

Addressing the Tax Challenges of the Digitalization of the Economy – A Possible Answer in the Proper Application of the Transfer Pricing Rules?

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“When innovations threaten your business, you must adapt or die.” (Paul Sloane)^[1]

In this article, the authors advance a possible solution to the challenges posed to international taxation by the digitalization of the worldwide economy. They argue that the proper application of the transfer pricing rules solves a problem of profits attribution to all the jurisdictions where digitalized companies generate their value.

1. Introduction

The extremely fast development of the new digital technologies and the promotion of innovations determine the direction in which the business environment is moving. Today, many industries adopt new information technologies (IT) to produce goods and provide services in a more unique, cost- and time-efficient, customer-friendly, and, ultimately, more competitive way than other businesses.

The PwC Global Industry 4.0 Survey analysed the current level of the digitalization of major industries worldwide and the anticipated digitalization in the future.^[2] Over the next five years, the level of the digitalization of companies is expected to rise between 42% and 74% in the Americas, between 31% and 67% in Asia-Pacific, and between 41% and 71% in Europe, the Middle East and Africa.^[3] Companies are expected to reduce production costs and deliver new streams of revenue by digitalizing their activities and creating new digital solutions that should enable them to personalize their products, increase the speed of operations, implement systems for analysing “Big Data” with regard to development and optimization, etc.^[4]

The high-level digitalization of industries indicates the beginning of a new era of the global economy. Governments and tax authorities worldwide should be prepared to understand these changes and adapt their rules and policies to properly reflect the interests of states and businesses. This is because outdated tax regulations and principles could result in situations of non-taxation or tax avoidance and, ultimately, the loss of revenue on the part of the treasuries of countries.

At present, one of the most discussed issues among tax authorities, policy makers, practitioners and academics around the globe is how to tax the digitalized part of a business, especially when this creates substantive value without any physical presence in a state. Under the current rules, tax authorities do not appear to have sufficient mechanisms by which to tax the business profits of companies that are derived from the value generated by the digitalization of the economy.

The objective of this article is to contribute to the discussion on possible solutions that can be identified to tax the value deriving from the digital activities of businesses. Specifically, the authors investigate whether a possible solution to these issues might derive from a proper application of transfer pricing rules, as interpreted by the current OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations (the “OECD Guidelines”).^[5]

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1. P. Sloane, *Think like an Innovator: 76 inspiring business lessons from the world's greatest thinkers and innovators* (FT Press 2016).

2. PwC, *Industry 4.0: Building the digital enterprise* (Global Industry 40 Survey 2016), available at www.pwc.com/gx/en/industries/industries-4.0/landing-page/industry-4.0-building-your-digital-enterprise-april-2016.pdf (accessed 29 Jan. 2018).

3. The present level of digitalization in the industries analysed is 31% in the Americas, 36% in Asia Pacific, and 30% in Europe, the Middle East and Africa. See PwC, *supra* n. 2, at Figure 13.

4. For more information regarding this, see PwC, *supra* n. 2.

5. OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (OECD 2017), International Organizations' Documentation IBFD [hereinafter *OECD Guidelines*], also available at <http://dx.doi.org/10.1787/tpg-2017-en> (accessed 18 Nov. 2017).

To this end, the authors analyse how digitalization influences business activities, whether digitalization generates additional value and what is this value for both traditional as well as highly digitalized forms of business. Part of the analysis of the authors focuses on a Value Chain Analysis (VCA) as a useful tool to investigate how companies function economically and how their businesses have been affected in a digitalized era.

Section 2. provides an overview of the latest developments at the OECD, as well as at the United Nations, in addressing the challenges generated by the digitalization of the economy and the unilateral measures adopted by some countries to face these challenges. Section 3. compares taxation based on the “value creation” approach as opposed to taxation based on that of “value consumption”. Section 4. discusses how the various highly digitalized business models differ from the traditional ones. Section 5. investigates the application of the current transfer pricing rules to tax highly digitalized business models. Section 6. presents the proposal of the authors to resolve the issues considered in this article. Section 7. concludes the article.

By way of a preliminary remark, this article refers to the term the “digitalization of the economy”, rather than the “digital economy”, as, in the authors’ opinion, “all the traditional businesses are digital, at least to some extent, and all the digital businesses are traditional, at least to some extent”.^[6] In addition, although this article tends to differentiate between traditional forms of business, on the one hand, and highly digitalized forms of business, on the other, it should be noted that, in the context of this article, this is just a conventional differentiation that is used for ease of distinction, as every form of business is different from the others and, therefore, there are many differences within both the traditional forms of business and the highly digitalized ones.

2. Setting the Framework for the Analysis: The Current Environment

2.1. Introductory remarks

In recent years, both the OECD and the United Nations have actively investigated the issues relating to the potential tax challenges generated by the development of the digitalization of the economy. The taxation of the digitalization of businesses has moved up the agenda of tax authorities worldwide. In this context, it should be noted that the G20/OECD Base Erosion and Profit Shifting (BEPS) initiative is intended to deal with these issues in Action 1 (“Addressing the Tax Challenges of the Digital Economy”).^[7] The Final Report on Action 1 was released in October 2015.^[8] Notwithstanding the remarkable results achieved by this Report, numerous questions on the ways in which to provide an effective response to the tax challenges of the digitalization of the economy are still open. On 1 November 2017, the OECD also published the extensive comments that it had received regarding its request for public input on the tax challenges of digitalization,^[9] in respect of which 52 organizations and individuals expressed their views on the examined issue. Sections 2.2. to 2.4. are intended to provide a brief overview of these topics.

2.2. Key features of the digitalization of the economy as identified by the OECD

While Action 1 emphasizes that “the digitalization and the resulting business models do not generate unique BEPS issues”, it also argues that “some of the key features of [digitalization] exacerbate BEPS risks”.^[10] With the intention of countering such base erosion and profits shifting risks, the OECD defines the key features of the digitalization of the economy having the utmost importance for, and influence on, the business environment and international taxation as follows:^[11]

- mobility, with regard to: (1) the intangibles on which the digitalization of the economy relies heavily; (2) users; and (3) business functions as a consequence of the decreased need for local personnel to perform certain functions as well as the flexibility in many cases to choose the location of servers and other resources;
- reliance on Data, including in particular the use of Big Data;
- network effects, which are understood by reference to user participation, integration and synergies;
- the use of multi-sided business models, under which the two sides of the market may be in different jurisdictions;
- a tendency toward monopoly or oligopoly in certain business models that rely heavily on network effects; and
- volatility due to low barriers to entry and rapidly evolving technology.

These factors influence the functions that the companies perform, the assets that they use, the risks that they assume and, therefore, the ways in which they create value. All of these features could affect a transfer pricing analysis of companies involved and, therefore, the way

6. P. Morton, *Profit splits and value chain analysis key to addressing transfer pricing issues in the digital economy*, *TP Week* (18 Aug. 2014), available at www.tpweek.com/articles/profit-splits-and-value-chain-analysis-key-to-addressing-transfer-pricing-issues-in-the-digital-economy/aratdfql (accessed 7 Nov. 2017).

7. OECD/G20, *Base Erosion and Profit Shifting Project* (OECD), available at www.oecd.org/ctp/beeps-actions.htm (accessed 29 Jan. 2018).

8. OECD, *Action 1 Final Report 2015 – Addressing the Tax Challenges of the Digital Economy* (OECD 2015), International Organizations' Documentation IBFD [hereinafter *Action 1 Final Report* (2015)], also available at www.oecd.org/tax/addressing-the-tax-challenges-of-the-digital-economy-action-1-2015-final-report-9789264241046-en.htm (accessed 12 Jan. 2018).

9. OECD, *BEPS public consultation on the tax challenges of digitalization* (OECD 2017), available at www.oecd.org/tax/beeps/public-consultation-on-tax-challenges-of-digitalisation-1-november-2017.htm (accessed 29 Jan. 2018).

10. OECD, *Action 1 Final Report* (2015), *supra* n. 8, at para. 368.

11. *Id.*, at para. 151.

in which they allocate their taxable bases between different countries. The Final Report on Action 1 concludes that the implementation of the OECD/G20 BEPS package, especially Action 7 (“Preventing the Artificial Avoidance of Permanent Establishment Status”)^[12] and Action 8-10 (“Aligning Transfer Pricing Outcomes with Value Creation”),^[13] substantially addresses those base erosion and profit shifting issues that are exacerbated by the digitalization of the economy. As a result, the OECD clearly concludes that topics relating to permanent establishments (PEs) and to the transfer pricing rules require a considerable amount of consideration in resolving these issues.

2.3. OECD and UN concerns regarding the challenges of the digitalization of the economy for transfer pricing

The Final Report on Action 8-10 was released more than two years ago. Since then, transfer pricing rules and guidelines have been extensively discussed and significantly developed by both practitioners and academics. The year 2017 remarkably saw an update of the OECD Guidelines^[14] and the release of the two OECD Discussion Drafts on the attribution of profits to PEs and on the transactional profit splits^[15] and comments regarding the two Discussion Drafts. The documents released do not substantively address the issues of the digitalization of the economy, thereby leaving this work within the scope of Action 1.

Action 1, however, raises several concerns regarding the challenges raised by the digitalization of the economy relating to transfer pricing rules. First, the limited physical presence required by the digitalized activities gives rise to a significant risk of non-compliance with the tax rules and to the artificial avoidance of the PE status. In addition, even when the definition of a PE is extended to include these activities, the OECD is concerned as to: (1) whether the existing transfer pricing rules and rules on attribution of profits to PEs are sufficient enough to deal with a PE with little physical presence; and (2) whether and how the existing guidelines, i.e. both the OECD Guidelines and the OECD Report on Attribution of Profits to Permanent Establishments,^[16] should be amended. The complexities in the application of these rules could be further increased by the extensive involvement of intangible assets in digital transactions.

The United Nations has also considered numerous issues regarding the tax challenges of the digitalization of the economy in the 2017 updates of the UN Practical Manual on Transfer Pricing for the Developing Countries^[17] (the “UN Manual”) and in the report of the Committee of Experts on International Cooperation in Tax Matters, “Tax Challenges in the Digitalized Economy”.^[18] The United Nations has emphasized how the major changes to the concept of a PE would require a revision of the UN Model (2011)^[19] and of individual bilateral tax treaties. The primary related issues identified by the United Nations are: (1) the determination of a nexus; (2) the role of Data; and (3) the characterization of payments.^[20]

The UN Manual emphasizes that the digitalization of the economy is one of the key growth drivers for developing economies.^[21] It concludes that the transfer pricing aspects of the ownership, management, use and transfer of intangibles place an additional burden of complexity in respect of compliance and investigation for both taxpayers and tax administrations in developing countries.^[22]

Briefly, both the OECD and the UN have concluded that the main issues to be addressed and rethought by transfer pricing rules are: (1) the development of the concept of a “digital”/“virtual” PE and the determination of the effective nexus; (2) the attribution of value based on the value-creating functions and assets and, in particular, on the value of Data; and (3) the application of the transfer pricing analysis to the “digital”/“virtual” PE as well as for the purposes of those transactions with unique contributions.

