

## International

# Allocation of the Taxing Right to Payments for Cloud Computing-as-a-Service

Louise Fjord Kjærsgaard<sup>[1]</sup>

Issue: World Tax Journal, 2019 (Volume 11), No. 3

Published online: 6 August 2019

The author analyses the options available to user jurisdictions for taxing the value generated by cloud computing service providers. The focus is on the challenges of allocating the taxing right to payments for cloud computing provided as a service in the form of Infrastructure-as-a-Service, Platform-as-a-Service and Software-as-a-Service, deployed as both public and private cloud computing. More specifically, the focus is on mixed contracts, the distinction between business income and royalties and whether the provision of such services constitute a permanent establishment. The analysis is primarily based on the OECD Model Tax Convention on Income and on Capital, but some relevant derogations and national practices are also considered. Among other things, it is concluded that the user jurisdictions, pursuant to the current international tax regime, will, under certain circumstances, be precluded from taxing the income of foreign cloud computing service providers, as cloud computing service providers may be able to deliver their digital services from remote locations while structuring their business around potential withholding taxes. Against this background, value creation and the fundamental principles of legal certainty, neutrality and the ability to pay tax are discussed. Finally, it is recommended that policymakers assess the full effects of the changes made in the tenth update to the [OECD Model Tax Convention on Income and on Capital \(21 November 2017\)](#) before introducing new measures.

## 1. Introduction

The ongoing digitalization of the economy has increased rapidly over the last years and has resulted in the development of and changes in many products and services, as well as in how they are provided. This includes the increasing transformation of software products from goods to services, i.e. so-called “servitization”.<sup>[1]</sup> However, it has, for some time, been argued by legal scholars, taxpayers, policymakers and tax authorities that applying the current tax regime to the changed economy results in diverse and global challenges.<sup>[2]</sup>

The international nature of this digitalization of the economy implies that international solutions to the challenges are preferred, which, in turn, suggests that the ambitious OECD/G20 BEPS Project is the right forum for analysing these challenges. However, the challenges related to the allocation of taxing rights to payments for digital technologies go beyond base erosion and profit shifting, which are both varieties of tax avoidance. Such payments call into question not only the fundamental rationale behind the existing rules on the allocation of taxing rights, but also the consistency with which similar transactions are treated.<sup>[3]</sup>

Taking into account the fundamental nature of the challenges imposed by digitalized business models, the (lack of) result of the OECD/G20 BEPS [Action 1 Final Report](#), delivered in 2015, is not surprising. The report concluded that further work was needed in respect of, among other things, the classification of income received for the provision of cloud computing-as-a-service.<sup>[4]</sup> It was stated that the OECD will continue to monitor the digitalization of the economy in consultation with a broad range of stakeholders and that it intends to deliver a report in 2020 reflecting the outcomes of its continuing work.<sup>[5]</sup> Nonetheless, the result regarding direct taxation in the [Action 1 Final Report](#),<sup>[6]</sup> as well as the [Inclusive Framework Interim Report](#), delivered in spring 2018,<sup>[7]</sup> clearly showed that reaching agreement on how to handle these new and highly digitalized business models is an extremely challenging task. Furthermore, the OECD [Public](#)

---

\* Louise Fjord Kjærsgaard, PhD scholar in international taxation at Copenhagen Business School and Senior Associate with CORIT Advisory. The author can be contacted at [lfk.law@cbs.dk](mailto:lfk.law@cbs.dk) or [lfk@corit.dk](mailto:lfk@corit.dk).

1. OECD/G20, [Addressing the Tax Challenges of the Digital Economy – Action 1: 2015 Final Report](#), pp. 41 and 52 (OECD 2015), Primary Sources IBFD [hereinafter [Action 1 Final Report](#)]. This development is sometimes also referred to as “Something-as-a-Service” or “X-as-a-Service”.
2. See, e.g. [Action 1 Final Report](#), *supra* n. 1, at p. 98 et seq.; J.Á.G. Requena, [Tax Treaty Characterization of Income Derived from Cloud Computing and 3D Printing and the Spanish Approach](#), 46 *Intertax* 5 (2018); O. Heinsen & O. Voss, [Cloud Computing under Double Tax Treaties: A German Perspective](#), 40 *Intertax* 11 (2012); and P. Gupta, [“Cloud” – A Technological Odyssey](#), 20 *Asia-Pac. Tax Bull.* 5 (2014), *Journal Articles & Papers IBFD*.
3. See, e.g. OECD/G20, [BEPS Project Public Consultation Document – Addressing the Tax Challenges of the Digitalisation of the Economy, 13 February-6 March 2019](#), p. 13 et seq. (OECD 2019), Primary Sources IBFD [hereinafter [Public Consultation Document](#)]; OECD/G20, [Action 1 Final Report](#), *supra* n. 1, p. 97; and J. Becker & J. Englisch, [Taxing Where Value Is Created: What’s “User Involvement” Got to Do with It?](#), 47 *Intertax* 2, p. 161 et seq. (2019).
4. OECD/G20, [Action 1 Final Report](#), *supra* n. 1, at p. 138.
5. *Id.*
6. *Id.*, at ch. 10.
7. OECD/G20, [Tax Challenges Arising from Digitalisation – Inclusive Framework on BEPS: 2018 Interim Report](#) (OECD 2018), Primary Sources IBFD [hereinafter [Inclusive Framework Interim Report](#)].

Consultation Document,<sup>[8]</sup> issued on 13 February 2019, and the Programme of Work,<sup>[9]</sup> issued on 31 May 2019, lack detail on whether and to what extent consensus has been reached on the scale and nature of the challenges posed by digitalization. Given the lack of transparency regarding the positions of the project members, in combination with the complexity of amending the international tax regime, it is uncertain whether agreement can be reached, and even if it were to be reached, it is unclear how it would impact cloud computing business models. Consequently, in this article, the challenges of allocating taxing rights to payments for cloud computing-as-a-service are analysed pursuant to the current international tax regime. Moreover, as the allocation of the right to tax payments depends significantly on the factual circumstances, the analysis is based on a thorough understanding of the technology provided to users.

Against this background, the current options available to user jurisdictions for taxing the value generated by the use of cloud computing-as-a-service are analysed in this article.<sup>[10]</sup> The focus is on the possibilities for user jurisdictions to tax remuneration received by enterprises providing cloud computing services (i.e. cloud computing service providers, or CCSPs). The article begins, in section 2., by describing cloud computing-as-a-service, along with the typical service and deployment models, as this is a necessary foundation for the subsequent analysis and discussion. The subsequent analysis is then divided into two main parts.

The first main part offers a traditional legal dogmatic analysis and discusses the options available under current tax regimes for taxing the value creation of CCSPs in the user jurisdiction (see section 3.).<sup>[11]</sup> The primary aim in this part is to deduce the law as it stands *de lege lata* by gathering, systematizing and analysing relevant legal sources.<sup>[12]</sup> In this context, the focus is on analysing the definition of royalties and the concept of permanent establishment (PE) in articles 5 and 12 of the OECD Model Tax Convention on Income and on Capital (OECD Model) and its Commentaries, as many bilateral tax treaties rely on these definitions.<sup>[13]</sup> Hence, although the OECD Model is not in itself a ratified and binding treaty, it has often been of great importance for the interpretation and application of bilateral tax treaty provisions.<sup>[14]</sup>

The interpretation of treaties in general – and therefore also tax treaties – is undertaken in accordance with the [Vienna Convention on the Law of Treaties \(1969\)](#) (Vienna Convention).<sup>[15]</sup> According to article 31 of the Vienna Convention, the general rule of interpretation is that a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in the context and in light of the object and purpose of the treaty. Further, supplementary means of interpretation are given in article 32, stating that recourse may be had to the preparatory work of the treaty and the circumstances of its conclusion. This implies that interpreting a treaty requires conducting, first, a strict interpretation of the text of the treaty and its co-text and, thereafter, a purposive interpretation of the strict and broader context. In addition, article 3(2) of the OECD Model provides for a third method of interpretation, i.e. the “renvoi” method, stating that any term not defined in the OECD Model shall have the meaning that it has at that time under the tax law of the relevant domestic tax system for the purposes of the taxes to which the convention applies.<sup>[16]</sup> However, before the renvoi method can be applied, it must

- 
8. OECD/G20, *Public Consultation Document*, *supra* n. 3, supports the further work of the Inclusive Framework on BEPS on digitalization, under its mandate from the G20 finance ministers and working through its task force on the digital economy.
  9. OECD/G20, *Programme of Work to Develop a Consensus Solution to the Tax Challenges Arising from the Digitalisation of the Economy – Inclusive Framework on BEPS* (OECD 2019).
  10. Only issues concerning direct taxation will be dealt with; hence, issues in respect of VAT and similar taxes are not within the scope of this article.
  11. The legal dogmatic method is often used in studies of international tax law: see, e.g. J. Wittendorff, *Transfer Pricing and the Arm's Length Principle in International Tax Law* p. 13 et. seq. (Kluwer International Law 2010).
  12. See, e.g. E.-M. Svensson, *Boundary-Work in Legal Scholarship in Exploiting the Limits of Law: Swedish Feminism and the Challenge to Pessimism* pp. 17-50 (Å. Gunnarsson, E.-M. Svensson & M. Davies eds., Routledge 2007).
  13. [OECD Model Tax Convention on Income and on Capital](#) arts. 5 and 12 (21 Nov. 2017), Treaties & Models IBFD [hereinafter *OECD Model* (2017)]. See C.H. Lee & J.-H. Yoon, *General Report*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 23 (IFA Cahiers vol. 103B, 2018), Books IBFD, where it is stated that many countries adhere to the OECD Model to a certain extent, although the allocation of taxing rights over royalties typically differs. See also J. Sasseeville & A. Skaar, *General Report*, in *Is There a Permanent Establishment?* p. 23 et seq. (IFA Cahiers vol. 94a, 2009), Books IBFD; and P. Baker, *Double Taxation Agreements and International Tax Law: A Manual on the OECD Model Double Taxation Convention (1977)* p. 2 (Sweet and Maxwell 1991).
  14. See, e.g. US: Tax Court (USTC), 2 May 1995, *Taisei Fire and Marine Insurance Co. v. Commissioner*, 104 TC 535, 548, Case Law IBFD. Similarly, the Danish Supreme Court has, in a number of cases, referred to the OECD Model and Commentaries: see, e.g. DK: (HR) [Supreme Court], 18 Dec. 1992, *I 323/1991*, Case Law IBFD, in which the court referred to the [OECD Model Tax Convention on Income and on Capital](#) (1 Sept. 1992), Treaties & Models IBFD as the reason for its decision in assessing the taxable income of a Danish branch of a US company. See also AU: High Court of Australia (HCA), 22 Aug. 1990, *Thiel v. Federal Commissioner of Taxation*, Case Law IBFD, in which the HCA dealt with the tax treatment of profits resulting from the sale of shares under the bilateral tax treaty concluded between Australia and Switzerland in 1980. To clarify the meaning of “enterprise” within the tax treaty, the judges in this case turned to the [OECD Model Tax Convention on Income and on Capital: Commentary on Article 3](#) (11 Apr. 1977), Treaties & Models IBFD, and the [OECD Model Tax Convention on Income and on Capital: Commentary on Article 7](#) (11 Apr. 1977), Treaties & Models IBFD. The importance of the OECD Model is further discussed in R. Avi-Yonah, *International Tax as International Law*, 57 Tax L. Rev., pp. 483-501 (2004); and C. Garbarino, *Judicial Interpretation of Tax Treaties: The Use of the OECD Commentary* p. 3 (Edward Elgar 2016). Garbarino argues that OECD interpretative solutions or principles may circulate through either effective or hybrid juridical transplants activated by domestic courts.
  15. The [Vienna Convention on the Law of Treaties](#) (23 May 1969), Treaties & Models IBFD [hereinafter *Vienna Convention*] entered into force on 27 Jan. 1980. It should be noted that the importance of the Vienna Convention for the interpretation of tax treaties has been subject to discussion in the literature: see, e.g. F. Engelen, *Interpretation of Tax Treaties under International Law* pp. 425-516 (IBFD 2004), Books IBFD; U. Linderfalk & M. Hilling, *The Use of OECD Commentaries as Interpretative Aids – The Static/Ambulatory-Approaches Debate Considered from the Perspective of International Law*, 2015 Nordic Tax Journal 1, pp. 36-40 (2015); and P.J. Wattel & O. Marres, *The Legal Status of the OECD Commentary and Static or Ambulatory Interpretation of Tax Treaties*, 43 Eur. Taxn. 7, pp. 225-229 (2003), Journal Articles & Papers IBFD.
  16. Art. 3(2) *OECD Model*. There is ongoing discussion regarding which state’s domestic law art. 3(2) refers to, i.e. the domicile state, the source state or the state applying the OECD Model. However, as the analysis in this paper is of a general nature and conducted according to the OECD Model – although examples from domestic law are given to a limited extent for illustrative purposes – it is not considered necessary to engage in this discussion. Instead, see, e.g. Engelen, *supra* n. 15, at p. 473 et seq.

be determined whether the term in question is defined either in the tax treaty itself or in its co-text, based on a literal and autonomous interpretation as well as a purposive and contextual interpretation of the strict and broader context.<sup>[17]</sup>

Regarding the interpretation of tax treaties – and what should be considered relevant co-text as well as strict and broader context – the exact legal status of the Commentaries on the OECD Model has been disputed.<sup>[18]</sup> Based on the principles set out here, it has been argued that, insofar as the Commentaries fall under the co-text,<sup>[19]</sup> the strict context<sup>[20]</sup> or the broad context<sup>[21]</sup> of the tax treaty, the Commentaries should be regarded as binding by domestic courts.<sup>[22]</sup> However, some domestic courts have taken different positions, ranging from applying the Commentaries as a (broad and vague) interpretative authority in general,<sup>[23]</sup> to merely applying them as a technical guide; hence, the interpretational importance of the Commentaries may vary from this approach.<sup>[24]</sup> Nonetheless, as it is the allocation of taxing rights to payments for cloud computing-as-a-service according to the OECD Model that is analysed in this article, the Commentaries are here given interpretative value. Moreover, as there currently is no international court interpreting the provisions of the OECD Model or of bilateral tax treaties,<sup>[25]</sup> available national case law from around the world is included in the analysis. Although the case law of one jurisdiction is not binding in other jurisdictions, the widespread use of the definitions of royalties and of the PE concept set out in the OECD Model and its Commentaries means that national court decisions from other jurisdictions can be an important source of guidance for national courts.<sup>[26]</sup>

Finally, it should be stressed that, in the legal dogmatic analysis conducted in this article, it is recognized that the allocation of the right to tax payments for cloud computing provided as a service has, to some extent, already been analysed in the international tax literature.<sup>[27]</sup> However, while this literature is acknowledged, it is the aim to reduce some of the remaining uncertainties by providing a fuller understanding of the technology, as well as a thorough analysis of the relevant legal sources. Specifically, (i) the classification of payments is analysed for three different cloud computing service models, with regard to whether they are deployed as private or public cloud computing; (ii) the circumstances are analysed under which mixed contracts of cloud computing-as-a-service – as well as mixed contracts in general – should be subject to unified taxation or broken down; and (iii) it is analysed whether the provision of cloud computing-as-a-service creates PEs in the user jurisdictions ( see section 3. ).

Based on the findings reached through the legal dogmatic method, *de lege ferenda* considerations regarding whether the income of CCSPs should be taxable in the user jurisdiction are discussed in the second main part of the analysis. The allocation of taxing rights is considered according to the principles of neutrality between traditional and highly digitalized business models<sup>[28]</sup> and the ability to pay tax, meaning that the tax burden should be proportionate to the capacity of the taxpayer.<sup>[29]</sup> These criteria have been chosen because they are generally considered fundamental for evaluating tax systems, including in respect of digitalized business models.<sup>[30]</sup> Recommendations are then made for improving legal certainty, which requires the law to be clear, easily accessible and comprehensible<sup>[31]</sup> ( see section 4. ).

