

International Taxation in the Digital Economy: Challenge Accepted?

The digitalization of the economy is considered as a key driver of innovation, economic growth and societal change, and is a major challenge for the international tax system. The OECD has addressed this challenge in its extensive Action 1 Final Report as part of its BEPS project. This article critically depicts the OECD's view and reform proposals on taxing businesses in the digital economy. Further, recent literature contributions on the matter are synthesized. While taxing profits according to value creation is detected as the new paradigm in international taxation, this review reveals that the understanding of the digital economy and corresponding reform proposals for taxation are premature. The authors show that the OECD has systematically missed the opportunities to define the paradigm of value creation and to analyse digital business models accordingly. Considering the current challenges, the key pressure area for taxing digital businesses in the near future is transfer pricing. Drawing from practical case studies and research in industrial economics, accounting and management science, this article derives a concept for value creation in digital businesses. Based on this concept, the authors propose a framework to refine transfer pricing guidance in order to come closer to the goal of aligning profit taxation with value creation.

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The authors wish to thank John Vella and Sven-Eric Bärsch for their valuable comments, as well as the organizers and participants of the Oxford University Centre for Business Taxation 6th Annual Doctoral Meeting for a fruitful discussion. The authors appreciate the detailed comments of two anonymous reviewers that helped to elaborate on the economics behind digital businesses. The authors also thank Mannheim Leibniz Science Campus MaTax for its financial support.

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1. Introduction

The phenomenon of digitalization is considered the most important development of the economy since the industrial revolution and one of the major drivers of growth and innovation.¹ At the same time, the digital economy is associated with major challenges for the international tax system.² Traditional tax laws are governing new ways of conducting business, but current international tax law and its underlying principles “may not have kept pace with changes in global business practices”.³ With regards to digital business models, the main tax challenges in the digital economy stem from the decreasing relevance of a physical presence in the market of the customers, the increasing importance and mobility of intangibles and the high degree of integration of the value chain. Although these developments are not entirely new,⁴ they have triggered a political and academic discussion about how international taxation can be reformed to provide a “reasonable and stable system for taxing the profits of multinational companies in the 21st century”.⁵ In this vein, there have been calls for comprehensive and systematic changes to the international tax principles by academic scholars

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1. E. Brynjolfsson & L.M. Kahin, *Understanding the Digital Economy – Data, Tools, and Research*, p. 1 (MIT Press 2000); M. Peitz & J. Waldfoegel, *The Oxford Handbook of the Digital Economy*, p. ix (Oxford University Press 2012); E. Brynjolfsson & A. McAfee, *The Second Machine Age*, p. 90 (W.W. Norton 2016); OECD, *OECD Digital Economy Outlook 2015*, p. 11 (OECD 2015), available at <http://www.oecd.org/Internet/oecd-digital-economy-outlook-2015-9789264232440-en.htm>.
 2. OECD, *Addressing the Tax Challenges of the Digital Economy – Action 1: 2015 Final Report*, p. 16 (OECD/G20 2015), International Organizations’ Documentation IBFD [hereinafter *Action 1 Final Report*].
 3. OECD, *Addressing Base Erosion and Profit Shifting*, p. 7 (OECD 2013), International Organizations’ Documentation IBFD.
 4. A. Baéz Moreno & Y. Brauner, *Withholding Taxes in the Service of BEPS Action 1: Address the Tax Challenges of the Digital Economy*, p. 4 (2015), White Papers IBFD; O. Popa, *Taxation of the Digital Economy in Selected Countries – Early Echoes of BEPS and EU Initiatives*, 55 Eur. Taxn. 1, sec. 1. (2016), Journals IBFD.
 5. M.P. Devereux & J. Vella, *Are we heading towards a corporate tax system fit for the 21st century?*, OUCBT Working Paper, p. 4 (2014); A. Cockfield et al., *Taxing Global Digital Commerce*, p. 7 (2013).

and supranational political institutions.⁶ The respective literature on the digital economy examines individual aspects, such as the permanent establishment (PE) concept, the characterization of income, the determination of transfer prices and the application of withholding or transaction taxes.⁷ There is a general consensus that the digital economy cannot be “ring-fenced” for tax purposes.⁸ At the same time, the proposals to tax companies in the digital economy differ widely with regard to the underlying aims and the methods to address the challenges. The lack of consensus also stems from the fact that there is no common definition and measurement of the relevant elements in digital value chains that are characterized by recent technological developments and the prevalence of online networks.

In the course of the base erosion and profit shifting (BEPS) project, the OECD has labelled the tax challenges of the digital economy as Action 1. It has been concluded that digital business models entail substantial opportunities for (aggressive) tax planning but also raise broader issues for the tax system. Although the OECD depicts some of the technological foundations and innovative business models of the digital era, the corresponding consequences and potential issues for taxation are not thoroughly discussed. Rather, the latest report highlights how the business models of multinational companies in the IT or e-commerce sector can facilitate undesired outcomes in terms of low or no taxation. Options to address the tax challenges put forward by the OECD are characterized by mitigating BEPS risks and creating awareness of the tax challenges,⁹ rather than by confronting the long-term tax issues caused by digital business models. The work of the OECD has been accompanied by an extensive body of literature containing different reform proposals. Surprisingly, scientific evidence on how digitalization might change the influence of tax policy on corporate decision-making is scarce. In the near future, revising the determination of transfer prices is one of the key challenges in designing an administrable system of profit taxation with a minimum of distortive effects for digital business models. The OECD stresses this challenge in the area of transfer pricing and intends to better align profit taxation with economic activity and value creation. However, outcomes are limited,¹⁰ and there is no common understanding of the term “value creation” in relation to the digital economy, which would be a prerequisite for a consistent profit allocation within digital business models.

Against this background, this article aims to review the OECD’s understanding of the tax challenges of the digital economy and present the current stage of reform proposals. This review investigates how far tax legislation and reform proposals for direct taxes incorporate value-creating factors of digital business models. By considering relevant literature and case studies of exemplary digital business models, the article further intends to identify open questions for research and suggest pragmatic policy action for the short run. In other words,

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6. Y. Brauner, *BEPS: An Interim Evaluation*, 6 World Tax J. 1, sec. 1. (2014), Journals IBFD; European Commission, *Questions and Answers on the Action Plan for Fair and Efficient Corporate Taxation in the EU*, Fact Sheet (European Commission 2015), available at http://europa.eu/rapid/press-release_MEMO-15-5175_en.htm.
7. This article focuses on the taxation of income and will not evaluate the tax challenges the digital economy poses for indirect taxes. However, the effective collection of VAT will be considered when reviewing reform options and drawing conclusions. Also, fundamental reform options such as a destination-based corporate tax are neglected, as the focus is on current challenges and developments for tax policy and practice.
8. OECD, *supra* n. 2, at 73, 142; European Commission, *Commission Expert Group on Taxation of the Digital Economy – Report*, p. 41 (European Commission 2014).
9. J. Englisch, *BEPS Action 1: Digital Economy – EU Law Implications*, British Tax Review, p. 281 (2015).
10. For a thorough critique, see Y. Brauner, *Changes? BEPS, Transfer Pricing for Intangibles, and CCAs*, University of Florida Levin College of Law Research Paper (2016).

this article examines how to narrow the gap between addressing and meeting the tax challenges of the digital economy.

To address this question, the article is organized as follows. In section 2., the authors depict the understanding of the digital economy and its tax consequences from the viewpoint of the OECD based on the Action 1 Final Report released in October 2015. Reform proposals for corporate profit taxation in the digital economy by the OECD and several scholars are summarized in section 3. In this section, the authors also give a brief outlook on unilateral action by states implementing rules to tackle identified tax issues of the digital economy. The focus in section 4. is on the organizational and economic nature of digital business models and their corresponding tax treatment. The authors first elaborate on the primarily undefined notion of value creation in the digital economy. To exemplify value drivers, case studies that encompass both newly emerged business models as well as the digital transformation of traditional business models are then presented. Lastly, a brief literature review shows that little is known regarding the tax sensitivity of such business models. Building on these results, the key practical challenge of aligning taxation with value creation is identified in section 5. The authors propose a practicable approach to developing transfer pricing guidance for application to meet this challenge and argue that tax policy should be aligned with innovation policy to foster innovation and growth. Finally, section 6. concludes.

2. The OECD-View on the Challenges of the Digital Economy

2.1. Technological features and business models

Rather than producing direct tax policy action, the OECD was expected to study the characteristics of the digital economy to provide an overview of the tax challenges.¹¹ In the course of the work, the OECD's Task Force on the Digital Economy (TFDE) also examined the technological foundations and characteristics of digital business models in the Action 1 Deliverable (2014) as well as in the Action 1 Final Report (2015).¹²

The OECD regards the soaring diffusion and development of information and communication technology (ICT) as the enabling factor for the digitalization of businesses in several areas.¹³ This development implies integration of hardware and software in the form of computing devices that become increasingly connected by accessing the Internet.¹⁴ Further, software business models in the digital economy are characterized by their reliance on the Internet as well as open-source approaches and on-demand implementations at the level of the end customer.¹⁵ In addition, the OECD observes that the major players in the digital economy rely on different ways of creating, using and generating revenue with online content as well as collecting and analysing data. Lastly, the OECD names cloud computing as a major result of the trends in ICT. Firms are able to provide traditional, on-premise resources as

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11. Brauner, *supra* n. 6, at 17; Englisch, *supra* n. 9, at 281; S.S. Johnston, *What's Next for the OECD and the Digital Economy*, 74 Tax Notes International, pp. 1089-1090 (2014).
 12. OECD, *Addressing the Tax Challenges of the Digital Economy: Action 1: 2014 Deliverable*, pp. 51-98 (OECD/G20 2014) [hereinafter *Action 1 Deliverable*]; OECD, *supra* n. 2, at 35-84.
 13. OECD, *supra* n. 1, at 11; OECD, *supra* n. 2, at 35 et seq.
 14. OECD, *supra* n. 2, at 37. While the relevance of hardware is still undisputable as the backbone of communication networks, digital business models generate profits more from the operation of computing devices and software applications than from the sale of hardware.
 15. *Id.*, at 39. Within this article, firms providing the technological infrastructure (so-called Internet service providers) do not fall under the scope of digital business models as they rely on substantial physical capital and operate at a regional scale.

services over the Internet, such as computing power, data warehousing or software applications.¹⁶ Overall, the OECD concludes that these developments create “new opportunities at a different stage of the value chain”.¹⁷ This shift (of innovation) elsewhere in the value chain caused by the advent and uptake of modern ICT is not further scrutinized.

Based on the development of ICT, the Action 1 Final Report includes a non-exhaustive list of potential future developments that might influence the nature of digital business models as well as a conceptual overview of how different layers of ICT interact. In a brief and descriptive manner, the concepts of the Internet of things, virtual currencies, advanced robotics, 3D printing, the sharing economy and collaborative production, access to government data and the reinforced protection of personal data are depicted.¹⁸ According to the OECD, several new business models have emerged due to the spread of ICT across all sectors entailing some key features that might be relevant for tax purposes.¹⁹ Apart from basic definitions and statistics, these business models are not further analysed. However, the OECD concludes that the high degree of connectivity implies the unprecedented mobility of intangibles, users and customers as well as business functions. Regarding the latter, it is particularly noted that businesses can carry on economic activity in markets with minimal need for personnel and physical operations. The processing and analysis of data, often provided by users, is facilitated by increased computing power and database management tools. These technologies have become a major value driver of digital businesses.²⁰ Therefore, investing in research and development (R&D) seems to be a pivotal activity for the sustainable success of a business in the digital economy. Lastly, a typical result of network effects and multi-sided platforms in the digital economy is seen in the formation of monopolistic or oligopolistic market structures with leader firms that succeed in generating a large user base.²¹

2.2. *Recognized tax challenges*

2.2.1. *BEPS*

The description of “the digital economy and the emergence of new business models”²² remains superficial in the sense that it only lists new forms of user experience and revenue generation. The OECD then devotes a comprehensive chapter to corresponding BEPS opportunities. This part of the Action 1 Final Report does not elaborate on the way assets are used or the way people perform their functions, nor does it elaborate on the corresponding tax consequences of the new digital business models. Rather, the focus shifts to the advantageous use of key features of the digital economy (such as mobility and the reliance on intangibles) and legal structures of companies in the IT sector that are supposedly motivated by the tax planning considerations.²³ The concentration on BEPS is justified by the general notion that

16. Id.

17. Id., at 36.

18. Id., at 42-48.

19. Exemplary business models are the extensive uptake of e-commerce for all types of trade transactions, online payment services, app stores, online advertising, the aforementioned cloud computing, high frequency trading and participative networked platforms. *See id.*, at 64.

20. Id., at 69.

21. Id., at 70-72.

22. Id., at ch. 4.2 (at 54-64).

23. Substantial resources have been committed to work on the specific problems identified by the BEPS project in the form of each action item. As all BEPS actions interact with each other in the digital economy, the focus should have rather been on the more general implications of the digital economy for the principles of

the specifics of the digital economy exacerbate BEPS, although the tax planning strategies might be similar to those of traditional businesses.²⁴

The OECD has identified four areas of BEPS opportunities of particular relevance in the digital economy. The first one comprises eliminating or reducing tax in the market country as the result of either avoiding a taxable presence or minimizing the income in the market country. For cross-border online transactions that do not require a physical presence, a tax liability is usually not defined in domestic law. If the country of residence does not assume its taxing right, the respective income is effectively untaxed. In the case of a taxable presence, the income can be minimized by only allocating minimal functions, assets and risks or maximizing deductions in the market country. This is considered problematic because the allocation of functions and assets is often tax motivated and functions and risks are not factually exercised.²⁵ This concept also applies to the second BEPS opportunity of reducing tax in the country of residence in particular if valuable (intangible) assets are transferred to affiliates in low-tax regimes. Two other BEPS opportunities are the avoidance of withholding taxes and the elimination or reduction of tax in the intermediate country through the use of specific contractual payments and the imposition of holding companies.²⁶

2.2.2. Broader challenges

While the OECD concluded in its early work that no “dramatic departure from the current rules” is needed,²⁷ today’s view is that source taxation might not be sufficiently established in the digital economy.²⁸ The potential reason is seen in the spread and evolution of ICT. This evolution has expanded the scale of cross-border business activity undertaken without substantial physical operations in the market countries. At the same time, core functions can be centralized due to their mobility. Accordingly, the OECD identifies broader tax challenges that can be categorized into (1) nexus for taxation, (2) the use of data and the respective attribution of value and (3) the characterization of payments made for digital products or related services.²⁹

(1) Taxable nexus

On one side, the fundamental nature of business activities with regard to a supply chain in the digital economy has not changed. On the other side, the way of conducting these activities is shaped by the spread of core functions across multiple jurisdictions and a potential segregation of core activities from customer markets.³⁰ In the eyes of the OECD, the latter phenomenon challenges current international tax law in particular with regard to the concept of PEs. First, it is questionable whether the preconditions of a dependent agent are still not met if contracts and customer relationships are prepared by local staff but the ultimate contract conclusion is reached remotely between customers and a foreign entity (paragraphs 5 and 6 of article 6 of the OECD Model³¹). Second, activities considered as preparatory or auxiliary according to paragraph 4 of article 5 of the OECD Model might

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international taxation. See R.S. Avi-Yonah & H. Xu, *Evaluating BEPS*, pp. 9-10 University of Michigan Public Law Research Paper (2016), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2716125##.

24. OECD, *supra* n. 2, at 78; Englisch, *supra* n. 9, at 283; D. Fehling, *Neues zu den Herausforderungen für die Besteuerung der Digitalen Wirtschaft – Der Abschlussbericht zu Maßnahme 1 des BEPS-Aktionsplans liegt vor*, IStR, p. 799 (2015).

25. OECD, *supra* n. 2, at 79-81.

26. Id., at 82; Englisch, *supra* n. 9, at 282.

27. OECD, *Are the Current Treaty Rules for Taxing Business Profits Appropriate for E-Commerce? – Final Report*, p. 72 and 350 (OECD 1999).

28. Baéz Moreno & Brauner, *supra* n. 4, at 15; Englisch, *supra* n. 9, at 282.

29. OECD, *supra* n. 2, at 99. Evidently, it is important to note that these three categories overlap when discussing the tax treatment of businesses in the digital economy.