2.4. The experience of countries in addressing the taxation of digital transactions

As a reaction to the debate referred to in section 2.3., many countries worldwide have implemented unilateral measures to try to tax the profits that are derived from the digitalized activities of multinational enterprises (MNEs) with “significant economic presence” in their territory. As a first adopter, the United Kingdom has implemented a “diverted profits tax” (DPT) to counter the use of aggressive tax planning by MNEs in diverting profits from the United Kingdom to low-tax jurisdictions. The DPT is imposed at a rate of 25% on those profits that are considered to be artificially diverted from the United Kingdom.

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12. OECD, *Action 7 Final Report 2015 – Preventing the Artificial Avoidance of Permanent Establishment Status* (OECD 2015), International Organizations' Documentation IBFD [hereinafter *Action 7 Final Report* (2015)], also available at <http://dx.doi.org/10.1787/9789264241220-en> (accessed 17 Dec. 2017).
 13. OECD, *Actions 8-10 Final Reports 2015 – Aligning Transfer Pricing Outcomes with Value Creation* (OECD 2015), International Organizations' Documentation IBFD [hereinafter *Actions 8-10 Final Reports* (2015)], also available at <http://dx.doi.org/10.1787/9789264241244-en> (accessed 18 Dec. 2017).
 14. The updates were approved by the OECD Council on 23 May 2016.
 15. On 22 June 2017, the OECD released two discussion drafts that provide additional guidance on the Final Reports on the OECD/G20 BEPS initiative that were published in October 2015. In this respect, see *OECD releases BEPS discussion drafts on attribution of profits to permanent establishments and transactional profit splits* (OECD 2017), available at www.oecd.org/ctp/transfer-pricing/oecd-releases-beeps-discussion-drafts-on-attribution-of-profits-to-permanent-establishments-and-transactional-profit-splits.htm (accessed 15 Dec. 2017).
 16. OECD, *Attribution of Profits to Permanent Establishments* (OECD 2010), International Organizations' Documentation IBFD.
 17. UN, *Practical Manual on Transfer Pricing for Developing Countries* (2nd ed., UN 2017), Department of Economic & Social Affairs, United Nations, New York [hereinafter *UN Manual*], available at <http://www.un.org/esa/ffd/wp-content/uploads/2017/04/Manual-TP-2017.pdf> (accessed 29 Jan. 2018).
 18. UN Committee of Experts on International Cooperation in Tax Matters, *Tax Challenges in the Digitalized Economy: Selected Issues for Possible Committee Consideration* (UN 2017), available at www.un.org/esa/ffd/wp-content/uploads/2017/10/15STM_CRP22_Digital-Economy.pdf (accessed 29 Jan. 2018).
 19. *United Nations Model Double Taxation Convention between Developed and Developing Countries* (1 Jan. 2011), Models IBFD, also available at www.un.org/esa/ffd/wp-content/uploads/2014/09/UN_Model_2011_Update.pdf (accessed 18 Dec. 2017).
 20. UN, *Tax Challenges in the Digitalized Economy*, *supra* n. 18, at para. 40.
 21. *UN Manual*, *supra* n. 17, at para. B.1.10.13.
 22. *Id.*, at para. B.1.11.3.

In Australia, a DPT came into effect on 1 July 2017 and imposes a 40% tax rate on profits diverted offshore through arrangements involving related parties. France has included a DPT in an amendment to the Finance Act 2017. However, France's *Conseil Constitutionnel* (Constitutional Council, CC) held the controversial law regarding the DPT to be unconstitutional and struck it down on 29 December 2016.^[23] New Zealand has also given consideration to a DPT as part of its response to base erosion and profit shifting.

Israel has adopted new tax rules. Under the new rules, the income of foreign services and goods providers should be taxed, even in the absence of a physical presence of the companies in the destination country, on the basis of "significant digital presence" involving Israeli users.

India introduced an equalization levy in the Finance Act 2016.^[24] Based on the new rules, a 6% equalization levy applies on business-to-business (B2B) payments for digital services made to non-resident service providers. Digital transactions include online advertising, digital advertising space and similar transactions.

Italy is discussing to implement a "web tax",^[25] as well as amendments to its transfer pricing rules, in particular, to adapt the valuation techniques to ensure the satisfaction of the arm's length principle. Italy is also considering the imposition of a 25% withholding tax on the activities of virtual PEs defined on the basis of "significant digital presence".

Kuwait and Saudi Arabia have introduced a "virtual service" PE, which is deemed to exist with no physical presence but, rather, as the result of the provision of services for more than the threshold period provided for by tax treaties. This can, for example, be seen in the India-Saudi Arabia Income Tax Treaty (2006),^[26] which provides for a period of 182 days in any 12-month period.

China, Israel and Italy are considering implementing VAT on the provision of digital services. France also has plans to value Data generated by the Internet users.^[27] In addition, France, Germany, Italy and Spain have suggested that an "equalization tax", or levy, on turnover would bring taxation to the level of the corporate income tax in the country in which the revenue was earned.^[28]

One of the main objectives of international tax norms should be to ensure neutrality in cross-border trading. The unilateral measures implemented to date are, however, likely to result in substantive uncertainties for MNEs and to contradict the international principles of neutrality, certainty, fairness and efficiency. The introduction of additional and heterogeneous taxes on similar transactions is likely to give rise to double taxation. The authors, therefore, hope that the introduction of such measures will be only temporary until countries multilaterally agree on the adoption of a single approach to deal with these issues.

3. "Value Creation" versus "Value Consumption" in Taxing Digital Transactions^[29]

The OECD/G20 BEPS initiative has placed considerable effort in "aligning transfer pricing outcomes with value creation" and, to a great extent, this can be considered to have been successful in providing guidance in reaching this objective. However, as emphasized in [section 2.4.](#), countries now appear to be moving to define new ways of taxation, whereby taxation should not occur where value is created but, rather, where the value is consumed, i.e. in the market jurisdiction.

There are several reasons for such unilateral actions. These include: (1) governments do not want to lose their taxing rights over the revenue generated from business activities that originate value in their countries that are not taxable under current international tax rules; (2) countries are concerned regarding the distortion of competition and in providing significant tax advantages that MNEs gain compared to smaller enterprises; and (3) there is still no multilateral policy agreement on how the taxation of the digitalization of the economy should be regulated.

Withholding taxes on digital transactions and the equalization levy try to tax the income in the destination country and not in the country where the value is created and, therefore, do not resolve the issue of fair income allocation. Withholding taxes on digital transactions and equalization levy are also reminiscent of a VAT system in their attempt to attribute the taxation of profits to the country of consumption and in using gross revenue as a tax base.

23. France's Constitutional Council's Decision no 2016-744 DC, 29 Dec. 2016, available at <http://www.conseil-constitutionnel.fr/conseil-constitutionnel/francais/les-decisions/acces-par-date/decisions-depuis-1959/2016/2016-744-dc/decision-n-2016-744-dc-du-29-decembre-2016.148423.html> (accessed 29 Jan. 2018). France has continued its efforts to implement a tax for the digital services. For more information regarding this, see H. Agnew & A-S. Chassany, *France says taxes on US tech groups would "restore balance"* Fin. Times, available at www.ft.com/content/91e9d2ac-bae8-11e7-8c12-5661783e5589 (accessed 15 Dec. 2017).

24. "To avoid some of the difficulties arising from creating new profit attribution rules for purposes of a nexus based on significant economic presence, an "equalization levy" could be considered as an alternative way to address the broader direct tax challenges of the digital economy." See OECD, *Action 1 Final Report* (2015), *supra* n. 8, at para. 115.

25. The Italian government has introduced a "temporary web tax", which will remain in force until the OECD/EU strategy for a new concept of a PE has been defined. The Italian "web tax" applies a 6% levy on digital sales. The Italian Finance Ministry has promised to define precisely what services are so taxable by April 2018.

26. *Convention between the Government of the Republic of India and the Government of the Kingdom of Saudi Arabia for the Avoidance of Double Taxation and the Prevention of Tax Evasion with Respect to Taxes on Income* (25 Jan. 2006), Treaties IBFD.

27. UN, *Tax Challenges in the Digitalized Economy*, *supra* n. 18.

28. T. Leigh, *France, Germany, Italy, Spain seek tax on digital giants' revenues*, Reuters (9 Sept. 2017), available at www.reuters.com/article/us-eu-tax-digital/france-germany-italy-spain-seek-tax-on-digital-giants-revenues-idUSKCN1BK0HX (accessed 10 Dec. 2017).

29. The authors define the "value consumption" approach as the attribution of profits to the jurisdiction in which the goods and services are consumed by the customers. Basically, this concept emphasizes the fact that the new unilateral measures that are described in [section 2.4.](#) and have been introduced by countries might not align the taxation of business profits with where the value is created.

The historically accepted practice that the consumption country receives VAT is intended to satisfy the taxing interests of state treasuries, as consumption itself does not generate additional value. However, the application of VAT to digital transactions, together with withholding taxes on digital transactions and equalization levies, could result in multiple layers of taxation and the attribution of extra taxable value to the country of consumption. The country of consumption should, in the authors' view, obtain additional, i.e. compared to VAT, taxing rights only if the consumption generates the additional value for the company providing goods or services. The use of a VCA (see [section 5](#).) should serve as a mechanism to define whether consumption in the market jurisdiction creates an additional value for the company, for example, Data monetization, and attributes the appropriate amount of profits to the market jurisdiction by means of direct income taxation.

In order to understand why the market jurisdiction should tax the business profits only when the additional value is generated in that jurisdiction, it is necessary to address the concepts and theories of direct income tax and indirect tax. These concepts and theories are discussed below.

Traditionally, the concepts of direct income tax and indirect tax are completely different. The purpose of a direct income tax is to compensate the state for the opportunities, good conditions and resources that are required to operate the business in the specific jurisdiction, where the operational units generate their value. The quantitative expression of the value created in the specific jurisdiction is the amount of revenue and profits the company obtains out of its operation in the specific jurisdiction, including whether the choice of jurisdiction was driven by some location-specific advantages. The government that creates the conditions for the operation of business, for example, highly educated human resources, good infrastructure, a stable political and economic environment, natural resources, etc., should receive appropriate compensation from the profits of a business.^[30] However, the purposes of an indirect tax are twofold. These are: (1) to compensate the government for creating the market conditions in the country and assuring that the customers within the jurisdiction have the purchasing power to consume the products; and (2) to ensure export and import neutrality. Both a withholding tax on digital transactions and an equalization levy may result in taxing the profits of companies that do not generate any value in the market jurisdiction. This gives rise to additional burdens for businesses and competitive disadvantages as well as multiple layers of taxation.

The second issue is that a withholding tax on digital transactions and an equalization levy are presented as independent new forms of taxation, which might not fit in with the context of the existing bilateral and multilateral agreements on the avoidance of the double taxation. However, a withholding tax on digital transactions and an equalization levy have been introduced as forms of income taxation. In addition, both a withholding tax on digital transactions and an equalization levy are intended to tax directly the income generated by a company in a specific jurisdiction, using the gross amount of profits as a tax base. Consequently, in the authors' opinion, the scope of the application of article 2(2) of the OECD Model^[31] should be expanded to include a withholding tax on digital transactions and an equalization levy. However, disagreement on this interpretation could result in multiple layers of taxation that might not be levied by means of bilateral and multilateral tax treaties. As a result, direct income tax should continue taxing value creation, while indirect taxes should continue taxing value consumption. Consequently, the development of a concept of a digital PE and the interpretation of transfer pricing rules could be the basis for the allocation of taxing rights between different countries. This is also true considering the current treaty networks of states.