17. See Garbarino, *supra* n. 14, at pp. 16-25. Garbarino argues that (i) the “co-text” includes the preamble, text and annexes of the treaty, any agreement relating to the treaty and any instrument in connection with the conclusion of the treaty; (ii) the “strict context” includes any subsequent agreement or practice and any relevant rules of international law; and (iii) the “broad context” includes the preparatory work of the treaty and the circumstances of the conclusion of the treaty. However, the scope of “context” is uncertain and has been subject to discussion in the literature; see, e.g. Baker, *supra* n. 13, at pp. 23-24.
18. Engelen, *supra* n. 15, at p. 439 et seq. In particular, scholars are divided on the question as to how to fit the Commentaries into the rules of interpretation laid out in the Vienna Convention: see Linderfalk & Hilling, *supra* n. 15, at p. 40; and S. Douma & F. Engelen, *The Legal Status of the OECD Commentaries* (IBFD 2008), Books IBFD, especially the contribution therein by N. Blokker, *Skating on Thin Ice? On the Law of International Organizations and the Legal Nature of the Commentaries on the OECD Model Tax Convention* p. 24, sec. 3. For the OECD’s own view on the status and importance of the Commentaries, see *OECD Model* (2017), Introduction, paras. 15 and 29.
19. Garbarino, *supra* n. 14, at p. 28: e.g. when both contracting states expressly refer to the Commentaries as the interpretative solution or when they conclude a tax treaty using the terms of the OECD Model and have both expressly accepted the interpretation of the OECD.
20. Id.: e.g. when the interpretative solutions established in the Commentaries express international customary law or country practices accepted by both contracting states.
21. Id.: e.g. when there is proof that the Commentaries have been actively used when negotiating the issue at stake.
22. C. West, *References to the OECD Commentaries in Tax Treaties: A Steady March from “Soft” Law to “Hard” Law?*, 9 World Tax J. 1, sec. 3 (2016), Journal Articles & Papers IBFD: “Since 2000, there has been increasing reference to OECD Commentaries with respect to the interpretation of tax treaties within either the treaty itself or with reference to a protocol to the treaty.”
23. Garbarino, *supra* n. 14, at pp. 28-29.
24. West, *supra* n. 22; W. Wijnen, *Some Thoughts on Convergence and Tax Treaty Interpretation*, 67 Bull. Intl. Taxn. 11, p. 576 (2013), Journal Articles & Papers IBFD. Wijnen considers the OECD Commentaries an important aid in the interpretation of treaties, but that the importance that courts attach to it differs from country to country. Specifically, he finds that courts in Australia, Canada, the Netherlands and the United Kingdom consider the OECD Commentaries to be very important and to have persuasive value. Courts in Austria, Germany and India are found to rely consistently upon the OECD Commentaries, whereas courts in France merely apply them as a technical guide, and courts in Italy consider them to be of limited value.
25. In AT: ECJ, 12 Sept. 2017, *Case C-648/15, Republic of Austria v. Federal Republic of Germany*, Case Law IBFD, the Court of Justice of the European Union (ECJ) interpreted the provisions on interest in the bilateral tax treaty between Austria and Germany. However, this treaty contains a reference to the ECJ as an arbiter in cases of difficulty or doubt. So far, this reference is the only one of its kind in a bilateral tax treaty. See H. Verhagen, *The European Court of Justice as Court of Arbitration for Disputes under DTA’s (Case C-648/15, Austria v Federal Republic of Germany)*, Kluwer International Tax Blog (13 Sept. 2017), available at <http://kluwertaxblog.com/2017/09/13/european-court-justice-court-arbitration-disputes-dtas-case-c-64815-austria-v-federal-republic-germany/> (accessed 29 July 2019). Verhagen discusses whether the ECJ has stretched its jurisdiction too far.
26. Sasseville & Skaar, *supra* n. 13, at pp. 21-22; and Garbarino, *supra* n. 14, at p. 8. Baker, *supra* n. 13, at p. 31, states that “the OECD Model now forms such a generally accepted basis for the negotiation of treaties that courts should examine and follow the decisions of authorities in other states unless they are convinced that the other decision is incorrect”.
27. See, e.g. Requena, *supra* n. 2, at pp. 408-421; S. Wagh, *The Taxation of Digital Transactions in India: The New Equalization Levy*, 70 Bull. Intl. Taxn. 9 (2016), Journal Articles & Papers IBFD; L.F. Kjærsgaard & J.L. Jørnsgård, *Kvalifikation af betalinger for cloud computing efter OECD’s modeloverenskomst*, 2016 SKAT Udland 11 (2016); A. Bal, *The Sky’s the Limit: Cloud-Based Services in an International Perspective*, 68 Bull. Intl. Taxn. 9 (2014), Journal Articles & Papers IBFD; J. Monsenego, *May a Server Create a Permanent Establishment? Reflections on Certain Questions of Principle in Light of a Swedish Case*, 21 Intl. Transfer Pricing J. 4, p. 247 et seq. (2014), Journal Articles & Papers IBFD; Gupta, *supra* n. 2; Heinsen & Voss, *supra* n. 2, at pp. 584-592; and A. Bal, *Tax Implications of Cloud Computing: How Real Taxes Fit into Virtual Clouds*, 66 Bull. Intl. Taxn. 6 (2012), Journal Articles & Papers IBFD.
28. OECD, *Implementation of the Ottawa Taxation Framework Conditions*, p. 12 (OECD 2003) [hereinafter *Ottawa Taxation Framework*].
29. J. Englisch, *Ability to Pay* in *Principles of Law: Function, Status and Impact in EU Tax Law* (C. Brokelind ed., IBFD 2014), Books IBFD.
30. OECD/G20, *Action 1 Final Report*, *supra* n. 1, at pp. 20, 21, 25 and 26.

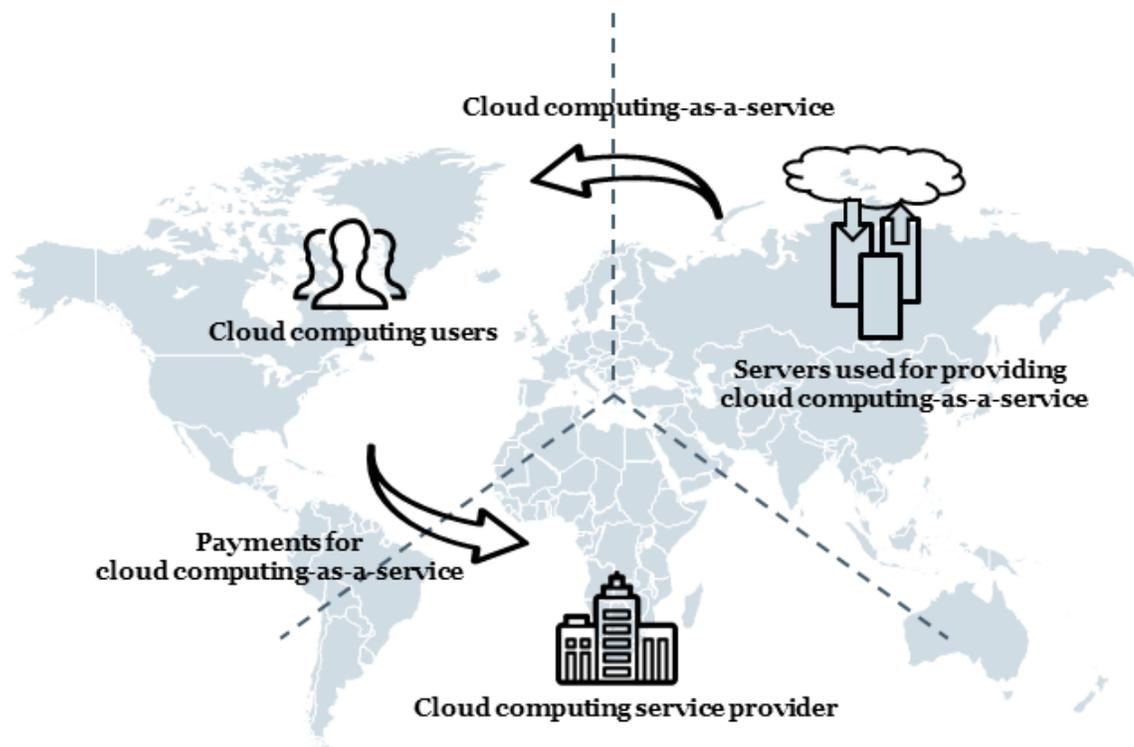
The final section of the article outlines the main conclusions ( see section 5 .).

## 2. Cloud computing

Cloud computing is considered fundamental to accelerating the digitalization of other businesses and, therefore, the entire economy. Cloud computing is often used as a cost-minimizing strategy to supply digital products and services, as the market of CCSPs is known to attain economies of scale.<sup>[32]</sup> Many businesses have recognized the effectiveness, operational excellence and innovation that cloud computing can facilitate, and, according to the OECD, the use of cloud computing has increased significantly in recent years, with approximately 50% of large businesses using cloud computing services in 2016.<sup>[33]</sup>

Figure 1 is a simple illustration of a cloud computing business model and the payments to which the taxing right should be allocated between the contracting states.

**Figure 1 – Illustration of a cloud computing business model in which servers, users and cloud computing service providers may be located in multiple jurisdictions, resulting in the provision of cloud computing services and payments across national borders.**



Despite the significance of cloud computing, there seems to be no generally accepted definition of it. However, legal scholars<sup>[34]</sup>— as well as the OECD — have previously used the following definition issued by the National Institute of Standards and Technology (NIST):

[A] model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computer resources (e.g. network, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interactions.<sup>[35]</sup>

31. D. Weber & T. Sirithaporn, *Legal Certainty, Legitimate Expectations, Legislative Drafting, Harmonization and Legal Enforcement in EU Tax Law*, in *Principles of Law: Function, Status and Impact in EU Tax Law* (C. Brokelind ed., IBFD 2014), Books IBFD; and G.T. Pagone, *Tax Uncertainty*, 33 *Melbourne U. Law Rev.* 3, p. 887 (2009), citing S. Joseph & M. Castan, *Federal Constitutional Law: A Contemporary View* p. 6 (Law Book Co. 2006) and J. Raz, *The Rule of Law and Its Virtue*, 93 *Law Quarterly Rev.* 2, pp. 198-202 (1977).

32. OECD/G20, *Inclusive Framework Interim Report*, supra n. 7, at p. 73. Economies of scale are attained when long-run average costs decrease while the quantity produced increases and input prices are fixed: see, e.g. R. Frank, *Microeconomics and Behavior*, p. 374 (8th ed., McGraw-Hill Irwin 2010). See also OECD/G20, *Action 1 Final Report*, supra n. 1, at p. 60.

33. OECD/G20, *Inclusive Framework Interim Report*, supra n. 7, at pp. 13-14.

34. See, e.g. Requena, supra n. 2, at p. 410; Heinsen & Voss, supra n. 2, at p. 584; and Gupta, supra n. 2, at p. 308.

35. P. Mell & T. Grance, *The NIST Definition of Cloud Computing* p. 2, National Institute of Standards and Technology (NIST) Special Publication 800-145 (NIST 2011).

More conceptualized, cloud computing can be said to have three layers: (i) the system layer, i.e. a virtual machine as an abstraction of physical servers; (ii) the platform layer, i.e. the visualized operating system of a server; and (iii) the application layer, i.e. web applications.<sup>[36]</sup> However, it should be noted that, in practice, cloud computing-as-a-service can vary significantly in terms of the provision of access to and control over available computer resources.

## 2.1. Cloud computing service models

Cloud computing provided as a service is typically divided into three service models: (i) Infrastructure-as-a-Service (IaaS); (ii) Platform-as-a-Service (PaaS); and (iii) Software-as-a-Service (SaaS).<sup>[37]</sup> Even though the solutions offered under each of the three service models may vary significantly, the essential difference is the user's authority and control over the three conceptualized layers.

IaaS is the pillar of cloud computing architecture and a highly efficient solution for developing PaaS and SaaS. A CCSP delivering IaaS provides fundamental computing resources (e.g. storage and networks) that make it possible for the user to deploy and run software, including operating systems and applications. Hence, the user does not control or manage the underlying cloud infrastructure, but has control over operating systems, storage systems and applications.<sup>[38]</sup> A well-known example of IaaS is Amazon EC2.

PaaS offers the user a platform and programming tool to create and modify applications created by a development language hosted by the CCSP. The user does not control or manage the underlying cloud infrastructure, operating systems and storage systems, but has control over the created applications. A well-known example of PaaS is the Google App Engine, which provides a platform on which the user can build highly scalable applications.<sup>[39]</sup>

SaaS provides the user with the capability to use the CCSP's applications through a thin interface, e.g. a web browser with a web-based email. Changes in the underlying systems are made by the CCSP, which means that the user does not have to upgrade the software to the newest version available, i.e. the accessible version is always the newest, and new features can thus be used immediately without the users having to install any software on their computer. The user does not control and manage the underlying cloud infrastructure, operational systems, storage systems or applications. A well-known example of SaaS is Google Docs, which offers the possibility to access a word processing application with which users can create documents.<sup>[40]</sup>

## 2.2. Private and public cloud computing

When using cloud computing, data and software are, for security and efficiency purposes, generally not stored on one specific server. Rather, the system copies each individual user's data and software onto multiple servers, which makes it possible to direct users' requests for resources to the physical location that best satisfies the demand. The functional overlap also ensures that, even if a problem should occur on a server, the data or software will not disappear.<sup>[41]</sup> To be more specific, individual access to the server capacity underlying the cloud depends on how the cloud computing is deployed. At the two ends of the spectrum are public and private cloud computing.

Public cloud computing gives the public ongoing access to the infrastructure through the Internet, often on a pay-per-use basis.<sup>[42]</sup> Users share the underlying servers with other users, which minimizes cost but can be problematic from a data protection point of view.<sup>[43]</sup> Conversely, private cloud computing offers a cloud infrastructure operated solely for a single user, either on or off-premise.<sup>[44]</sup> As the cloud infrastructure is accessed only by the user and authorized third parties, this way of deploying cloud computing offers more control and security for data and software stored in the cloud.<sup>[45]</sup>

Between these types of cloud computing are various combinations under so-called "hybrid cloud computing", consisting of at least one public cloud and one private cloud. The user deploys the cost-effective public cloud computing for less-sensitive data and software, and private cloud computing when there is a need for greater control and security.<sup>[46]</sup>

On the basis of this description of cloud computing-as-a-service, including the typical service and deployment models, section 3. contains an analysis of the current options available for user jurisdictions to tax the remuneration received by the CCSP for the provision of cloud computing-as-a-service. Initially, payments received for the provision of cloud computing-as-a-service will be classified according to the OECD Model (2017), and this will be followed by an analysis of whether the provision of cloud computing-as-a-service creates a PE of the CCSP under the OECD Model (2017).

---

36. S. Goyal, *Public vs Private vs Hybrid vs Community – Cloud Computing: A Critical Review*, 6 Intl. J. of Computer Network and Info. Security 3, p. 21 (2014).

37. See, e.g. id., at pp. 22-23; OECD/G20, *Action 1 Final Report*, supra n. 1, at p. 60; and Gupta, supra n. 2, at p. 308.

38. See Amazon Elastic Compute Cloud, available at <https://aws.amazon.com/ec2/> (accessed 29 July 2019); and Goyal, supra n. 36, at p. 22.

39. See Google App Engine, available at <https://cloud.google.com/appengine> (accessed 29 July 2019); and Goyal, supra n. 36, at p. 22.

40. See Google Docs, available at <https://www.google.com/docs/about/> (accessed 29 July 2019); and Goyal, supra n. 36, at pp. 22-23.

41. OECD/G20, *Action 1 Final Report*, supra n. 1, at p. 59.

42. NIST defines a public cloud as "one in which the infrastructure and computational resources that it comprises are made available to the general public over the Internet. It is owned and operated by a cloud provider delivering cloud services to consumers and, by definition, is external to the consumers' organizations": see W. Jansen & T. Grance, *Guidelines on Security and Privacy in Public Cloud Computing* p. 3, NIST Special Publication 800-144 (NIST 2011).

43. Goyal, supra n. 36, at p. 23.

44. NIST defines a private cloud as "one in which the computing environment is operated exclusively for a single organization. It may be managed by the organization or by a third party, and may be hosted within the organization's data center or outside of it. A private cloud has the potential to give the organization greater control over the infrastructure, computational resources, and cloud consumers than can a public cloud": see Jansen & Grance, supra n. 42, at p. 3.