30. OECD, *supra* n. 2, at 101.

31. OECD Model Tax Convention on Income and on Capital (26 July 2014), Models IBFD.

constitute more important parts of digital business models and hence trigger the PE status. Additionally, it is not clear how network effects and user participation that are observable in the market country should be treated for tax purposes.³²

(2) Use of data and attribution of value

Although customer data has always been a source of value, it is unclear if current rules consistently attribute value to the huge amounts of data collected and used for digital businesses. The major challenge lies in understanding how collected data is monetized and which functions are involved to do so. Whether the remote collection of data gives rise to a taxable nexus should depend on a thorough analysis of functions performed, assets used and risks assumed in order to reflect the value chain of businesses leveraging data. Even if a taxable nexus is assumed, it remains an issue of transfer pricing to allocate respective profits to the countries where data is collected, processed and used. For the use of such data in advertising, the OECD recognizes that the value of data is reflected in the advertising revenue.³³

(3) Characterization of payments

Since the last elaboration of ICT's implications on taxation, business models have evolved and it is a challenging task to qualify the respective payments as royalties, fees for technical services or business profits. This challenge is particularly obvious for the concept of cloud computing that implies a shift towards more service-oriented business models in the area of hardware and software goods. Also, completely innovative business models such as 3D printing may raise unprecedented characterization questions.³⁴ In this respect, the OECD hints at the interrelation of the characterization of payments and nexus, as both concepts together will determine how certain digital transactions are taxed.³⁵

2.3. The new gold standard: Value creation

The OECD clearly aims to tax profits in line with value creation and economic activity.³⁶ Scholars and practitioners have already acknowledged this conception as the new and prevalent paradigm in international tax law.³⁷ The fundamental question of how enterprises in the digital economy add value and make their profits appeared early in the BEPS project.³⁸ The report on the tax challenges of the digital economy does not give any definition or interpretation of value creation but highlights several questions, issues and developments regarding this concept in the digitalized world. Intangibles are seen as core contributors to value creation of companies in the digital economy. Intangibles, along with business operations, are becoming more mobile. Software is becoming an ever more important category of intangibles in many digital business models.³⁹ The discussion of the technological developments reveals that networks are assumed to change the concept of value creation since increases in value are associated with an increase in the mere number of network participants.⁴⁰ While the concept of data as a contributor to value creation is established, the question of how to attribute value to the generation, storage and use of data is still unanswered giving rise to a broader tax challenge.⁴¹ Considering the amount of data in the analysis of functions, assets and risks, as well

32. OECD, *supra* n. 2, at 101-102; Englisch, *supra* n. 9, at 282.

33. *Id.*, at 104.

34. *Id.*, at 105.

35. For instance, if a nexus is established in the form of a PE, business profits are taxable in the market jurisdiction and the net principle applies. Royalties, however, would then give rise to withholding taxes and payments and are thus taxed on a gross basis in the market jurisdiction.

36. *Id.*, at 136.

37. Devereux & Vella, *supra* n. 5, p. 13; W. Schön, *Transfer Pricing Issues of BEPS in the Light of EU Law*, British Tax Review 3, p. 419 (2015); J. Wittendorf, *BEPS Actions 8-10: Birth of a New Arm's-Length Principle*, 81 Tax Notes International, p. 331 (2016).

38. OECD, *supra* n. 2, at 16; OECD, *supra* n. 3, at 25.

39. OECD, *supra* n. 2, at 65.

40. *Id.*, at 71.

41. *Id.*, at 99.

as measuring the value of data, would be a complex task due to the variety of transactions, the diffusion of data in multi-sided business models and the remote nature of handling data.

The goal of aligning profit taxation with value creation in the digital economy is emphasized in the reference to the work on the revision of transfer pricing guidance within the BEPS project; the work on the corresponding Actions 8-10 is explicitly headlined “Aligning Transfer Pricing Outcomes with Value Creation”. Again, the Actions 8-10 Final Reports does not define the notion of value creation for purposes of designing tax policy but rather presents it as a modification of the existing arm’s length standard.⁴² However, the work intends to update current practice by including the nature of integrated global value chains within a concise revision of the current OECD’s Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations (OECD Guidelines).⁴³ Due to its technological features and globalized nature, digital business models constitute prime examples of integrated global value chains and should thus be directly affected by the ongoing transfer pricing policy that aims at outcomes aligned with value creation.

2.4. Transfer pricing in the digital economy

The OECD expects that the revision of the OECD Guidelines “will substantially address the BEPS issues exacerbated by the digital economy”⁴⁴ and acknowledges that the broader issues also directly relate to transfer pricing. At international level, profit allocation for tax purposes resulting from intra-company transactions depends on the functions performed, risks assumed and assets used by the involved entities. The analysis has to be performed and justified by the taxpayers relying on the arm’s length principle. The principle is codified in the OECD Guidelines agreed on in 1995 and last updated in 2010, as well as in article 9 of the OECD Model. The OECD’s interpretation has been adopted in many countries’ domestic tax laws. Primarily, profit allocation follows contractual arrangements of transactions between associated companies. Legal ownership of intangibles is a decisive factor in determining profits stemming from the use of intellectual property (IP).⁴⁵ The underlying arm’s length principle has generally been criticized as it cannot fully reflect highly integrated transactions between dependent parties that jointly make use of economies of scale, synergies or know-how.⁴⁶ Developing transfer pricing solutions against the background of the BEPS project is therefore seen as a departure from the original interpretation of the arm’s length principle relying on contractual arrangements as a starting point for analysis.⁴⁷ Before using any theoretical framework for allocating taxable profits, one should acknowledge that the inherent question is where and when profits of a multinational business ultimately arise. Since theory

42. Wittendorf, *supra* n. 37, at 331; Schön, *supra* n. 37, at 420.
43. OECD, *Aligning Transfer Pricing Outcomes with Value Creation – Actions 8-10: 2015 Final Reports*, p. 11 (OECD/G20 2015), International Organizations’ Documentation IBFD [hereinafter *Actions 8-10 Final Reports*]. OECD, *Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (OECD 2010), International Organizations’ Documentation IBFD [hereinafter *OECD Guidelines*].
44. OECD, *supra* n. 2, at 12; Englisch, *supra* n. 9, at 282-284.
45. Wittendorf, *supra* n. 37, at 332; Duff & Phelps, *Guide to International Transfer Pricing*, p. 70 and 73 (2015); F. Wassermeyer & H. Baumhoff, *Verrechnungspreise international verbundener Unternehmen*, pp. 9, 182 and 815 (2014).
46. For a discussion, see W. Schön, *Transfer Pricing – Business Incentives, International Taxation and Corporate Law*, in *Fundamentals of Transfer Pricing in Law and Economics*, pp. 61-62 (2012). See also G. Kofler, *The BEPS Action Plan and Transfer Pricing: The Arm’s Length Standard under Pressure?*, *British Tax Review* 5, pp. 647-648 (2013).
47. W. Schön, *International Taxation of Risk*, *Bull. Intl. Taxn.*, p. 286 (2014), *Journals IBFD*; Schön, *supra* n. 37, at 420; Kofler, *supra* n. 46, at 651.

cannot provide an answer to this question, profit allocation for tax purposes (via transfer prices) can never yield a perfect result.⁴⁸ Despite these fundamental issues, current international tax policy tends to adhere to transfer pricing practice when taxing multinational companies and focuses its work on selective practical problems.

Due to the increasing globalization and segregation of value chains, the contractual separation of risks and assets, in particular intangibles, from functions has emerged as a prominent tool for tax planning in the area of transfer pricing.⁴⁹ The OECD argues that the technological features of the digital economy magnify this tax planning potential. In particular, transfer prices are used to minimize income allocable to functions, assets and risks in market jurisdictions and high-tax countries.⁵⁰ It is concluded that digital business models exploit the combination of intra-firm contractual arrangements and the legal ownership of intangibles to justify large income allocations to entities, even if they perform very little business activity.⁵¹

The OECD refers to its BEPS Actions 8-10 Final Reports for the development of potential solutions for transfer pricing in the digital economy. In the Actions 8-10 Final Reports, reference is made to the tax challenges of the digital economy when describing the scope of work for guidance on the transactional profit split method. As outlined in sections 2.2. and 2.3., this output of Actions 8-10 provides indirect recommendations on how to tax value creation in the digital economy, in addition to promoting less reliance on a legalistic approach to assets and risks. The authors will therefore consider the work regarding the revision of the OECD Guidelines in section 3. of this article.

2.5. *Interim conclusion*

Prior to the publication of the OECD's Action 1 Final Report, no serious study had been carried out into the changes brought about by the digital economy from a tax point of view.⁵² In the Action 1 Final Report, the OECD acknowledges that the key features of digital business models are potentially relevant for designing tax regulations.⁵³ Thus, the evaluation of tax policy regarding digital business models should closely follow the analysis of the organizational and economic characteristics of the depicted developments. While BEPS opportunities inherent in the digital economy are detected, the broader challenges are only described on an abstract level. More accuracy would be needed to determine the exact tax treatment of all transactions of a digital and multinational company. However, it is emphasized that the developments of the digital economy challenge the current tax system, especially with regards to the paradigm of characterizing and allocating income according to value creation.

A major part of the tax challenges of the digital economy relate to transfer pricing. Despite its well-known fundamental weaknesses, tax policy and practice will have to rely on the existing transfer pricing concept for allocating profits in the near future. Yet, the OECD has

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48. For a general criticism, see J. Neighbour & J. Owens, *Transfer Pricing in the New Millennium: Will the Arm's Length Principle Survive?*, 10 *George Mason Law Review* 951, p. 954 (2002) and O.H. Jacobs et al. eds., *Internationale Unternehmensbesteuerung*, 8th edition, p. 628 et seq. (C.H. Beck 2016). Schreiber also hints at this problem while detecting a circularity in the use of transfer prices for allocating profits according to value creation. U. Schreiber, *Investitionseffekte des BEPS Aktionsplans der OECD*, 67 *ZfBf*, p. 116 (2015).

49. Brauner, *supra* n. 10, at 3.

50. OECD, *supra* n. 2, at 80-81.

51. *Id.*, at 145; Kofler, *supra* n. 46, at 649.

52. Brauner, *supra* n. 6, at 17.

53. OECD, *supra* n. 2, at 64.

not directly elaborated on transfer pricing specifically for transactions of digital business models. This limitation is related to the lack of analysis regarding the evolution of functions, assets and risks in digital business models. Analysis of the tax challenges hardly refers to the technological developments pointed out in the first sections of the Action 1 Final Report (see section 2.1.). In addition, the international tax policy community has not provided a clearly defined and commonly acknowledged notion of the term “value creation”. Options to reach the goal of better aligning the location of taxable profits with the location of economic activity and value creation put forward by the OECD and several scholars are presented in section 3.

3. Proposals to Tax Companies in the Digital Economy

3.1. BEPS action items affecting taxation in the digital economy

Consistently with the notion that the tax challenges of the digital economy are mainly an expression of more intense BEPS activities by multinational enterprises (MNEs), the OECD first describes how relevant outputs of the BEPS project address the identified tax challenges before evaluating separate reform options for the digital economy. The work on BEPS aims to combat artificial structures and profit shifting to low-tax jurisdictions or non-taxation, and thereby to align taxation with the location of economic activities.⁵⁴

3.1.1. Treaty abuse and the avoidance of the PE status

Taxation of digital business in the market jurisdiction is expected to be fostered by the BEPS work on the prevention of treaty abuse (Action 6) and the prevention of the artificial avoidance of PE status (Action 7). There is no explanation in the Action 6 Final Report as to whether these rules might apply to companies in the digital economy specifically or more frequently. In contrast, the TFDE considers the work on the PE status a “key area of focus” for the digital economy and highlights two potential amendments.⁵⁵ First, a PE status should be assumed if a local subsidiary (i.e. its workforce) of a company selling tangible goods or providing services online plays a principal role in the conclusion of contracts and the parent company routinely concludes these contracts in a formal way without any material modification (modification of the independent agent provisions in article 6 of the OECD Model). Second, the list of exemptions from the PE status in paragraph 4 of article 5 of the OECD Model is revised to exclude activities that were previously qualified as preparatory or auxiliary but are rather substantial for digital business models and thus should create a PE. In this context, the OECD highlights the use of large and sophisticated warehouses in proximity to customers purchasing physical goods from online platforms. Additionally, a new anti-fragmentation rule targets the prevention of a PE by the spread of multiple entities of the supply chain across various jurisdictions. A local warehouse of an e-commerce company repeatedly serves as an example that will regularly be affected by these amendments.⁵⁶

3.1.2. Individual anti-avoidance measures

In the view of the OECD, several anti-avoidance measures will address BEPS in the country of residence and the source country of companies in the digital economy. Action 6 on preventing treaty abuse, Action 2 on hybrid mismatch arrangements and Action 4 on the lim-

54. Id., at 86.

55. Id., at 88.

56. Id., at 12, 65, 80, 88, 134, 145, 169.

itation of base erosion via financial payments should limit BEPS facilitated by tax-motivated arrangements. Again, there is no direct reference made to the specific tax challenges of the digital economy. Measures to counter harmful tax practices more effectively (Action 5) are attributed particular relevance for the digital economy. As many countries have introduced preferential regimes for income stemming from intellectual property (so-called “IP boxes”) and the digital economy relies on intangibles as the key value drivers, the proposed nexus approach is expected to ensure that taxpayers only benefit from the regimes if substantial activity is prevalent.⁵⁷ To ensure taxation in the jurisdiction of the ultimate parent, a report on designing effective controlled foreign company rules (CFC, Action 3) has been delivered. Depending on the specific approach to implement CFC rules, digital businesses might be affected if key intangibles are located in low-tax jurisdictions and the respective companies generate revenue from the remote sale of digital goods and services.⁵⁸

3.1.3. *Aligning transfer pricing outcomes with value creation*

Major tax challenges of the digital economy are expected to be addressed by the extensive work on aligning transfer pricing outcomes with value creation (Actions 8-10). The revision of the OECD Guidelines should help to restore taxation on stateless income, to address BEPS in market and parent jurisdiction, and to solve issues regarding the tax treatment of data.⁵⁹ While the analysis of functions, assets and risks will still be decisive for profit allocation, further guidance aims to ensure that profit will be allocated to those group members that exercise control over business risks rather than only contractually bear the risks and only financially contribute to the development of intangibles.⁶⁰ The revision of chapter I of the OECD Guidelines on applying the arm’s-length principle confirms that an assembled workforce and group synergies within MNEs are not treated as intangibles per se.⁶¹ Since these concepts might be of particular relevance in digital business models, the OECD does not seem to pursue a more tailored definition of intangibles for digital businesses. The use and transfer of intangibles is revised within chapters VI and VII of the OECD Guidelines with the aim to force back the predominance of legal ownership and value transfers, including cost contribution agreements, according to the economic circumstances. A definition of the term “intangibles” is provided for the first time. This definition is expected to cover a broader range of intangibles and might thus cause qualification conflicts when applied by multiple tax authorities in the future.⁶² The guidance introduces a commensurate with income (CWI) standard that may allow tax authorities to use ex post information to determine transfer prices, in particular when intangibles are hard to value.⁶³ Intangibles are seen as key value contributors of digital business models. However, the revision of the OECD Guidelines does not entail any specific elaboration on the definition, detection and valuation of intangibles within digital business models. Instead of a clarification, these modifications might entail higher compliance costs and a higher risk of tax disputes for digital companies that develop and use diverse types of intangibles as is already anticipated for traditional businesses. While

57. Id., at 90; Englisch, *supra* n. 9, at 285.

58. Id., at 93; Englisch, *supra* n. 9, at 291.

59. Id., at 86, 88, 103.

60. For a detailed analysis of the new guidance, see Wittendorf, *supra* n. 37, and H-K. Kroppen & S. Rasch, *Immaterielle Vermögenswerte – Neudefinition des Fremdvergleichsgrundsatzes? Die finalen Aktionspunkte 8-10 der BEPS Initiative*, IWB 22 (2015).

61. *Actions 8-10 Final Reports*, *supra* n. 43, at 46-48; Wittendorf, *supra* n. 37, at 342.

62. For a discussion, see Wittendorf, *supra* n. 37, at 344-347.

63. OECD, *supra* n. 2, at 91. *Actions 8-10 Final Reports*, *supra* n. 43, at 9-12.

the proposed modifications imply a significant reorientation from a mere legalistic approach towards taxing the “true nature” and value-creating factors,⁶⁴ there are no public comments on how the required “group-based understanding of the industry (...) including its business strategies, markets, products, its supply chain, and the key functions performed”⁶⁵ will be developed by tax authorities and corporate tax managers.

The only direct relation to the tax challenges of the digital economy is the promotion of a wider application of the transactional profit split method.⁶⁶ The OECD acknowledges that the enforcement of the arm’s length principle in the digital economy with its digital products and services is becoming increasingly difficult as MNEs employ global and highly integrated supply chains. In this vein, the legal separation of MNEs’ affiliates is considered economically less relevant in the digital economy. The OECD thus advocates for a greater reliance on value chain analyses and the use of transactional profit split methods to properly align profits with value creation if unique intangibles are involved in digital business models.⁶⁷

3.2. Adjustments of the PE concept and alternative concepts of nexus

In its Action 1 Deliverable, the OECD discussed several options to amend the definition of a PE in order to address the broader tax challenges. The output was considered in the work on Action 7. As a result, the exceptions from PE status in article 5(4) of the OECD Model have been modified. In the future, only overall activities of a PE that are of a preparatory or auxiliary nature will be excepted. As a result, a function formerly considered as auxiliary, such as logistics, could constitute a PE if a well-performing logistics infrastructure is essential to the business model, as is the case for electronic retailing. In addition, an anti-fragmentation rule (new article 5(4)(1) of the OECD Model) has been introduced to complement the modification of exceptions from PE status. This rule is directed at the opportunity of digital companies to spread their value chain across several business entities and jurisdictions.⁶⁸ The OECD mentions that these modifications may go beyond BEPS cases, but does not further evaluate the amendments of the PE concept.