As soon as the concept of a digital PE is introduced, the business profits in the market jurisdictions are captured by the application of income taxes, by means of transfer pricing rules. In such a case, the income tax applies to the net amount of business income generated in the country where value is created.

In some instances, the difference in the rates of income tax applying to the net basis and an equalization levy, for example, 6% in the case of India, applicable to the gross amount of profits, could appear to result in comparable amounts of tax revenue. However, taxing in line with the concept of a digital PE and transfer pricing rules enables the market jurisdiction to receive its fair amount of income tax revenue on the basis of the value generated there.

In the authors' view, there is no need to "reinvent the wheel" and create "new" forms of taxation to catch business profits on digital transactions, as the existing transfer pricing rules, as amended by the OECD/G20 BEPS initiative, are already potentially capable of coping with the tax challenges of the digitalization of the economy. Rather, the objective should be to also align transfer pricing outcome with value creation in the context of attributing profits to the operational units of MNEs as soon as the concept of a digital PE is developed. However, in order to apply the existing rules of taxation, how digitalization influences the businesses and what rules should be further developed must still be examined (see [section 4](#).).

4. The Novelties of the Digitalized Business Models

4.1. Introductory remarks

The main starting point of this analysis is the understanding that "all the traditional businesses are digital, at least to some extent, and all the digital businesses are traditional, at least to some extent".^[32] Both the traditional business models and the highly digitalized business models have the same purpose of realizing profits by means of selling goods and providing services. The activities of companies are also intended to reduce their expenses, maximize their profits and target a larger market share. However, enterprises differ in the way they reach their strategic objectives. They adopt specific and unique development and risk strategies, derive their advantages from the

30. For more on the theory of taxation, see J. Stamp, *Fundamental Principles of Taxation in the Light of Modern Developments* The Newmarch Lectures for 1919 (1936).

31. *OECD Model Tax Convention on Income and on Capital* art. 2(2) (21 Nov. 2017), Models IBFD reads as follows "[t]here shall be regarded as taxes on income ... all taxes imposed on total income ... or on elements of income...".

32. Morton, *supra* n. 6.

use of different technologies and assets and perform different functions. All of these components gives rise to a company's value for its customers, shareholders and the company itself. Currently, digitalization significantly contributes to the value creation process of numerous companies.

4.2. The role of digitalization for companies

The digitalization of an industry is defined by Parida et al. (2015) as “the intelligent connection of the machines powered by information and digital technologies”.^[33] Digitalization provides businesses with very numerous opportunities for new functionalities, greater reliability and efficiency, and the optimization of the processes, thereby increasing the overall value that companies create and deliver to their customers.^[34]

When thinking of the digitalization of the economy and industries, it is common to refer to MNE digital giants, such as Facebook, Apple, Amazon, Netflix and Google, which are also referred to, in the “Wall Street slang”, as FAANG. However, it must be remembered that digitalization also affects traditional businesses as, for example, in the construction and operation, transport, extractive, engineering, agriculture, and banking industries. These industries do not lag behind in technological progress and apply the technological advances in their business operations. Both the highly digitalized businesses and the traditional ones are, and, most probably, will be, increasingly driven by the use of personal computing, intelligent software, Big Data, Blockchain technologies, advanced robotics, 3D printing, etc. Cloud-based processes, the internet of things, the sharing economy and collaborative production are modern trends that also create additional value for the production of goods and the provision of services.

The digitalization of the economy provides many new opportunities for businesses. The main improvements are, inter alia: (1) the high speed of the transactions; (2) the closer relationship between goods and/or services providers and their customers; (3) freedom in the location of assets; (4) the possibility to modify the role of intermediaries and to generate high profits; and (5) the enabling of completely new business models.

The digitalization of the economy influences many activities, i.e. the functions companies perform, the assets they use in their activities and the risks that they assume. In the recent past, some primary activities have become less relevant, but, meanwhile, secondary activities, for example, technological and intellectual property (IP) development, have, in many instances, attained the same value of primary activities.

4.3. Digital assets in the strategic development

Companies use new digital assets on all of the stages of their production, including strategy, design, production, marketing, and distribution to the final customers. Companies strategically invest into new equipment, IT devices, software and IT platforms.^[35] Artificial Intelligence (AI) is replacing people in providing the operational processes. IT platforms and software negate geographical boundaries^[36] and make connectivity between the various operational units as efficient and fast as with other organizations. These elements result in a reduction in transactional costs, the easier transfer of intangible assets between different jurisdictions and an expansion of business activities worldwide.

The other advantage of IT platforms and software is the possibility of knowing your customer almost “as your own friend” or even better. The digital interaction between different service providers gives rise to the ability to analyse the demands of the prospective and current customers and to offer them highly personalized goods and services in the places where they spend a considerable amount of their lifetime nowadays, i.e. social networks.

Marketing strategies also extensively rely on Big Data that makes it one of the most valuable assets for a company. A company's IP, such as “core competencies,” technologies and know-how,^[37] remain the value-creating intangible assets in the Digital Era.

Last but not least, human assets are very relevant. Knowledge-based human capital is of great value and currently much in demand. As a result, less qualified labour is already being replaced by AI.

There are numerous examples of this. BlaBlaCar, which is one of the examples of a highly digitalized business model that has been applied to a long-distance ride-sharing platform to connect “drivers” and “travellers”, emphasizes that “assets which generate value [for BlaBlaCar] are brand, platform, know-how and Data storage”.^[38]

However, the value of such assets may vary with regard to different forms of business. This very much depends on the way in which a company generates value.

33. Parida et al., *Developing global service innovation capabilities: How global manufacturers address the challenges of market heterogeneity*, 58 *Research-Technology Management* 5, pp. 35-44 (2015) and S. Lenka et al., *Digitalization and advanced service innovation*, *Forskningsinformation från Stiftelsen IMIT – Inst. for Mgt. of Innovation & Tech.* 3 (Oct. 2016), available at www.diva-portal.org/smash/get/diva2:1037366/fulltext01.pdf (accessed 7 Nov. 2017).

34. Id.

35. “A platform is a combination of hardware and software that provides standards, interfaces, and rules that allow providers of complements to add value and interact with each other and/or users”. See D.J. Teece & G. Linden, *Business models, value capture, and the digital enterprise*, *Springer Open J. Org. Design* (24 Aug. 2017), available at <https://jorgdesign.springeropen.com/articles/10.1186/s41469-017-0018-x> (accessed 7 Nov. 2017).

36. See the references to Porter (2001), Slywotzky & Morrison (2001), Afuah & Tucci (2001), Kim et al. (2004), Grover & Ramanlal (2005) and Javalgi et al. (2007) in K. Täuscher, *Business Models in the Digital Economy: An Empirical Classification of Digital Marketplaces*, *Fraunhofer Ctr. Intl. Mgt. & Knowledge Econ.*, available at www.imw.fraunhofer.de/content/dam/moez/de/documents/Working_Paper/Working_Paper_Digital_Marketplaces_final.pdf (accessed 7 Nov. 2017).

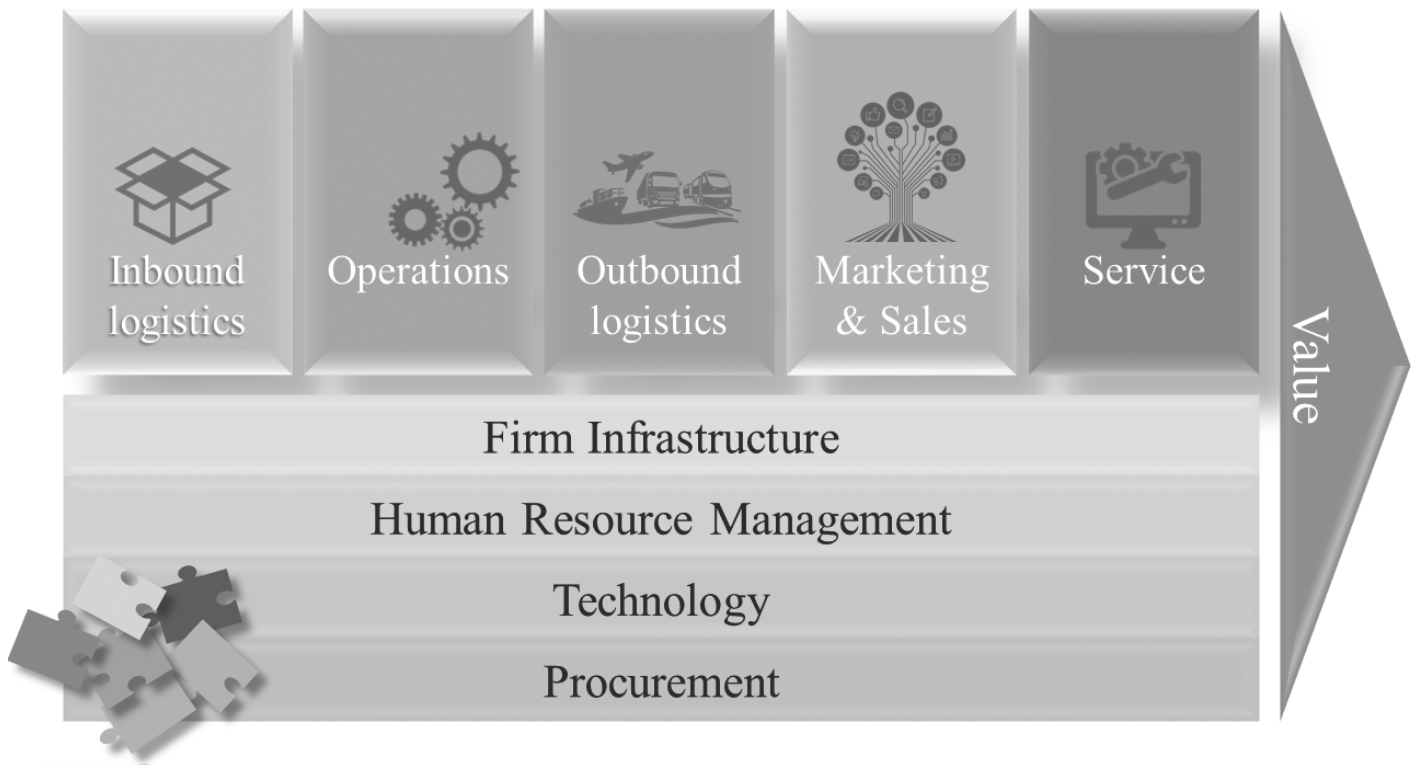
37. Teece & Linden, *supra* n. 35.