45. Goyal, supra n. 36, at pp. 24-25.

46. Id.; Gupta, supra n. 2, at p. 309; and H. Koenig & K.C. Ho, *Taxing the Borderless Cloud within the Singapore Border*, 18 Asia-Pac. Tax Bull. 5, p. 395 (2012), Journal Articles & Papers IBFD.

## 3. Cloud Computing-as-a-Service and Current Tax Principles

The classification of payments is justified by the practical significance of the OECD Model, according to which cross-border income should be classified under a number of categories and the right to tax this income is allocated on that basis to each state.<sup>[47]</sup> It should, however, be of little surprise that challenges arise regarding the interpretation of such tax treaty provisions, which allocate tax revenue between the contracting states.

With respect to the classification of payments in digital transactions, the Technical Advisory Group on Treaty Characterisation of Electronic Commerce Payments (Technical Advisory Group) concluded, in its report from 2001,<sup>[48]</sup> that one of the most important classification issues is the distinction between business income and royalties, corresponding to articles 7 and 12 of the OECD Model, in circumstances in which all payments are received in the course of carrying on a business.<sup>[49]</sup>

As also recognized by Lee and Yoon, these challenges continue to exist and are also of importance with respect to the classification and allocation of taxing rights to payments for cloud computing-as-a-service.<sup>[50]</sup> This is based on the fact that numerous bilateral tax treaties allow the source state, i.e. the user jurisdiction, to tax royalty payments, whereas the right to tax business income in general is exclusively granted to the domicile state unless the income should be attributed to a PE located in the user jurisdiction.<sup>[51]</sup> Hence, in order to determine the possibilities for user jurisdictions to tax value generated by CCSPs, it is necessary to analyse whether payments for cloud computing-as-a-service should be classified as royalties and whether the CCSP has a taxable presence in the user jurisdiction.

Before it becomes relevant to allocate the taxing rights on payments for cloud computing-as-a-service according to a tax treaty, it must be established that the payment is taxable according to the domestic tax law of the user jurisdictions. However, the tax laws of user jurisdictions will generally impose source tax on payments in the user jurisdictions, especially if the income is classified as royalty income under domestic tax law or if it may be allocated on the basis of a taxable presence in the user jurisdiction.<sup>[52]</sup> Accordingly, the analysis in this article will, from this point on, adhere to the assumption that payments for cloud computing provided as a service will be taxable in user jurisdictions for domestic tax law purposes.

### 3.1. The classification of payments for cloud computing-as-a-service

In this section, the challenges concerning the classification of payments for IaaS, PaaS and SaaS, deployed as public or private cloud computing, will be analysed. However, as contracts for cloud computing are often very complex and usually include multiple services (e.g. access to virtual and physical servers and their infrastructure, storage systems, operational systems and applications), cloud computing contracts are typically mixed contracts. Hence, before classifying payments for cloud computing-as-a-service from a tax treaty perspective, it is necessary to analyse whether the contract – and thus, the consideration made under the contract – should be broken down or be subject to unified taxation.

#### 3.1.1. Mixed contracts

##### 3.1.1.1. The OECD Model and its Commentaries

It is stated in the [Commentary on Article 12 of the OECD Model \(2017\)](#) that payable consideration under mixed contracts should, in principle, be broken down, either according to the information given in the contract or by means of a reasonable apportionment of the whole amount of consideration pursuant to the various parts; and that, subsequently, the appropriate tax treatment, including classification, should be applied to each apportioned part.<sup>[53]</sup> However, if one part of what is being provided constitutes “by far the principal purpose of the contract” while “the other parts stipulated therein are only of an ancillary and largely unimportant character”, the treatment applicable to the principal part should be applied to the whole amount of the consideration.<sup>[54]</sup> It is argued that, as this is an exception to the general rule, the exemption should be interpreted narrowly; nonetheless, this exemption may be interpreted in various ways.<sup>[55]</sup>

47. C.H. Lee, *Impact of E-Commerce on Allocation of Tax Revenue between Developed and Developing Countries*, in *International Tax Law*, vol. 1 (R.S. Avi-Yonah ed., Edward Elgar 2016); M.J. Graetz & M.M. O’Hear, *The “Original Intent” of US International Taxation in International Tax Law*, vol. 1 (R.S. Avi-Yonah ed., Edward Elgar 2016); and H.D. Rosenbloom & S.I. Langbein, *United States Tax Treaty Policy: An Overview*, 19 *Columbia J. Transnatl. L.*, p. 359 (1981).

48. Technical Advisory Group on Treaty Characterisation of Electronic Commerce Payments, *Tax Treaty Characterisation Issues Arising from E-commerce* (1 Feb. 2001), adopted by the OECD Council in July 2002 [hereinafter *Tax Treaty Characterisation Issues*].

49. *Id.*, at p. 4.

50. See Lee & Yoon, *supra* n. 13, at p. 34, where it is stated that no national tax administration has established clear interpretative guidelines on the taxation of income from cloud computing and that, as a result, the traditional rules and theories in respect of the international taxation of services apply, potentially leading to a number of difficult problems in determining the character and source of the relevant income.

51. *Id.*, at p. 21; and H. Litwinczuk, *Poland: Payments for Copyrights of Computer Software as Royalties in Tax Treaty Case Law around the Globe* pp. 288-299 (M. Lang et al. eds., Wolters Kluwer Law & Business 2011).

52. According to Lee & Yoon, *supra* n. 13, at p. 18, every country covered in the branch reports relies on a withholding system to collect a number of taxes concerning non-residents. Further, these authors state that withholding taxes apply almost universally in international transactions classified as interest, dividends, royalties and even certain forms of business profits not attributed to PEs.

53. *OECD Model Tax Convention on Income and on Capital: Commentary on Article 12* paras. 11.6 and 17 (21 Nov. 2017), *Treaties & Models IBFD* [hereinafter *OECD Model: Commentary on Article 12* (2017)]. See also S.L. Lugo, *Chile*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* pp. 21-22 (IFA Cahiers vol. 103B, 2018), *Books IBFD*, in which the author observes that, in Ruling no. 1833 (23 May 2016), “the Chilean IRS was consulted in very broad terms on the domestic tax treatment of cloud computing”, including, inter alia, software, infrastructure and services. Even though no clear answer was provided to the broad and unclear question, the Chilean IRS would, in principle, “try to separate the different activities included under cloud computing and apply the corresponding taxation as per the legal nature of each activity separately”.

54. Paras. 11.6 and 17 *OECD Model: Commentary on Article 12* (2017).

A strict literal and autonomous interpretation of the wording included in the Commentary on Article 12 of the OECD Model (2017) seems to imply a two-step approach, according to which unified taxation should be applied only in situations in which (i) *one* part constitutes, by far, the principal purpose of the contract; and (ii) *all* of the other parts are of an ancillary and largely unimportant character, i.e. there can only be one principal purpose of a contract and *all* other parts must be ancillary and largely unimportant. The reason for such an interpretation is that contracts containing one principal purpose as well as ancillary and largely unimportant services could, in economic substance, be said to constitute just *one* service. This interpretation is further supported by the choice of wording in the Commentary on the OECD Model (2017) that unified taxation should be “applied to the *whole amount of the consideration*” (emphasis added) instead of, for example, the appropriate proportion of the consideration.<sup>[56]</sup>

In connection with this interpretation, members of the Technical Advisory Group discussed an alternative approach, proposing that the treaty classification applicable to the (one) predominant element of the payment should always be applied to the whole of that payment, i.e. the non-predominant element(s) should automatically be treated as ancillary and largely unimportant. It is recognized that an obligation to break down the payments and apply the correct classification in a mixed contract – which, for commercial purposes, should be regarded as a single transaction – may impose an unreasonable compliance burden on taxpayers and tax authorities. However, while the Technical Advisory Group invited comments on this issue, none were received, and thus, no further changes were recommended to the revised Commentaries, which implies that such an interpretation cannot find support in the current wording.<sup>[57]</sup> Hence, this more practical interpretation of the appropriate course for dealing with mixed contracts is not supported.

A second alternative – and somewhat less strict – literal interpretation of the wording of the Commentary on Article 12 of the OECD Model (2017) also seems to imply a two-step-approach, according to which mixed contracts must be broken down unless (i) the contract has an apparent principal purpose – or purposes; and (ii) the remaining parts of the contract are of both an ancillary and largely unimportant character; i.e. a contract may include several principal services, with connected ancillary and largely unimportant services (contrary to the first alternative, in which there can only be one predominant service). This interpretation seems to accept that a service can lie somewhere between the service of principal purpose and ancillary and largely unimportant services, without precluding the possibility that some ancillary and largely unimportant services might be taxed together with a service of principal purpose; which, in turn, permits considerations paid under such contracts to be broken down into fewer parts.<sup>[58]</sup> Although this interpretation may lower the administrative burden on taxpayers and tax administrations, it does not seem to find support in a strict, literal interpretation of the wording of the Commentaries and, hence, is not supported.

In conclusion, it is argued that only the strict, literal interpretation of the Commentaries should be recognized, implying that unified taxation should be applied only if a contract has *one* principal purpose and *all* other parts of the contract are ancillary and largely unimportant.

However, under either approach, it may be rather difficult in practice to distinguish the principal element from the auxiliary and largely unimportant element(s). Still, the analysis may have important practical consequences.<sup>[59]</sup> For example, if the contract is subject to unified taxation and if one contractual element, i.e. the principal part, gives rise to withholding tax, the whole payment will be subject to withholding tax; conversely, if the contract can be split, withholding tax will only apply to part of the consideration.

The Commentary on Article 12 of the OECD Model (2017) appears to provide an example of transactions including an apparent principal purpose as well as an ancillary and largely unimportant part, i.e. the acquisition of a program copy whereby the user is allowed to copy the program onto the user’s computer hard drive or for archival purposes.<sup>[60]</sup> It is stated that even though copying the program would generally require the use of a right protected by copyright law, making an archival copy is an essential step in utilizing the program. However, rights in relation to these acts of copying should, when they do no more than enable the effective operation of the program by the user, be disregarded in analysing the character of the transaction for tax purposes; this element should be regarded as an ancillary and largely unimportant part of the transaction. The argument is that it is not the protected right that is licensed to the user, but rather a product made available with the use of the protected right: the payment in such transaction is essentially for the product and not for the use of the protected right.<sup>[61]</sup> This analysis seems to be based on the understanding that if an element constitutes only a necessary practical or technical condition for carrying out the principal purpose of the contract, that element should be regarded as an ancillary and largely unimportant part of the transaction. However, no further guidance is given in the Commentary.

55. The principle that exceptions should be narrowly interpreted is emphasized by several authors in the literature: see, e.g. U. Linderfalk, *On the Interpretation of Treaties: The Modern International Law as Expressed in the 1969 Vienna Convention on the Law of Treaties* p. 286 (Springer 2007).

56. Para. 11.6 *OECD Model: Commentary on Article 12 (2017)*. Similarly, in the rationale for suggesting changes to the wording of this Commentary provided by the Technical Advisory Group in *Tax Treaty Characterisation Issues*, *supra* n. 48, at para. 47, it is stated that the exemption of unified taxation implies that “the treatment applicable to the principal part should generally be applied to the whole consideration”.

57. *Tax Treaty Characterisation Issues*, *supra* n. 48, at para. 48, stating that some members “noted that where as a commercial matter the transaction should be regarded as a single transaction, an obligation to break down the payments involved in these transactions would impose an unreasonable compliance burden on taxpayers, especially for consumer transactions that involve relatively small amounts of money”. See also Requena, *supra* n. 2, at p. 416, who observes that this mode of interpretation is possible, but agrees that it is not within the scope of the Commentaries.

58. See, e.g. Requena, *supra* n. 2, at p. 416, where the author states that “[a] contract might include various main services with their corresponding ancillary services, and each of these would be attributed the same tax characterization as the main service to which they are linked”.

59. Bal (2014), *supra* n. 27, at p. 516.

60. Para. 14 *OECD Model: Commentary on Article 12 (2017)*.

61. Id. For case law, see, e.g. IN: Income Tax Appellate Tribunal (ITAT), 22 June 2005, *Ericsson Radio Systems AB, Motorola Inc. and Nokia Networks OY v. Deputy Commissioner of Income Tax*, [2005] 95 ITD 269 (Delhi) (SB), Case Law IBFD; and IN: ITAT, 19 Dec. 2008, *Infrasoft Ltd. v. ADIT (International Tax)*, ITA 847/Del/2008, Case Law IBFD. Similar arguments are put forward in M. Valta, *Income from Royalties*, in Klaus Vogel on *Double Taxation Conventions*, pp. 968 and 1015 (4th ed., E. Reimer & A. Rust eds., Wolters Kluwer Law and Business 2015).

Because neither article 12 of the OECD Model (2017) nor its Commentary gives sufficient guidance in respect of when mixed contracts should be subject to unified taxation, it is necessary to have recourse to domestic tax law, in accordance with article 3(2) of the OECD Model (2017), for interpretative guidance. As noted in section 1. , article 3(2) provides that, in the application of the model at any time by a contracting state, any term not defined therein shall, unless the context otherwise requires, have the meaning that it has at that time under the law of that state for the purposes of the taxes to which the OECD Model (2017) applies.<sup>[62]</sup> Moreover, it is stated there that the meaning under the applicable tax laws of a state should prevail over any meaning given to the term under other laws of that state.

However, there seems to be little guidance in domestic tax laws. An indication of this is that the issue of classifying mixed contracts is addressed in the relevant volume of *Cahiers de droit fiscal international* only by the authors of the chapters on Austria, Denmark and Finland.<sup>[63]</sup> Yet, these countries do not seem to have domestic principles regarding whether to break down or integrate mixed contracts. Instead, the national branch reporters state that the most appropriate course to take with a mixed contract is to follow the Commentaries on the OECD Model (2017), which, as already stressed, in fact give little guidance in this respect.

As the legal sources provide insufficient clarification and guidance, it is relevant to analyse the related international tax literature, i.e. on mixed cloud computing contracts as well as mixed contracts unrelated to cloud computing.<sup>[64]</sup>

### 3.1.1.2. Mixed contracts in the international tax literature on cloud computing

The uncertainties emphasized in this article regarding mixed contracts have been subject to debate in the international tax literature on cloud computing-as-a-service; yet, no author has been able to provide a final conclusion, and, therefore, no generally accepted approach seems to have been agreed upon.

Bal analyses a fictive contract for SaaS (most likely based, in turn, on IaaS; see section 2.1. ) incorporating (i) access to a tax information database; (ii) the use of accounting software; (iii) the storage of business records; and (iv) support services. Bal seems to support the first of the interpretations mentioned in section 3.1.1.1. , i.e. that there can be only one principal purpose and that all other parts of the contract must be of an ancillary and largely unimportant character. Furthermore, she argues that when determining whether to apply unified taxation, the decisive factor should be whether the services are “inherently linked”. Without elaborating on whether this should be understood from a technical, practical and/or commercial perspective, Bal seems to find that, in contracts such as the one she discusses, the strongest arguments are that the listed services are typically not inherently linked, as the components could be purchased separately. On this basis, the author finds that such contracts should generally be broken down.<sup>[65]</sup>

Requena analyses a somewhat similar fictive contract combining SaaS and IaaS, containing (i) access to a commercial database hosted on the servers of the CCSP; (ii) the use of accounting software in the cloud infrastructure; (iii) a data storage service; and (iv) a technical assistance service. Requena supports the second and less strict of the interpretations mentioned in section 3.1.1.1. , i.e. that there may be more than one principal element of a contract.<sup>[66]</sup> He also seems to find that the strongest arguments lead to considering the principal purpose of the contract to be (i) access to a commercial database or (ii) the use of accounting software, and that the other services should be considered ancillary. The argument is that (iii) data storage and (iv) technical assistance are “linked” to (i) the commercial database and (ii) the accounting software, respectively, as the storage service “permits” the customer to store accounting data and information extracted from the commercial database, while the technical assistance is “clearly linked” to the software.<sup>[67]</sup>

The findings of Bal and Requena neatly illustrate that the analysis of mixed contracts is highly fact-dependent, and, in this respect, it should be acknowledged that the somewhat different results may be due to the very limited facts provided in the fictive contracts. However, if conclusions may be drawn on this basis, it seems that Bal has a general rule that mixed contracts should be broken down and made subject to the appropriate tax treatment, including classification, unless they are inherently linked – presumably from a technical and practical perspective, as the determining factor is whether the components could be purchased separately – and the non-principal services are all of an ancillary and largely unimportant character. On the other hand, Requena seems to apply a lower bar for services to be taxed together with the principal purpose(s) of a contract, arguing that associated services (e.g. data storage, which permits the customer to store accounting data and information extracted from the commercial database, as well as technical assistance linked to the accounting software) should be classified based on the principal service(s). Although it seems as though the two authors apply the term “linked” at somewhat different levels, they both nevertheless seem to focus on whether the services are technically or practically linked despite this not being explicitly mentioned as a determining factor in the Commentary on Article 12 of the OECD Model (2017). However, as previously argued, somewhat similar criteria may be deduced from the example of copying computer programs onto the users’ hardware for archival purposes. Hence, the inclusion of practical as well as technical perspectives seems relevant in the analysis of mixed contracts. The result of adopting such perspectives is likely to be that cloud computing contracts should, in practice, be broken

62. As stated in section 1. , it should be noted that the reference to “that state” in art. 3(2) OECD Model is unclear. It is not specified whether what is referred to is the domestic law of the domicile state, the domestic law of the source state or the domestic law of the state applying the OECD Model. Further, there is no agreement in the international tax literature on this matter: see e.g. Engelen, *supra* n. 15 , at p. 473 et seq.