Based on the initial approaches of the 2014 Deliverable, the OECD also presents a new taxable nexus based on the concept of significant economic presence. In the absence of a taxable presence according to existing principles, such a significant economic presence could be based on different factors comprising sales, the frequency of digital transactions and the number of users. A combination of these factors with the main emphasis on sales could then result in a taxable presence.⁶⁹ The OECD mentions that, once such a nexus is established, the determination of attributable income is a non-trivial task. Existing rules and principles would not be analogously applicable without major adjustments due to the missing physical

64. S. Picciotto, *International Taxation and Economic Substance*, Bull. Intl. Taxn., sec. 3. (2016), Journals IBFD.
65. Revised Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations, proposed new para. 1.34, ch. 1 sec. D, as suggested in *Actions 8-10 Final Reports*, *supra* n. 43, at 15.
66. *Actions 8-10 Final Reports*, *supra* n. 43, at 55.
67. OECD, *supra* n. 2, at 92. See also Schön, *supra* n. 37, at 419.
68. OECD/G20, *Preventing the Artificial Avoidance of Permanent Establishment Status – Action 7: Final Report*, pp. 29 and 39 respectively (OECD/G20 2015), International Organizations’ Documentation IBFD. The option to modify the PE thresholds, as described in the Action 1 Deliverable, was not further considered.
69. OECD, *supra* n. 2, at 107-113.

and legal factors that determine the allocation of assets, functions and risks.⁷⁰ As another departure from current principles, the deemed profit method as an easily administrable way of profit allocation is briefly presented. A ratio of the revenue generated within the market of the significant presence according to the above factors would determine the profit allocated to the market country. The approach, however, contains several shortcomings, such as the required comparability of the significant presence with traditional business operations to find appropriate margins. Also, there could even be deemed profits in loss-making situations of the digital business model.⁷¹ Owing to these practical issues and concerns regarding the implications of such a departure from the established tax principles, the OECD did not further discuss the concept of a significant economic presence when evaluating the options that deal with the broader tax challenges.

In relation to the OECD's work on BEPS, Hongler and Pistone presented an elaborated report on how to expand the PE concept to appropriately preserve source states' sovereignty to tax business income in the digital age. Although the work directly relates to the BEPS project, the authors pursue a more fundamental revision of the principles for allocating taxing rights. The authors propose the PE as a means to allocate taxing rights that require a departure from the concept of a fixed place of business based on physical characteristics as a response to the digital economy's structural changes.⁷² Conducting digital business in countries can justify the creation of a PE according to both the source and the benefit theory. On the one hand, the source theory should encompass digital businesses if value creation occurs in a modern, less physical sense. On the other hand, non-physical, digital activities also receive benefits from countries, such as a stable legal system, the enforcement of payments, the supply of energy or infrastructure, which are important for the business model.⁷³ Therefore, an amendment of the PE concept in the form of an additional paragraph in the OECD Model is suggested. Following the novel rule, a company operating electronic applications, databases, online marketplaces, storage rooms or platforms for online advertising would be deemed to have a PE if a monthly user base of 1,000 and a certain threshold revenue in the market country are surpassed.⁷⁴ Once such a nexus would be established, neither the current transfer pricing rules for allocating assets, functions and risks nor the alternative concept of formulary apportionment would be suitable for income allocation due to the non-physical nature of digital businesses.⁷⁵ The authors advocate the application of the transactional profit split method (PSM) that should be revised in order to account for the great importance of the inherent value creation of the market itself. An upfront income allocation of one third of a digital company's profit to the market jurisdiction is considered to be in line with economic principles.⁷⁶ Although the collection of the tax and the distribution among several market countries might entail practical challenges, the authors also see the upfront split and allocation of profits as

70. Similarly, formulary apportionment is not a suitable method as comparable factors to apply the formula will generally not be available and the inherent departure from traditional profit attribution methods is not desired.

71. Id., at 112-113.

72. P. Hongler & P. Pistone, *Blueprints for a New PE Nexus to Tax Business Income in the Era of the Digital Economy*, pp. 10 and 14 (2015), White Papers IBFD.

73. Id., at 19 and 22.

74. Id., at 25.

75. Id., at 32-33. The option of introducing a gross taxation through withholding taxes on digital transactions is not further discussed. Instead, reference is made to Baéz Moreno & Brauner, *supra* n. 4. See also sec. 3.4. of this article.

76. Id., at 34.

a feasible option to ensure the global enforcement of taxation.⁷⁷ In their White Paper, the authors discuss several implementation issues, such as determining the ultimate taxpayer, the interaction with other supranational provisions and the introduction to national hard and soft law, all requiring substantial further research efforts. As in the OECD's Final Report on Action 1, the term "value creation" is not defined but used as the justification of the proposed approach.⁷⁸ Despite these shortcomings, the modified PE concept is seen as superior to other reform proposals as it would preserve the Ottawa principles of taxation.⁷⁹

In addition, there are frequent comments in the literature on these elaborated reform proposals and the OECD's work with diverging views. It is noted that the proposed changes to the exceptions from the status of PE will only have limited impact since the concept of physical presence will still be prevalent and certain business models (i.e. online retailers) are targeted selectively.⁸⁰ Further, several limitations of the OECD's criteria to establish a taxable nexus based on a significant (digital) economic rather than physical presence have been highlighted.⁸¹ First, thresholds and conditions for establishing such a nexus would potentially ring-fence certain cyber-physical transactions. Second, it is not clear how businesses that rely on both a digital and a physical presence would be treated. Third, many obstacles remain for such proposals in terms of the interaction of a new digital nexus with existing principles in international tax law, such as the PE provisions for traditional businesses and distributive rules.⁸² Therefore, some scholars argue for an elaboration of a "digital service PE". This approach would be preferable to an alternative nexus from a systematic point of view as it is also justified with the base erosion principle but directly relates to common practice in the OECD and UN Models.⁸³ Others call for a more fundamental debate on how to establish indicators in the digital economy that equally comply with the principles of economic allegiance and inter-nation equity as the concept of the traditional PE did when originally introduced.⁸⁴ However, it is not explained how these principles can serve as determinants for the allocation of taxable profits. Within this debate, scholars propose not to rely on any physical presence or specific nature of transactions but solely use a certain sales volume as a threshold for cre-

77. Id., at 37.

78. Accordingly, there is no explanation on how the upfront allocation of one third of the profits to the market jurisdiction would comply with the principle of taxation according to value creation.

79. Id., at 38-43.

80. D.W. Blum, *Permanent Establishments and Action 1 on the Digital Economy of the OECD Base Erosion and Profit Shifting Initiative – The Nexus Criterion Redefined?*, 69 Bull. Intl. Taxn. 6/7, sec. 3.2. (2015), Journals IBFD; Hongler & Pistone, *supra* n. 72, at 13.

81. The OECD's draft on a taxable nexus based on a digital presence as presented in the Action 1 Deliverable is also harshly criticized because many aspects regarding the definitions and implementation were unsolved. As the concept was not further pursued in the Action 1 Final Report, the discussion is omitted in this article.

82. For a discussion on the compatibility of new PE definitions and EU law, see Englisch, *supra* n. 9, at 285 et seq.

83. Blum, *supra* n. 80, at 318-322 and at 321 for the "service PE" concept. A service PE for digital transactions would allocate significantly more income to the source country than applying a new nexus approach and traditional transfer pricing rules. This is briefly highlighted by Baéz Moreno when comparing the OECD's work on the tax challenges of the digital economy with the UN Model approach to tax technical services. See A. Baéz Moreno, *The Taxation of Technical Services under the United Nations Model Double Taxation Convention: A Rushed – Yet Appropriate – Proposal for (Developing) Countries?*, 7 World Tax J. 3 (2015), Journals IBFD.

84. E.E. Lopez, *An Opportunistic, and yet Appropriate, Revision of the Source Threshold for the Twenty-First Century Tax Treaties*, 43 Intertax 1, p. 13 (2015).

ating a taxable presence.⁸⁵ At this point of time, there are no outlooks on the consequences for existing principles and issues of implementation of such a concept.

3.3. Withholding taxes

In order to collect taxes from digital businesses in market countries in the form of a final withholding tax or to enforce the nexus option, the OECD discusses the opportunities and issues of a withholding tax on digital transactions as an alternative to complicated profit allocation mechanisms. In the literature, this proposal is also referred to as an “equalization levy” that should apply to a broad range of online and remote transactions to tax profits of digital businesses based on their significant digital presence. As one form, the levy could be collected on all remote or only digital transactions of foreign companies with domestic customers based on the gross value of the transactions and would thus resemble a consumption tax, such as the value added tax (VAT). As another form, the levy could be calculated based on the amount of data or “other contributions” from customers in order to account for the value creation by collecting user data. Collecting such a tax would be particularly challenging in business-to-consumer (B2C) transactions. Financial intermediaries (such as banks) would either need to be granted detailed information on the transaction or a mandatory registration system might be needed. As withholding taxes usually follow the approach of a gross taxation of income, business models with ongoing expenses are not appropriately taxed and withholding tax rates would need to be low.⁸⁶ Further, a gross taxation of digital transactions from remote providers would not comply with international trade law and EU law. It is generally codified that foreign suppliers must not be taxed less favourably than domestic suppliers. Particularly withholding taxes on transactions involving digital goods would be problematic.⁸⁷ Because of these concerns, the OECD has not considered the option of a withholding tax system to address the tax challenges of the digital economy in its final evaluation of the topic.

Alongside the BEPS project, Baéz Moreno and Brauner have provided a detailed argumentation for a broad withholding tax mechanism to encounter the under taxation of stateless income and allocate more tax revenue to source jurisdictions in the digital economy. The authors see the withholding mechanism as a secondary alternative to the nexus approach, but point out its merits of a feasible way to collect taxes and allocate revenue to source states.⁸⁸ The proposal comprises a global standard withholding tax of, for instance, 10% on “base-eroding payments to non-residents” for all business-to-business (B2B) transactions. Upon registration, payments not related to digital transactions can be exempt from the withholding tax and would be taxed on a net basis in the source country.⁸⁹ This would avoid the difficult task of agreeing on a definition of the digital economy and its related transactions. Further, the option for net taxation, as well as the possibility to credit the withholding tax in the residence jurisdiction, run counter to the objections of the OECD and in the literature

85. R. Avi-Yonah, *A virtual PE: International taxation and the marketplace fairness act*, Public Law and Legal Theory Research Paper Series No. 328, p. 3 (University of Michigan Law School 2013); M. Devereux, *How we can make global companies pay their fair share of tax* (Financial Times, 22 May 2013).

86. Applied consistently, the credit mechanism of withholding taxes would also need to be on gross basis to avoid unused tax credits and double taxation.

87. OECD, *supra* n. 2, at 113.

88. Baéz Moreno & Brauner, *supra* n. 4, at 6-7.

89. The withholding tax rate might be increased if the payee is located in a low-tax jurisdiction. The administrative burden for multinational enterprises is expected to be limited as a registration system would fit into the developments of global information exchange and increasing reporting requirements. See Baéz Moreno & Brauner, *supra* n. 4, at 7 and 13-14.

that a withholding tax would have the form of an excise tax inhibiting international trade.⁹⁰ In order to follow a source rule to legitimately allocate income, the preferred mechanism would qualify those payments liable to withholding tax that are deductible in the country of residence or PE of the payor.⁹¹ Since payments related to B2C transactions due not erode tax bases of corporate taxpayers, B2C transactions are excluded from the proposal of extending withholding taxation. Similarly, a consumer-to-consumer (C2C) transaction would not be covered by the withholding tax.⁹² Due to its simplicity, the proposed mechanism does not face significant design issues and could be implemented as a new article 7(4) in the OECD Model.⁹³ However, a comprehensive registration and identification system would be required and can only be implemented under global coordination and standard setting.⁹⁴ While their proposal can be based on a source rule following the base erosion approach and contains elaborate implementation guidance, the authors call for more work on an anti-abuse rule, accounting and review aspects as well as a coherent taxation of B2C transactions.

A study by Finke et al. shows that the extension of source taxation by imposing withholding taxes might be a useful instrument to combat base erosion due to the promising features of collectability and enforceability. As a pragmatic solution to secure tax revenue in market jurisdictions, the authors assume a fixed withholding tax rate of 10% for all cross-border payments. The tax is fully credited on a gross basis in the jurisdiction of the payee. Predicting the effects on the tax revenue of individual countries is a difficult task. Depending on the status quo of the withholding tax network, the direction of bilateral flows of payments related to digital transactions, as well as the characterization of those payments, the outcomes might have surprising and undesired results for countries considered as major market jurisdictions in the digital economy.⁹⁵ For digital transactions that do not create a taxable nexus under current rules, withholding taxes are, in contrast, considered less helpful. When there is no taxable nexus, it will be cumbersome to determine transactions falling under the scope of the tax and the respective withholding agents for the collection of the tax. The latter is particularly problematic because customers can hardly be obliged to withhold taxes payable by foreign MNEs. Also, (financial) intermediaries in digital transactions often have no legal connection to the involved business entities and are interchanged frequently.⁹⁶

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90. Baéz Moreno & Brauner, *supra* n. 4, at 25. Yet, the problem of potential double taxation in the case that the jurisdiction of the recipient of the payment only grants a tax credit on a net basis is not further addressed. For concerns regarding international trade law and withholding taxes as quasi-consumption taxes, see OECD, *supra* n. 2, at 113. Comments received with respect to the Public Discussion Draft on BEPS Action 1: OECD, *Public Discussion Draft – BEPS Action 1: Address the Tax Challenges of the Digital Economy*, pp. 91-96 (OECD 2014), International Organizations' Documentation IBFD; Cockfield et al., *supra* n. 5, at 470.
91. Baéz Moreno & Brauner, *supra* n. 4, at 15.
92. Id., at 18.
93. Id., at 23.
94. Such a registration is facilitated if market countries already pursue a consumption taxation of digital transactions at the location of consumers by requiring non-resident suppliers to register for VAT purposes. Otherwise, the imposition of a withholding tax on B2C and B2B transactions raises the administrative burden, but might facilitate the collection of VAT for digital transactions at destination.
95. C. Fuest et al., *Eindämmung internationaler Gewinnverlagerung: Wo steht die OECD und was sind die Alternativen?*, *Steuer und Wirtschaft* 1, p. 96 (2015). For a detailed simulation of introducing a globally coordinated system of a withholding tax on interest and royalty payments of 10%, see Finke et al., *Extending Taxation of Interest and Royalty Income at Source – an Option to Limit Base Erosion and Profit Shifting?*, ZEW Discussion Papers, pp. 30-32 and 35 (ZEW 2014).
96. Blum, *supra* n. 80, at 324; C. Fuest et al., *Profit Shifting and “Aggressive” Tax Planning by Multinational Firms: Issues and Options for Reform*, 5 *World Tax J.* 3, sec. 5. (2013), Journals IBFD.

3.4. Consumption-oriented tax system and transaction taxes

There are only a few comments and proposals on introducing transaction taxes, sometimes named “bit” tax or “Google” tax. In its 2014 version of the Action 1 Deliverable, the OECD dedicated a small paragraph to the option of introducing a bandwidth tax that would be based on the volume of bandwidth used by MNEs’ websites.⁹⁷ The advantageousness of such a transaction tax is probably not evaluated further as it is not clear how the technological infrastructure relates to the value creation of digital business models and a bit tax does not fit into the existent system of income taxation.⁹⁸

3.5. Unilateral actions and EU proposals

The OECD does not recommend any of the considered options due to the incomplete elaboration on the functioning of digital business models and the prospect of the implementation of BEPS measures as well as the effective collection of VAT. However, the OECD leaves the unilateral or bilateral implementation of such options to countries wishing to proactively limit perceived tax challenges of the digital economy.⁹⁹ The OECD simultaneously demands consistency with existing international tax law in the case of unilateral action. These statements in the Action 1 Final Report reflect the conflict of interest between those countries wishing to generate more tax revenue at source from foreign IT companies and those pursuing a competitive landscape for domestic digital businesses.¹⁰⁰

Even prior to the publication of the reports on addressing the tax challenges of the digital economy by the OECD, the EU and certain national governments contemplated tackling the issues of taxation in the digital economy. In its report of May 2014, the EU High Level Expert Group on Taxation of the Digital Economy expressed its support for the developing ideas and conclusions of the OECD concerning the tax challenges of the digital economy.¹⁰¹ Regarding BEPS, it encouraged member states to counter harmful tax practices while respecting the single market principles.¹⁰² Within the scope of BEPS, a fundamental review of transfer pricing rules, in particular with respect to the allocation of profits to intangibles and business risk, is seen as a major challenge.¹⁰³ Finally, the report underlines the need for elaborating on more fundamental tax reform options to address the technological change within the digital economy. Therefore, continuing examination on income taxation based on formulary apportionment¹⁰⁴ and research on a destination-based income tax system are suggested.¹⁰⁵ The assumption of neutrality and feasibility of the latter reform option is not uncontested in

97. OECD, *supra* n. 12, at 146 et seq.

98. Blum, *supra* n. 80, at 324.

99. OECD, *supra* n. 2, at 137.

100. Fehling, *supra* n. 24, at 802.

101. European Commission, *Report of the EU High Level Expert Group on Taxation of the Digital Economy*, p. 6 and 41 (European Commission 2014).

102. *Id.*, at 43.

103. *Id.*, at 43-45. In this context, the Expert Group expects the most important and decisive output for the tax challenges of the digital economy from Actions 8, 9 and 10 of the BEPS project.

104. In particular, the proposal on a common consolidated corporate tax base (CCCTB) first published in 2011 and recently picked up in the Action Plan for Fair and Efficient Corporate Taxation in the EU (Action Plan on Corporate Taxation: Communication from the Commission to the European Parliament and the Council – A Fair and Efficient Corporate Tax System in the European Union: 5 Key Areas for Action, COM(2015) 302 Final (European Commission 2015). See Proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB), COM(2011) 121/4 (2011), EU Law IBFD.