38. OECD, *supra* n. 9.

4.4. Functions of companies and growing digitalization

The division of the functions of companies and the main value drivers are very dependent on the industry in which they operate, the strategy they adopt, the market share they attain and many other economic factors. Porter's Value Chain Analysis^[39] (see Figure 1) distinguishes between a company's primary activities, including inbound logistics, operations, outbound logistics, marketing and sales, and service, and support activities such as infrastructure, human resources, or HR, management and technological development. The digitalization of a company's products, services and operational processes may influence the attribution of value to the functions performed by the operational units that focus on technological development and marketing and sales.

Figure 1: Porter's Value Chain Analysis



Highly digitalized business models and their value drivers differ from the traditional forms of businesses. The former use Data as one of the key generators of their stream of revenue. In the jargon of Big Data, this is referred to as Data monetization.^[40] In different ways, each of these businesses monetizes the value of Data they gather, while, at the same time, providing for their traditional operations.^[41] For instance, the value of Uber^[42] is estimated to be over USD 50 billion.^[43] Drivers and riders of Uber and similar ride services are empowered, as precision in rider and driver information is captured and shared through a marketplace so that each side can, apparently, make rational economic decisions. Uber gathers the information regarding the location of the customers and offers them, for example, restaurants, shops and sights near their current place or their place of destination. Restaurants and shops, in exchange, pay Uber a fee for the adverts. Consequently, Uber monetizes Data regarding the location of customers while also providing traditional taxi services. With regard to Airbnb, the sharing of information is enabled by the low cost of sharing photos, videos and reviews, as well as the ability to track local hotel prices algorithmically.^[44]

Uber and Airbnb do not provide taxi or housing services themselves. They create the platform for other service providers to reach potential customers, thereby creating additional value for them, such as transparency, comfort and fraud prevention, and for service providers, such as access to the customers.

39. For more information on the concept of a VCA, see M.E. Porter, *Competitive Advantage* (Free Press 1985).

40. K. Sachdeva, *5 key attributes of effective data monetization strategy*, *IBM Big Data & Analytics Hub* (6 Feb. 2017), available at www.ibmbigdatahub.com/blog/5-key-attributes-effective-Data-monetization-strategy (accessed 7 Nov. 2017).

41. Id.

42. Uber Technologies Inc. is a global transportation technology company headquartered in San Francisco, California, United States, operating in 633 cities worldwide.

43. *How Uber Works: Insights into Business & Revenue Model*, *Juggernaut* (24 Sept. 2015), available at <http://nextjuggernaut.com/blog/how-uber-works-business-model-revenue-uber-insights> (accessed 7 Nov. 2017).

44. Id.

It may appear that highly digitalized companies, like Uber and Airbnb, do not differ from the traditional forms of businesses and provide familiar services, such as accommodation and transport by way of apps. However, they derive their high value not only from the traditional operations, but also from the monetization of Data, marketing and B2B relationships, and perform specific functions to realize their objectives. Highly digitalized companies also have the opportunity to create trusted relationships with their customers, based on their long-running purchase activities. Such companies gather Data, which is, then, monetized, which customers provide in exchange of free or cheaper services. As a result, these functions and their specific features should be taken into account when a transfer pricing analysis is performed (see section 5.).

5. The Current Application of Transfer Pricing Rules

5.1. Introductory remarks

The OECD Guidelines, as amended by Action 8-10 of the OECD/G20 BEPS initiative, are intended to align transfer pricing outcomes with value creation. In this context, the application of a proper transfer pricing analysis should be performed using the following four-step approach:

- (1) identification of the commercial or financial relationships between the associated enterprises by analysing the economically relevant characteristics, or comparability factors, of a transaction, to accurately delineate the transaction undertaken;^[45]
- (2) recognition of the accurately delineated actual transaction;^[46]
- (3) selection of the most appropriate transfer pricing method;^[47] and
- (4) application of the most appropriate transfer pricing method.^[48]

The fundamental starting point of the analysis is, therefore, the identification of the commercial or financial relationships between the associated enterprises, i.e. step (1). Without step (1), an analysis would reach wrong conclusions. Consequently, this article focuses on step (1) of the analysis.

The identification of the commercial or financial relationships between the associated enterprises is based on an analysis of the economically relevant characteristics, or comparability factors, of the transaction, i.e.:

- the contractual terms of the transaction;
- the functions performed by each of the parties to the transaction, taking into account assets used and risks assumed, including how those functions relate to the wider generation of value by the MNE group to which the parties belong, the circumstances surrounding the transaction, and industry practices;
- the characteristics of the property transferred or the services provided;
- the economic circumstances of the parties and of the market in which the parties operate; and
- the business strategies pursued by the parties.

In this process, the identifications of the functions performed, the assets used and the risks assumed, i.e. a functional analysis, or FAR, analysis, is of pivotal importance.

This is even more important in the context of attributing profits to PEs. Based on the application of the Authorised OECD Approach (AOA) to attribute profits to PEs,^[49] the following two-step analysis should be performed, whereby:

- (1) the PE should be hypothesized as a separate and independent enterprise; and
- (2) the profits of the hypothesized separate and independent enterprise should be determined based on a comparability analysis.

With regard to step (1), it is important to:

- identify the “significant people functions” that are relevant to the attribution of the economic ownership of assets and to the assumption of risks; and
- attribute the economic ownership of assets and the risks to the PE based on the identified “significant people functions”;
- attribute capital based on the assets and risks attributed to the PE; and

45. OECD Guidelines, *supra* n. 5, at paras. 1.33-1.118.

46. Id., at paras. 1.119-1.128.

47. Id., at paras. 2.1-2.12.

48. Id., at paras. 2.13-2.155.

49. See OECD, *supra* n. 16 for more on the AOA and the attribution of profits to PEs.

- recognize and determine the nature of those dealings between the PE and the other parts of the same enterprise that can appropriately be recognized.

With regard to step (2), the recognized dealings should be priced at arm's length, based on the following:

- the determination of comparability between the dealings and uncontrolled transactions, established by applying the comparability factors in the OECD Guidelines directly, i.e. by reference to the characteristics of property or services, economic circumstances and business strategies, or by analogy, i.e. by reference to a functional analysis and the contractual terms, in light of the particular factual circumstances of the PE; and
- the selection and application by analogy to the guidance in the OECD Guidelines of the most appropriate method in respect of the circumstances of the case to arrive at an arm's length compensation with regard to the dealings between the PE and the rest of the enterprise, taking into account the functions performed by, and the assets and risks attributed to, the PE.

Consequently, in the case of PEs, the functions performed, or, better, the significant people functions performed, probably have an even more pivotal role.

The starting point of this analysis is, however, based on the wording of the OECD Guidelines, which also apply, as noted previously in this section, by analogy for the purposes of attributing profits to PEs using:

... a broad-based understanding of the industry sector in which the MNE group operates (e.g. mining, pharmaceutical, luxury goods) and of the factors affecting the performance of any business operating in that sector. The understanding is derived from an overview of the particular MNE group which outlines how the MNE group responds to the factors affecting performance in the sector, including its business strategies, markets, products, its supply chain, and the key functions performed, material assets used, and important risks assumed.^[50]

To this end, the performance of a VCA can be a useful tool and will become increasingly a relevant tool in any transfer pricing analysis to be performed before the traditional comparability analysis and the identification of the commercial or financial relationships between the associated enterprises, including the functional analysis, previously noted in this section, as well as the identification of the significant people functions in the specific case of PEs.

In this context, it is important to note that a VCA, on the one hand, and identification of the commercial or financial relationships between the associated enterprises, including the functional analysis, as well as the identification of significant people functions, in the specific case of PEs, on the other, are based on different concepts. While the latter is performed in accordance with the "separate entity approach", as a fundamental pillar in the application of the arm's length principle,^[51] a VCA does not follow this idea and, instead, focuses on the operation of the whole company or group of companies, disregarding any "legal frame" or jurisdictional barriers.^[52] This is evident from the following statement in the OECD Guidelines:

The process then narrows to identify how each MNE within that MNE group operates, and provides an analysis of what each MNE does (e.g. a production company, a sales company) and identifies its commercial or financial relations with associated enterprises as expressed in transactions between them.^[53]

In addition, as stated previously in this section, a functional analysis should, ultimately, include:

how those functions relate to the wider generation of value by the MNE group to which the parties belong, the circumstances surrounding the transaction, and industry practices.^[54]

This can be understood as an explicit reference to a VCA as an important tool in this process.

A VCA improves the outcome of the identification of the commercial or financial relationships between the associated enterprises and, therefore, of the application of the arm's length principle, as it helps to identify the key value drivers of a business and, consequently, distinguishes between the relatively more important functions, assets and risks and the relatively less important ones. Ultimately, the

50. OECD Guidelines, *supra* n. 5, at para. 1.34.

51. R. Petruzzi, *The Arm's Length Principle: Between Legal Fiction and Economic Reality*, in *Transfer Pricing in a Post-BEPS World* 1-32 (M. Lang, A. Storck & R. Petruzzi eds., Kluwer L. Intl. 2016).

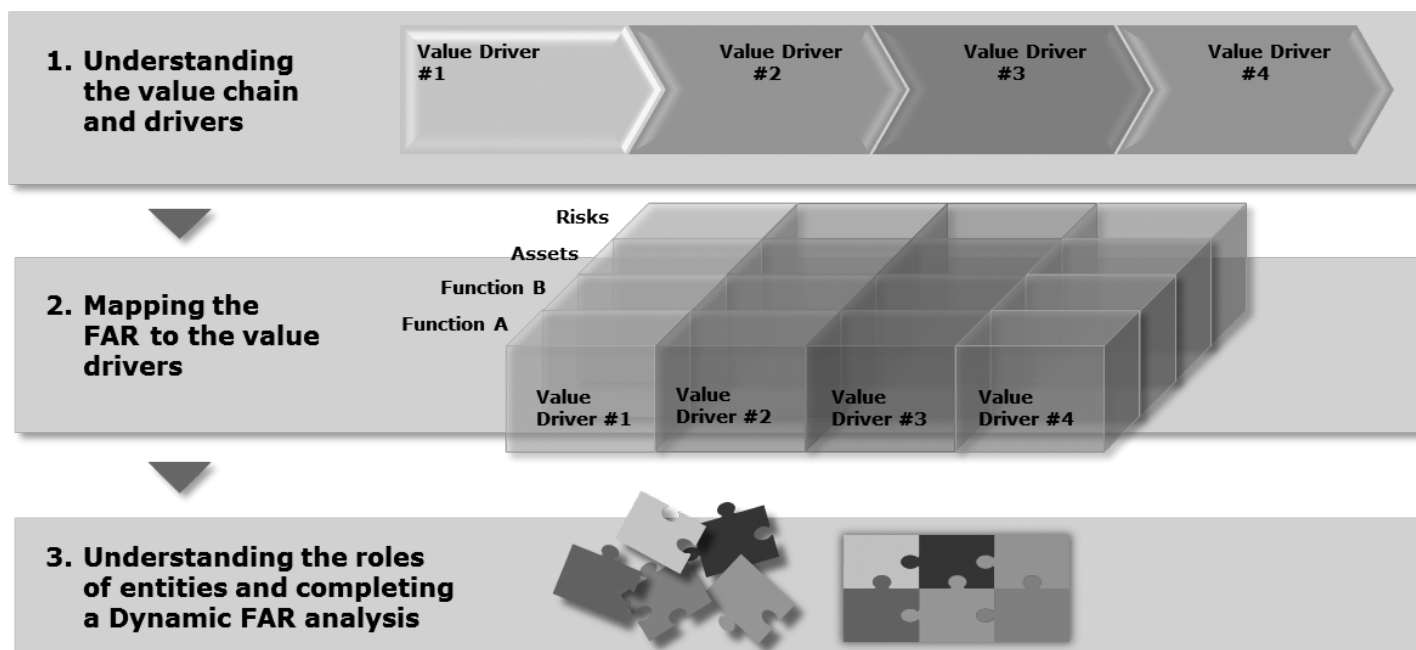
52. The OECD approach to a transfer pricing analysis based on VCA and functional analysis, as a relevant part of the identification of the commercial or financial relationships between the associated enterprises, may be interpreted as leading to the following two conclusions: (1) a VCA and a functional analysis are interchangeable; and (2) a VCA and a functional analysis are complementary. The authors believe that the second approach is the correct one and assume that, on the one hand, a VCA is intended to analyse the general process of value creation within a company, while a functional analysis aims to analyse what functions are performed, what assets are used and what risks are assumed by related parties in specific transactions and how these functions, assets and risks generate value in these transactions.