63. V. Daurer & M. Jann, *Austria* , in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* pp. 24-25 (IFA Cahiers vol. 103B, 2018), Books IBFD; J. Bundgaard, *Denmark* , in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 20 (IFA Cahiers vol. 103B, 2018), Books IBFD; and E. Karhu, *Finland* , in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 22 (IFA Cahiers vol. 103B, 2018), Books IBFD.

64. It should be stressed that literature produced by scholars is not considered to have legal value in itself, but merely provides interpretational inspiration in the absence of valid legal sources.

65. Bal (2014), *supra* n. 27 , at p. 516. Without explicitly stating it, Bal supports the strict literal interpretation as the determining factor in her analysis as to whether the residual services may *all* be considered ancillary and largely unimportant; if not, this would justify the treatment of all of the services on an individual basis.

66. Requena, *supra* n. 2 , at p. 416.

67. *Id.*, at p. 417.

down based on information contained in the contract or by means of reasonable apportionment. This applies especially in situations in which users, technically and practically, may (de)select certain non-predominant services or purchase them separately, as this indicates that these services are not ancillary and largely unimportant. Subsequently, the apportioned parts of the consideration should receive the appropriate tax treatment, including classification.

Requena further argues that a fictive contract combining SaaS and IaaS, by providing a customer with access to online software as well as space to store data on the servers of the CCSP, could constitute two “inseparable” services (presumably similar to inherently linked services) if the data that the customer can store is a “direct consequence of access to the software in the cloud”. In this case, Requena argues that the access to the software would be the principal service, and its classification would therefore be transferable to the data storage service. Conversely, he argues that if the two services are “totally independent”, the income derived from each service should be subject to the appropriate tax treatment, including classification of each service individually.<sup>[68]</sup>

Somewhat similarly, Heinsen and Voss argue on the basis of a fictive contract that provides access to certain software applications which are hosted and used within the cloud and by which the user’s data is transmitted to the CCSP to be processed using the CCSP’s infrastructure; hence, the contract combines SaaS and IaaS. The authors argue that the nature of SaaS is that the software is operated within the IT infrastructure of the CCSP; hence, the IaaS element is inherently part of SaaS, i.e. “inherently linked”, and consequently does not represent a separate part of the agreement.<sup>[69]</sup> Conversely, Heinsen and Voss argue that if a contract provides the user with the (theoretical) option to use an IT infrastructure other than the IaaS provided by the SaaS provider, it would be questionable to consider the IaaS as ancillary and largely unimportant. Thus, the fact that the provision of the content is, in this case, not “inherently linked” to the IT infrastructure of the provider seems to suggest that there are two separable services, which should be given the appropriate tax treatment, including classification of each service individually.<sup>[70]</sup>

In determining whether mixed cloud contracts provide access to a software application as well as an IT infrastructure and space to store data from the software on the servers of the CCSP, Requena, as well as Heinsen and Voss, seem to have a strict technical perspective: if the two components may be separated technically, they constitute separate components subject to separate classification and taxation. As stated above, the Commentaries on the OECD Model (2017) also seem to adopt a technical perspective in the analysis of mixed contracts. Therefore, in contracts including only (predominant) software and storage capacity within the provider’s IT infrastructure – at least when it is not possible to store the data from the application on an IT infrastructure other than the CCSP’s – such contracts are likely to be subject to unified taxation according to the taxation of the use of the application.

### 3.1.1.3. Interpretative guidance on mixed contracts unrelated to cloud computing

Even though it goes beyond the scope of this article to provide an exhaustive analysis of all aspects of mixed contracts in general, it is relevant to investigate whether certain general principles discussed in the international tax literature in respect of mixed contracts unrelated to cloud computing may be relevant to cloud computing contracts.

In this respect, it may be noted that legal scholars have suggested that when intellectual property is transferred and some support service is necessary (e.g. the information is not put into writing or is not self-explanatory), the support service can be disregarded as ancillary, whereas additional training would constitute a separate service.<sup>[71]</sup> Accepting this suggestion implies that cloud computing contracts including (predominant) online application software, storage capacity within the CCSP’s IT infrastructure and technical support services not constituting training in the use of the software are likely to be subject to unified taxation according to the taxation of the use of the application.

Moreover, as a rough indicator, it has been suggested that the more asymmetric the overall technological level between the transferor and transferee is, the more likely it is that that support services should be regarded as separate services.<sup>[72]</sup> This seems to argue that the distinction between principal and ancillary elements should not only be based on a technological and practical perspective, but should also include a somewhat commercial perspective. However, it would seem unreasonable – and an excessive administrative burden to put on the taxpayers and tax administrations – if two identical contracts entered into between the CCSP and two unrelated users with different technological levels should not be treated alike regarding whether or not to apply unified taxation. A solution in which the more commercial perspective is still taken into account would be to assess the differences at the technological level between the CCSP and a typical user of the goods or services. This will be elaborated further below.

---

68. Id., at p. 417.

69. Heinsen & Voss, *supra* n. 2, at p. 591.

70. Id.

71. Valta, *supra* n. 61, at p. 1014. See also A. García Heredia, *Who Knows the Riddle of Know-How? Spain Becomes Entangled in the Web of Intangibles*, 45 Eur. Taxn. 3, p. 110 (2005), Journal Articles & Papers IBFD, who argues that when know-how is transferred, “technicians and experts must often visit the installation where the know-how is to be used. These technicians and experts must train the staff and educate them as to how to use the secret knowledge. This does not mean that the technical assistance is the principal part of a know-how contract, but, rather, that it is something required to use the know-how properly”.

72. Valta, *supra* n. 61, at p. 1014. See also García Heredia, *supra* n. 71, at p. 110: “It is possible that the supply of technical assistance only has an ancillary character because the transferee can arrange for the exploitation of the know-how [i.e. know-how would be the main part of the contract]. It may also, however, be the case that the transferor must provide major technical assistance because the transferee does not have sufficient technology to use the transferred know-how on his own [i.e. technical assistance may have great importance].”

Finally, formal aspects may, in some countries, be of relevance; hence, a separate charge<sup>[73]</sup> or a separate section of the contract<sup>[74]</sup> may be an indicator of separate services. However, as these formal aspects can be arranged rather freely, they should not be regarded as decisive criteria, but should merely be taken into account in the analysis.

As the above analysis of the Commentaries on the OECD Model (2017) and the international tax literature shows, there is no clear guidance on how to determine the roles played by the various services provided in a cloud computing contract. However, the analysis of mixed contracts should proceed on a case-by-case basis and be founded on information contained in the contract. The majority of legal scholars seem to find that the decisive criterion is whether the services are inherently linked or whether they may be “technically” separated. This seems to be in line with the example provided in the Commentaries on the OECD Model (2017) and, hence, this interpretation is supported.

However, instead of focusing (only) on whether the services are technically inherently linked, another option could be also to consider whether each of the services supplied under a mixed contract for a typical cloud computing user constitutes an aim in itself or, alternatively, a means of better enjoying the principal service supplied under the mixed contract. This user perspective seems to find support in the example provided in the Commentaries, where it is stated that the use of copyright is not important for classification purposes because it does not correspond to what the payment is essentially in consideration of.

Such an approach is known from the case law of the Court of Justice of the European Union with regard to VAT.<sup>[75]</sup> Specifically, the Court has stated that it follows from article 2 of the Sixth VAT Directive<sup>[76]</sup> that every transaction must normally be regarded as a distinct and independent transaction. However, when two or more services supplied to a *typical* consumer are so closely linked that they – from the perspective of a *typical* consumer – form, objectively, a single, indivisible economic supply (which it would be artificial to split), it should be regarded as a single supply for VAT purposes.<sup>[77]</sup> This would seem to imply that mixed contracts – by which the typical cloud user acquires SaaS or PaaS for the purpose of using an application or an operating system, respectively, and is not interested in or focused on how the underlying layers work – should be regarded as a single supply even when the principal purpose and ancillary services are not inherently linked from a technical perspective. Conversely, where separate services are an “add-on” and not merely a means of better enjoyment of the predominant service provided, these cannot be regarded as ancillary and largely unimportant in the contract.

However, given the differences between tax treaty law and VAT law within the European Union, as well as the differences in the wording included in the Commentaries on the OECD Model (2017) and EU case law, the legal basis for obtaining inspiration in this way is highly uncertain, which, naturally, should be taken into account. Nonetheless, in respect of cloud computing provided as a service, it can be argued that, in the typical examples of SaaS or PaaS delivered in combination with IaaS, the application or the operating system is rarely separable from the underlying cloud infrastructure. Further, it can be argued that the primary aim of entering into such a contract for the *typical* cloud user is the use of the application or the operating system, and that such a user would see IaaS as a means of better enjoying these. Similarly, limited technical support services, as an alternative to a long-winded user manual, will typically be regarded as a means of better enjoying the application or the operating system. Hence, the consideration payable under such contracts should be classified as the consideration for the application or the operating systems, i.e. the principal element of the contracts. Conversely, it can be argued that additional services, such as technical assistance services specifically requested by the user, should be treated as separate services if they go beyond what is necessary to transfer the software or data. Similarly, separate applications unrelated to the predominant application or equally essential applications should not be subject to unified taxation, and hence, the contract should be broken down into the various services.

### 3.1.1.4. Preliminary findings on mixed contracts

Summarizing the above analyses, it is argued that only the strict, literal interpretation of the Commentaries should be recognized, implying that unified taxation should be applied only if a contract has *one* principal purpose and *all* other parts of the contract are ancillary and largely unimportant. Determining the principal service as well as the ancillary and largely unimportant services under a mixed contract is complex; however, it is important because, in practice, if only some elements may give rise to withholding tax, this may result in different tax liabilities in the user jurisdiction and the state of residence of the CCSP. The regime governing mixed contracts and, consequently, most cloud computing contracts is a source of legal uncertainty for taxpayers as well as tax administrations. It has been argued that the determining factor is whether the services are “inherently linked”; however, clarification on this point would be welcomed.

73. Valta, *supra* n. 61, at p. 1014, with reference to CN: State Administration of Taxation (SAT), Notice on Certain Issues Concerning the Implementation of Articles on Royalties in Tax Treaties, *Guoshuifa* 2009-507 (14 Sept. 2009). However, as Valta also notes, A. Cai & J. Hong, *New Developments on the Taxation of Technology-Related Transactions*, 16 Asia-Pac. Tax Bull. 4, sec. 2.3. (2010), Journal Articles & Papers IBFD state that “if the services do not constitute a permanent establishment (PE) in China, the service fees shall be treated as royalties regardless of whether they are charged separately or included as part of the technology licensing fees”.

74. Heinsen & Voss, *supra* n. 2, at p. 591, with reference to DE: *Bundesfinanzhof* (BFH) [Federal Tax Court], 15 June 1983, BStBl. II 1984: 17. According to the Court, separate sections in the contract indicated that the contracting parties considered the different parts of the service to be legally independent from one another. However, as the authors note, much time has elapsed since the decision; thus, it cannot be excluded that the Court would arrive at a different conclusion today.

75. See, inter alia, UK: ECJ, 25 Feb. 1999, *Case C-349/96, Card Protection Plan Ltd v. Commissioners of Customs and Excise*, [1999] ECR I-0973, paras. 29-30, Case Law IBFD, where it is stated that “[a] service must be regarded as ancillary to a principal service if it does not constitute for customers an aim in itself, but a means of better enjoying the principal service supplied”, with reference to UK: ECJ, 22 Oct. 1998, *Joined Cases C-308/96 and C-94/97, Commissioners of Customs and Excise v. T.P. Madgett, R.M. Baldwin and the Howden Court Hotel*, [1998] ECR I-6229, para. 24, Case Law IBFD.

76. Sixth Council Directive 77/388/EEC of 17 May 1977 on the harmonization of the laws of the Member States relating to turnover taxes – Common system of value added tax: uniform basis of assessment, art. 2, OJ L145 (1977), Primary Sources IBFD.

77. See e.g. DE: ECJ, 19 July 2012, *Case C-44/11, Finanzamt Frankfurt am Main V-Höchst v. Deutsche Bank AG*, paras. 20-21, Case Law IBFD; DE: ECJ, 10 Mar. 2011, *Joined Cases C-497/09, C-499/09, C-501/09 and C-502/09, Finanzamt Burgdorf v. Manfred Bog*, para. 53, Case Law IBFD; and NL: ECJ, 19 Nov. 2009, *Case C-461/08, Don Bosco Onroerend Goed BV v. Staatssecretaris van Financiën*, para. 37, Case Law IBFD.

## 3.1.2. Royalties or business income

Once it has been determined whether the cloud computing contract should be subject to unified taxation or broken down, the relevant portions of the consideration should be classified. For the purpose of structuring this section, and in line with the conclusions drawn in section 3.1.1., the following simple scenarios of inherently linked cloud computing services will be assumed:

- SaaS contracts in the form of a word processing application, hosted as well as performed within the cloud and in which the user's data is transmitted to the CCSP to be processed using the CCSP's infrastructure, subject to unified taxation and classified according to the predominant service, i.e. access to a word processing application with which users can create documents;
- PaaS contracts in the form of a platform and operating system, hosted as well as performed within the cloud and in which the user's data is transmitted to the CCSP to be processed using the CCSP's infrastructure, subject to unified taxation and classified according to the predominant service, i.e. the use of the platform and operating system to create applications; and
- IaaS contracts in the form of storage capacity within the CCSP's virtual and physical IT infrastructure, subject to unified taxation and classified according to the predominant service, i.e. the provision of storage capacity on the CCSP's servers.

It should be recalled that the classification of payments for tax treaty purposes should be based on a thorough understanding of the specific transaction, including the specific terms of the contract concluded and, in particular, any references to intellectual property rights.<sup>[78]</sup> Hence, the classification of the payment may, in practice, vary according to these terms. Nonetheless, the most important classification issue that arises – assuming that all payments received by the CCSP are received in the course of carrying on a business – is typically the distinction between business income and royalties, corresponding to article 7 and article 12 of the OECD Model (2017), respectively.<sup>[79]</sup> In assessing this, it must be remembered that article 7 is secondary to article 12 in cases in which an enterprise does not carry on its business through a PE in the user jurisdiction. Accordingly, it must first be considered whether the payments received by the CCSP should be classified as royalties. Furthermore, it should be noted that the definition of royalties varies across bilateral tax treaties, although it is often inspired by the definition of royalties included in article 12(2) of the OECD Model (2017):

[P]ayments of any kind received as a consideration for the use of, or the right to use, any copyright of literary, artistic or scientific work including cinematograph films, any patent, trade mark, design or model, plan, secret formula or process, or for information concerning industrial, commercial or scientific experience.<sup>[80]</sup>

Even though cloud computing is not explicitly mentioned in the wording of the definition and the definition has been argued to be exhaustive, it is, according to article 3(2) of the OECD Model (2017), the domestic tax law of the state that is decisive when interpreting the scope of the intellectual rights and experiences included in the definition, unless the context requires otherwise ( see section 1. ).<sup>[81]</sup> The fact that neither the definition in article 12(2) of the OECD Model (2017) nor its Commentary explicitly includes cloud computing increases uncertainty for both taxpayers and tax authorities, although such uncertainty is not uncommon with regard to digital services.