105. European Commission, *supra* n. 101, at 8 and 50.

light of the unknown consequences for tax revenue distribution and the effects on corporate decisions.¹⁰⁶ Hence, political action addressing the tax challenges of the digital economy at EU level will, in line with the OECD's work, most certainly focus on current pressure areas, such as preventing low or non-taxation by tax-motivated arrangements.

Among others, Australia, France, Hungary, India, Israel, Italy, Luxemburg, the Netherlands, and the United Kingdom have introduced measures for taxing digital businesses.¹⁰⁷ Concrete action has been taken in Australia, Hungary, Italy, the United Kingdom and, most recently, in India. All countries apply different methods targeted at taxing income from digital business. Italy has passed a new transfer pricing rule that stipulates the use of valuation techniques other than cost-based indicators for determining the arm's length prices of digital transactions.¹⁰⁸ In the United Kingdom and Australia, similar laws aim to include the income of multinational companies without being liable to limited taxation according to prevailing law but with a significant economic allegiance to the domestic market. Both the diverted profits tax, with effect from 1 April 2015 in the United Kingdom, and the Tax Integrity Multinational Anti-Avoidance Law, with effect from 1 January 2016 in Australia, particularly target large multinational companies generating sales in these countries by running local operations (such as customer relationship management) but remotely concluding contracts with customers.¹⁰⁹ While the British government explicitly mentions digital businesses as the main target group,¹¹⁰ the Australian authorities hint at "30 large multinational companies [that] are suspected of diverting profits using artificial structures to avoid a taxable presence".¹¹¹ Hungary, in turn, opted for levying a surtax in the publishing sector that also applies to online advertising by non-resident and domestic providers. A tax of 5% on net sales from advertising above approximately EUR 3 million is levied and might be charged to the advertiser if there is no evidence (i.e. registration) of the provider paying the tax.¹¹² Only recently, the Indian government introduced an equalization levy that applies to digital transactions along with the Finance Bill 2016.¹¹³ This new concept is formalized as a separate type of tax and complements the ordinary income tax code. A surtax of 6% is levied on payments to for-

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106. Id., at 50; B. Westberg, *Taxation of the Digital Economy – An EU Perspective*, 54 Eur. Taxn. 12, sec. 4. (2014), Journals IBFD.
 107. For a recent and brief overview, see Popa, *supra* n. 4, at 38-41, and EY, *Digital Tax Developments April 2016* (EY 2016), available at [http://www.ey.com/Publication/vwLUAssets/ey-digital-developments-map-direct-tax-april-2016/\\$File/ey-digital-developments-map-direct-tax-april-2016.pdf](http://www.ey.com/Publication/vwLUAssets/ey-digital-developments-map-direct-tax-april-2016/$File/ey-digital-developments-map-direct-tax-april-2016.pdf).
 108. G. Gallo, *Italy – Budget Law for 2014 – details* (7 Jan. 2014) News IBFD; G. Pizzitola & C. Horwath, *VAT Registration Rule for Web Advertising Abolished*, 73 Tax Notes International March 24, 2014, p. 1097 (2014).
 109. B. Obuoforibo & S. Heydari, *United Kingdom – Corporate Taxation* sec. 10.6.1., Country Analyses IBFD (accessed 29 Feb. 2016); M. Butler et al., *Important International Tax Developments – Foreign Capital Gains Withholding Tax, and Anti-Google, Netflix and Amazon Taxes*, 22 Asia-Pac. Tax Bull. 2, sec. 5. (2016), Journals IBFD; AU: *The Treasury, Tax Laws Amendment (Tax Integrity Multinational Anti-Avoidance Law) Bill 2015*, National Legislation IBFD; M. Butler & M. Danby, *Draft Legislation for “Anti-Google” Tax*, 22 Intl. Transfer Pricing J. 6, p. 349 (2015), Journals IBFD.
 110. HMRC, *Government ramps up efforts to tackle digital multinational tax risks*, Press Release, 24 Mar. 2015 (HMRC 2015), available at <https://www.gov.uk/government/news/government-ramps-up-efforts-to-tackle-digital-multinational-tax-risks>.
 111. See the statement under the title “Closing the Digital Loophole” on the Australian government’s website, available at <http://www.budget.gov.au/2015-16/content/glossy/tax/html/tax-03.htm>. See also Butler & Danby, *supra* n. 109, at 349.
 112. L. Torma & Á. Burján, *Hungary – Corporate Taxation* sec. 2.3.10., Country Analyses IBFD (accessed 4 Feb. 2016).
 113. S. Wagh, *The Taxation of Digital Transactions in India: The New Equalization Levy*, 70 Bull. Intl. Taxn. 9, p. 548 et seq. (2016), Journals IBFD; M. Agrawal, *India at the Forefront in Implementing BEPS-Related Measures: Equalization Levy in Line with Action 1*, Intl. Transfer Pricing J., pp. 323-326 (2016), Journals IBFD.

eign companies for online advertising services and has to be withheld by the resident payors. The government opted for the equalization levy after an expert group evaluated the reform options that the OECD had discussed but not recommended in its Final Report on the tax challenges of the digital economy.¹¹⁴

3.6. *Interim conclusion*

Neither the OECD's Final Report on Action 1 nor the academic literature produce a clear and unanimous answer to the question of how to address the tax challenges of the digital economy. With regard to the determination and taxation of corporate profits, both the OECD and the EU are unlikely to propose a departure from the current principles of assessing the "functions, assets and risks of the enterprises concerned". Rather, they promote selective adoptions of current standards.¹¹⁵ Existing concepts of international taxation and their potential adoptions are discussed separately in the corresponding action points. The implementation of specific BEPS action points in national or supranational law faces obstacles of compatibility with EU law, and proposals regarding transaction and withholding taxes for the digital economy might collide with international trade law.¹¹⁶ While the question of defining a source and, thus, justifying taxing rights comes first, the profit allocation that is expressed in the valuation techniques of transfer pricing cannot be circumvented in a second step.¹¹⁷ Several scholars highlight that the key question for taxing businesses in the digital economy is how to allocate profits generated by the underlying new types of business models. Yet, the OECD's preferred proposal to amend the exception of auxiliary and preparatory activities from the PE status will not remarkably affect income allocation in the digital economy.¹¹⁸

The academic work by Hongler and Pistone and Báez Moreno and Brauner provide thought-out ideas on how to tax purely digital companies that should be seized on by the OECD when elaborating solutions to tax digital business according to value creation. Establishing new or alternative nexus rules based on wholesale thresholds, e.g. of transaction volumes, might contradict the idea of not ring-fencing the digital economy for tax purposes. Further, Hellerstein points out that new concepts of nexus might lead to the additional problem of misalignment of the allocation of taxing rights and the ability to enforce taxation.¹¹⁹ Still, these reform proposals are the first to highlight the importance of consumer markets for digital business models and that this fact should be reflected in the allocation of taxable profits either via PSM (Hongler and Pistone) or extended withholding taxation (Báez Moreno and Brauner).

There is no common and concise definition of the term "value creation" with regard to the digital economy. This is a major pitfall in the current discussion. Although the OECD elaborates on the technological foundations and transformative elements of the digital economy, these results do not find their way into the discussion of the appropriate design of coordi-

114. *Id.*, at 538.

115. OECD, *supra* n. 2, at 112; Englisch, *supra* n. 9, at 280; M.K. Singh, *Taxing E-Commerce on the Basis of Permanent Establishment: Critical Evaluation*, 42 *Intertax* 5, pp. 331-333 (2015). This is why fundamental reform proposals for taxing corporate income, such as a destination-based corporate income tax, are not further analysed for the sake of this article.

116. For a detailed discussion, see Englisch, *supra* n. 9.

117. Brauner, *supra* n. 6, at 17.

118. Hongler & Pistone, *supra* n. 72, at 13.

119. W. Hellerstein, *Jurisdiction to Tax in the Digital Economy: Permanent and Other Establishments*, 68 *Bull. Intl. Taxn.* 6/7, sec. 3. (2014), *Journals IBFD*.

nated tax rules and guidance on the allocation of profits in the digital economy. Such work might be continued when a more detailed mandate is developed during 2016 and 2017.¹²⁰ Digital business models have not yet been analysed in a profound manner and it remains unclear in how far value contributing assets and activities are developed. In the same vein, there is no understanding of digital value chains and there are only few proposals in the literature as to how to refine the transfer pricing system with a direct reference to the digital economy. Such understanding, however, is a prerequisite for the OECD's aim to modify the application of transfer pricing rules in order to better reflect value-creating functions and assets. Without a common understanding of digital business models and the process of value creation depending on the nature of each model, arriving at solutions for tax policy remains a mammoth challenge.

4. A Deeper Look at Digital Business Models, Value Creation and Tax Consequences

4.1. Case studies on value creation of digital business models

4.1.1. Defining value creation and analysing business models

The term “value creation” is one of the most prominent terms in the current debate on international tax policy. For the international community's aim to align transfer pricing with economic activity it is of particular relevance to arrive at a common understanding and a defined notion of value creation and value drivers.¹²¹ This section therefore suggests a conceptualization of the term “value creation” and business models in the digital economy before examining value-creating activities and assets of exemplary business models in the following sections.

The digital economy is not (only) an era of new or revolutionary business models but rather represents the evolution of existing business models, products and services.¹²² In their recent comprehensive work on the economics of digital technologies, the Massachusetts Institute of Technology's economists Brynjolfsson and McAfee hint at the important complementary innovations of digitalization that are reflected “in business process changes and organizational co-inventions”.¹²³ In order to address the tax challenges of the digital economy and contribute to the goal of aligning taxation with value creation, a deeper look at the value drivers, core characteristics and new elements of digital business models is needed. Such an analysis reaches beyond the current discussion about the tax consequences of legal structures and accounting policies of prominent MNEs in the IT sector.

Generally speaking, a business creates value if the revenues exceed the corresponding costs. Thus, both the revenue and cost sides should be considered when trying to identify important elements of a value chain. Management theory based on Porter states that businesses create value through differentiation along the different steps of the value chain. Traditionally, IT was seen as a supporting element of the process of differentiation.¹²⁴ Through the increasing

120. OECD, *supra* n. 2, at 13, 138.

121. D.D. Stewart, 'Value Creation' *Understanding Key to Transfer Pricing's Future*, 79 *Tax Notes International*, p. 322 (2015).

122. D. Bonnet & G. Westermann, *The best digital business models put evolution before revolution*, *Harvard Business Review* (20 Jan. 2015).

123. Brynjolfsson & McAfee, *supra* n. 1, at 102.

124. M.E. Porter, *The Competitive Advantage: Creating and Sustaining Superior Performance* (Free Press 1985); M.E. Porter & V.A. Millar, *How Information Gives You Competitive Advantage*, 63 *Harvard Business Review* 4, pp. 149-160 (1985); R. Amit & C. Zott, *Value creation in e-business*, 22 *Strategic Management Journal* 6/7, p. 496 (2001).

relevance and strategic use of information,¹²⁵ a modern value chain analysis within digital markets needs to take into account the combination and integration of resources, innovative technologies and information.¹²⁶ According to Amit and Zott, a digital business model “depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities”.¹²⁷ In practical terms, the value creation of a digital business model can be defined as the way of generating revenue (exploitation of business opportunities) by using data and information (content) in a specific form of products or services (structure). This process has to be implemented by skilled personnel acting in strategic management and operations and using appropriate assets within their organization (governance). From a quantitative point of view, the concept of economic value added (EVA) can serve as a numeric proxy of value creation. It captures both sales and related current costs,¹²⁸ as well as the opportunity cost of the employed assets within a business model. As a result, one should analyse at what point in time (and for international tax purposes in which location) revenue is generated by sales on the market, costs are incurred through relevant activities (performed anywhere) and assets are employed within digital business models.

Management science provides useful frameworks for analysing business models. These tools can be used to examine the inherent value creation since “a business model describes the rationale of how an organization creates, delivers and captures value”.¹²⁹ The business model concept generally offers a powerful tool to analyse value creation by intellectual capital in particular.¹³⁰ Osterwalder and Pigneur propose to analyse the four areas of the offer, customers, infrastructure and financial viability of a business model. For digital business models in particular, El Sawy and Pereira put forward the five components of value proposition, interface, service platforms, organizing model and revenue model.¹³¹ The interface is the means of connecting the customer and the offer which is equivalent to the value proposition. The service platforms and the organizing model can be seen as the infrastructure of a digital business model. In the following sections (sections 4.1.2.-4.1.4.), this article provides a brief analysis of digital businesses with these concepts as the framework of choice. Exemplary business models from the B2C and B2B sectors as well as the transformation of traditional business models are presented to draw attention to open questions regarding the tax challenges of the digital economy.

4.1.2. Case study: Digital B2C business models

Digital business models can be classified under the B2C sector if private users of the digital goods or services are either direct and paying customers or if they contribute to the business’ offer for commercial customers. Digital B2C business models often offer extremely targeted

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125. See C. Shapiro & H.R. Varian, *Information Rules: A Strategic Guide to the Network Economy* (Harvard Business School 1998).

126. Amit & Zott, *supra* n. 124, at 496.

127. Id., at 511.

128. When calculating the EVA as a corporate performance measure, net operating profits as well as the cost of capital after taxes are used. Yet, it is not the purpose to discuss the exact way of calculation and the merits and shortcomings of the measure at this point, but rather to present the concept as an aid to conceptualize the term “value creation”.

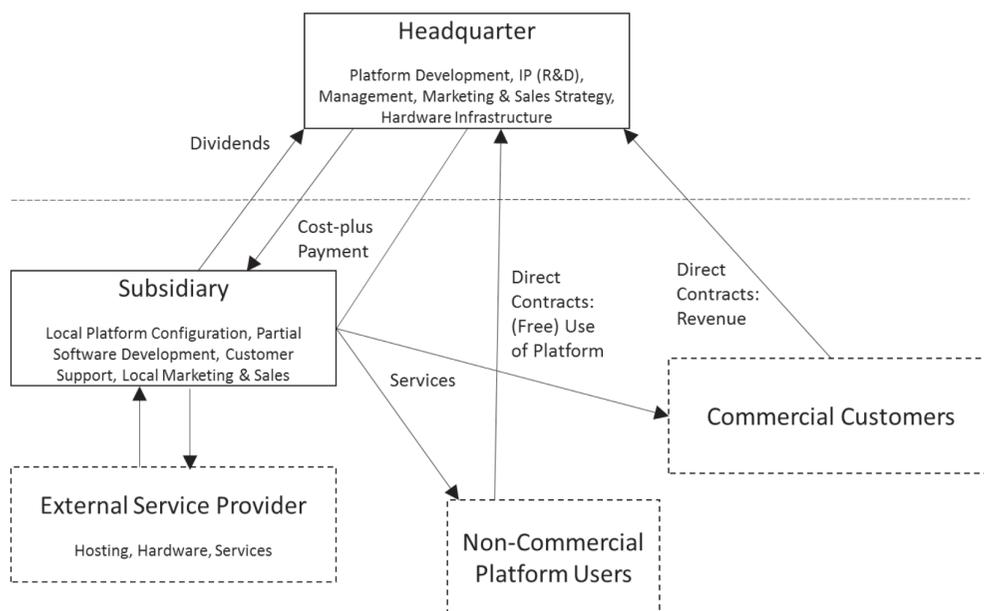
129. A. Osterwalder & Y. Pigneur, *Business model generation: a handbook for visionaries, game changers, and challengers* p. 14 (Wiley 2010).

130. V. Beattie & S.J. Smith, *Value creation and business models: Refocusing the intellectual capital debate*, 45 *The British Accounting Review*, p. 252 (2013).

131. O.A. El Sawy & F. Pereira, *Business Modelling in the Dynamic Digital Space* p. 24. (Springer 2013).

and individualized products and services, such as advertising or platform services, while creating free online services for end users. The (paying) customers are usually commercial advertising clients or consumers of web-based services that do not depend on the physical location of the service provider. The business models' infrastructure is typically composed of an online platform and the enabling proprietary software. For running the platforms and software applications, these business models rely on a widespread IT infrastructure with its core physical elements at the main location of the parent company and individual parts, such as data centres, located in customer markets.¹³² The core activities within these business models are the development and maintenance of the IT infrastructure and its online services as well as content management and marketing. The latter two activities in addition to user support are partly performed by personnel at locations near to the customers. Revenue is generated, for instance, by advertising or fees for the use of online services. The corresponding costs of the business model stem from expenditure for the platform's maintenance as well as compensation expenses for the staff in software development, marketing and other functions.¹³³ Prominent examples of such B2C business models are Google Inc., with its search engine, or LinkedIn Inc. and Xing AG, with their network services. Both companies run a multi-sided online platform as the core infrastructural element of their business model.

Figure 1: A simplified digital B2C business model



From the perspective of current tax law, a significant taxable nexus is only created in the country of residence of the parent company if this company enters into direct contractual relations with the customers. This result is independent of the geographical markets where revenue is generated even if some of the aforementioned activities are performed at the loca-

132. E.g. Google runs four data centres across Europe: in Belgium, Finland, Ireland and the Netherlands. See <https://www.google.com/about/datacenters/inside/locations/index.html> (accessed 2 Oct. 2016).