53. OECD Guidelines, *supra* n. 5, at para. 1.35.

54. *Id.*, at para. 1.36.

results of a VCA and of the identification of the commercial and financial relationships between the associated enterprises align the profits with the economic activity and value creation. Figure 2 illustrates this process:^[55]

Figure 2: Commercial and financial relationships between associated enterprises and alignment of profits with economic activity



Sections 5.2. to 5.3. now analyse how a VCA can be applied in the context of highly digitalized businesses and how a VCA can be further developed or, if necessary, modified to address the challenges of the digitalization of the economy. With this purpose in mind, the following two questions are discussed: (1) what are the key value drivers in different forms of businesses; and (2) what are the specific key value drivers for the highly digitalized business? (See section 5.2.)

Subsequently, the process of identifying the commercial or financial relationships between the associated enterprises is analysed, with emphasis on the following two key elements of this process noted in section 4.: (1) the functional analysis, i.e. the identification of the functions performed, the assets used and the risks assumed; and (2) the identification of the significant people functions in the specific case of PEs. Here again, the focus is on highly digitalized businesses. (See section 5.3.)

5.2. The application of a VCA

5.2.1. Opening comments

Notwithstanding some ambiguities, the significance of the OECD/G20 BEPS initiative and the OECD Guidelines should not be underestimated. The use of a VCA to enhance the outcome of the guidance is the logical step towards the fair distribution of taxing rights between the jurisdictions where businesses create the most beneficial conditions for the sustainable development of their main value drivers. A VCA can also potentially constitute a relevant step to address the digitalization of the economy, by means of: (1) the prevention of artificial arrangements by inaccurately delineating the actual transactions undertaken; and (2) the alignment of most of the taxing rights to the jurisdiction where most of the value of the business is created. The proper application of all of the recommendations can have an enormous effect on some MNEs' aggressive tax planning.

5.2.2. Determination of “value” and “value creation”

The purpose of a case-by-case-based VCA is to understand the global value chain of a business and the ways in which this business generates its value. However, the OECD does not define what a VCA is or how to define “value” and “value creation”.

Every business, at the initial stage, develops its own business model in trying to define: (1) a firm's value propositions for customers, partners and other stakeholders; (2) the processes and resources required to deliver these value propositions; and (3) a profit formula.^[56] In addressing point (1), it can be assumed that the concept of value may refer to different social phenomena,^[57] for example, the value for the customers, the value for the partners, the value for the stakeholders or the value for the company itself. However, most often when

55. E. Llinares, *Presentation at the Advance Transfer Pricing Course*, WU Transfer Pricing Ctr. Inst. Austrian and Intl. Tax L. at WU (2017).

56. A. Shanker, *A Customer Value Creation Framework for Businesses that Generate Revenue with Open Source Software*, 2 Tech. Innovation Mgt. Rev. 3, p. 18 (2012).

57. C. Bowman & V. Ambrosini, *Value Creation Versus Value Capture: Towards a Coherent Definition of Value in Strategy*, 11 Brit. J. Mgt. 1, pp. 1-15 (2000).

economists use the term “value”, they refer to the value for the customer, as this is the primary objective in realizing the successes of a company.^[58] “Value” and “value creation” are central concepts in the economic literature on management and organization.^[59] In this respect, Conner (1991) argued that, from a resource-based perspective:

obtaining returns requires (a) the firm’s product either be distinctive in the eyes of buyers, or (b) that the firm selling an identical product in comparison to competitors must have a low-cost position.^[60]

Value may be understood as: (1) the additional advantages provided to the customer in comparison with other products, i.e. what makes the product unique and distinctive; or (2) the more beneficial cost proposition. The advantages for the customer make the qualitative part of the value proposition.

On the other hand, value can also have a quantitative expression. In this regard, Porter (1985) defined value as:

the amount buyers are willing to pay for what a firm provides them. Value is measured by total revenue... A firm is profitable if the value it commands exceeds the costs involved in creating the product.^[61]

With these words, Porter (1985) mostly described the quantitative form of value as the amount of money that the customers are willing to pay for the qualitative value.

The approach of Bowman and Ambrosini (2000) is also persuasive. These authors distinguish between use value and exchange value.^[62] In this context, use value is the qualitative characteristic which “refers to the specific qualities of the products perceived by customers in relation to their needs”, while exchange value refers to the “monetary amount realized at a single point in time when the exchange of the good takes place”.^[63] It is, therefore, possible to define the value creation process as the combination of valuable resources that are intended to create the qualitative value proposition for the customers and to receive profits in exchange.

In the authors’ opinion, at each stage of a VCA in the context of a transfer pricing analysis, taxpayers and tax administrations should examine, initially, and more importantly, the qualitative characteristic of value to determine where such value is created. Taking into account the nature of intra-group relations, the operational units do not exercise their bargaining power to compensate the value they create and conclude artificial legal arrangements that contradict the principles of market economy and the arm’s length principle. Consequently, the quantitative characteristics, i.e. how much profit a company receives out of a specific controlled transaction, cannot serve as the starting point of an analysis aimed at highlighting how the company creates value.

Many business models use IT to optimize their processes. However, the extent to which the digitalized part plays a role in the business models differs significantly. Not all companies generate the same value from the digitalized part of their businesses. In addition, as noted in [section 2.](#), even in distinguishing between traditional forms of business and highly digitalized ones, it must be remembered that neither all of the traditional nor all of the highly digitalized aspects follow the same business model, as one of the key elements of the success of a business is its uniqueness.

As a result, the value attributed to the digitalized activities should be examined on the case-by-case basis. For instance, a traditional unbranded, but, nevertheless, good quality, shoe manufacturer, which starts selling its products via a website, uses digital technology only for its online distribution. The website itself does not, typically, create considerable extra value for such a company. Most of its value is, most probably, derived from the manufacturing process and from the quality of the materials. Consequently, no extraordinary profits should be attributed to the website. The website-related profits could be determined, for example, by analysing the margins realized in comparable distribution activities by comparable unrelated distributors in similar circumstances. In contrast, companies, like the FAANG, base their business models almost exclusively on the use of digital technologies, which play a pivotal role in their development. As a result, appropriate taxing rights should be shared with the jurisdictions where such value is generated.

5.2.3. New value drivers of highly digitalized business models

Highly digitalized businesses operate in virtual markets. Such markets have specific features, such as: (1) high connectivity;^[64] (2) a focus on transactions; (3) the importance of information and networks,^[65] and (4) widespread access and sharing of information.^[66] Due to their specific features, Amit and Zott (2001) distinguish the following four values with regard to electronic(e)-business companies: (1) efficiency;^[67] (2) complementarities;^[68] (3) lock-in;^[69] and (4) novelty. Brettel et al. (2014) distinguish the following value drivers of digital

58. The approaches to the definition of “value” are dependent on the theory the firms use to explain the concept. See P. Drucker, *The Practice of Management* (Harper Brothers 1954).

59. D.P. Lepak, K.G. Smith & M.S. Taylor, *Value Creation and Value Capture: A Multilevel Perspective*, 32 Acad. Mgt. Rev. 1 pp. 180-194 (2007).

60. Bowman & Ambrosini, *supra* n. 57.

61. M. Porter & V. Millar, *How information gives you competitive advantage* (1985).

62. Bowman & Ambrosini, *supra* n. 57.

63. Id.

64. S. Dutta & A. Segev, *Business transformation on the Internet*, 17 Eur. Mgt. J. 5, pp. 466-476 (1999) and R. Amit & C. Zott, *Value Creation In E#Business*, 22 Strategic Mgt. J. 6-7 pp. 493-520 (R. Amit & C. Zott, Harvard Bus. Sch. Press, Boston 2001).

65. C. Shapiro & H.R. Varian, *Information Rules: A Strategic Guide to the Network Economy* (1998), pp. 3-8; Amit & Zott, *supra* n. 64, at pp. 84-98.

66. P. Evans & T.S. Wurster, *Getting Real About Virtual Commerce* 77 Harvard Bus. Rev., p. 87 (1997); Amit & Zott, *supra* n. 64, at pp. 84-98.

67. The efficiency of the transactions in the digital age is enhanced due to a reduction in costs per transaction. See Amit & Zott, *supra* n. 64, at p. 94.

68. “Complementarities” refers to providing a bundle of goods to increase the value of the offer to the customer. See Amit & Zott, *supra* n. 64, at p. 95.

69. “Lock-in” refers to the extent the customers are motivated to engage in repeat transactions and partners have incentives to maintain and improve their association. See Amit & Zott, *supra* n. 64, at p. 96.

entities: (1) individualized production; (2) horizontal integration in collaborative networks; and (3) end-to-end digital integration.^[70] Despite the fact that these various authors refer to the values of the digitalized economy in different ways, they express a similar approach to the understanding of values of e-businesses. Individualized production is part of the lock-in strategy, the use of complementarities is the result of the horizontal integration in collaborative networks, and efficiency and novelty can be viewed as a result of the end-to-end digital integration.

It is worthwhile examining how these values apply in practice. With this objective in mind, the authors now provide an example of a possible VCA with regard to Amazon's business activities.^[71] The authors assume that Amazon operates through the following two types of customers and creates the value for both of these types: (1) the final consumer of the goods advertised on Amazon (see Table 1); and (2) goods providers advertising their products on Amazon (see Table 2). Tables 1 and 2 provide the example of a VCA in respect of the primary activities of the Amazon digital business model using Porter's Value Chain Analysis (see Figure 1 in section 4.4.).^[72]

The analysis involves four steps. These steps address the following four questions: (1) what are the primary activities of the company; (2) what functions does the company perform, in general, within the framework of every primary activity; (3) what values does the company create; and (4) what specific functions does the company perform to create each type of value.