The word “payments” used in the definition should be interpreted broadly as requiring only the fulfilment of an obligation to put funds at the disposal of the creditor in the manner required by contract or by custom.<sup>[82]</sup> Consequently, payments do not need to be monetary in order to fall within the scope of the definition; hence, data provided by users as required under the terms and conditions of a CCSP could be regarded as a “payment” and potentially classified as a royalty, as user data constitutes a benefit with monetary value for the recipient.<sup>[83]</sup> However, the classification of such payments as royalties remains subject to the cash and/or benefits being provided in return for the use of, or the right to use, the specific assets or information included in the definition in article 12(2).

### 3.1.2.1. Classification of payments for SaaS: Online application software

As discussed in section 2.1., SaaS, in simplified terms, provides the user with the capability to use a CCSP's applications through a thin interface, e.g. a web browser in the case of a web-based email. Traditionally, application software is provided by transferring a copy to the user, e.g. by downloading it onto the hardware of the users' devices. In contrast, SaaS consists of application software running within the infrastructure of the CCSP, with the users accessing the application software via the Internet, which seems to limit the user's control and disposition over the application software. Despite this difference, the Commentaries on the OECD Model (2017) concerning software appear suitable for classifying payment in return for SaaS, as they state that the method of transferring software to the user is

78. OECD Committee on Fiscal Affairs, *The Tax Treatment of Software*, sec. 27 (OECD 2000), Primary Sources IBFD; see also Bal (2014), *supra* n. 27, at p. 516.

79. The Technical Advisory Group, in *Tax Treaty Characterisation Issues*, *supra* n. 48, at p. 4, argues that this is generally the case in respect of payments for digital services.

80. Art. 12(2) *OECD Model (2017)*.

81. C.P. du Toit, *Beneficial Ownership of Royalties in Bilateral Tax Treaties* p. 36 (IBFD 1999), Books IBFD. As stated in section 1., it is the approach taken in this article that the renvoi method, as provided for in article 3(2) of the OECD Model, should only be applied if the relevant term is not defined in the tax treaty or its co-text based on a strict and autonomous interpretation, and cannot be determined based on a purposive and contextual interpretation of the strict and broader context. Furthermore, as problematized by e.g. Baker, *supra* n. 13, at pp. 24-25, the renvoi method gives no guidance as to whether it is the domestic tax law of the domicile state, the source state or the state applying the tax treaty; as a result, instances of double taxation and double non-taxation may occur.

82. Para. 8.3 *OECD Model: Commentary on Article 12 (2017)*.

83. Valta, *supra* n. 65, at p. 993. The value of data has been highly debated over the last year: see, e.g. Becker & Englisch, *supra* n. 3, at p. 161 et seq. In addition, the cashless transaction of user data in exchange for free access to online intermediary platforms is discussed in L.F. Kjærsgaard & P.K. Schmidt, *Allocation of the Right to Tax Income from Digital Intermediary Platforms: Challenges and Possibilities for Taxation in the Jurisdiction of the User*, 2018 *Nordic Journal of Commercial Law* 1 (2018).

not relevant.<sup>[84]</sup> Furthermore, both operating software and application software<sup>[85]</sup> are generally included among the intellectual property listed in the definition of royalties in article 12(2) of the OECD Model (2017), although, in accordance with article 3(2) of the OECD Model (2017) and its Commentary, this should be assessed according to the domestic copyright law of the contracting states.<sup>[86]</sup>

The classification of payments for the use of software depends on the nature of the rights that the user acquires under the particular arrangement with regard to the use and exploitation of the program, ranging from the mere use of the software to the transfer of complete rights regarding the software.<sup>[87]</sup> According to the Commentaries on the OECD Model (2017), the use of software in a manner that, in the absence of an agreement, would constitute an infringement of a copyright, would imply that any payment for such a right should be classified as a royalty.<sup>[88]</sup> However, if the rights acquired in relation to the software are limited to those necessary in order to enable the user to operate the program (which is an essential step in utilizing the software) payments in such cases should be classified as business income under article 7 of the OECD Model (2017).<sup>[89]</sup>

In relation to the use of rights protected by copyright law, SaaS, as stated above, generally does *not* imply a physical transfer, such as a download of the application software onto the user's hard drive. In other words, when users access the cloud, the underlying codes of the software are generally *not* copied onto the users' devices, as it is the (copy of the) software on the CCSP's virtual and physical servers that is being utilized by one or multiple users. Hence, in many countries, this should not constitute an infringement of a copyright, as the software is neither distributed nor reproduced.<sup>[90]</sup> In addition, the user of an application on the CCSP's virtual and physical servers generally acquires no information about the ideas and principles underlying the application, such as its logic, algorithms or programming languages or techniques. Consequently, such payments should not be classified as royalties, as they do not represent a consideration for the use of or the right to use the software; instead, SaaS should, in these situations, be regarded as the provision of a service using a copyright. Finally, the image of the graphical user interface that is reproduced on the users' devices could, in some situations, be copyright protected, but even in this case, it seems likely that the reproduction of the image should be regarded as a necessary and essential step in the utilization of the software in conjunction with the machine on which it is installed (i.e. the CCSP's virtual and physical servers) and used in no other manner.<sup>[91]</sup> On this basis, it is argued that such use of a copyright in the course of providing SaaS should be regarded as merely the means by which the digital signal is captured. According to the Commentaries on the OECD Model (2017), such uses of copyright – i.e. limited to those necessary to enable the user to operate the application – are not important for classification purposes because they do not correspond to what the payment is essentially in consideration for.<sup>[92]</sup> These payments should therefore generally be classified as business income under article 7 of the OECD Model (2017).

In line with this conclusion, the Brazilian federal tax authorities issued a ruling regarding the classification of SaaS acquired from a foreign CCSP.<sup>[93]</sup> The SaaS packages concerned were not made exclusively for Brazilian residents and could be accessed by users through the Internet, from any device, with the use of a password. One SaaS package provided protection of users against viruses, spam and other threats, while another allowed conferences, meetings and training sessions in real time. According to the Brazilian tax authorities, payments in return for these services were not to be classified as royalties, since (i) the user did not acquire the software and had no power over the computer infrastructure or any power to modify the available programs; and (ii) the user was only granted the right to remotely access the resources. Instead, the Brazilian tax authorities classified the relevant payments as service income – more specifically, as payment for a technical service (subject to withholding tax for Brazilian tax purposes) – as the functioning of the software was handled by the CCSP and the services were rendered by means of automated structures requiring maintenance and technical support using specific technical knowledge.

84. Para. 14.1 *OECD Model: Commentary on Article 12 (2017)*; and Heinsen & Voss, *supra* n. 2, at pp. 585-586.

85. Thus, in para. 12.1 *OECD Model: Commentary on Article 12 (2017)*, software is described as "a program, or series of programs, containing instructions for a computer required either for the operational processes of the computer itself (operational software) or for the accomplishment of other tasks (application software)".

86. *Id.*, at para. 12.2, observes that research into the practices of OECD member countries has established that all but one of them protects rights in computer programs either explicitly or implicitly under copyright law.

87. *Id.*

88. *Id.*, at para. 13.1.

89. *Id.*, at paras. 14, 17.2 and 17.3. The *UN Model Double Taxation Convention between Developed and Developing Countries: Commentary on Article 12* (1 Jan. 2017), Treaties & Models IBFD has adopted a broader approach with regard to the scope of the term "royalties". As also argued by D. Castro, *Taxation of Software Payments: Multi-Jurisdictional Case Law Analysis*, 73 Bull. Intl. Taxn. 3, p. 116 (2019), Journal Articles & Papers IBFD, even payments in return for the strict use of a program for personal or business use or enjoyment may constitute royalties. Hence, para. 17.4 specifies that "some members of the Committee of Experts are of the view that the payments referred to in paragraphs 14, 14.1, 14.2, 14.4, 15, 16, 17.2 and 17.3 of the OECD Commentary may constitute royalties". As also noted by Castro, these paragraphs refer to (i) general end-user licences, regardless of the method of transfer; (ii) site, enterprise and/or network licences; (iii) distribution intermediaries; (iv) the transfer of full ownership of the copyright of software; (v) the transfer of geographically limited and time-limited rights; (vi) user copyright limited to backup or operation purposes; and (vii) user copyright limited to download for own use or enjoyment.

90. L. Determann, *What Happens in the Cloud: Software as a Service and Copyrights*, 29 Berkeley Tech. L. J. 2, pp. 1105-1108 (2015) and T.D. Fuller & B.W. Reynolds, *United States*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* pp. 25-27 (IFA Cahiers vol. 103B, 2018), Books IBFD, state that a normal Software-as-a-Service (SaaS) transaction conveys to the customer no legally protectable rights to the software itself, nor any rights to the servers on which the software runs.

91. Under EU copyright law, only the creative elements of computer programs are protected, i.e. not functionality, technical interfaces, programming language or data file formats: see Council Directive 2001/29/EC of 22 May 2001 on the Harmonisation of Certain Aspects of Copyright and Related Rights in the Information Society, art. 1(2), OJ L167 (2001); and also, e.g. UK: ECJ, 2 May 2012, Case C-406/10, *SAS Institute Inc. v. World Programming Ltd*, para. 46, in which the Court stated that "neither the functionality of a computer program nor the programming language and the format of data files used in a computer program in order to exploit certain of its functions constitute a form of expression of that program and, as such, are not protected by copyright in computer programs for the purposes of that directive". US copyright law contains somewhat similar provisions, pursuant to 17 USC § 102(a)-(b). See also Determann, *supra* n. 93, at p. 1114.

92. Paras. 17.2 and 17.3 *OECD Model: Commentary on Article 12 (2017)*.

93. BR: RFB *Solução de Consulta* [Tax Ruling] 2017-191 (23 Mar. 2017). See also M. Formenti & E. Trouw, *Brazil*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 22 (IFA Cahiers vol. 103B, 2018), Books IBFD.

Based on the classification of payments for SaaS as payments for technical services in this Brazilian case, it is argued in this article that special consideration should be made in respect to the classification of payments for SaaS for tax treaty purposes if the applicable tax treaty (typically with a developing country) includes, in its definition of royalties, “payments [...] for the provision of technical services or technical assistance”.<sup>[94]</sup> Such services, however, are not treated as royalties under article 12 of the OECD Model (2017) and, consequently, the Commentaries do not provide any guidance on which services should be regarded as technical services or technical assistance.

Despite divergent domestic practice, it has been argued in the international tax literature that there is no discernible or practical difference between technical services and technical assistance.<sup>[95]</sup> Different from the provision of know-how, the provider of technical services or technical assistance uses special knowledge in the provision of services but does not transfer this special knowledge to the recipient. Whether “technical” should be understood strictly in the context of know-how, industrial intellectual property and secrets or as having a wider meaning is debated in the international tax literature.<sup>[96]</sup> However, it would seem to be in line with the general rules of interpretation in the Vienna Convention and article 3(2) of the OECD Model (2017) to interpret “technical” in the context of the overall definition of royalties in article 12(2) of the OECD Model (2017) prior to making reference to national law as per the renvoi method, and hence not to allow payments for a wider form of technical services to be classified as royalties.<sup>[97]</sup> In other words, as the other elements included in the same definition indicate that the payment has to be for something “extraordinary” – i.e. special knowledge and experience unrevealed to the general public, and not familiar skills – a similar requirement should apply in respect of “technical”. Nonetheless, on this basis, it cannot be precluded that some payments for SaaS may be classified as technical services – and thereby as royalties – under bilateral tax treaties that include technical services or technical assistance in their definition of royalties.

Consequently, taking the Commentaries on the OECD Model (2017) as a source of legal interpretative value, most payments for SaaS should not be classified as royalties under article 12 of the OECD Model (2017), but instead as business income under article 7, as the consideration will generally not be for the right to use the copyright, but for a service provided through the use of a copyright. However, payments for SaaS provided by use of special knowledge, classified as know-how, could fall within the scope of definitions of royalties that include payments for technical services or technical assistance. As stated, such definitions are found primarily in tax treaties with developing countries.

### 3.1.2.2. Classification of payments for PaaS – operating systems

As discussed in section 2.1., PaaS offers the user a platform and programming tool that supports the creation and use of application codes with whatever capabilities may be required by the user. Hence, PaaS is targeted primarily at application developers and consists, inter alia, of diverse application software infrastructure (middleware) capabilities and operating systems.

In a similar manner to SaaS, the platform and programming tools are run within the infrastructure of the CCSP and users access the platform via the Internet, thus limiting the users’ control and disposition of the programming tools and the operating system. However, as the components in PaaS also are forms of software, i.e. operational software, the Commentaries on the OECD Model (2017) concerning software seem suitable for classifying payments for PaaS as well. This is based on the same arguments applied in the case of SaaS, i.e. that the method of transferring software to the user is, according to the Commentaries on the OECD Model (2017), not relevant.<sup>[98]</sup> Hence, if the use of platform and programming tools in the absence of an agreement would constitute an infringement of a copyright, any payment in consideration for such use should, as a starting point, be classified as a royalty. However, as the platform and programming tools are run within the infrastructure of the CCSP and the users access the platform via the Internet, no copy of the platform and programming tools is made. In addition, the users of the platform and programming tools on the CCSP’s virtual and physical servers acquire little or no information about the ideas and principles underlying the platform and programming tools, such as their logic, algorithms or programming languages or techniques. Finally, the image of the graphical user interface reproduced on the users’ computers is unlikely to be copyright protected.<sup>[99]</sup>

It should be noted that a majority of the members of the Committee on Fiscal Affairs found that “the right to use”, as referred to in the definition of royalties in article 12(2) of the OECD Model (2017), should be interpreted narrowly and limited to use by an acquirer who seeks to “exploit commercially the intellectual property of another”.<sup>[100]</sup> Hence, if PaaS is received for the purpose of developing an application that is then commercialized (e.g. as SaaS for internal business purposes) or provided to third-party users, it could be argued that the payment for PaaS should be classified as royalty income.<sup>[101]</sup> However, as it seems not to be the intellectual property itself that is

94. Valta, *supra* n. 61, at p. 1018, states that such clauses can be found in the treaty practice of, inter alia, Argentina, Brazil, Gabon, Ivory Coast, the Philippines, Thailand, Tunisia and Vietnam.

95. M.S. Screpante, *Cross-Border Software Transactions from a Technology Importing Country Perspective: The Case of the Argentina-Germany Income and Capital Tax Treaty (1978)*, 67 Bull. Intl. Taxn. 9 (2013), Journal Articles & Papers IBFD argues for a differentiation between technical services and technical assistance. For the opposite view, see Valta, *supra* n. 61, at p. 1018.

96. See Valta, *supra* n. 61, at pp. 1019-1021, where the author summarizes and discusses the various views.

97. See *id.*, at pp. 1020-1021, where the author argues similarly. However, A.P. Dourado et al., *General Definitions*, in Klaus Vogel on *Double Taxation Convention* pp. 211-213 (4th ed., E. Reimer & A. Rust eds., Wolters Kluwer Law and Business 2015) argue against a systematic preference for interpretation from the context over interpretation by reference to national law.

98. Para. 14.1 *OECD Model: Commentary on Article 12 (2017)*; and Heinsen & Voss, *supra* n. 2, at pp. 585-586.

99. Under both EU and US copyright law, only the creative elements of computer programs are protected, i.e. not functionality, technical interfaces, programming language, or data file formats; see *supra* n. 91.

100. OECD Committee on Fiscal Affairs, *supra* n. 78, at sec. 44.

101. See, e.g. Daurer & Jann, *supra* n. 63, at pp. 24-25, who state that, from an Austrian perspective, payments for digital content used for private/non-business purposes are usually not classified as royalties, but that a commercial exploitation could change this. Similarly, D. Schäfer, *Singapore*, in *Withholding tax in the Era of BEPS, CIVs and the Digital Economy* p. 20 (IFA Cahiers vol. 103B, 2018), Books IBFD, states that it is relevant to know whether cloud computing is used commercially by the

commercially exploited by the acquirer of PaaS, but instead the services provided using the intellectual property, it may be concluded that whether PaaS is acquired for commercial purposes or for personal purposes should generally not influence the classification of payments for PaaS. Furthermore, it seems untenable that the classification of identical payments from different users, or from the same user over time, should vary depending on whether the service is or is not commercially exploited by the user.