133. See, e.g., Google Inc., *Annual Report 2014*, p. 23 (Google Inc. 2015); Xing AG, *Annual Report 2014*, pp. 33 and 35 (Xing AG 2015).

tion of the customer. The business might employ local staff at local subsidiaries or create a PE to access customer markets. According to current transfer pricing principles, however, the activities are typically considered routine as they do not bear any contractual risks and elements of the IT infrastructure are only separate parts of the larger system that might even be hosted by external providers. Against the background of the current practice, the collection of data is also seen as a routine activity that does not necessarily contribute to value creation and hence does not alone justify a tax liability or another allocation of income. The value of data is rather created by processing and analysing the information.¹³⁴ However, tax authorities become increasingly suspicious regarding the circumvention of such a PE status.¹³⁵ For taxing income, current rules attribute the value to the entity that develops and maintains the required sophisticated software. As a result, local subsidiaries or PEs of foreign B2C businesses do not pay large amounts of taxes as they are compensated according to the cost-plus method as can be seen in financial accounts.¹³⁶

4.1.3. Case study: Digital B2B business models

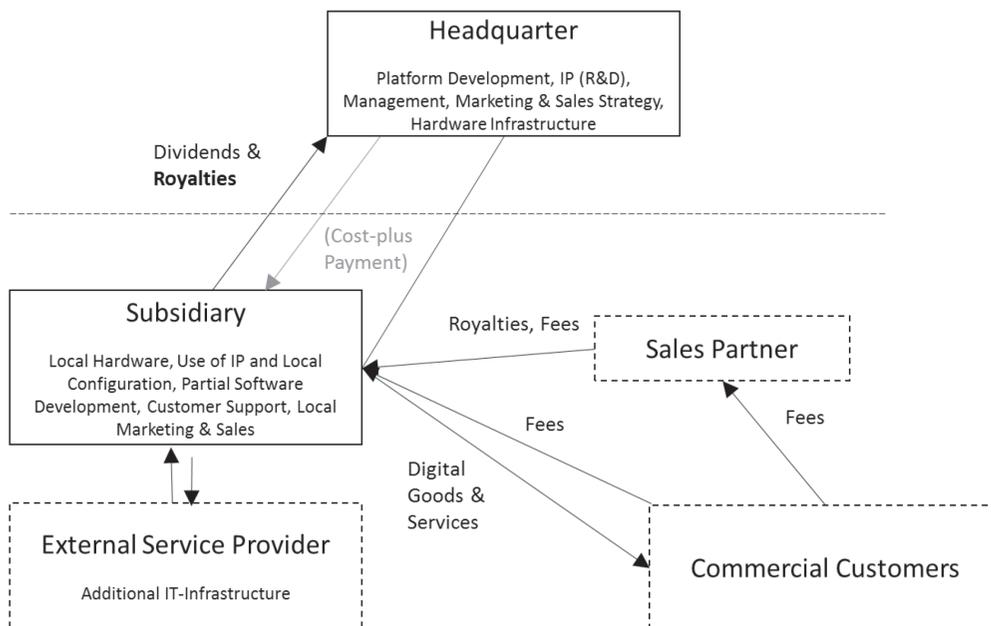
Digital business models in the B2B sector offer digital goods or services for commercial clients. Consequently, such business models can also be regarded as “enablers” of the digital economy as they facilitate the digital transformation of their clients. The customer group comprises enterprises across all sectors and geographic regions with access to the Internet. Complex combinations of hardware and software elements build the infrastructure of digital B2B business models. The businesses often run a massive server landscape at their main location while they operate through smaller complementary hardware components at the location of their customers. These hardware components, such as data centres, can also be outsourced to external providers. Usually, software development is the core activity that is mainly conducted at the location of the parent company implying that the parent company typically owns the corresponding IP. Sales is another important function that is planned and managed centrally but carried out locally through subsidiaries and (in some cases) local partners. These local entities further foster customer relationships to facilitate the specific individualization of the digital offers. Revenues stem from the direct sale or the licensing of digital products or services. If local subsidiaries enter into direct contractual relationships with customers, they compensate their parent company for the use and sale of the digital products via royalty payments. Corresponding costs mainly occur due to the maintenance and the development of the IT infrastructure. Personnel expenses related to software development and sales activities constitute the major part of expenditure.¹³⁷ Practical cases of such B2B business models are Salesforce.com, a leading provider of cloud software for marketing activities, and SAP SE, with its increasing product range of cloud applications and big data analytics.

Similar to B2C business models, the primary taxable nexus is in the parent company’s jurisdiction. Current principles in international taxation attribute most of the business’s value to

134. Fehling, *supra* n. 24, at 801; Johnston, *supra* n. 11, at 1089-1091.
 135. As the current tax probe of Google in France shows, tax authorities might claim to find a foreign corporation establishing a permanent base in the customer market. See A. Thompson et al., *Google’s Paris offices raided by French authorities in tax probe* (Financial Times, 24 May 2016).
 136. For foreign companies operating in the German market, see, e.g., Google Germany GmbH, *Unconsolidated Financial Accounts 2014*, p. 7 (2015); LinkedIn Germany GmbH, *Unconsolidated Financial Accounts 2014*, p. 3 (2015) (LinkedIn Germany is a direct competitor of Xing AG).
 137. See, e.g., Salesforce.com, *Annual Report 2015*, pp. 39-41 (2016); SAP SE, *Annual Report 2015*, p. 231 (2016).

the development and maintenance of the IT infrastructure and digital products. Local sales activities and the functions regarding customer support are regarded routine and compensated via the cost-plus method.¹³⁸ There might be a higher degree of taxable nexus if software is sublicensed to local subsidiaries or directly to customers and if sales contracts are concluded between local entities and customers. In this case, local withholding taxes might be levied and the ultimate profit allocation again depends on transfer pricing regulations but will lead to a similar result of low profit margins in local markets. For cloud-based services, withholding taxes can only be levied if the underlying contract specifically defines the right to use, exploit and adapt the software. A cloud business would create taxable nexus in the form of a PE at the location of the hosted data, software or infrastructure if the activities carried out in this location are not of auxiliary nature. The classification would follow the principles of a server PE as discussed in the past.¹³⁹ Cloud-based business models, however, are becoming more service-based. Therefore, profits from cross-border cloud transactions are primarily taxed in the residence state of the provider without establishing a PE at the location of the server or the customer under current tax law.¹⁴⁰

Figure 2: A simplified digital B2B business mode



4.1.4. Case study: Digitalization of traditional businesses

The Internet of things, advanced robotics and 3D printing were listed as emerging future developments of the digital economy by the OECD. However, the digital economy includes

138. See, e.g., Salesforce.com Germany, *Annual Report 2015*, p. 6 (2016) (unconsolidated accounts of the German subsidiary).
 139. A. Bal, *Tax Implications of Cloud Computing – How Real Taxes Fit into Virtual Clouds*, 66 Bull. Intl. Taxn. 6 (2012), Journals IBFD.
 140. A. Bal, *The Sky's the Limit – Cloud-Based Services in an International Perspective*, 68 Bull. Intl. Taxn. 9 (2014), Journals IBFD.

the transformation of entire business models rather than only individual technological phenomena. It is expected that the process of value creation will change dramatically and that new products and business models will be established within traditional boundaries.¹⁴¹ If this development is understood as a business model within the proposed framework, the offer or value proposition is directed at the company itself. It is incorporated in the digitalization of the entire supply chain and the digital business development. The business model is directed towards increases in efficiency as well as the generation of additional or alternative revenue streams. One major infrastructural element is the implementation of an IT landscape that enables the digital transformation of the traditional, primarily physical, business processes. The concept or the implementation of the Internet of things is one such new infrastructure.¹⁴² Another infrastructural characteristic is the organizational implementation of the digital transformation. Recently, large multinational companies have been founding spin-off subsidiaries to centralize all activities elaborating on the digital transformation. In particular, specific human capital is allocated to these units. Several companies also found subsidiaries that are equipped with significant amounts of capital. These so-called “innovation hubs” are used to acquire or promote high-technology ventures. This digital know-how then ideally facilitates the transformation of the traditional business model. A major activity within this infrastructure is the analysis of collected data on customer characteristics, transactions and input or output markets. Experts point out that software is becoming the crucial infrastructural element and value driver within the digital transformation of business models even if a substantial amount of hardware elements are required.¹⁴³ As these forms of digital transformation are still evolving, efficiency gains, additional revenues or other financial outcomes are not reliably measurable. In contrast, related expenditure is already occurring in the form of labour costs, the development and the acquisition of IT components as well as the purchase price of acquired companies. Practical case studies for the digitalization of traditional businesses are provided by the German steel distributor Klöckner & Co SE, with its digitalization venture Kloeckner.i, the German healthcare company Merck KGaA, with its innovation centre, and Coca-Cola Enterprises Inc., with its development of digital vending solutions.¹⁴⁴

From a tax perspective, a nexus is only established in the jurisdiction where the subsidiary or innovation centre is located. In the exemplary case of E-Health, it is evident that the important functions are not the sale of applications to patients and the collection of data across the globe because, once implemented, these activities are routine tasks. Data of patients are automatically collected by standardized hardware devices and transmitted to central computing centres via the Internet. Such activity is thus of an auxiliary nature. Instead, the development of the software for analytics and interpretation of the output by skilled personnel are key. Under current rules, any additional profit arising from efficiency gains or additional revenues in any entity of a multinational company will thus be allocated to the residence country of the company where the presented main activities are conducted.

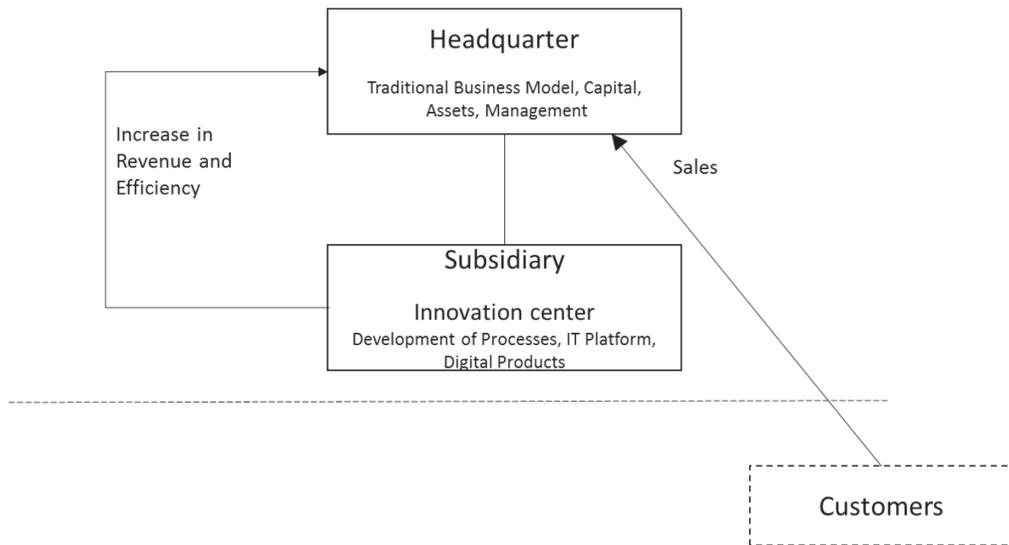
141. See, e.g., German Council of Economic Experts, *Annual Economic Report 2015/16*, pp. 308-313 (2015).

142. For a detailed elaboration on the Internet of things as a digital business model, see E. Fleisch et al., *Geschäftsmodelle im Internet der Dinge*, 67 ZbF, pp. 444-464 (2015).

143. *Id.*, at 460.

144. Information available at <http://www.kloeckner-i.com>, http://www.merckgroup.com/en/innovation/innovation_center/innovation_center.html and <http://www.cokesolutions.com/Vending/Pages/Site%20Pages/Overview.aspx>.

Figure 3: The (simplified) structure of digitalizing a traditional business model



4.2. Evidence on tax sensitivity of digital business models

The potential of the digital economy as a driver of social developments and economic growth, as well as its inherent challenges for the international tax system, have been widely acknowledged. Besides anecdotal and descriptive evidence on US digital companies' effective tax rates,¹⁴⁵ there are no specific empirical studies on the interrelation between international taxation and digital businesses models.¹⁴⁶ This lack of evidence might be due to the shortage of readily available data to scrutinize the degree of digitalization, the organizational structures and the financial characteristics of digital business models as well as the topic's newness. Nevertheless, studies on sales taxation and e-commerce (primarily in the United States) as well as recent work on profit shifting and the tax-motivated use of intangibles contribute to the understanding of the tax challenges of the digital economy.

Sales taxation is considered to increasingly distort economic behaviour because of the uptake of online transactions.¹⁴⁷ Nguyen et al. find that current US legislation fails to define taxable nexus and tax liability, thus leading to the erosion of sales tax bases due to the fact that online sellers make use of tax rate differentials.¹⁴⁸ Correspondingly, Einav et al. confirm a negative correlation between the number of online sales and the corresponding sales tax rate with

145. European Commission, *supra* n. 101, at 24, Annex 2 A and 2 B.

146. K.J. Klassen et al., *A Model of Multinational Income Shifting and an Application to Tax Planning with E-Commerce*, 36 *Journal of the American Taxation Association* 2, p. 40 (2014); Lopez, *supra* n. 84, at 13; Blum, *supra* n. 80, at 325; Cockfield et al., *supra* n. 5, at 490.

147. See, e.g., B. Lockwood, *Tax Competition and Tax Co-ordination under Destination and Origin Principles: A Synthesis*, *Journal of Public Economics* (2001); S. Basu, *To tax or not to tax? That is the question? Overview of Options in Consumption Taxation of E-Commerce*, 1 *The Journal of Information, Law and Technology* (2004); J.E. Lighthart, *Consumption Taxation in a Digital World: A Primer*, CentER Discussion Paper (Tilburg University 2004), advocating for the destination principles despite its practical challenges.

148. H. Nguyen et al., *Tax Challenges for Electronic-Commerce Activities*, 28 *The Journal of Applied Business Research* 5, pp. 861-870 (2012).

respect to the seller's location based on transaction data of the eBay platform.¹⁴⁹ Agrawal further shows that increasing access to high-speed Internet facilitates the tax efficient allocation of revenues by companies in the United States and therefore intensifies states' sales tax rate competition.¹⁵⁰

Different strands of literature in the area of public finance suggest that companies in the digital sector structure their business in a tax-optimized manner. Klassen et al. show that US-based multinationals report significantly lower effective tax rates if they generate a high share of revenue via online channels and from abroad.¹⁵¹ To the best of the authors' knowledge, there are no other studies with such a direct focus on digital forms of business and tax consequences. In the recent past, several studies on the effect of taxes and tax incentives on the location of IP have been published. Since IP is a key success factor of digital business models, the impact of taxes on its location and management should be of particular interest. The literature unanimously underlines the positive effect of unilateral tax incentives on the location of patents by multinational firms. Early results by Ernst and Spengel (2011) confirm that tax incentives regarding R&D input attract patent applications in European countries.¹⁵² Several other recent studies find that a decrease in the relevant tax rate for profits derived from IP increases the probability of patent location in the respective country.¹⁵³ Griffith et al. predict a decrease in patent applications of 4% for Luxemburg and 0.5% for Germany if the relevant tax rate increased by one percentage point.¹⁵⁴ Examining the quality as well as the number of patents, Ernst et al. (2014) show that this effect is more pronounced for patents that are associated with high future returns.¹⁵⁵ These insights from research might be a first indication that assets of digital business models are primarily located in countries that provide for a certain degree of tax attractiveness. Nevertheless, a recent analysis of interviews with tax practitioners reveals that such conclusions should be drawn with caution. Experts state that not all activities related to the development of IP are as observable as patent applications and R&D activities. The resulting procedure of patent applications is often coordinated at the level of the ultimate parent company without considering tax factors in operative decision-making.¹⁵⁶ The empirical results of Alstadsaeter et al. confirm these practical insights. The major finding is that generous provisions for taxing income derived

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- 149. L. Einav et al., *Sales Taxes and Internet Commerce*, 104 American Economic Review 1, pp. 1-26 (2014).
 - 150. D.R. Agrawal, *The Internet as a Tax Haven? The Effect of the Internet on Tax Competition* (University of Kentucky 2016).
 - 151. Klassen et al., *supra* n. 146.
 - 152. C. Ernst & C. Spengel, *Taxation, R&D Tax Incentives and Patent Application in Europe*, ZEW Discussion Paper (ZEW 2011).
 - 153. See, e.g., M. Dischinger & N. Riedel, *Corporate taxes and the location of intangible assets within multinational firms*, 95 Journal of Public Economics (2011), with a focus on the intangibles of European companies; B.P. Lindsey & W.M. Wilson, *Foreign or Domestic Tax Havens: The Location Decision for Intangible Property by U.S. Firms*, Discussion Paper (Texas Christian University 2015), with a focus on US firms; Böhm et al., *The Impact of Corporate Taxes on R&D and Patent Holdings*, Discussion Paper (University of Hohenheim 2012), regarding the relocation of patents. For studies regarding the localization of patents, see, e.g., R. Griffith et al., *Ownership of intellectual property and corporate taxation*, 112 Journal of Public Economics (2014); A. Alstadsaeter et al., *Patent Boxes Design, Patents Location and Local R&D*, CESifo Working Paper (Center for Economic Studies and Ifo Institute 2015); Bradley et al., *Cross-Country Evidence on the Preliminary Effects of Patent Box Regimes on Patent Activity and Ownership*, Tuck School of Business Working Paper (Dartmouth College Tuck School of Business 2015).
 - 154. Griffith et al., *supra* n. 153, at 20.
 - 155. C. Ernst et al., *Corporate taxation and the quality of research and development*, 21 International Tax and Public Finance (2014).
 - 156. M. Walpole & N. Riedel, *The role of tax in choice of location of intellectual property*, Discussion Paper, pp. 42-43 (The University of New South Wales 2014).

from IP significantly attract the location of patents whereas the location of R&D activities is not sensitive to reduced tax rates on related income. Further, the authors acknowledge that the value creation process related to business models relying on IP other than patents is not observed in current research.