Table 1: Example of a VCA of the primary activities of Amazon – The business-to-customer (B2C) value proposition^[73]

	Technological development	Inbound logistics	Manufacture and/or operations	Outbound logistics	Marketing and/or Sales	Service
Functions in general	<ul style="list-style-type: none"> – Research and development (R&D) – Production engineering – Product and process design, etc. 	<ul style="list-style-type: none"> – Quality control – Receiving – Storing goods in warehouses, etc. 	<ul style="list-style-type: none"> – Twenty-four hour payment system – Production – Maintenance – Control, etc. 	<ul style="list-style-type: none"> – Dispatch – Delivery – Invoicing 	Marketing	Administration of returns and/or warranties
Value 1: Individualized production	Software for analysing Data demands to create a personalized valuable offer	–	–	<ul style="list-style-type: none"> – Standard shipping – Prime delivery 	<ul style="list-style-type: none"> – Personal discounts – Vouchers – Analysing personal demand and making offers 	–
Value 2: Complementarities	Software for analysing Data on purchases	–	<ul style="list-style-type: none"> – Integration of many sellers – Variety of production 	–	Analysing of demand for complementarities	–
Value 3: Lock-in	<ul style="list-style-type: none"> – One-click payments – Personal cabinet – Data storing 	–	Production of own goods and quality control	–	<ul style="list-style-type: none"> – Discounts – Recommendations 	Administration of returns and/or warranties
Value 4: End-to-end digital integration	Development and update of the platform	–	–	–	<ul style="list-style-type: none"> – Twenty-four hour access – Social network cooperation 	–

73. The examples of this VCA focus on the primary activities of Amazon. However, Porter's Value Chain Analysis includes the secondary functions that can also generate the value for some business forms. For more information on the concept of a VCA, see Porter, *supra* n. 39.

70. M. Brettel et al., *How virtualization, decentralization and network building change the manufacturing landscape: An Industry 4.0 Perspective* 8 International Journal of Mechanical, Industrial Science and Engineering. 1, pp. 37-44 (2014).

71. Disclaimer: the example of Amazon's VCA analysis is not based on any documentation provided by Amazon or any other documentation related to its business model. The information provided cannot, therefore, be used as a basis for the purposes of the taxation of Amazon's activities.

72. In the Porter's original Value Chain Analysis, technological development as a function belongs to secondary activities. However, for the purposes of the analysis of the digital business models, in the authors' opinion, technological development is a primary function and one of the most important value drivers. For more information on the concept of a VCA, see Porter, *supra* n. 39.

Table 2: Example of a VCA of the primary activities of Amazon – The B2B value proposition

	Technological development	Inbound logistics	Manufacture and/or Operations	Outbound logistics	Marketing and/or Sales	Service
Functions in general	<ul style="list-style-type: none"> – R&D – Production engineering – Product and process design etc. 	<ul style="list-style-type: none"> – Quality control – Receiving – Storing goods in warehouses, etc. 	<ul style="list-style-type: none"> – Twenty-four hour payment system – Production – Maintenance – Control, etc. 	Delivery held by sellers	Marketing	Administration of returns and/or warranties
Value 1: Access to the clients	Development and constant update of the platform	–	Administration of requests	–	Marketing of sellers' products	–
Value 2: Client demands	Software for analysing Data	–	–	–	Analysing demand	–
Value 3: Role of trusted guarantor	Maintenance of B2B transactions	–	<ul style="list-style-type: none"> – Payment system – Branding 	–	–	Administration of returns and/or warranties
Value 4: End-to-end digital integration	–	–	Maintenance of requests	–	Marketing of sellers' products	–

The analysis in Tables 1 and 2 provides the possibility to reach several conclusions. These are now considered below.

First, in the case in question, the most important value-creating activities are presumably technological development and marketing. Operations also create some value. Meanwhile, inbound and outbound logistics do not contribute much to the value creation. These activities should, therefore, be remunerated by routine profits, while the activities creating the main use and exchange value should be remunerated with the higher amount of profits. Nevertheless, this conclusion only relates to the case in question, which serves as an example, and not to other highly digitalized business models. As noted in [section 5.2.2.](#), every business should be analysed separately on a case-by-case basis.

Second, it is clearly visible from a VCA that much value is derived from the functions of collecting and analysing Data relating to customers. Amazon tends to have a long-standing relationship with its customers. Piece by piece, Amazon gathers the information regarding all searchers, purchases, preferences regarding colours, prices, brands, models, etc. to realize highly personalized offering that fits its customers. Amazon does not make random offers or recommendations. After a year or less of the purchasing activities of its customers on Amazon, the company knows everything regarding its client, i.e. where a customer lives, works, what does he/she likes, what amount of money is he/she is ready to spend, which brands he/she prefers, etc. This Data helps to increase the level of efficiency of the marketing activities and the amount of offers result in a purchase. Data is, therefore, a very valuable asset for the highly digitalized businesses. Nevertheless, not all Data creates value.

Customers contribute to the value of highly digitalized companies by providing information regarding themselves and giving these companies the permission to process this information and even to sell it, in some cases. In this context, Lusch and Vargo (2006) argue that "customers create value in the process of their consumption experience".^[74] Pine and Gilmore (1998) also argue that:

the production of economic value has shifted over time, from the extraction of commodities, to the production of goods, to the delivery of services, and, finally, to the staging of experiences.^[75]

The same approach is supported by recent strategy management literature.^[76] Highly digitalized companies have found the way in which to efficiently use the high value of customers and their consumption experience. The authors would, however, suggest that customers may serve as an additional function in the value creation of companies and as a nexus for digital PEs.

In conclusion, a VCA is an important tool for analysing business transactions. A VCA defines how a business creates most of its value and what is crucial for its successful performance. The focus of highly digitalized companies may differ from those operating in a traditional business form, as technological development is the primary activity of the company and, in many instances, Data of customers and their experience is an important value-creating asset.

The next step in a transfer pricing analysis is the identification of the commercial or financial relationships between the associated enterprises undertaken by analysing the economically relevant characteristics, or the comparability factors, of a transaction to accurately delineate the actual transaction undertaken. As already stated, the focus in this article is on a functional analysis, i.e. the analysis of

74. R.F. Lusch & S.L. Vargo, *Service-Dominant Logic: Reactions, Reflections and Refinements*, 6 Marketing Theory 3, pp. 281-288 (2006) and in *Value Creation and Consumption: When Consumer Creativity Generates Value in Online Forums* (M. Taillard et al. eds., ACR N.A. Advances 2014).

75. B. Pine & J. Gilmore (1998).

76. R. Adner & P. Zemsky *A demand-based perspective on sustainable competitive advantage* 27 Strategic Management Journal 3 (2006), pp. 215-239; R. Priem, *A consumer perspective on value creation* 32 Academy of Management Review 1 (2007), pp. 219-235.

the functions performed, the assets used and the risks assumed by each entity involved in the specific transaction, as well as on the identification of the significant people functions in the specific case of PEs. (See [section 5.3.](#))

5.3. The performance of a functional analysis

5.3.1. Opening comments

As noted in [section 5.1.](#), a functional analysis is a relevant element of the identification of the economically significant circumstances relating to commercial or financial transactions.^[77] Such a functional analysis seeks to identify the economically significant activities and responsibilities undertaken, the assets used or contributed and the risks assumed by the parties to the transactions in question.^[78]

Under the section of the OECD Guidelines on “economically significant activities and responsibilities undertaken”, a functional analysis of a specific transaction should be aligned with the results of a VCA. However, a VCA and a functional analysis differ considerably.

The specific characteristics of the functional analysis of highly digitalized businesses are that, within the framework of primary and secondary activities, there are numerous specific functions relating to the specific assets used in the various transactions undertaken. These include: (1) the transfer of Data; (2) the purchase and sale of Data; (3) Data transformation; (4) various types of transactions involving IP rights; and (5) managerial functions. Functions may not appear to significantly differ from the traditional forms of transactions. Nevertheless, the use of different assets and risk allocating factors may do.

5.3.2. Functions performed

5.3.2.1. Initial remarks

It can be argued that it is impossible to allocate the relevant functions, assets and risks to digital PEs, as they do not have any physical substance or legal personality.^[79] However, based on the application of the transfer pricing rules and, in the specific case of PEs, on the application of the AOA in attributing profits to PEs,^[80] the attribution of assets, or, better, the “economic ownership” of the assets, and risks and the consequences of the attribution of profits should follow the preliminary assessment of the significant people functions and their location, i.e. whether in a PE. Consequently, functions are a relevant element of the exercise that results in the attribution of assets and risks and, ultimately, profits.

The traditional understanding of functions relates to the physical presence of employees, their role in the transactions undertaken and their ability to create value for a company. However, in highly digitalized business models, this traditional understanding must be reconsidered to better reflect “who” creates value and contributes to the success of a company.

Together with the role played by the “traditional functions”, for example, research and development (R&D), marketing, purchasing, supply, etc., a key function to be included in an analysis is who provides one of the unique and valuable assets for these types of businesses, i.e. Data: the customers. As stated in [section 4.4.](#), Data has significant value for highly digitalized businesses. Consequently, those customers who provide their Data also create high value for these businesses. As a result, it is necessary to assess how to reinterpret the role of customers within a functional analysis.

In the authors’ view, the customers of highly digitalized businesses do not play the same role as the customers of traditional businesses. While the latter can be considered to be “passive customers”, in simply buying, i.e. consuming, the products or services provided by a company, the former can be regarded as “active customers”, considering that they not only receive a product or service, but also contribute to enhancing its value.

Customers can, therefore, be viewed as “unconscious contributors” to the business value of a highly digitalized company, i.e. almost as if they are “unconscious employees” in these companies’ value chains. It is the activities of customers, combined with the other activities, for example, the development of the software to analyse Data provided by customers, which permits these companies to monetize and realize (further) profits. In exchange for Data provided, customers receive compensation, almost “remuneration”, in the form, for example, of free access to social platforms, for example, as in the case of Facebook, or cheaper and better services, for example, as in the case of Airbnb, Amazon and Uber. It is clear that most customers do not realize that Data on their activities may create value and profits for the highly digitalized companies. Such customers are, therefore, referred to in this article as “unconscious” contributors.

The authors would suggest that, in a functional analysis, some relevance should be provided to the customers as contributors to the value created by the company. Consequently, customers may well be part of the significant people functions that results in the attribution of the economic ownership of assets and risks to a PE. However, as referred to in [section 5.2.2.](#), relevance should be assessed on a case-by-case basis.

5.3.2.2. Human resources in the digital age

At this point of the analysis, it is appropriate to provide some detail regarding human resources in the digital age. In this respect, Tavares and Owens (2015) argue that human capital in its specific form of knowledge-based capital is becoming a predominant value driver of

77. OECD Guidelines, *supra* n. 5, at para. 43.

78. OECD, *Action 8-10 Final Report* (2015), *supra* n. 13.

79. *Id.*

80. See OECD, *supra* n. 16 for more on the AOA and the attribution of profits to PEs.

businesses particularly in the digital age.^[81] Hongler and Pistone (2015) argue that the cross-border income allocation should partly rely on a destination-based key and the market jurisdiction should have the right to tax at least part of the income of an enterprise.^[82]

The main ideas incorporate that the knowledge-based capital and the market must become the major allocation factors in the analysis of value creation. In this context, the OECD Report on “New Sources of Growth: Knowledge-Based Capital” argues that the:

allocation of value depends on the ability of participants to supply sophisticated, hard-to-imitate products or services. Increasingly, the supply of such products or services stems from forms of knowledge-based capital such as brands, basic R&D and design, and the complex integration of software with organizational structures.^[83]

Nevertheless, the knowledge-based capital cannot become the primary determining factor for the value creation and transfer pricing analysis for the following reasons. Currently, physical capital is becoming intelligent.^[84] Scanadu’s [personal tricorder](#) monitors the people’s vital signs and IBM’s Watson system diagnoses cancer better than a human.^[85] Consequently, human resources in the digital age may have a different value for the business and should be addressed separately in a VCA.