Accordingly, considering the Commentaries on the OECD Model (2017) as a source of legal interpretative value, payments in these situations should probably not be classified as royalties under article 12 of the OECD Model (2017), as they do not represent consideration for the use of or the right to use. Instead, PaaS should generally be treated as the provision of a service using a copyright, and hence classified as business income under article 7 of the OECD Model (2017). However, as also stated in relation to SaaS, special attention should be paid to whether the applicable tax treaty includes technical services or technical assistance within its definition of royalties and whether the technical knowledge used by the CCSP to deliver PaaS may be regarded as knowledge within the meaning of the term as included in article 12 of the OECD Model (2017).

### 3.1.2.3. Classification of payments for IaaS: Storage capacity within the CCSP's IT infrastructure

As discussed in section 2.1., IaaS, as the main pillar of cloud computing, provides the user with storage capacity within the CCSP's IT infrastructure, consisting of virtual and physical servers. A virtual server (also called a virtual machine) is software or an operating system that simulates and behaves like an actual server. Multiple virtual machines can run simultaneously on the same physical computer, and the virtual hardware is mapped to the real hardware on the physical machine, which saves costs by reducing the need for physical hardware systems, associated maintenance costs and power, as well as cooling demand. Hence, the storage capacity has a virtual aspect, i.e. the software or operating system, as well as a physical aspect, i.e. the computer hardware, servers, etc.<sup>[102]</sup> However, as the storage capacity ultimately relies on the physical server, this is treated as the principal element for the purpose of classifying the corresponding payment.

Payment for the use of computer hardware and servers seems not to fall within the definition of royalties included in article 12 of the OECD Model (2017) as such physical assets cannot be regarded as know-how, industrial intellectual property or industrial secrets. In addition, transactions concerning server capacity as a service are not addressed further in the Commentaries on the OECD Model (2017). Consequently, any such payments should be classified as business income under article 7 of the OECD Model (2017), as long as the full rights and ownership of the servers are not transferred to the users, as this will generally imply classification as capital gains under article 13 of the OECD Model (2017).

However, the OECD Model, as it read on 11 April 1977, also included, in its definition of royalties, "payments [...] for the use, or the right to use, industrial, commercial or scientific equipment" (ICS equipment), i.e. certain physical assets, and some bilateral tax treaties still include this older definition.<sup>[103]</sup> Neither the definition of royalties in the OECD Model (1977) nor the Commentaries on the OECD Models (1977) and (2017) elaborate on what should be regarded as ICS equipment.

Nevertheless, before reference is made to national law, it seems to be in accordance with the general rule of interpretation in the Vienna Convention and in article 3(2) of the OECD Model (2017) to interpret "industrial, commercial or scientific" in the context of the overall definition of royalties; and, hence, to allow to be classified as royalties under article 12(2) of the OECD Model (2017) only those payments for the use of or the right to use physical assets applied in a "process" that has practical application in the operation of an enterprise and from which an economic benefit can be derived.<sup>[104]</sup> On this basis, it is argued in this article that servers may be regarded as ICS equipment.

The Commentaries on the OECD Model (2017) include some interpretative guidance on the distinction between payments for the use of ICS equipment and payments for the provision of services using ICS equipment.<sup>[105]</sup> The examples provided in the Commentaries are not related to servers, but rather, inter alia, to satellite operators' transponder leasings. These, despite their differences, are argued here to have essential similarities with servers, e.g. by providing capacity on ICS equipment-as-a-service. The similarities suggest that the principles for classifying payments for the use of such ICS equipment may be applicable to the classification of payments for the use of servers and hardware provided as IaaS.<sup>[106]</sup>

---

user. Schäfer illustrates this position with a case discussed by the Singaporean tax authorities involving the use of portals such as Bloomberg or Lexis-Nexis, in which the tax authorities state that if the information is used internally as background information, it will not be considered "owned" by the Singapore user and the payment should not be subject to withholding tax (which likely refers to the payment not being classified as royalties). If, on the other hand, the information is used for commercial purposes, e.g. by quoting this information in reports to clients, the payment will indeed be subject to withholding tax (and therefore likely classified as royalties).

<sup>102.</sup> OECD/G20, *Inclusive Framework Interim Report*, *supra* n. 7, at pp. 72-73.

<sup>103.</sup> A. Mehta, *International Taxation of Cross-Border Leasing Income* p. 149 (IBFD 2005), Books IBFD, found that 44 out of the 64 bilateral tax treaties analysed included industrial, commercial or scientific (ICS) equipment. Furthermore, as stated in the Reservations on art. 12 OECD Model (2017), (i) Greece reserves the right to include the payments referred to in paragraphs 9.1, 9.2 and 9.3 in the definition of royalties (para. 38); (ii) Canada, Chile, the Czech Republic, Latvia and the Slovak Republic reserve the right to add the words "for the use of, or the right to use, industrial, commercial or scientific equipment" to the definition of royalties (para. 40); (iii) Greece, Italy and Mexico reserve the right to continue to include income derived from the leasing of ICS equipment and of containers in the definition of royalties (para. 41); (iv) Poland reserves the right to include income derived from the use of or the right to use ICS equipment and containers in the definition of "royalties" (para. 41.1.); (v) New Zealand reserves the right to tax payments at source from the leasing of ICS equipment and containers (para. 42); and (vi) Turkey reserves the right to tax income from the leasing of ICS equipment at source (para. 46).

<sup>104.</sup> See para. 11 *OECD Model: Commentary on Article 12 (2017)*, in which a similar requirement is specified in respect of payments received as consideration for information concerning industrial, commercial or scientific experience, i.e. know-how. See further Valta, *supra* n. 61, at 1020-1021; and Dourado et al., *supra* n. 97.

<sup>105.</sup> Paras. 9-9.3 *OECD Model: Commentary on Article 12 (2017)*.

<sup>106.</sup> See a similar application of the Commentaries regarding ICS equipment in, e.g. H.J. Kim & S. Yang, *Korea, Republic of*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 15 (IFA Cahiers vol. 103B, 2018), Books IBFD, where it is stated that, in the absence of clear guidelines or precedents addressing the particular issue of classifying income from cloud computing-as-a-service, academic discussions suggest that payments for Infrastructure-as-a-Service (IaaS), as opposed to SaaS or Platform-as-a-Service (PaaS), could reasonably be viewed as royalties inasmuch as they involve the use of or the right to use ICS equipment; Wagh, *supra* n. 27; Valta, *supra* n. 61, at pp. 999-1000; and Kjærsgaard & Jørnsgård, *supra* n. 27.

It is stated in the Commentaries that classification of the payment for the use of ICS equipment depends, to a large extent, on the relevant contractual arrangements. Furthermore, it is stated that such payments would normally be classified as business income under article 7 of the OECD Model (2017), as the user typically does not acquire physical possession of or have access to the transponder and because the satellite would typically be operated by the provider. If, on the other hand, the user may operate the satellite, payments to the satellite owner would likely be classified as royalties under article 12.<sup>[107]</sup>

The Technical Advisory Group has analysed whether transactions that involve computer equipment (hardware) should be treated as transactions involving the use of ICS equipment, – which, if so, would imply that the corresponding payments should be classified as royalty payments under tax treaties, including the right to use ICS equipment. The group found that the following factors indicate that the payment should be classified as a royalty payment:<sup>[108]</sup>

- the user is in physical possession of the hardware;
- the user controls the hardware;
- the user has a significant economic or possessive interest in the hardware;
- the provider does not bear any risk of substantially diminished income or substantially increased expenditure if there is non-performance under the contract;
- the provider does not use the hardware concurrently to provide significant services to entities unrelated to the user; and
- the total payment does not substantially exceed the rental value of the hardware for the contract period.

Although this is a non-exclusive list of factors and some of these factors may not be relevant in particular cases, the Technical Advisory Group concluded that they imply that payments for hardware should, in general, be classified as business income as opposed to royalties. Specifically, the group found that in the case of data warehousing, the provider typically (i) uses hardware to provide data warehousing services to users; (ii) owns and maintains the hardware on which the data is stored; (iii) provides many users with access to the same hardware; and (iv) has the right to remove and replace hardware at will. The users have no possession of or control over the hardware and will therefore utilize the hardware concurrently with other users.<sup>[109]</sup>

The report of the Technical Advisory Group is not in itself a valid legal source, and not all of the listed factors are to be found in the Commentaries on the OECD Model (2017). Nevertheless, it is worth noting that physical possession of the transponder and complete authority over the satellite are of importance for classifying the payment according to the Commentaries.<sup>[110]</sup> It is uncertain whether and to what extent, the remaining factors are of relevance for classification purposes: it could be argued that, as only some of the factors are included in examples, only these should be considered relevant; alternatively, it could be argued that the Commentaries do not set out to list all relevant factors, but only to provide examples of relevant factors in the context of transponders and satellites. The latter view seems to have been taken by, inter alia, the Supreme Court of the Republic of Korea, in a case focused on whether the use of a telecom satellite and an Internet network fell within the scope of the use of or the right to use ICS equipment. The Supreme Court classified the payments as business profit after analysing (i) the physical occupation and maintenance of the equipment; (ii) the control and operation of the equipment; (iii) the direct use of the equipment; (iv) whether users were allowed, under the relevant agreement, exclusive use of the equipment; and (v) whether there was effective lease of equipment.<sup>[111]</sup> On this basis, it is here argued that all the listed factors may be of some relevance when determining whether a payment is for *the right to use* ICS equipment.

When IaaS is provided, it is, in simplified terms, access to the server capacity of the physical servers that is provided. Users' purposes for purchasing IaaS may vary, but they are likely to include commercial purposes. Moreover, the capacity is likely to be applied to a process of an industrial or commercial character that has practical application in an operation and from which an economic benefit can be derived. Thus, the physical servers on which capacity is provided through IaaS appear to fulfil the conditions of being ICS equipment as envisaged in the Commentaries on the OECD Model (2017).<sup>[112]</sup> As for whether the user should be considered to be acquiring either a right to use the servers or a service supplied using the servers, it may be relevant to distinguish between IaaS deployed as private cloud computing and IaaS deployed as public cloud computing, as this determines who has access to the server capacity.

In cloud computing, as discussed in section 2.2. of this article, data and software are generally not stored on one specific server. Rather, for security and efficiency purposes, the system copies each individual user's data and software onto multiple servers and directs each user's requests for resources to the physical location that best satisfies a given demand.<sup>[113]</sup> It should also be recalled that public cloud

---

<sup>107.</sup> Para. 9.1. *OECD Model: Commentary on Article 12 (2017)*.

<sup>108.</sup> *Tax Treaty Characterisation Issues*, *supra* n. 48, at pp. 11-12.

<sup>109.</sup> *Id.*, at p. 13.

<sup>110.</sup> Para. 9.1 *OECD Model: Commentary on Article 12 (2017)*.

<sup>111.</sup> See Kim & Yang, *supra* n. 106, at p. 15, summarizing KR: Supreme Court, 18 Jan. 2008, 2005Du16475.

<sup>112.</sup> T. Çakmak, *Turkey*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 29 (IFA Cahiers vol. 103B, 2018), Books IBFD: payments for continual use of computer software or digital content, such as cloud computing or the use of a foreign server, are treated by the Turkish authorities as payments for the use of or the right to use ICS equipment, and hence as royalties. See also B. Miles & C. Plunket, *New Zealand*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 23 (IFA Cahiers vol. 103B, 2018), Books IBFD, in which the authors state that the Inland Revenue Department takes the view that, while software itself may not be "equipment", it can be part of equipment if it is an integral part of "industrial, commercial or scientific equipment", i.e. if the software is necessary for the use of the underlying equipment.

<sup>113.</sup> OECD/G20, *Action 1 Final Report*, *supra* n. 1, at p. 59.

computing gives multiple users ongoing access to the IT infrastructure, often on a pay-per-use basis.<sup>[114]</sup> Hence, payments for use of the servers are typically lower than the full rental value of the servers. Moreover, the user of IaaS deployed as public cloud computing is not in physical possession of the servers and does not have control or full authority over specific servers. Therefore, payments for IaaS deployed as public cloud computing should most likely be classified as business income under article 7 of the OECD Model (2017) — regardless of whether or not the definition of royalties in the applicable tax treaty includes payments for the right to use ICS equipment.

IaaS deployed as private cloud computing offers a cloud infrastructure operated solely for a specific user, either on or off-premises.<sup>[115]</sup> Hence, the user obtains sole access to the servers, typically with the purpose of making the storage of data more secure. The payment is thus remuneration for the full and exclusive right to use the servers, and, if on-premises, also for the physical possession of them, but not for full control over the servers, as they are generally administered and updated by the CCSP. Thus, the acquisition of full and exclusive use of the servers — especially if these are on-premises — offers a strong argument for classifying payments for IaaS deployed as private cloud computing as royalty payments under article 12 of the OECD Model (2017), if the applicable definition of royalties includes the right to use ICS equipment. If, however, the servers are off-premises, i.e. the user is not in physical possession of the servers, the classification is more uncertain.

As also noted in the OECD Commentaries, transactions involving digital technologies may occasionally impose challenges regarding the boundaries between article 13 of the OECD Model (2017), regarding capital gains, and article 12, regarding royalties, in situations in which an exclusive right is acquired.<sup>[116]</sup> Capital gains are not defined in detail in article 13 of the OECD Model (2017) or its Commentaries. However, it is stated in the Commentaries that the words “alienation of property” are “used to cover in particular capital gains resulting from the sale or exchange of property and also from a partial alienation, the expropriation, the transfer to a company in exchange for stock, the sale of a right, the gift and even the passing of property on death”.<sup>[117]</sup> Regarding ICS equipment, the [Commentary on Article 12 of the OECD Model \(1977\)](#) states that, when contracts combine the hiring element and the sale element, it may prove difficult to determine their true legal substance. However, it adds that payments under credit sale agreements should not be regarded as royalty payments, as the sale element is the paramount use, even though the transfer of ownership is dependent upon the payment of the last instalment. Conversely, the principal purpose of leasing contracts is normally that of hire, even if the user, during the term of a contract, has the right to opt to purchase the equipment in question outright; hence, such payments should be classified as royalty payments up to the date that any such right to purchase is exercised.<sup>[118]</sup> In addition, it is stated in the Commentaries on the OECD Model (2017) that the form of the consideration, e.g. instalments or payments related to a contingency, does not alter the essential character of the transaction.<sup>[119]</sup> These unspecific guidelines leave room for boundaries to be delimited in a variety of ways when “alienation” is, in accordance with the *renvoi* method, interpreted according to domestic tax law.<sup>[120]</sup> Therefore, it cannot be precluded that some payments for IaaS, deployed as private cloud computing on-premises, might be classified as capital gains under article 13 of the OECD Model (2017), on the basis that significant rights typically associated with the legal ownership of an asset have been granted to the user. However, as one of the benefits of cloud computing, as compared to traditional computing, is that the user does not have to invest in hardware (as it is instead the CCSP’s hardware that is being used), this is unlikely to be the case in the majority of cloud computing contracts.

### 3.1.2.4. Preliminary findings on the classification of payments for SaaS, PaaS and IaaS

In conclusion, most payments for cloud computing-as-a-service in the form of SaaS, PaaS and IaaS, deployed as either public or private cloud computing, should be classified as business income under article 7 of the OECD Model (2017), and therefore taxable only in the domicile state of the CCSP, unless the CCSP has a PE in the user jurisdiction.<sup>[121]</sup> This is based on the position that the Commentaries on

114. See Jansen & Grance, *supra* n. 42, with the definition of public cloud computing quoted there.

115. *Id.*, with the definition of private cloud computing quoted *supra* n. 44.

116. Para. 8.2. *OECD Model: Commentary on Article 12 (2017)*.

117. *OECD Model Tax Convention on Income and on Capital: Commentary on Article 13*, para. 5 (21 Nov. 2017), Treaties & Models IBFD.