Another literature strand verifies the common perception that multinational companies engage in tax-motivated profit shifting.¹⁵⁷ The use of intangibles appears to be a major channel of profit shifting, hinting at the potential relevance of profit shifting behaviour of companies with digital business models.¹⁵⁸ The magnitude of profit shifting through the use of intangibles as well as the role of specific digital business models in profit shifting strategies has not been researched. Besides the tax-motivated allocation of patents, there is no evidence for the tax-motivated allocation of key functions (in particular people) or profits in the digital sector as suggested by the OECD.¹⁵⁹

4.3. *Interim conclusion*

Value creation is a currently popular but undefined criterion in international tax policy for the digital economy. Consistent with the latest academic work in several disciplines, value creation (for tax purposes) could encompass any activity related to generating revenue by digitized products and services based on the quantitative concept of EVA, the location of incurred current expenses, revenue sources (markets) and the capital employed should be taken into account.

The case studies in sections 4.1.2.-4.1.4. illustrate that digital business models expand internationally via slim organizational structures. Under current tax law, digitalization leads to a convergence of core activities and thus taxable nexus at the location of the parent company or regional hubs. In local markets, elements of the IT infrastructure are observable and might constitute a taxable nexus in the form of a PE. These elements of the IT infrastructure can be controlled remotely, rented from third parties and moved across jurisdictions. Depending on the activities performed at the location of the hardware elements, they might not contribute much to value creation in the current interpretation by solely hosting data and providing computing power. As a result, little profit stemming from digital business models of foreign companies is attributed to market jurisdictions for tax purposes.¹⁶⁰ This specific form of innovative business model and its implied organizational consequences are not necessarily tax-driven but rather represent outcomes of the technological development. In this sense, the focus on servers for tax purposes might become obsolete and more evolving technological developments need to be discussed in the future.¹⁶¹ The authors' analysis confirms the

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157. For a review, see D. Dharmapala, *What do we know about Base Erosion and Profit Shifting? A Review of the Empirical Literature*, 35 *Fiscal Studies* 4, pp. 421-448 (2014).

158. For a meta-analysis of 25 empirical studies on profit shifting, see J.H. Heckemeyer & M. Overesch, *Multinationals' Profit Response to Tax Differentials: Effect Size and Shifting Channels*, ZEW Discussion Paper, p. 27 (ZEW 2013).

159. OECD, *supra* n. 2, at 80.

160. See also the case studies in Baéz Moreno & Brauner, *supra* n. 4, sec. 4., and in Hongler & Pistone, *supra* n. 72, annex.

161. Singh, *supra* n. 115, at 332-333. For instance, fog computing technology will further question the reliance on servers for discussing a taxable nexus. For a brief introduction to the concept, see Cisco, *Fog Computing and the Internet of Things: Extend the Cloud to Where the Things Are*, White Paper (Cisco 2015). For a detailed discussion on the notion of PEs in the IT sector, see M. Gianni, *The OECD's Flawed and Dated Approach to Computer Services Creating Permanent Establishments*, 17 *Vanderbilt Journal of Entertainment and Technology Law* (2014).

OECD's finding that functions and assets can spread across multiple countries but that this flexibility is limited; the core functions including the development of intangible assets can only take place where key personnel is located. In addition, providing high-quality digital services to end users requires a certain degree of infrastructure in proximity to the customer market.¹⁶² The authors account for this evidence in section 5., picking up the discussion of future transfer pricing policies.

Apart from indirect empirical evidence, there is no reliable scientific knowledge concerning whether the degree of digitalization influences tax-motivated corporate decision-making. Against this background, the OECD sees both a risk of overstating and of understating the respective tax challenges.¹⁶³ Much research and political discussion is needed to examine the effect of the current tax system on digital business models, fiscal competition as well as the consequences that potential reform options would imply for corporate decision-making and tax revenues.¹⁶⁴ This section's categorization and analysis of value creation and business models in the digital economy intends to provide a framework for addressing these open questions and, in turn, to derive policy options, which are proposed in section 5.

5. From Addressing to Meeting the Challenge

5.1. *Aligning taxation with value creation: A transfer pricing challenge*

The international community promotes the adherence to existing tax principles and the introduction of specific anti-BEPS measures to address the tax challenges of the digital economy.¹⁶⁵ This approach is justifiable given the undeveloped understanding of business models as well as the lack of scientific knowledge on revenue losses and the effect of taxes on business decisions in the digital economy. The recent work under the umbrella of the BEPS project has defined and stressed the tax challenges of the digital economy. Despite the large amount of dedicated political resources and academic contributions, there is no elaborated and commonly accepted proposal on how these challenges could be met. The more tangible output of the BEPS project is targeted at aggressive tax planning activities and the undesired low or no taxation of mobile income. A more rigorous application of anti-avoidance measures (Actions 2-7) and documentation requirements (Actions 12-13) as well as increased collaboration between tax authorities (Actions 14-15) are not primarily designed to meet the tax challenges raised by the digital economy. The OECD's Action 1 Final Report is the first study to raise the issue of the consistent attribution of profits among connected business entities in the digital economy.¹⁶⁶ Although the OECD recognizes a shift in value creation due to emerging technologies, it does not deliver a roadmap on how this development should be reflected in tax policy beyond BEPS.

For the near future, the focal point in corporate profit tax policy for the digital economy is transfer pricing. Neither the international community nor national tax politicians promote

162. Id., at 66-68.

163. OECD, *supra* n. 8, at 100.

164. See, e.g., Westberg, *supra* n. 106, at 544; Baéz Moreno, *supra* n. 83, at sec. 4.; France Stratégie, *Taxation and the digital economy: A survey of theoretical models*, p. 19 (France Stratégie 2015). In this report, several theoretical studies highlight the complexities of digital business models that should be incorporated in future studies on corporate taxation. See, e.g., J. Crémer, *Taxing network externalities*, pp. 1-2 (France Stratégie 2015) and M. Bourreau et al., *Digital Platforms, Advertising and Taxation*, p. 3 (France Stratégie 2015).

165. Fehling, *supra* n. 24, at 800-801. The primary intention is to influence and guide outcomes of other action points to address issues of digital economy. See Brauner, *supra* n. 6, at 15-16.

166. Brauner, *supra* n. 6, at 17

fundamental tax reforms. Profit allocation and the inter-nation right to tax profits will thus follow existing principles. These principles include the simultaneous application of the source and the residence principle as well as the application of well-established transfer pricing mechanisms for international profit allocation. Consequently, the primary task is to revise the application of transfer pricing rules and the interpretation of the arm's length principle rather than to deal with individual aspects of the digital economy, such as specific e-commerce transactions by including the use of warehouses in the definition of a PE.¹⁶⁷ The presented case studies highlight that the latter approach is ineffective. Even if reforms in tax law decrease the thresholds for establishing a taxable nexus or facilitate tax collection in the digital age, the allocation and taxation of profits will not be refined unless transfer pricing regulations are adapted to the characteristics of digital business models. This is due to the fact that most activities performed at the locations with a new taxable nexus would be of an auxiliary or preparatory nature under current the Authorized OECD Approach. Thus profit allocation to entities creating a (digital) taxable nexus would still be minor. Practitioners acknowledge that changes to the interpretation of the arm's length standard are required to overcome the lack of a clear measure for the allocation of benefits from integration and transitions without comparables.¹⁶⁸

Policy makers agree that understanding the term "value creation" for transfer pricing of digital business models is a long-term challenge.¹⁶⁹ Applying current methods and benchmarks leads to outcomes that are not compatible with a modern understanding of the digital economy as exemplified by the recent tax audit of Google in the United Kingdom. Against this background, digital leaders claim to pay taxes in line with current rules and suggest that income allocation mechanisms should be evaluated from an up-to-date perspective instead of publicly denouncing individual taxpayers.¹⁷⁰

In its function of coordinating international tax policy and promoting global trade, the OECD constantly revises its OECD Guidelines in order to provide an up-to-date instrument for multinational enterprises and tax authorities. The release of the Actions 8-10 Final Reports contain the revision of several chapters of the current OECD Guidelines with particular relevance for the arm's length principle (chapter I) and intangibles (chapter VI). These changes will also apply to many aspects of transactions in the digital economy. Yet the new guidance is viewed critically by scholars and practitioners as it introduces complicated, not properly defined, mechanisms and increases legal uncertainty regarding the taxation of international business models.¹⁷¹ Apart from stating that the transactional PSM should be used more frequently,¹⁷² the Reports do not contain guidance on the treatment of transactions in

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167. Schreiber, *supra* n. 48, at 115; R.J.S. Tavares & J. Owens, *Human Capital in Value Creation and Post-BEPS Tax Policy: An Outlook*, 69 Bull. Intl. Taxn. 10, sec. 4. (2015), Journals IBFD; Stewart, *supra* n. 121, at 322.
 168. U. Andresen, *Comments on Professor Schoueri's Lecture "Arm's Length: Beyond the Guidelines of the OECD"*, 69 Bull. Intl. Taxn. 12, p. 720 (2015).
 169. Stewart, *supra* n. 121, at 322.
 170. The Economist, *Going after Google* (The Economist, 28 Jan. 2016); K. McCann, *Google Boss: International tax laws should be rewritten* (The Telegraph, 10 Feb. 2016), available at <http://www.telegraph.co.uk/technology/google/12151032/Google-boss-International-tax-laws-should-be-rewritten.html>; T. Bradshaw, *Apple chief Tim Cook rounds on outdated US tax code* (Financial Times, 20 Dec. 2015).
 171. Brauner, *supra* n. 10, at 7-14; Wittendorf, *supra* n. 37, at 358; Kroppen & Rasch, *supra* n. 60, at 840; C. Engelen, *Ex post-Informationen und Preisanpassungsklauseln – kritische Würdigung der OECD-Ausführungen zu schwer bewertbaren immateriellen Werten*, IStR, pp. 150-153 (2015).
 172. *Actions 8-10 Final Reports*, *supra* n. 43, at 55 et seq.

the digital economy. As a result, the output of Actions 8-10 is not expected to provide sufficient guidance for real-world business transactions in the digital age.¹⁷³

Against this background, several contributions by scholars and practitioners suggest that more detailed guidance on the multilateral analysis of global value chains within the framework of the arm's length principle would be a promising tool for taxing profits in the digital age.¹⁷⁴

5.2. Developing transfer pricing guidance for the digital economy

The discussion in section 2.4. reveals that any attempt to tax the profits of digital businesses in line with value creation based on transfer pricing rules can only lead to approximate solutions. Although more fundamental reforms should guide future debates, improving transfer pricing outcomes for digital business models is a logical and necessary task for tax policy makers in the short term. A pragmatic way to better align profit taxation with value creation in the digital economy would be to develop specific guidance on transfer pricing for digital business models. Such guidance could be implemented not only as a revision of intangibles but in the form of a specific chapter on digital business models in the OECD Guidelines.

The latest work that substantially amended the OECD guidelines was issued in 2010 with a new chapter on business restructurings.¹⁷⁵ The motivation for the additional chapter was to account for the increasing complexity and relevance of international restructurings of business models and the inherent transfer of risks.¹⁷⁶ The aim was to offer guidance "as to how these arrangements can be tested against a sophisticated arm's length standard".¹⁷⁷ In line with this intention, an additional chapter on digital business models in the OECD Guidelines can be justified by the increasing relevance of digital transactions in the economy and the lack of benchmarks for transfer pricing.¹⁷⁸ In the vein of the specific guidance on business restructurings or intangibles, the guidance addressed a specific economic development affecting a multitude of taxpayers and was not directed at a specific group of taxpayers supposedly representing the digital economy.

It is neither the aim nor is it within the scope of this article to produce a complete and thoroughly elaborated set of rules. The authors rather present an idea of how such guidance could be structured. The OECD's ongoing work on revising the Guidelines is acknowledged, as well as the underlying aim to capture value creation. The authors' proposal, however, should be seen as a pragmatic and complementing way to integrate the increasing relevance of digital business models in this work. As a starting point, the authors comment on the particularities of the digital economy that should be accounted for. In particular, this article builds on Tavares and Owens who argue that human capital in its specific form of knowledge-based

173. G. Bergmann et al., *A Lesson From BEPS: Minimize Transfer-Pricing-Related Tax Risks*, 79 *Tax Notes International* September 21, 2015, p. 1051 (2015); M. Herzfeld, *The Economic Substance Doctrine: Lessons for BEPS*, 78 *Tax Notes International* May 11, 2015, p. 505 (2015); Wittendorf, *supra* n. 37, at 335.

174. Tavares & Owens, *supra* n. 167, at 594; Schreiber, *supra* n. 48, at 115.

175. See *OECD Guidelines*, *supra* n. 43, at ch. IX.

176. See the introductory statement on the OECD's website, <http://www.oecd.org/ctp/transfer-pricing/transfer-pricingandbusinessrestructuring.htm>.

177. W. Schön, *International Taxation of Risk*, *Bull. Intl. Taxn.*, p. 281 (2014), *Journals IBFD*.

178. Yet, one might argue that an additional chapter in the OECD's transfer pricing guidelines leads more to additional complexity and legal uncertainty rather than improved guidance. It is not the idea of this contribution to deliver a proven remedy for tax law changes. Rather, the authors would like to offer a stimulus for future discussion oriented at practical solutions.

capital is becoming a predominant value driver of businesses, particularly in the digital age, and that such capital should have substantial weight in the functional analysis of purposes of profit allocation.¹⁷⁹ In Sections 5.2.1.-5.2.3., the authors discuss several findings (key assets and core activities) from the case studies (see sections 4.1.2.-4.1.4.) that should be addressed in transfer pricing guidance that acknowledge the existence of globally integrated value chains. Similarly to Tavares and Owens, it is argued that such value chains might require the application of an enhanced PSM and suggestions are related to the concept of EVA in order to determine value creation. The underlying aim is to detect real economic activity instead of relying on contractual arrangements and legal ownership to facilitate the allocation of income in line with value creation for digital businesses.

Similarly to chapter IX on business restructurings of the OECD's Guidelines, the scope of the guidance will first be described in the form of a definition of digital business models and the understanding of value creation in the digital economy (section 5.2.1.). Next, important assets employed and core activities performed are discussed for the sake of a functional analysis (sections 5.2.2.-5.2.3.). Lastly, there is a discussion on how the guidance should propagate the application of preferred transfer pricing methods (section 5.2.4.).

5.2.1. Scope and definitions

An introductory definition of digital business models and the understanding of value creation in the digital economy is crucial for the analysis of functions, assets and risks. A commonly accepted definition will be necessary to establish transfer pricing outcomes of digital business models that might change the allocation of profits between the states of source (markets) and residence (incorporation). Hongler and Pistone argue that profits should be allocated to jurisdictions "in which value creation occurs in respect of business income either on the supply or demand side".¹⁸⁰ In order to preserve the source theory in the digital age, the forms of value creation on the demand side have to be analysed in particular. In line with the definition of Amit and Zott, the value is created where content is created and transactions are designed to generate revenue. Thus, activities related to content creation on the user-market side and the interaction with users or customers that shape the revenue streams need to be identified. The scope of the guidance should be broad in order to address any type of business model that creates revenue through the extensive use of digital technologies. Thus, obvious forms of digital businesses that rely on digital products and services as well as physical goods and services that are delivered through digital transactions would be covered. So as not to ring-fence digital business models for tax purposes, transfer pricing guidance on digital business models should apply consistently to all companies conducting any form of internal or customer-oriented digital business independently of the company's industry and history. In short, such newly developed transfer pricing guidance should apply to the respective transactions of any company relying on digital transactions and activities, exclusively or in addition to traditional forms of business.