5.3.3. Assets used, contributed, and economically owned

Once the important functions, or the significant people functions in the context of profit attribution to PEs, have been identified, the next task should be the attribution of the economic ownership of the assets relating to these functions. Digital PEs may rely on several types of assets in their economic activities that can be allocated to them. These are, typically, IP rights, physical assets, such as servers that provide services to the customers and collect the information, Data collected in the market jurisdiction, and employees who administer the work of the website, orders, communication with clients and conclusion of contracts, etc. In practice, it can be difficult to determine what specific servers save Data for a specific website, how many people maintain the work of the website and communicate with the clients, etc. It is, however, possible to attribute the assets to the PE that creates the additional value for a company that is involved in the significant economic activities of the company in the market jurisdiction and is related to the significant people functions, i.e. the customers: Data.

Some literature describes Data as the new oil, lifeblood^[86] or fuel of the highly digitalized economy. Data may also play a pivotal role in a VCA. Relevant issues to address include whether all Data has the same importance for value creation and how much value should be attributed to Data.

For the highly digitalized businesses, such as the FAANG, Data helps to reach a new level of intimacy in the business-to-customer (B2C) relationships. Amazon is the biggest retailer by market capitalization. Airbnb is the biggest hospitality service by location. Uber is the biggest taxi service provider by market capitalization and location. All of these businesses disrupt the traditional business forms by using customers’ Data as a secret source of success. In this context, Brynjolfsson and McAfee (2017) have observed that Data may constitute the raw material for combinatorial innovation^[87] and Ourghanlian (2015) states that “Data is becoming the new currency”.^[88]

What lessons can governments learn from the phenomenon of digitalization? While many organizations have already accepted that Data is one of the main value drivers for highly digitalized businesses, Data is not yet always recognized as a significant asset in a transfer pricing analysis. Data obviously has its value, as enterprises can sell it and its loss may cause considerable financial damage to its owners.^[89] The authors believe that transfer pricing rules should recognize Data, depending on the specific circumstances of the case, as one of the main value-driving assets for highly digitalized businesses.

However, not all Data should have the same relevance for a transfer pricing analysis but, rather, only that which generates high value for a company based on a VCA. Amazon gathers Data on customers’ demand to make personalized goods offers. Facebook gathers the personal Data that serves the source for the marketing and sells this to goods and services providers. Uber gathers Data on the locations of customers to advertise places to visit in those areas. In these examples, Data is a core element of the business models.

On the other hand, customers’ Data with regard to the shoe manufacturer referred to in [section 5.2.2.](#), i.e. the name of a customer, contact details, size of shoes, etc., does not generate any substantial additional value or profits for the shoe manufacturer and is only for internal use.

In this respect, it can be noted that BlaBlaCar has identified the following three types of Data used in its company:^[90]

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81. R.J.S. Tavares & J.P. Owens, *Human Capital in Value Creation and Post-BEPS Tax Policy: An Outlook*, 69 Bull. Intl. Taxn. 10 (2015), Journals IBFD.
 82. P. Hongler & P. Pistone, *Blueprints for a New PE Nexus to Tax Business Income in the Era of the Digital Economy* (2015), White Papers IBFD.
 83. OECD, *New Sources of Growth: Knowledge-Based Capital* p. 23 (OECD 2013), available at <http://www.oecd.org/sti/inno/knowledge-based-capital-synthesis.pdf> (accessed 11 Jan. 2018).
 84. G. Satell, *5 Things Managers Should Know About the Big Data Economy*, *Forbes* (26 Jan. 2014), available at <https://www.forbes.com/sites/gregsatell/2014/01/26/5-things-managers-should-know-about-the-big-data-economy/#682efdcc4def> (accessed 29 Jan. 2018).
 85. Id. For more information on IBM’s Watson system, see www.ibm.com/watson/health/oncology-and-genomics/oncology (accessed 29 Jan. 2018).
 86. For more information on the value of Data in digital economy, see S. Ramakrishnan, *Data is the Lifeblood of the Digital Economy*, CIO Review, available at <https://digital-experience.cioreview.com/cxinsight/data-is-the-lifeblood-of-the-digital-economy-nid-14044-cid-172.html> (accessed 11 Jan. 2018) and L. Morvan, Accenture, Managing Director, *Data: The Fuel of the Digital Economy and SME Growth*, Accenture (2016), available at www.accenture.com/t20160901t103414_w_us-en/_acnmedia/PDF-29/Accenture-Data-The-Fuel-Of-The-Digital-Economy-And-SME-Growth.pdf (accessed 11 Jan. 2018).
 87. M. Schrage, *Rethinking the Value of Customers in a Digital Economy*, MIT Sloan: Mgt. Rev. (11 Apr. 2016), available at <https://sloanreview.mit.edu/article/rethinking-the-value-of-customers-in-a-digital-economy> (accessed 10 Dec. 2017).
 88. Technical and Security Director for Microsoft France, *Big Data Paris 2015: Data Is the Fuel of the Digital Economy*, (19 Mar. 2015).
 89. For more information on the various ways of evaluating Data, see L.F. Garifova, *Infonomics and the Value of Information in the Digital Economy* 23 *Procedia Econ. & Fin.*, pp. 738-743 (2015).
 90. OECD, *supra* n. 9.

- (1) Metric Data, which helps to measure business performance, such as attrition rates in analysing on which frequency members use the service;
- (2) Business Data, which helps to improve the service and the user experience; and
- (3) Data, which is sold to third parties.

These three types of Data are, in turn, divided by BlaBlaCar into the following two pillars:^[91]

- (1) Data for internal purpose, which does not generate any revenue, i.e. Metric Data and Business Data; and
- (2) Data for external purpose, which generates revenue, i.e. Data which is sold to third parties.

On the basis of this division, it is reasonable to conclude that only Data that generates revenue potentially creates substantial value and should be connected to high profits. The authors would suggest the following four-step test in analysing the value of Data: (1) what Data is collected; (2) what activities the company performs with Data, for example, marketing activities and selling Data; (3) whether these activities generate additional value for customers; and (4) whether these activities generate significant revenue for a company.

The next issue is what jurisdiction should capture the value of Data, i.e.: (1) the market jurisdiction where Data is collected; or (2) the jurisdiction where Data is processed and in combination with other resources, for example, human resources, creates the value for the customers and the company? There are several arguments in favour of both of these options. On the one hand, Data is collected in a specific market to target that market. Some Data may belong to the customers who create it themselves, but, equally, some Data is created as the result of the analysis of the behaviour of customers. As customers are the source of the valuable asset, some of the value of such an asset could be attributed to the market jurisdiction.

On the other hand, Data itself does not create any final value for customers or for a company. Rather, it is the processing of this Data, for example, by generating individualized offers for the customers, that creates the value for customers and companies.

It is not uncommon for Data to be generated in one jurisdiction, for example, the market jurisdiction, and processed in another jurisdiction, for example, the jurisdiction of the employees or the jurisdiction where the servers are located. In this case, the following two types of transactions regarding the alienation of the taxing rights can be assumed:

- (1) in the first jurisdiction, Data should be recognized as an asset, which is created by the customers and should be properly evaluated and compensated, if transferred; and
- (2) the second jurisdiction should have the taxing rights on the amount of the exchange value, i.e. the business profits, which a company creates by performing specific functions with Data.

The final, but not the least important, question is how to evaluate Data and how can a transfer pricing analysis be used to attribute the appropriate amount of profits in a transaction involving Data? There are several approaches in economic science to evaluating Data.^[92] A further analysis as to how the transfer pricing analysis would apply in such circumstances is, therefore, required.

5.3.4. Risks assumed in commercial relations

Apart from the attribution of the economic ownership of the assets, important functions, or significant people functions in the context of profit attribution to PEs, also have a role to play in the attribution of the risks assumed in the relevant transactions to ultimately attribute business profits. There are many definitions of “risk”. In a transfer pricing context, it is appropriate to consider risk as “the effect of uncertainty on the objectives of the business”.^[93] Action 1 of the OECD/G20 BEPS initiative emphasizes several ways in which companies can artificially allocate risks between the principal company and digital PEs.^[94] Such strategies include: (1) using a subsidiary or PE to perform marketing or technical support; (2) maintaining a mirrored server to enable faster customer access to the digital products sold by the group, with a principal company contractually bearing the risks; (3) limiting the capitalization of that entity to make it financially unable to bear risk; and (iv) maintaining a warehouse and assisting in the fulfilment of orders with regard to businesses selling tangible products online.

The problem of the artificial allocation of the risks using contractual terms is not new. For this reason, a transfer pricing analysis considers the economic substance of the relationships between the parties to be more important than the contractual terms that apply to the same transactions.

Given the difficulties in attributing profits to digital PEs, “risk” allocation could become less relevant and a less determinative factor regarding a functional analysis of the transaction. Legally, digital PEs cannot bear risks, as they do not have any legal personality, financial assets or any other means to assume and bear the risks. It is the company that is materially responsible for all of the transactions of digital PEs and the same company undertakes the economic activity.

91. Id.
 92. Garifova, *supra* n. 89.
 93. OECD Guidelines, *supra* n. 5, at para. 1.51.
 94. OECD, *Action 1 Final Report* (2015), *supra* n. 8, at para. 188.

Historically, the concept of a PE was created as a legal fiction. This legal fiction was established to make it possible for jurisdictions to determine the scope of their taxing rights and to allocate the profits of an enterprise that is a resident of another state.^[95] The new concept of a digital PE is not an exception to this rule. A digital PE is a legal presumption that certain economic activities determined, for example, by the amount of revenue and by the number of customers in a particular jurisdiction, give that country the right to tax the profits derived from such economic activity. A PE remains as a legal fiction in providing a new approach to the definition. Even if it is legally difficult to allocate risks to a digital PE, some types of risks may be allocated to it as a presumption that the close connection with the market and jurisdiction imposes some obligations, liabilities and risks on a PE. Ultimately, risks are allocated when they are connected to the significant people functions performed by a digital PE.

The OECD Guidelines distinguish the following five types of business risks. These are: (1) strategic risks; (2) marketplace risks; (3) infrastructure or operational risks; (4) financial risks; and (5) transactional risks. Generally, a risk is, according to the OECD Guidelines, allocated to the enterprise exercising control and having the financial capacity to assume the risk.^[96] It could be difficult to decide which of these risks should be allocated to the jurisdiction of the PE, as digital PEs do not exercise control or assume the risks.^[97] However, in connecting the attribution of risks to the performance of the significant people functions and the attribution of the economic ownership of the assets to a digital PE, such a risk allocation could be more viable.