118. *OECD Model Tax Convention on Income and on Capital: Commentary on Article 12*, para. 9 (19 Oct. 1977), Treaties & Models IBFD.

119. Para. 8.2. *OECD Model: Commentary on Article 12 (2017)*.

120. See, e.g. Valta, *supra* n. 61, at pp. 997-998, who observes that, in the United States, the indicators of a conditional sale are that “a) parts of the payment are attributed to an equity of the lessee; b) the lessee is contractually obliged to an amount of ‘rental’ payments that also lead to the acquisition of the title; c) the ‘leasing rates’ are so high at the beginning that they constitute an inordinately large proportion of the amount needed to secure the acquisition; d) ‘rental’ payments materially exceed the current fair rental value and thus compensate for more than just the use of the property; e) the price for a purchase is nominal in relation to the value of the property at the time when the option may be exercised, as determined at the time of the entering into the original agreement, or a relatively small amount in comparison to the total payments under the contract up to that point; and f) some portion of the periodic payments is specifically designated as interest or is otherwise readily recognizable as the equivalent of interest.” In addition, according to D.P. Sengupta, *India*, in *Capital Gains Taxation: A Comparative Analysis of Key Issues* pp. 214-215 (M. Littlewood & C. Elliffe eds., Edward Elgar 2017), in India, the transfer of an asset includes, *inter alia*, the sale, exchange, relinquishment and extinguishment of any rights. In New Zealand, long-term lease agreements (e.g. of 12 years, as in NZ: Privy Council (PC), 29 Oct. 1998, *Commissioner of Inland Revenue v. Wattie*, [1999] 1 NZLR 529) were previously considered capital gains; however, this changed in 2012, and even long-term lease contracts are now considered income rather than capital gains: see S. Griffiths, *New Zealand*, in *Capital Gains Taxation: A Comparative Analysis of Key Issues* pp. 302-303 (M. Littlewood & C. Elliffe eds., Edward Elgar 2017). In South Africa, disposal of an asset is any event, act, forbearance or operation of law that results in the creation, variation, transfer or extinction of an asset: see J. Roeleveld, *South Africa*, in *Capital Gains Taxation: A Comparative Analysis of Key Issues* p. 319 (M. Littlewood & C. Elliffe eds., 2017). Within Danish law, “ownership” is characterized by a series of powers, in particular the rights to (i) possess and use an asset; (ii) have the asset at one’s disposal in order to change or dispose of it; (iii) exclude others from using the asset; and (iv) request the return of the asset from others who do not have the right to temporarily possess it. These are all essential powers that are connected to property law; see, e.g. W.E. von Eyben, *Formuerettigheder: Indhold, Beskyttelse, Overdragelse* p. 24 (Jurist-Forbundets Forlag 1972). As an example of the contrary (in a case in which ownership was not transferred), see DK: HR, 8 Dec. 2003, SKM2003.586.HR, in which the Court stated that the right to use copyrighted films was granted only for a limited time and hence could not be classified as a transfer of ownership. For a commentary on the case, see P.K. Schmidt & J. Bundgaard, *Beskatning af immaterielle aktiver*, in *Immaterielretlig crossover* p. 91 (B. von Ryberg, C. Kragelund & M. Lavesen eds., Gjellerup/Gads Forlag 2015).

121. See L. Quarantino, *Italy*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* pp. 27-28 (IFA Cahiers vol. 103B, 2018), Books IBFD, in which the author argues that payments for the continual use of computer software via cloud computing should be treated as consideration for the right to view/display the content, i.e. as royalties. As there are no public rulings or tax court decisions available on the matter, the author refers to *Tax Treaty Characterisation Issues*, *supra* n. 48, at

the OECD Model are a valid source with legal interpretative value, as well as on the basis that, in the majority of transactions, payment is not consideration for the right to use commercial or industrial intellectual property rights or assets included in the definition of “royalties”, but instead consideration for a service provided using such commercial or industrial intellectual property rights or assets. However, special attention should be paid to whether the applicable tax treaty includes technical services or technical assistance within its definition of royalties and whether the technical knowledge used by the CCSP may be considered know-how. Similarly, special attention should be paid to whether the applicable tax treaty includes ICS equipment and whether IaaS is deployed as private cloud computing, especially if IaaS is deployed on the premises of the user. Finally, it cannot be excluded that IaaS, deployed as private cloud computing, may be classified as capital gains under article 13 of the OECD Model (2017), although this, in practice, should be an exception to the general rule.

## 3.2. PEs of cloud computing service providers

### 3.2.1. Server farms as PEs

As demonstrated through the previous analysis, most payments for cloud computing-as-a-service will be classified as business income, and therefore taxed in the user jurisdiction only if the CCSP has a PE in the user jurisdiction, and the payment should be attributed to this PE. Hence, a user jurisdiction’s right to tax payments for cloud computing-as-a-service largely depends on whether the activities in the user jurisdiction of the CCSP are sufficient to constitute a PE.

In article 5 of the OECD Model (2017), a PE is defined as “a fixed place of business through which the business of an enterprise is wholly or partly carried on”.<sup>[122]</sup> This definition therefore contains the following three cumulative conditions:<sup>[123]</sup>

- the existence of a “place of business”;
- this place of business is “fixed”; and
- the business of the enterprise is carried out through this fixed place of business.

The content of these conditions makes it clear that the various users of cloud computing in a jurisdiction will not constitute a PE of the CCSP – not only because there will be no fixed place of business at the disposal of the CCSP, but also because it is difficult to claim that the users are carrying on the business of the CCSP.

However, the physical servers used to provide cloud computing-as-a-service are equipment with physical locations, which may constitute a “fixed place of business” of the enterprise that operates the servers, assuming that the servers are not moved for a sufficient amount of time.<sup>[124]</sup> Furthermore, if the CCSP itself operates the servers, it will be carrying on business through this fixed place of business even if few or no personnel is present at the server farms.<sup>[125]</sup> Thus, server farms owned and operated by the CCSP may very well constitute fixed places of business through which the CCSP carries on its business.

Yet, even if the three cumulative conditions for creating a PE are met, activities considered preparatory or auxiliary will, according to article 5(4) of the OECD Model (2017), not constitute a PE of the CCSP. Some of the functions explicitly mentioned as being typically of a preparatory or auxiliary nature could – depending on the functionality of the cloud computing equipment – be relevant to server farms, e.g.<sup>[126]</sup> (i) the use of facilities solely for the purpose of the storage, display or delivery of goods belonging to the enterprise; and (ii) providing a communications link, relaying information through a mirror server for security and efficiency purposes.

However, the “economic substance test” included in article 5(4) of the OECD Model (2017) means that even these activities must be preparatory or auxiliary with respect to the business of the individual enterprise.<sup>[127]</sup> In general terms, auxiliary activities are of a supporting

---

annex 2, category 21 (Access to an interactive web site). However, on the basis of the analysis in the present article, this finding cannot be supported. According to Z. Kukulski & A. Tim, *Poland*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* pp. 22-23 (IFA Cahiers vol. 103B, 2018), Books IBFD, citing PL: Director of the Tax Chamber in Warsaw, Tax Ruling IPPB5/423-1258/12-3/MW (1 Mar. 2013), the Polish tax authorities recognize that, from an international perspective, income from cloud computing services should typically be classified as business profit. However, the authors emphasize that the differences between the tax treatment of SaaS, IaaS and PaaS have not been analysed by the tax authorities, and they suggest in particular that the distinctive character of IaaS should be considered.

122. Art. 5(1) *OECD Model (2017)*.

123. *OECD Model Tax Convention on Income and on Capital: Commentary on Article 5* para. 6 (21 Nov. 2017), Treaties & Models IBFD [hereinafter *OECD Model: Commentary on Article 5 (2017)*].

124. Id., at paras. 123 and 125.

125. Id., at para. 127. G. Abate, *France*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 27 (IFA Cahiers vol. 103B, 2018), Books IBFD, notes that even though the French tax authorities endorse the OECD principles, they have also issued a stricter interpretation of “server permanent establishments” (PEs), according to which the absence of operating staff on the site of a server implies that nothing more than preparatory or auxiliary activities are taking place, and hence that a PE is not created (FR: Ministerial Reply 56961 to M. de Chazeaux, Journal Officiel de l’Assemblée Nationale, 30 July 2001). The condition regarding the presence of operating staff is to be disregarded only in the specific exceptional circumstances in which the sale functions are run automatically by the server in the place where it is located. However, as this stricter interpretation was not included in the recast official doctrine of the French tax authorities issued in September 2012, Abate considers it doubtful whether this is still the prevailing interpretation.

126. Art. 5(4) *OECD Model (2017)*; and para. 128 *OECD Model: Commentary on Article 5 (2017)*. See also J. Walker & T. Roth, *The Cloud, E-Commerce and Taxable Presence*, 21 Asia-Pac. Tax Bull. 2 (2015), Journal Articles & Papers IBFD.

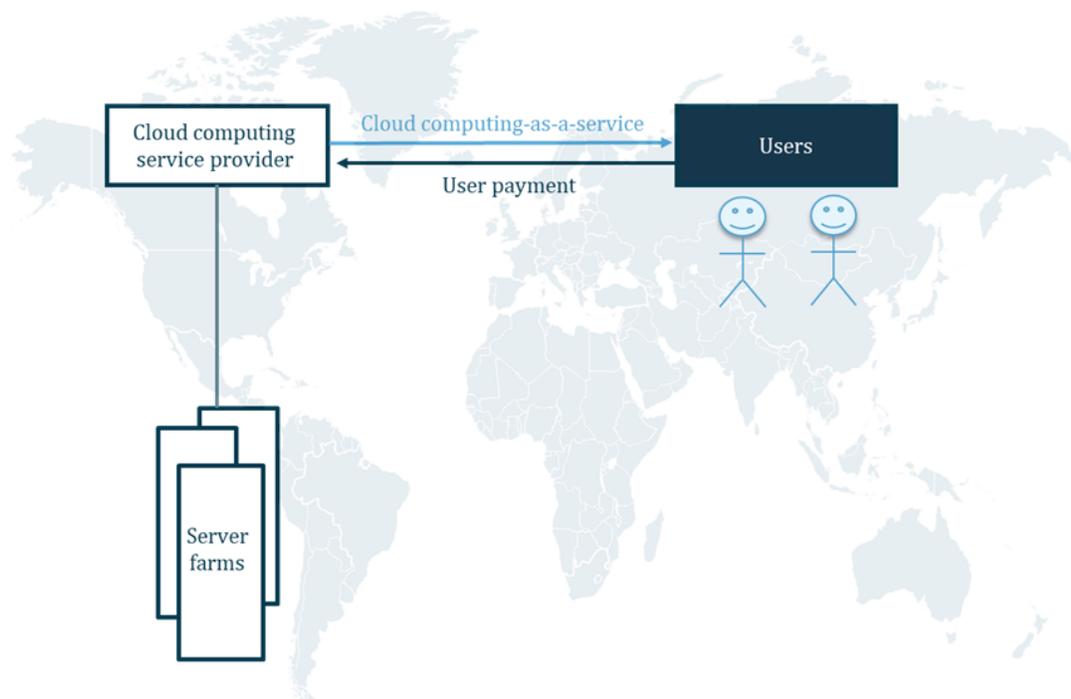
127. The “economic substance test” may be illustrated by the example in para. 62 of *OECD Model: Commentary on Article 5 (2017)*, regarding a fixed place of business constituted by facilities used by an enterprise for storing, displaying or delivering its own goods or merchandise. If an enterprise maintains a very large warehouse, in which a significant number of employees work, for the main purpose of storing and delivering goods owned by the enterprise that it sells online to customers in the local market, the storage and delivery activities represent an important asset, require a number of employees and constitute an essential part of the enterprise’s sale and distribution business and would therefore not have a preparatory or auxiliary character. Before the implementation of OECD/G20, *Preventing the Artificial Avoidance of Permanent Establishment Status – Action 7: 2015 Final Report* (OECD 2015), Primary Sources IBFD [hereinafter *Action 7 Final Report*], it was debated whether

nature, typically without the need for significant assets or employees; whereas preparatory activities are those that are carried on in contemplation of the essential and significant part of the business, but only for a relatively short period of time.<sup>[128]</sup>

In the case of a CCSP owning and operating the servers used to provide cloud computing-as-a-service, it seems appropriate to conclude that even though servers as machines cannot make decisions or assume risks on their own, the servers are generally – independently of the type of cloud computing provided – an essential and significant part of the services provided to users, and thereby of the core business of the CCSP, i.e. not preparatory or auxiliary.<sup>[129]</sup>

Therefore, insofar as the CCSP owns and operates the servers through which cloud computing is provided as a service to the users (as illustrated in figure 2 below), the CCSP will typically create a PE in the jurisdictions where the servers are located.<sup>[130]</sup>

**Figure 2 – Illustration of a simple (fictive) cloud computing business model in which the servers used to provide cloud computing-as-a-service to the users are owned and operated by the cloud computing service provider.**



Even though a thorough analysis of the attribution of profits is beyond the scope of the analysis in this article, it should briefly be noted that, if the CCSP carries on its business through a PE, the profits attributable to the PE are, according to article 7 of the OECD Model (2017) and the OECD *Report on the Attribution of Profits to Permanent Establishments* (OECD 2008), the profits that the PE would be expected to make if it were a separate and independent enterprise engaged in the same or similar activities under the same or similar conditions. This functional analysis should take into account the functions performed, assets used and risks assumed by the enterprise through the PE.<sup>[131]</sup> This therefore requires a detailed analysis of the facts and circumstances, but it has been argued to result in the

the activities explicitly mentioned in art. 5(4) of the OECD Model were also subject to a “preparatory or auxiliary” requirement or whether they could not per se create a PE. However, the strict literal interpretation was often adopted in practice, i.e. the requirement of “preparatory or auxiliary” was specifically referred to only in the “catch-all” provisions stated in art. 5(4)(e) and (f) of the OECD Model; see, e.g. V. Dhuldhoya, *The Future of the Permanent Establishment Concept*, 72 Bull. Intl. Taxn. 4a (2018), Journal Articles & Papers IBFD; and R. Batheja, *Treaty Abuse and Permanent Establishments: Proposed Changes to Article 5(3) and (4) of the OECD MC*, in *Preventing Treaty Abuse* pp. 386-387 (D.W. Blum & M. Seiler eds., Linde 2016). Conversely, the OECD itself was of the opinion that all activities had to be of a preparatory or auxiliary nature: see *OECD Model Tax Convention on Income and on Capital: Commentary on Article 5* para. 21 (26 July 2014) [hereinafter *OECD Model: Commentary on Article 5* (2014)], Treaties & Models IBFD. Similar opinions may be found in the international tax literature; see the work of Batheja cited above.

<sup>128.</sup> Para. 60 *OECD Model: Commentary on Article 5* (2017).

<sup>129.</sup> Para. 130 *OECD Model: Commentary on Article 5* (2017); and E. Reimer, *Permanent Establishment*, in *Klaus Vogel on Double Taxation Conventions* p. 312 (4th ed., E. Reimer & A. Rust eds., Wolters Kluwer Law and Business 2015). However, it should be noted that *OECD Model: Commentary on Article 5* (2017) includes official observations made by a number of countries on paras. 122- 131, i.e. the interpretation of “PE” in respect of e-commerce. Hence, (i) the United Kingdom takes the view that a server used by an e-tailer, either alone or together with websites, could not, as such, constitute a PE (para. 176); (ii) Chile and Greece do not adhere to all of the interpretations (para. 177); (iii) Mexico and Portugal wish to reserve their right not to follow the position expressed in the relevant paragraphs (para. 182); and (iv) Turkey reserves its position on whether and under which circumstances the activities referred to there constitute a PE (para. 183).

<sup>130.</sup> See also Bal (2014), *supra* n. 27, at p. 519.