179. Tavares & Owens, *supra* n. 167.

180. Hongler & Pistone, *supra* n. 72, at 19.

5.2.2. Key assets

For digital business models, intangible assets are key value drivers¹⁸¹ and can take on new forms other than patents or copyrights. For instance, a lot of R&D is never formalized as IP but still adds substantial value to businesses. Also, hardly measurable categories, such as organizational capital, user-generated content and human capital related to digital capabilities, are large parts of intangibles in digital firms.¹⁸² It is particularly critical to distinguish between assets of ordinary character that involve only little risk and those assets with a larger contribution to value creation. According to the current work on transfer pricing intangibles, an ordinary asset involving low risk would be an assembled workforce (if qualifying as intangible) or only internally used software.¹⁸³ However, a detailed analysis of digital business models might reveal that these assets are more crucial for generating profits as indicated by the presented case studies (see sections 4.1.2.-4.1.4.). Therefore, the work on the OECD guidelines on intangibles should be extended with regards to the development and management of the IT infrastructure as well as the people influencing important business processes.¹⁸⁴

Most parts of the IT infrastructure are very important tangible and intangible assets of digital business models because products and services have embedded digital technologies that cannot be disentangled from the underlying IT infrastructure.¹⁸⁵ In addition, empirical studies confirm that investment in ICT is positively associated with sales growth and profitability.¹⁸⁶ Hence, there should be particular guidance on how strategic investments in hardware and other information technology contribute to the business model. This would help to account for the shift (of innovation) elsewhere in the value chain caused by the advent and uptake of modern ICT as detected by the OECD. Drawing from the case studies, investments in important ICT elements could be detected. A company in the B2C market needs to invest in local platforms to store and manage market-specific data and content. In the B2B market, such investments are even more crucial. When, for instance, cloud applications are offered to local businesses, the proximity of servers is important due to legal regulation (data security) and the need for high-speed access to the applications. The case studies show that a digital business model running an online platform relies heavily on a well-performing IT landscape without necessarily owning any tangible or intangible assets when accessing foreign markets. Instead, hosting services allow for the same activities to be conducted as when the infrastructure is owned. If companies do not directly invest in the infrastructure but rely on outsourced

181. S. White, *Intangibles drive value in the digital age*, Journal of Accountancy March 2016, p. 21 (2016). For the full report, see CGMA, *The Digital Finance Imperative: Measure and Manage what Matters Next* (2015), available at <http://www.cgma.org/Resources/Reports/Documents/the-digital-finance-imperative-report.pdf> (CGMA 2016); Beattie & Smith, *supra* n. 130, at 244; R. Sydler et al., *Measuring intellectual capital with financial figures: Can we predict firm profitability?*, 32 European Management Journal, p. 245 (2014).

182. Brynjolfsson & McAfee, *supra* n. 1, at 119-121.

183. *Actions 8-10 Final Reports*, *supra* n. 43, at 100.

184. So far, this aspect has been neglected. Further, future developments in IT will emphasize the developments and should thus be considered. See also Fehling, *supra* n. 24, at 802.

185. M. Pagani, *Digital Business Strategy and Value Creation: Framing the Dynamic Cycle of Control Points*, 37 MIS Quarterly 2, p. 619 (2013).

186. For a recent literature review, see M. Cardona et al., *ICT and productivity: conclusions from the empirical literature*, 25 Information Economics and Policy (2013); Brynjolfsson and Hitt show that investment in computerization is associated with abnormally high returns in the long term. See E. Brynjolfsson & L.M. Hitt, *Computing Productivity: Firm Level Evidence*, 85 The Review of Economics and Statistics 4 (2003). For a proposal on how to account for the productivity of ICT in the determination of transfer prices, see Lostumbo et al., *Profit Splits Post-BEPS: Quantifying an MNE's Intangibles*, 80 Tax Notes International November 23, 2015, p. 710 (2015).

IT services, the related costs and control could be attributed to a local entity of the business independent of the contractual arrangements. As shown in the exemplary case in section 4.1.4., traditional businesses make strategic investments to foster the digitalization of their value chain. The location and the development of the importance of such investments should be monitored for transfer pricing purposes.

As a specific type of IP, software is the backbone of any digital business model and is seen as the crucial factor for competitive advantage in the future.¹⁸⁷ Guidance on the investment in software as well as on its development and use is a non-trivial but eminent task. Today's software business models are not always formalized in the form of copyrights. The generation of revenue from software is dependent on ongoing maintenance and development. As revenue is further based on service-oriented cloud transactions, protecting software from unauthorized copying through copyrights becomes (partly) obsolete.¹⁸⁸

Database systems can be considered as an asset combining hardware and software features. The nature and relevance of databases has dramatically changed due to the uptake of online services and cloud computing applications. Guidance on the nature of related payments for cloud computing transactions is needed, as it is unclear how the existing principles should be applied for this growing business segment.¹⁸⁹ The B2B case study exemplifies that the payment of commercial customers and sales partners could either constitute a royalty fee for the use of cloud applications or a service fee for the provision of services through the cloud platform.

Data as another form of an intangible asset are considered a key resource in the digital economy. The tax treatment of data has thus been subject to a controversial debate.¹⁹⁰ There is a common perception that the mere process of collecting data does not substantially add to value creation.¹⁹¹ The processing and analysing of data, often provided by users, is facilitated by increased computing power, proprietary software and database management tools. This sophisticated use of data has become a success factor for digital businesses.¹⁹² Considering the hardware and software elements together with related people functions in the functional analysis can thus serve as a proxy that captures the value of data. Further, it is important to examine in which functions the data are exploited in order to create value. In the digital age, not only the IT or operations departments exploit data but other functions too. Marketing, customer support and sales may also engage in data collection, processing and analysis depending on the business model.¹⁹³ At this point, it is important to note that market-related activities, such as marketing or sales, make extensive use of data and digital technologies. Thus marketing has become an important success factor, and more so than ever before. In contrast to current transfer pricing practice, this phenomenon should be accounted for in the functional analysis. Taxing corporate profits based on the functional analysis will be a less complicated and a more efficient way of taking the value of data into account for tax

187. See, e.g., S. Russwurm, *Software, die Zukunft der Industrie*, in *Industrie 4.0* p. 21 (U. Sandler ed., Springer 2013).

188. Z. Mahmood & S. Saeed eds., *Software Engineering Frameworks for the Cloud Computing Paradigm*, p. 260 et seq. (Springer 2013); M. McRoberts, *Software Licensing in the Cloud Age*, 3 *The International Journal of Soft Computing and Software Engineering* 3, p. 297 (2013).

189. Fehling, *supra* n. 24, at 801.

190. Id.

191. European Commission, *supra* n. 101, at 47.

192. OECD, *supra* n. 2, at 69.

193. White, *supra* n. 181, at 21.

purposes than any attempt to tax the use of data separately. It can be shown that taxing profits will not influence the amount of data collected by platform providers. In contrast, transaction-based taxes on data are expected to create economic distortions.¹⁹⁴ The case studies are only presented in a simplified manner. It is impossible to distinguish how much value for the business is associated with the data of a specific platform user, as this value depends on the scale and form of the business model. While a search engine generating revenue from customized advertisements benefits from a high degree of personal information from a large user base, it is less clear how the data collected from a cloud application user translate into business profits. The functional analysis should therefore consider the location of both the technical collection and storage of data in regional data centres as well as data exploitation conducted by staff familiar with the particularities of the customer markets as well as the overall business model.

Several theoretic studies and practical reports highlight the importance of a meaningful user base for the success of digital business models. The reason is that major (financial) benefits arise for digital businesses relying on the use of platforms due to network externalities.¹⁹⁵ While theory suggests that taxing network externalities can directly increase overall efficiency,¹⁹⁶ such an approach would clearly contradict existing principles. Similarly, it would be difficult to enforce regulation that defines and measures the user base as separate intangibles since not all users are customers that contribute in the same (financial) manner to a platform's value.¹⁹⁷ Pellefigue states that the interactions of digital economics, such as the increased use of IT and the Internet, multi-sided markets and network externalities, are the profit drivers in the digital economy. Since traditional transfer pricing standards are not (yet) designed in order to capture these economic circumstances, analytical tools in game theory are proposed to achieve a profit allocation that is economically more justifiable.¹⁹⁸ Pellefigue suggests a model where different affiliates of an MNE in the digital economy engage in bargaining and consider the network effects that the activities of each other would have on their financial situation. As a result, subsidiaries in countries where users and customers are located would be attributed more profits even if their assets and functions are limited from a traditional perspective.¹⁹⁹ Again, this approach is not compatible with the existing system. However, the findings of the model are in line with the literature that the status quo is no longer tenable and that the OECD should consider that the user base might serve as an indicator for value contribution. This consideration would be consistent with the OECD's statement that the value of consumer-related data is indirectly reflected in financial outcomes such as advertising revenue.²⁰⁰ As in the case of data as a key asset, one should thus attribute substantial importance to all activities performed to sustain and enlarge the user base.

194. For instance, if taxation is based on the numbers of users, data will be collected more excessively from fewer users as the profit per marginal user is decreased. F. Bloch & G. Demange, *Taxation and Privacy Protection on Internet Platforms*, pp. 3-4, in France Stratégie, *supra* n. 164.

195. See, e.g., OECD, *supra* n. 1, at 147.

196. J. Crémer, *Taxing Networks Externalities*, in France Stratégie, *supra* n. 164, at 13.

197. For the difficulty to distinguish intangibles and customer base, see J.S. Wilkie, *Intangibles and Location Benefits (Customer Base)*, 68 Bull. Intl. Taxn. 6/7 (2014), Journals IBFD.

198. J. Pellefigue, *Transfer Pricing Economics for the Digital Economy*, 22 Intl. Transfer Pricing J. 2, sec. 3. (2015), Journals IBFD.

199. *Id.*, at 100.

200. OECD, *supra* n. 2, at 104.

5.2.3. Core activities

Tavares and Owens point out that human capital is decisive in global value chains. Global and integrated value chains are particularly predominant in the modern economy and the arm's length principle should account for this fact in the digital age.²⁰¹ Within the scope of the analysis of value chains, the location and use of knowledge-based capital should influence the characterization of the value chain and the according transfer pricing outcomes. Tavares and Owens record the fact that the accumulation of knowledge-based capital often involves key entrepreneurial risk-taking functions that are significantly less mobile than financial capital and the beneficial ownership of assets. Considering knowledge-based capital in the functional analysis would overcome the direct valuation of complex economic phenomena, such as the use of data, and would thus provide a suitable instrument for attributing income according to value creation in the digital economy. As such an approach would often ignore intercompany contracts in favour of value chain analysis, effective dispute resolution mechanisms are necessary to establish legal certainty for taxpayers and to avoid double taxation.²⁰²

Transfer pricing guidance should elaborate on functions performed by people in digital business models to arrive at an updated view on the analysis of assets, functions and risks. Intangibles in digital business models are sometimes hardly observable and highly valuable due to the ongoing development by the respective workforce. This is the case for the development and maintenance of an online platform's underlying software that includes important functions of the platform, its adaptation to local customer needs or even the provision of digital goods. Again, market-oriented functions stand out as key drivers of business success and growth. Accounting for the interaction of people functions and (intangible) asset value might justify some allocation of IP rents from their location in low-tax to high-tax countries where a company's staff is located. This move might counteract IP tax planning strategies based on the allocation of beneficial or legal ownership. Using ex-post information as proposed by the OECD will add to this trend. However, the current revision of the OECD Guidelines on intangibles does not specifically address labour rents and location benefits.²⁰³ Thus, a debate as to whether and to what extent such rents should be allocated is necessary for the international community in order to formulate the respective guidance. Any approach to put more weight on the location of staff would resemble the significant functions paradigm, as recently stipulated in the Authorized OECD Approach, for allocating profits to PEs. There are arguments to not give too much weight to the location of people, as those people do not bear the risk themselves and multinational firms might operate through separate legal entities, in particular for reasons of risk separation and decision centralization.²⁰⁴ Yet, the analysis of the case studies reveals that staff in multiple jurisdictions perform activities related to core elements of the digital business models. Thus, personnel expenses might be an appropriate allocative factor for assigning profits throughout the network of separate legal entities of such businesses. The following explanations will further elaborate on this notion and this discussion should influence the elaboration of transfer pricing guidance.

201. Tavares & Owens, *supra* n. 167, at 594.

202. *Id.*, at 599.

203. For a discussion, see M.A. Kane, *Labour Rents, Arm's Length Transfer Pricing and Intangibles: Still Searching for a Solution to the BEPS*, 69 Bull. Intl. Taxn. 6/7 (2015), Journals IBFD. See also Wilkie, *supra* n. 197, at 352-360.

204. Schön, *supra* n. 177, at 290.

Customer orientation and all related activities are crucial for the success of digital business models. For instance, a major task of a digital company is the ongoing reconfiguration and integration of its customers. Accordingly, digital firms are moving from the product to the customer approach.²⁰⁵ Transfer pricing guidance should acknowledge that digital business models are becoming more customer-centric and should determine how this characteristic influences the analysis of assets, functions and risks. Activities performed by local staff, such as customer support or the technical adaptation of digital products and services to the particularities of local markets (e.g. language features, legal requirements, customer characteristics, etc.),²⁰⁶ might not be best interpreted as routine tasks from a tax perspective. The Italian government has identified this problem and takes a first step towards determining an arm's length price using indicators other than cost for these types of transactions.²⁰⁷ In particular, potentially new forms of the sales function of digital business models should be analysed in order to provide specific criteria that distinguish between important activities that contribute to customer-centric value creation and supportive activities. Such guidance would closely relate to the transfer pricing classification of the user base as mentioned earlier. Regarding the B2C case study (see section 4.1.2.), one could argue that the functions of the local subsidiary in the country of the platform users and customers are of high relevance. The business model depends on a platform tailored to the local language and regulation as well as to customer-specific configurations. Taking on this view, it is questionable whether a cost-plus markup leads to a transfer pricing outcome in line with value creation. In the B2B case (see section 4.1.3.), local staff are often involved in sales activities. In digital businesses, such as cloud computing, the sold good is of a non-rival nature, implying negligible marginal costs. Therefore, the sales function is decisive for the company's profitability and should thus be appropriately reflected when aligning transfer prices with value creation.

The generation and provision of digital content is another core activity which can be regarded as a core product of digital business models.²⁰⁸ Here, software can either be seen as a separate form of digital content if monetized as an individual product or as a means to generate and manage digital content. Due to the integrated and global nature of digital value chains, digital content and products such as software are often developed jointly by several teams in different locations that integrate users in the development.²⁰⁹ How the activities performed

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- 205. Pagani, *supra* n. 185, at 618. For further reference, see exemplary contributions from industry experts, such as Capgemini, *Digital Transformation: A Roadmap for Billion-Dollar Organizations*, p. 27 (Capgemini 2011); T. Goodwin, *The Battle Is For The Customer Interface* (Tech Crunch, 3 Mar. 2015), available at <http://techcrunch.com/2015/03/03/in-the-age-of-disintermediation-the-battle-is-all-for-the-customer-interface/>. This trend is also observable in the software industry. See A. Mädche et al., *Software for People: A Paradigm Change in the Software Industry*, p. 3 (Springer 2012).
 - 206. E.g., Google's local staff in Germany are focused on sales but also contribute to product engineering. On its webpage, Google states "As Germany's largest office, we do a bit of everything, from marketing and sales to engineering and IT. We're online sales experts, helping Germany's largest companies and advertisers to grow their businesses via platforms like AdWords and AdSense. Our marketing and communications teams create German-language communications campaigns for our products." Information available at <http://www.google.com/about/careers/locations/hamburg/> (accessed 2 Oct. 2016).
 - 207. Popa, *supra* n. 4, at 39; L. Quaratino, *New Provisions Regarding the Taxation of the Digital Economy*, 54 Eur. Taxn. 5, sec. 1 (2014), Journals IBFD.
 - 208. K.C. Laudon & J.P. Laudon, *Management Information Systems – Managing the Digital Firm*, p. 415 (Pearson 2014).
 - 209. S. Faraj & L. Sproull, *Coordination Expertise in Software Development Teams*, 46 Management Science 12, p. 1554 (2000). For a literature review on the effects of user involvement in software development, see M. Bano & D. Zowghi, *User Involvement in Software Development and System Success: A Systematic Literature Review*, in *EASE 2013 Proceedings of the 17th International Conference on Evaluation and Assessment in Software Engineering*, pp. 125-130 (EASE 2013).

at different locations can be compared should thus be discussed. When software constitutes a separate digital product, as is the case in the B2B case study, software development is often centralized. Accordingly, a significant proportion of value is created at the respective central locations. For the exploitation of the software, the sales function and other customer-centric, decentral activities as described in the previous paragraph need to be considered. When a firm operates a multi-sided platform, content might be user generated through the upload of any type of information. For these cases, the OECD Guidelines should elaborate on the activities of a business that processes this information in a way to contribute to the value proposition. When a business uses a digital platform, the inherent economic value is captured by the revenue of platform providers and the expected gain by using the platform of the commercial customers.²¹⁰ Transfer pricing should distinguish between these phenomena when the aim is to tax corporate profits according to existing principles. The core activities of a platform provider comprise platform and content maintenance and development. Commercial platform users compensate the platform provider via fees for service or advertising and their activity should not influence the classification of the platform provider's activities. The analysis of the platform provider's assets and functions would rely on the procedure proposed for the phenomena of data, user base and customer centric applications.

5.2.4. Transfer pricing methods

Current policy tends to point out that the transactional PSM offers the most appropriate tools to allocate profits arising from the use of intangibles.²¹¹ The PSM allocates the overall profit from a group of transactions to the involved parties. First, each involved party is compensated by a base return, which is derived from a typical market return according to the routine activities performed. The residual profit is then split across the entities based on one or several allocation keys that can be derived from market data or a hypothetical third party transaction.²¹² The PSM should be applied in particular when the underlying value chain is highly integrated and several entrepreneurial entities make unique contributions, making comparable transactions unavailable.²¹³ Digital businesses are characterized by their reliance on intangibles, integrated value chains and unique structure that are not comparable market transactions. As a consequence, the default transfer pricing method for most of the respective transactions will be the PSM as has already been suggested by Hongler and Pistone, and Kadet in his call for a simplified PSM.²¹⁴

Accordingly, the use of the PSM for digital business models should be covered in a refinement of the transfer pricing guidance. First, such a refinement should include a threshold for activities that can be compensated on a cost basis. The current line drawn by the OECD with regard to internal business operations, such as software systems, is too blurred. For the case of digital business models where internally used software can be a key asset, the respective guidelines should be more detailed. Second, guidance on how to use the method based

210. Pagani, *supra* n. 185, at 625-626.

211. OECD Guidelines, *supra* n. 43, at 94; *Actions 8-10 Final Reports*, *supra* n. 43, at 57; H-K. Kroppen et al., *Profit Split, the Future of Transfer Pricing? Arm's Length Principle and Formulary Apportionment Revisited from a Theoretical and a Practical Perspective*, in *Fundamentals of Transfer Pricing in Law and Economics*, pp. 267 and 270 (Springer 2012).