6. The Authors' Proposed Solution

6.1. Introductory remarks

This section attempts to provide a suggestion as to how to resolve the tax challenges of the digitalization of the economy by way of the application of a proper transfer pricing analysis. In order for business profits to be taxed in a country, a company should either be resident or have a PE in that country.

If a company is resident in a country, the transfer pricing rules, interpreted in line with the understanding provided in sections 2. to 5., attribute the arm's length amount of the profits to that country. If a company is not resident in a country, the assessment of whether the company has a PE in that country should be performed before attributing profits to the country based on the principle of the attribution of profits to PEs referred to in [section 2](#). Consequently, the first step should be the development of the concept of a PE that includes the profits generated by highly digitalized business activities.

6.2. The need to develop a new concept of a PE

The current OECD requirements that are used to assess the presence of a PE under article 5(1) of the OECD Model rely on parameters such as the "fixture" and the "permanency" of a business activity. These requirements cannot, evidently, be used to tax highly digitalized forms of business, which are characterized by little or no physical presence in market jurisdictions.

Action 7 of the OECD/G20 BEPS initiative states that:

[the] changes [to the definition of PE] do not require substantive modifications to the existing rules and guidance concerning the attribution of profits to a PE under Article 7 but that there is a need for additional guidance on how the rules of Article 7 would apply to PEs...^[98]

Action 1 emphasizes that the avoidance of the taxable presence is like to become a bigger issue due to the increasing reliance on automated processes.^[99] Consequently, non-resident companies may not be subject to tax in the countries where they have customers.^[100] The OECD also underlines that tax liabilities can be reduced in the market country by means of (1) minimizing the income allocable to functions, assets and risks in the market jurisdictions; and (2) maximizing the use of deductions in respect of payments made to other associated companies in the form of interest, royalties, service fees, etc. Consequently, on the basis of the analysis of the specific features of highly digitalized businesses, an analysis of the value chain features and of the functions, the assets and the risks involved, the authors would advance their options for a concept of digital PE.

The market jurisdiction should have the taxing rights only if a significant economic activity there generates an additional value for a company. Such value may be generated on the basis of Data gathered by the customers in the market. "Customers" who generate valuable Data, i.e. only "active" customers and only those who generate "valuable" Data, could be a good nexus on which to establish the presence of a digital PE.

As a result, there may be three approaches to connect the customers and Data with the market jurisdiction with regard to the assessment of the existence of a digital PE. The first option would be to reinterpret, i.e. not redraft, the current definition of a PE, thereby "stretching" the interpretation of the current wording. The concept of "Data" could be regarded as being of the natural resources of a state under

95. M.K. Singh, *Taxing E-Commerce on the Basis of Permanent Establishment: Critical Evaluation*, 42 Intertax 5 (2014).

96. OECD Guidelines, *supra* n. 5, at para. 70.

97. Hongler & Pistone, *supra* n. 82.

98. OECD, *Action 7 Final Report* (2015), *supra* n. 12.

99. OECD, *Action 1 Final Report* (2015), *supra* n. 8, at para. 79.

100. Id.

article 5(2)(f) of the OECD Model.^[101] In this case, the current definition of PE would be used to assess the existence of a nexus with a state. This solution would represent a prompt reaction to the current issues, as current tax treaties would not have to be amended. It would, however, have to be assessed as to how such an interpretation could be aligned with the conditions of article 5(1) of the OECD Model, which would still include parameters, such as “fixture” and “permanency”. The second option would be to develop a new definition of PE, whereby taking into account the role of customers that are treated as “unconscious” contributors and/or employees of a company would give rise to a PE in a state. In this case, however, only the customers who generate valuable Data for the company could serve as a nexus to the market jurisdiction to establish a digital PE.

Hongler and Pistone (2015) have attempted to provide a definition of PE that would rely on a wording that includes various highly digitalized forms of business as well as a threshold. This would be as follows:

If an enterprise resident in one Contracting State provides access to (or offers) an electronic application, database, online market place or storage room or offers advertising services on a website or in an electronic application used by more than 1,000 individual users per month domiciled in the other Contracting State, such enterprise shall be deemed to have a permanent establishment in the other Contracting State if the total amount of revenue of the enterprise due to the aforementioned services in the other Contracting State exceeds XXX (EUR, USD, GBP, CNY, CHF, etc.) per annum.^[102]

However, the issues with such definition could, inter alia, be that: (1) taxpayers could circumvent the application of these rules by means of some forms of tax planning structures; and (2) the definition could easily become obsolete, i.e. it could inadvertently exclude new forms of businesses and activities introduced in the future.

The preferable way to develop a new definition of PE could be by radically amending the entire wording of article 5 of the OECD Model and, therefore, defining a nexus between the business profits of an enterprise and the taxing rights of a country on those business profits every time the enterprise “creates value” in that country. This definition would be very broad and could potentially align taxation with value creation. However, its broad scope could generate uncertainty for taxpayers and increase disputes not only between taxpayers and tax administrations, but also between different tax administrations. Consequently, such a definition would have to be complemented by effective mechanisms for cooperative compliance and dispute resolution.

6.3. Definition of the amount of profits attributable to PEs

Once the existence of a digital PE in a country is established, the next question would be the assessment of the amount of profits generated by a company that should be attributed to the country of the PE. To this end, Hongler and Pistone (2015) consider the following four options to allocate the profits to the jurisdiction of the PE: (1) formulary apportionment; (2) gross income taxation; (3) a redefinition of functions and risks relevant in determining the appropriate transfer price; and (4) a modification of the existing profit split method with an upfront allocation of a partial profit to the market jurisdictions.^[103] The BEPS Monitoring Group has also considered the following three options for allocating profits to PEs: (1) residence-based worldwide taxation; (2) destination-based cash-flow taxation; and (iii) formulary apportionment.^[104]

In the authors’ opinion, the attribution of profits to the market jurisdiction should, rather, be based on a net-basis taxation, which is in line with the principles of a direct taxation system, and on a value creation concept. To this end, the analysis presented in sections 2. to 5., including the use of a VCA and the identification of the commercial or financial relationships between the associated enterprises, or between an enterprise and its PE, performed on a case-by-case basis, would define the proper amount of profits to be allocated to the country where the active customers, being “unconscious” contributors and/or employees of the company who generate valuable Data for the company.

As noted in section 5.3.3., there are several approaches that could be adopted in economic science to evaluate Data^[105] and a further analysis as to how the transfer pricing analysis would be applied in this case is required. In this context, an example can be provided.

In the specific context of a PE, the determination of the profits, i.e. specifically related to the active activities of customers, to be attributed to the PE could imply the following three steps:

- (1) identification of the significant people functions, for example, the active customers;
- (2) attribution of the assets and the risks based on the significant people functions, for example, Data that generate revenue and the risks connected to those functions; and
- (3) attribution of profits to a PE, based on the significant people functions performed, the assets economically owned and the risks assumed.

This attribution of profits could be based, for example, on the revenue deriving from Data that generate revenue collected from users in the PE state. However, such Data alone would not generate any value. In order to generate value, Data would have to be, inter alia,

101. See G. Cottani, Ludovici Piccone & Partners, in OECD, *Tax Challenges of Digitalisation: Comments Received on the Request for Input – Part II* (OECD 2017), available at www.oecd.org/tax/beps/tax-challenges-digitalisation-part-2-comments-on-request-for-input-2017.pdf, 144-151 (accessed 29 Jan. 2017).

102. Hongler & Pistone, *supra* n. 82.

103. Id.

104. *Comments on the Public Discussion Draft on BEPS Action 10 “Revised Guidance on Profit Splits”*, Inst. for Austrian & Intl. Tax Law, Vienna U. Econ. & Bus. (14 Sept. 2017).

105. Garifova, *supra* n. 89.

collected, elaborated and exploited. Consequently, the revenue derived from Data should be netted off against all of the costs necessary to collect, elaborate and exploit Data. Ultimately, the profits attributable to the PE would be determined subsequently.

7. Conclusions

The digitalization of activities is a powerful engine for the economic development and the globalization of the world economy. Notwithstanding the fact that digitalization does not significantly change the traditional forms of business, new business models have emerged, for example, social networking, the sharing economy, virtual trading platforms, Blockchain, etc., which derive a significant amount of their value from digitalized activities.

In recent years, both the OECD and the United Nations have actively explored the problem of the tax non-compliance caused by the increasing digitalization of the economy. However, further improvements are still needed to align the solutions to these issues.

Highly digitalized business models are characterised by great mobility, reliance on Data, the use of network synergies, etc. The assets that generate the most value for these businesses are brands, platforms, know-how, Data, etc. At the same time, the functional focus of these businesses has moved to activities, such as technological development and marketing activities and the outsourcing of some secondary functions, which do not generate high value.

Some countries have taken unilateral action to tax the profits of MNEs with “significant economic presence” in their territory, for example, by suggesting the introduction of withholding taxes on digital transactions or equalization levies. However, these taxes lead to multiple layers of taxation, thereby resulting in a contradiction of the principles of international tax law. The existing transfer pricing rules could also cope with the challenges of the digitalization of the economy as soon as the concept of a digital PE is developed and implemented. When the work on the concept of a digital PE is concluded, the authors believe that the current transfer pricing rules and the rules on the attribution of profits to PEs, in line with the arm’s length principle, should be used to tax profits on a net basis and where value is created.

To this end, a digital PE should be established only where a company generates high value. The performance of a VCA is an important tool in analysing the economic activity in the market jurisdiction and the amount of value created there. In addition, the use of Blockchain technology could considerably improve such an analysis. A VCA employs some terminology, such as “use value” and “exchange value” and/or “total value”, which could be useful in establishing the nexus for a digital PE and the quantum in the attribution of profits to such a PE.

A functional analysis, and the identification of significant people functions, should be based on a VCA that is used to define how specific transactions contribute to the value-creating activities of a company. A functional analysis should also consider the new functions of highly digitalized businesses, i.e. “active” customers, and attribute the related assets to a digital PE, i.e. Data, and the risks. Data should, at the same time, be divided between internal, i.e. not generating additional value and, therefore, irrelevant to a VCA, and external, which can be sold and should be attributed to the value and taxing rights to the market jurisdictions.

In this context, customers who generate valuable Data for a company serve as “unconscious” contributors and/or employees. Such customers “work” for the company by generating a high value that is then monetized in exchange for free or cheaper services.

Data and customers, which generate the value, connect the economic activities of a company with the market jurisdiction. Consequently, Data and customers that act as “unconscious” contributors and/or employees could serve as a nexus for the identification of a digital PE.

With this objective in mind, the concept of a PE could be reinterpreted. “Data” could be regarded as a “natural resource” under article 5(2) (f) of the OECD Model and active customers could provide a sufficient nexus with the market jurisdiction. The transfer pricing analysis would, then, attribute profits to such digital PEs.

Further developments could be intended to explore how these topics, i.e. “intangibles”, “users”, “business functions”, “Big Data” and “market”, could fit with the analysis of the accurate delineation of the relevant transactions. In this context, the Platform for Collaboration on Tax, including the International Monetary Fund (IMF), the OECD, the United Nations and the World Bank, could consider working on a toolkit that would address the proper application of a transfer pricing analysis for highly digitalized business models.