212. Kroppen et al., *supra* n. 211, at 272-273.

213. *Id.*, at 270-272.

214. J.M. Kadet, *Expansion of the Profit-Split Method: The Wave of the Future*, p. 1185 (University of Washington School of Law 2015).

on a functional analysis would meet the practical needs.²¹⁵ Again, the development of such guidance would closely relate to ongoing work by the international community. In its work on Actions 8-10, the OECD cautiously proposes the revision of the PSM with more weight on allocative factors. This approach is understood and criticized as a hidden convergence towards formulary apportionment.²¹⁶ The current guidelines on transactional PSM do not entail decision rules on how to determine the economic factors for allocating functions.²¹⁷ Yet, the determination and the weighting of the allocation factors for splitting the residual profit is at the heart of transfer pricing digital business models.

In the most recent elaboration of the revised Guidelines on the PSM, the OECD proposes more explanatory passages on when to apply the (different forms of the) PSM and how to arrive at the required decision criteria for applying the method and splitting profits with the aim to produce more output in 2017.²¹⁸ While the criticisms regarding the lack of clarity on the proposed new guidance are manifold,²¹⁹ the authors think that such additional guidance is the only way to promote the consistency of international profit taxation in the midterm. The OECD states that difficulties in application are a major drawback of the PSM and but does not propose substantially new or more detailed guidance on its application.²²⁰ This article aims to serve as a basis for such guidance on its application. The authors' analysis has detected value-creating elements in digital business models and could help in stating examples of profit splitting factors²²¹ more precisely. The authors acknowledge that there is no remedy regarding the relative importance of these elements in order to determine the profit that should be allocated respectively. Reviewing the insights from section 4., guidance should be developed on how to assess the technological infrastructure, software, data centres and activities performed by sales and customer support in terms of allocative factors. It is the authors' view that including these aspects of the value chain as cost-based profit splitting factors would be consistent with the concept of EVA as well as the arm's length principle and would circumvent problems of identifying and valuing risks and intangibles. The authors introduced EVA as a measure of value creation reflecting current costs, opportunity costs for employed capital and revenues. Most of the named aspects are directly linked to current costs. Further, opportunity costs for employed capital is either reflected by depreciation expenses related to own capital investments or current expenses for external service providers of IT infrastructure. Expenses related to sales activities would reflect revenue.²²²

215. See, e.g., Lostumbo, *supra* n. 186, at 708.

216. Schreiber, *supra* n. 48, at 117-118; Tavares & Owens, *supra* n. 167, at 590.

217. Kroppen & Rasch, *supra* n. 60, at 838.

218. OECD, *BEPS Actions 8-10 Revised Guidance on Profit Splits: Public Discussion Draft, 4 July – 5 September 2016* (OECD 2016); Lostumbo, *supra* n. 186, at 708.

219. See the consolidated document containing the comments received by the OECD, available at <https://www.oecd.org/ctp/transfer-pricing/public-comments-received-on-beps-discussion-drafts-on-attribution-of-profits-to-permanent-establishments-and-revised-guidance-on-profit-splits.htm>.

220. OECD, *supra* n. 218, at 7 and 12 et seq.

221. *Id.*, at 17-18.

222. Alternatively, one could use sales as a separate profit splitting factor since cost-based factors can introduce economic distortions due to tax rate differentials across jurisdictions. In an evaluation of the consequences of the BEPS Action Plan on investment activity, Schreiber (*supra* n. 48) criticizes the OECD's move towards a more frequent application of the PSM. If the consideration of cost factors is maintained when applying the method, investment decisions might be distorted, as business functions in the digital economy are highly mobile and might be located according to tax planning objectives. To mitigate distortive effects while not abandoning existing principles of international profit taxation, the author advises the OECD to elaborate on a PSM that is based on a revenue factor only. Despite the expected opposition in countries with smaller customer markets, a revenue-based PSM would be desirable as it counteracts the avoidance of taxation in

Rethinking transfer pricing and applying the PSM based on the EVA concept will emphasize the activities on the demand side of an enterprise that have been identified in the case studies, such as software adaptations, platform co-development, marketing and sales. As a result, the application of the PSM will lead to a stronger allocation of profits to entities operating in consumer markets, which is in line with the proposal of Hongler and Pistone while extending it in a way that the allocation of profits is based on individually determined quantitative input factors.

5.3. Coordinating tax and innovation policy

Digitalization is as seen a major driver of innovation and economic growth in modern societies.²²³ On a supranational level, it is agreed that the goal of designing tax systems that are fit for the digital age should be to promote growth and investment.²²⁴ Yet, legislators do not seem to consider tax legislation as a potential tool of economic policy to stimulate positive welfare effects of the digital economy. Current tax policy, rather, intends to mitigate unfair tax planning opportunities of large MNEs. Innovative business models in the digital economy are highly mobile. Location attractiveness is thus essential for economies to benefit from the positive spillover effects of digital and innovative businesses across all industries. Leading researchers believe “that the digital revolution is delivering an unprecedented set of tools for bolstering growth and productivity, creating wealth, and improving the world. But we can create a society of shared prosperity only if we update our policies, organizations, and research to seize the opportunities and address the challenges these tools give rise to”.²²⁵ Against this background, several supranational organizations and research institutes rank countries according to their readiness for digitalization and innovation.²²⁶ Studies find that the quality of locational factors such as broadband Internet connection and IT-related skills of the workforce differ widely across countries. Therefore, the enhancement of public goods required for a prospering digital economy, such as a powerful ICT infrastructure or a modern regulatory framework covering the collection and use of private data, should be on the political agenda. Empirical research clearly confirms that firm-level investment in innovative technologies and digitalization responds positively to a higher quality of these locational factors.²²⁷ Taxes are not considered in these studies. Consolidating several empirical studies and theoretic arguments, Schreiber argues that the proposed anti-BEPS measures are likely to have a negative impact on business investment if they are designed in the form of unilateral anti-avoidance measures.²²⁸ Broadening the tax base in the state of residence by stricter controlled foreign company legislation or limiting the deductibility of interest or royalty payments is likely to induce distortions in business decisions. Tax policy should thus not be neglected as a potential instrument affecting the evolution of digital business models. Given

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market countries and decreases investment distortions, compliance costs and the risk of double taxation. The proposal of a PSM based on a revenue factor only is elaborated in U. Schreiber & L. Fell, *International Profit Allocation, Intangibles and Sales-Based Transactional Profit Split*, 9 World Tax J. 1 (2017), Journals IBFD. The authors thank U. Schreiber and L. Fell for an earlier draft of this paper.

223. See, e.g., Brynjolfsson & McAfee, *supra* n. 1, at 71, 81.

224. OECD, *supra* n. 2, at 98.

225. E. Brynjolfsson et al., *Open Letter on the Digital Economy*, 118 MIT Technology Review 4, p. 12 (2015).

226. See, e.g., INSEAD et al., *The Global Information Technology Report 2016* (World Economic Forum 2016), available at <https://www.weforum.org/reports/the-global-information-technology-report-2016> ITU, *Measuring the Information Society Report 2015* (United Nations (ITU) 2015), available at <http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf>.

227. See Cardona et al., *supra* n. 186.

228. Schreiber, *supra* n. 48, at 102-127.

the increasing modularity in digital business models (in particular the software business) that leads to increased competition,²²⁹ the design of a tax system should account for all businesses in the digital economy equally and consistently rather than targeting monopolistic rents of large MNEs.²³⁰ Further insights from research could firstly determine the tax attractiveness of a specific location and secondly estimate to what extent digital businesses make location decisions dependent on the tax attractiveness. Based on the results, tax policy could entail effective instruments to attract digital business and should thus be aligned with future innovation policy.²³¹

The OECD concludes that the identified challenges will be significantly mitigated by other BEPS actions and that domestic tax regulations targeted at the digital economy could be introduced unilaterally if treaty obligations are met.²³² This is surprising as the OECD usually acts as an advocate of international coordination and primarily serves as a platform to mitigate cross-border conflicts in international taxation.²³³ Accordingly, several states are in the process of amending their tax code. Due to the topicality of the developments, potential consequences for states' tax revenue or the taxpayers are not yet foreseeable.²³⁴ Since digital business models are mobile and digital transactions are borderless, the introduction of unilateral reforms should be evaluated critically. If tax measures are selective regarding the type of transaction and the location of businesses, tax policy might distort corporate behaviour and the location attractiveness of the respective jurisdiction might suffer. Hungary has already experienced a loss in location attractiveness for digital businesses.²³⁵ Thus, unilateral actions can be considered ineffective in solving issues of double or non-taxation of profits arising from digital transactions. It is questionable as to whether the new legislation in the United Kingdom and Australia has had its intended effect of mitigating base erosion without negatively influencing digital business. Yet other states might follow these initiatives or introduce alternative concepts, such as the digital presence in Israel and a tax on digital advertising in India.²³⁶ This trend might lead to legal uncertainty and a higher compliance burden for taxpayers as well as the collision with treaty principles.²³⁷ Further, theory and empirical

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- 229. El Sawy & Pereira, *supra* n. 131, at 2, 4, 8 and 20.
 - 230. The OECD states that the tendency towards a monopolistic or oligopolistic market position is potentially relevant from a tax perspective, yet there is no further elaboration on how this characteristic should be reflected in the tax treatment. See OECD, *supra* n. 2, at 73 and 143.
 - 231. Cockfield et al., *supra* n. 5, at 497-498. France Stratégie, *supra* n. 164, at 19. The report advocates for targeted subsidies and tax breaks to promote digitalization within the economy.
 - 232. OECD, *supra* n. 2, at 94 and 137; Fehling, *supra* n. 24, at 799.
 - 233. For example in its explanatory statement, the OECD stresses its consensus-based approach. See OECD, *Explanatory Statement 2015 Final Reports*, p. 22 (OECD 2015); H.J. Oortwijn, *Dispute Resolution in Cross-Border Tax Matters*, 23 Eur. Taxn. 2, secs. 1.-7. (2016), Journals IBFD.
 - 234. As in Australia, income is not only taxed but the treasury also plans to apply penalties of up to 100% per cent of the tax owed and interest. Information available at <http://www.budget.gov.au/2015-16/content/glossy/tax/html/tax-05.htm>; See also Butler et al., *supra* n. 109.
 - 235. Popa, *supra* n. 4, at 40; R. Felkai, *Government Presses Ahead with Controversial Sectoral Taxation Policy through the Introduction of an Advertisement Tax*, 55 Eur. Taxn. 1, sec. 3. (2015), Journals IBFD.
 - 236. For instance, the Italian government is considering following the British approach of introducing a tax rule targeting the revenues of digital MNEs sourced domestically. See EY, *Italy considers introduction of tax on digital activities*, Global Tax Alert, pp. 1-2 (EY, 27 Apr. 2014). For recent developments in Israel, see Y. Rosensweig, *Tax Authorities Publish Draft Circular on Internet Activity of Foreign Companies*, 22 Intl. Transfer Pricing J. 4, p. 261 (2015), Journals IBFD. See also EY, *Confusion reigns in new world of digital taxation* (EY 2016), available at <http://taxinsights.ey.com/archive/archive-articles/confusion-reigns-in-new-world-of-digital-taxation.aspx>.
 - 237. Fehling, *supra* n. 24, at 802; Wagh, *supra* n. 113, at 549 et seq.; L. Cerioni, *The New "Google Tax": The "Beginning of the End" for Tax Residence as a Connecting Factor for Tax Jurisdiction?*, 55 Eur. Taxn. 5, sec. 6 (2015), Journals IBFD.

research suggest that investment in intangible assets, and thus most probably investment in digital business models as a very mobile form of businesses, will certainly be sensible to unfavourable domestic tax policy.²³⁸ Although the OECD pursues a quick implementation of measures to address the perceived tax challenges,²³⁹ any action should be evaluated in a coordinated way to ensure the competitiveness of the respective jurisdictions and an unhindered development of the international digital economy.²⁴⁰

5.4. *Interim conclusion*

The elaboration of the proposed guidance directly relates to the work on Action 1 of the OECD's BEPS project. This report has focused on the technological features of the digital economy and could thus serve as a starting point for drafting transfer pricing guidelines for digital business models. Further empirical and applied research are the precondition to achieving the stated goal of aligning taxation with value creation.²⁴¹

First, a common definition and starting point for the analysis of value drivers would be needed. Insights from management science and industrial economics suggest that novel and less physical elements should be considered for this purpose. For a sincere promotion of economic activity and value creation for tax purposes, the current reliance on legal functions and ownership has to be overcome. This necessity is inherent to the promotion of the PSM by the OECD that most probably will affect highly integrated digital business models. Considering the insights of this article, a future solution could lie in a more frequent use of some kind of formulary method. This scenario will most likely provoke further opposition since it implies a further departure from the traditional arm's length principle and makes global harmonization of these profit allocation methods indispensable to prevent double taxation and legal uncertainty.

Promoting specific transfer pricing guidance would not ring-fence the digital economy for tax purposes but directly address its novel characteristics when applying the arm's length principle equally to companies from all sorts of industries. While designing tax policy for the digital economy, policy makers should carefully consider the impact of taxes on corporate decisions. In the future, businesses may see tax policy as another economic factor when evaluating location decisions for digital ventures.

6. Conclusions

The digitalization of the economy creates challenges for the taxation of companies that have been recognized by the international community. The OECD has addressed the challenges by publishing its work on Action 1 that also refers to the impact of the other action points on these challenges. The features of the digital economy are seen as facilitators of aggressive tax planning and the overarching goal of the OECD's future tax policy is to align taxation with value creation.

238. Schreiber, *supra* n. 48, at 114.

239. OECD, *supra* n. 2, at 94.

240. Brauner, *supra* n. 6, at 15.

241. Cockfield et al., *supra* n. 5, at 490-491. A group of French economists underline the notion that tax policy should consider the manifold aspects of digitalization. As research is far from complete, no governmental action is initiated in France. See France Stratégie, *supra* n. 164.

Different approaches to address the challenges are currently discussed in the literature. While the OECD has focused on mitigating BEPS opportunities so far, several scholars have proposed changes to individual concepts of the tax system. At the same time, unilateral action has been initiated by several governments while the effects of reforms on tax revenues and corporate decisions are unclear. Even when assuming harmful tax practices are mitigated by anti-BEPS initiatives and unilateral action has its desired effect, broader challenges remain. The reason is that neither the work by the OECD nor the related literature have comprehensively dealt with digital business models and fail to provide a definition of “economic activity” or “value creation” as the new mantra of international tax policy. This is particularly critical when considering digital business models, since the digital economy is not an exclusive group of multinational IT companies that engage in tax planning. Digitalization rather entails new types of transactions and business models across all sectors. The case studies as well as insights from scientific and practical literature in this paper show that the nature of the tax challenges lies in the appropriate allocation of profits if policy makers do not pursue fundamental reforms of the international tax system.

A new and technical analysis of digital business models with an updated understanding of the term value creation based on the concept of ECA shows that, in particular, sales and software development activities performed and IT assets employed by companies in foreign markets lead to the generation of substantial revenues. However, current tax law attributes the resulting profits primarily to the jurisdiction where parent companies or regional operating centres are located and important intangible assets are legally owned. The OECD aims to overcome this primarily legal view and tax business according to value creation and economic activity. The authors argue that business model analyses based on economic characteristics that are identified relying on interdisciplinary knowledge are helpful to reach this goal. As a pragmatic and concise policy option to meet the tax challenges of the digital economy, specific guidance on the transfer pricing of digital business models could be developed. Such an approach requires an internationally coordinated revision of the common analysis of assets, functions and risks for the digital economy to produce a global standard for value-creating factors in the digital economy. The presented ideas are intended to contribute to the ongoing academic discussion and might serve for future policy considerations, in particular when designing guidance on the application of transfer pricing standards and methods.

Scientific evidence on the tax challenges is scarce. Further exploration of tax sensitivity, fiscal competition and the consequences for tax revenue regarding digital businesses is needed to respond to the tax challenges and evaluate policy options. Policy makers, with the OECD as frontrunner, have recognized that the digitalization of the economy poses serious challenges to the existing international tax framework. To fully understand and accept the challenges, more research from different fields is needed. If the OECD and the European Union adhere to their “conservative evolutionary approach”,²⁴² an updated notion of the arm’s length standard for the digital economy as well as appropriate tools for international profit allocation should be developed, as proposed in this article. The aim should be to arrive at an administrable

242. Apart from discussing the fundamental reform option of a cash-flow tax, the European Commission also argues in favour of adopting existing principles rather than introducing changes to the international tax system. See Westberg, *supra* n. 106, at 543; European Commission, *supra* n. 101, at 41. Already in relation to the work by the OECD on BEPS Action 1, a lack of recognition of the need for fundamental reforms and the commitment to discuss such options has been detected. See, e.g., Brauner, *supra* n. 6, at 17.

taxation of corporate profits that does not distort corporate decisions and paves the way for digital innovations. Such an approach could make the difference between addressing and meeting the tax challenges of the digital economy.



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