<sup>131.</sup> See OECD, *Report on the Attribution of Profits to Permanent Establishments*, Preface, para. 10 (OECD 2010), Primary Sources IBFD, in which it is stated that the report was based upon the principle of applying, by analogy, the guidance found in the *OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations* (OECD 2009), Primary Sources IBFD, for the purpose of determining the profits attributable to a PE.

attribution to the PE of only a modest profit.<sup>[132]</sup> The reason for this is that local PEs are commonly structured to have no ownership interest in intangible assets, to perform no (or limited) functions and to assume or control no (or limited) risks related to development, enhancement, maintenance, protection and exploitation (DEMPE) of intangibles.<sup>[133]</sup> Hence, in the case of a PE arising as a result of a server, it may be argued that attributing only the costs for the server to the PE or attributing to it the entire profit from the operations conducted via the server will typically not be in accordance with article 7 of the OECD Model (2017); instead, what is attributed to the PE should lie somewhere in between these extremes.<sup>[134]</sup>

Commonly – and perhaps with the aim of limiting the uncertainties related to attributing profits to a PE, as well as the pros and cons of global and territorial tax systems,<sup>[135]</sup> the full or limited independence of PEs and certain market risks – the server farms within a cloud computing business model are typically owned and operated by local subsidiaries of the CCSP.<sup>[136]</sup> These subsidiaries are entitled to remuneration in accordance with the arm's length principle, resulting in a profit margin in the jurisdiction in which the server farm is located; this will typically be subject to tax, although this depends on the domestic tax law of the relevant jurisdiction. However, similar to the situation in which the servers are owned and operated by the CCSP itself, it has been argued that (too) little taxable profit is realized in the jurisdictions containing such subsidiaries.<sup>[137]</sup>

Moreover, even in cloud computing business models in which server farms are owned and operated by local subsidiaries of the CCSP, the server farms could – depending on the specific facts and circumstances – constitute PEs of the CCSP pursuant to article 5(1) and (7) of the OECD Model (2017)<sup>[138]</sup> if the business of the CCSP may be said to be wholly or partly carried out at the server farms and the servers are “at the disposal” of the CCSP.<sup>[139]</sup>

### 3.2.1.1. A place of business “at the disposal of”

It should come as little surprise that uncertainties have been experienced regarding whether servers create PEs in various business models, including cloud computing business models, especially in respect of whether remote management of data and applications stored on the servers can cause a server to be “at the disposal of” the CCSP for the purposes of determining whether a PE has been created.

Whether a fixed place of business should be considered to be at an enterprise's disposal is further dealt with in the Commentary on Article 5 of the OECD Model (2017), in which it is stated that a place of business may be situated in the business facilities of another enterprise, e.g. where a foreign enterprise has certain premises or a part thereof owned by the other enterprise constantly at its disposal.<sup>[140]</sup> However, even the mere fact that an enterprise has a certain amount of space at its disposal that is used for business activities is sufficient to constitute a place of business. No formal legal right to use that place is required; instead, the determining factors are whether the enterprise has the effective power to use that location, the extent of the presence of the enterprise at the location and the activities that the enterprise performs there. Further, clarification of when a server is at the disposal of the CCSP can, to some extent, be found in national administrative practice and case law.

In Danish administrative practice, the Danish Tax Assessment Board<sup>[141]</sup> has analysed the concept of disposal in respect of server PEs, which, according to Danish domestic tax law, should be interpreted in line with the definition used in the OECD Model and its

132. See e.g. OECD/G20, *Action 1 Final Report*, supra n. 1, at p. 80; OECD/G20, *Public Consultation Document*, supra n. 3, at p. 8; and M. Olbert & C. Spengel, *International Taxation in the Digital Economy: Challenge Accepted?*, 9 *World Tax J.* 1, p. 8 (2017).

133. See, e.g. OECD/G20, *Action 1 Final Report*, supra n. 1, at p. 80; OECD/G20, *Public Consultation Document*, supra n. 3, at p. 8; and Olbert & Spengel, supra n. 132, at p. 8.

134. See, e.g. SE: Skatteverket [Swedish Tax Agency], *Ställningstagande 202 493137-18/111* (23 Nov. 2018). The position of the Swedish Tax Agency regarding when servers located in Sweden create PEs is that an arm's length profit allocation to the PE is neither only the costs incurred by the PE for the server nor the entire profit of the business activity conducted through the server. Instead, the profit of the PE should reflect an arm's length compensation for the economic ownership of the servers.

135. See OECD/G20, *Addressing the Tax Challenges of the Digital Economy – Action 1: 2014 Deliverable*, sec. 2.3.1. (OECD 2014), Primary Sources IBFD, describing the characteristics of global and territorial tax systems.

136. See e.g. OECD/G20, *Public Consultation Document*, supra n. 3, at p. 4.

137. See, e.g. id., at para. 3; and Procter & Gamble, *Re: Comments on Public Consultation Document on Addressing the Tax Challenges of the Digitalisation of the Economy* p. 3 (6 Mar. 2019), in OECD/G20 Inclusive Framework on BEPS, *Addressing the Tax Challenges of the Digitalisation of the Economy: Comments Received on Public Consultation Document* (updated 11 Mar. 2019), available at <https://www.oecd.org/tax/beps/public-comments-received-on-the-possible-solutions-to-the-tax-challenges-of-digitalisation.htm> (accessed 31 July 2019). In addition, D Maduke & N. Miklaucic, *Canada*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p.22 (IFA Cahiers vol. 103B, 2018), Books IBFD, argue that it may be possible for a US parent company to isolate its data centre in a Canadian subsidiary and thereby limit the exposure of the parent company's revenue to Canadian income tax. A thorough analysis of the remuneration of local subsidiaries is beyond the scope of this article.

138. This is referred to as the “separate entity” approach, which provides the possibility that a subsidiary may constitute a PE of its parent company in appropriate situations. Whether a subsidiary PE exists must be analysed under the general PE rules. Hence, a subsidiary PE may arise under both the main rule in art. 5(1) and the agency rule in art. 5(5) *OECD Model (2017)*. See also J. Wittendorff, *Triangular Cases: The Interaction Between Transfer Pricing and PEs*, 66 *Tax Notes Intl.* 6, p. 545 et seq. (2012).

139. Para. 126 *OECD Model: Commentary on Article 5 (2017)*; see also para. 36 regarding ICS equipment such as satellites, in which the Commentary distinguishes between the situation in which equipment is let or leased by an enterprise through a fixed place of business maintained by it in another jurisdiction and the situation in which an enterprise lets or leases ICS equipment to an enterprise in another jurisdiction without maintaining a place of business in that jurisdiction. Only in the former situation does the enterprise create a PE in the second jurisdiction. This remains the case even if the lessor in the latter situation supplies personnel to operate the equipment after installation, provided that their responsibility is limited and the activities are performed under the direction, responsibility and control of the lessee. Conversely, if the supplied personnel have wider responsibilities, e.g. decision-making power, or if they operate, service, inspect and maintain the equipment under the responsibility and control of the lessor, the activity of the lessor may create a PE.

140. Para. 10 *OECD Model: Commentary on Article 5 (2017)*.

141. The Danish Tax Assessment Board (*Skatterådet*) is the highest tax assessment body in Denmark. The body has 19 members: 6 are elected by the parliament and 13 are appointed by the Minister of Taxation. One of the Danish Tax Assessment Board's most important tasks is to issue advance binding rulings to taxpayers applying for them.

Commentaries.<sup>[142]</sup> The Danish Tax Assessment Board issued an advance binding ruling, in the beginning of 2016 stating that the activities performed by a foreign parent company with respect to a website hosted on a data centre owned by its subsidiary in Denmark would not constitute a PE of the foreign parent company, as the servers were not at the disposal of the parent company in the same manner as *if the parent company in fact owned or operated the servers*.<sup>[143]</sup> The activities performed by the foreign parent company included, inter alia, the ability of employees of the foreign parent company to remotely (i) monitor the performance of hardware and software; (ii) install and uninstall applications; (iii) carry out maintenance of the hosted applications; (iv) manage software and data; (v) close servers that did not work properly and redirect data traffic to other servers; and (vi) in an emergency situation, turn off specific servers or other specific equipment in the data centre. Furthermore, employees of the foreign parent company were granted limited physical access to the data centre and were to be accompanied by employees of the Danish subsidiary.<sup>[144]</sup> In its decision, the Danish Tax Assessment Board emphasized that the foreign parent company did not have any instructional power over the employees of the Danish subsidiary and would therefore not control their work, as well as the fact that the employees of the foreign parent company had no unaccompanied physical access to the servers. On this basis, the Danish Tax Assessment Board rightly concluded that the foreign parent company could not be regarded as having the servers owned and operated by its Danish subsidiary at its disposal and, for that reason, that the servers did not create a PE of the foreign parent company.<sup>[145]</sup>

A somewhat similar result was reached by the Canada Revenue Agency in one case,<sup>[146]</sup> whereas the Spanish tax authorities and courts have applied a distinctive – and criticized – interpretation of “disposal” in *Dell Spain*.<sup>[147]</sup>

Although there seem to be divergent practices in domestic case law, the general understanding of a fixed (physical) place of business being at disposal implies that a cloud computing business model may be structured so as not to create PEs of the CCSP in the jurisdiction where the servers are located (if the servers are owned and operated by local subsidiaries).<sup>[148]</sup> Furthermore, the subsidiaries that own and operate the server farm should not constitute a deemed PE in the form of dependent agents of the CCSP according to article 5(5) of the OECD Model (2017). The argument is that the subsidiaries will neither interact with users of the CCSP nor actively participate in the contracting activities with users of the CCSP, not even if the negotiation and conclusion of contracts with the users is fully automated by the software being run and stored on the servers. This is, first and foremost, because neither the software nor the servers can be considered persons within the meaning of article 3 of the OECD Model (2017), and also because the mere storage of software cannot be regarded as playing a principal role in the conclusion of contracts.<sup>[149]</sup>

In conclusion, a CCSP providing cloud computing-as-a-service may be structured so as to avoid the creation of PEs in the user jurisdiction if a subsidiary owns and operates the servers. Though such subsidiaries will be entitled to an arm’s length remuneration for the services provided, it should be recognized that the number of user jurisdictions in which taxable revenue will be generated can be limited in comparison to the number of user jurisdictions in which the CCSP provides cloud computing-as-a-service.

### 3.2.2. Local representatives as PEs

A more realistic and common business setup, however, is for the CCSP to also have local representatives performing, for example, user support, sales and marketing activities on behalf of the CCSP. This is illustrated in [figure 3](#).

142. See, e.g. the preparatory remarks to DK: Forslag til Lov om ændring af forskellige skattelove (fast driftssted og fiskale repræsentanter) [Proposal for a law amending various tax laws (permanent establishment and fiscal representatives)], L no. 119 of 11 Dec. 1996. For a thorough analysis of PEs under Danish domestic tax law, see A.N. Laursen, *Fast driftssted* pp. 51-55 (Jurist- og Økonomforbundets Forlag 2011); and A.N. Laursen, *Ændringer af fast driftsstedsdefinitionen afledt af BEPS-projektet*, 2018 SR-Skat 2, pp. 111-123 (2018).

143. DK: Tax Assessment Board, Advance binding ruling SKM2016.188.SR (15 Mar. 2016).

144. See Bundgaard, *supra* n. 66, at 19, in which the author summarizes the decision of the Danish Tax Assessment Board.

145. A similar result was reached in the following decisions: DK: Tax Assessment Board, Ruling SKM2015.369.SR (3 June 2015); DK: Tax Assessment Board, Ruling SKM2014.268.SR (11 Apr. 2014); and DK: Tax Assessment Board, Ruling SKM2011.828.SR (19 Dec. 2011).

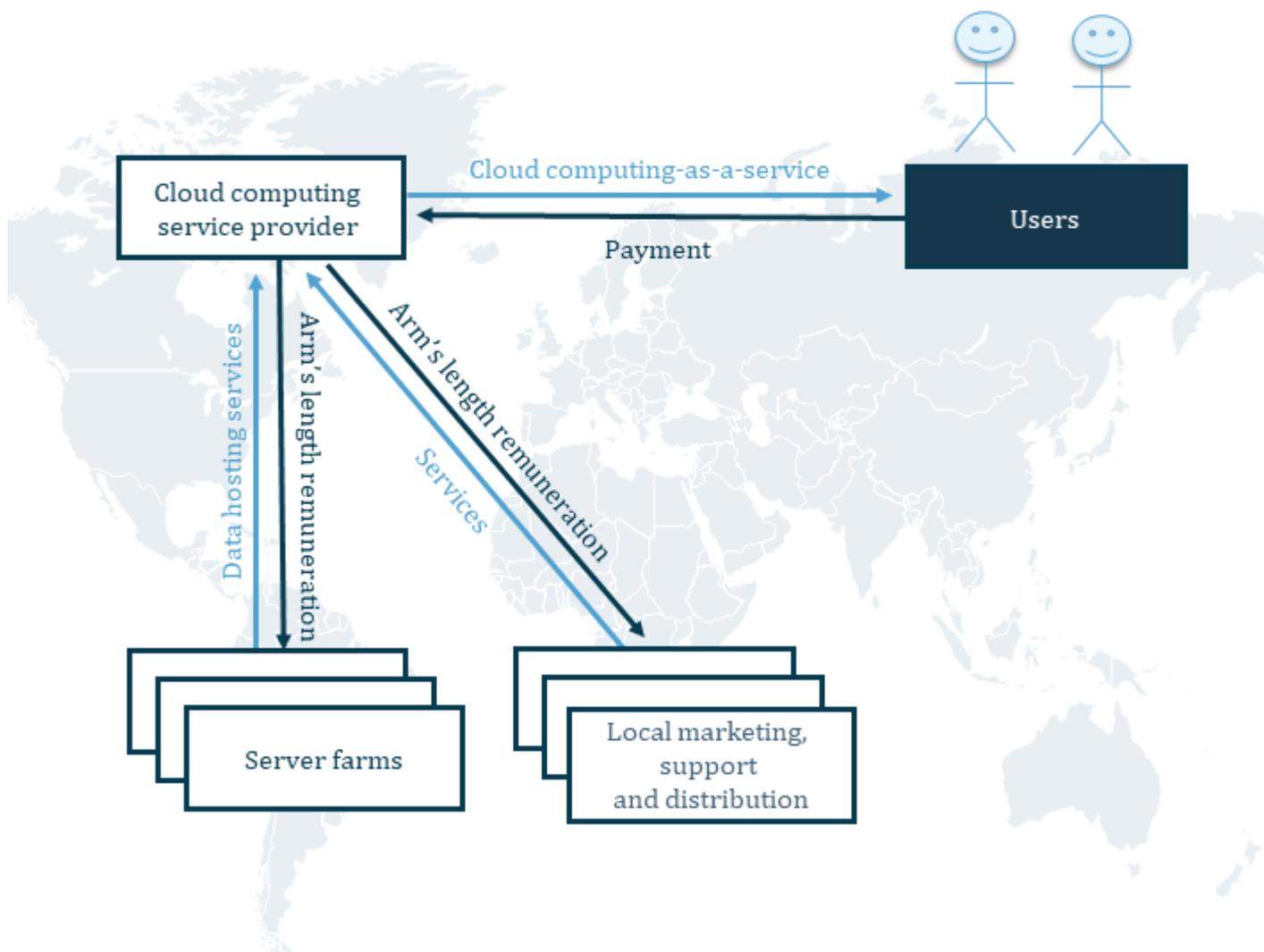
146. CA: Canada Revenue Agency (CRA), Server as a Permanent Establishment, Ruling 2012-0432141R3. The Canada Revenue Agency found that a data centre owned and operated by a Canadian affiliate of a US parent company did not constitute a PE of the parent company. The employees of the subsidiary would principally be responsible for the installation, operation, maintenance and repair of equipment located in the data centre. Conversely, the website activities could (and would) be managed remotely by employees of the US parent company, who would have the ability to monitor the performance of the hardware and software, install and uninstall applications, perform maintenance on the hosted applications and otherwise manage the software and data. However, employees of the US parent company would be escorted upon visiting the data centre for the purpose of, inter alia, inspection and maintenance. As a result, the Canada Revenue Agency concluded that the servers owned and operated by the Canadian subsidiary could not be considered to be at the disposal of the US parent company. See also Maduke & Miklaucic, *supra* n. 137, at p. 22, where the authors argue that the concept of a “server PE” is unlikely to have a meaningful impact on any Canadian tax revenue loss resulting from the digitization of traditional transactions. The primary reason is that the presence of many significant digital businesses in the United States reduces the need to have servers physically located in Canada. Secondly, even if, as in the case summarized here, it is desirable for a US company to set up a data centre in Canada, it may be possible to isolate the data centre in a Canadian subsidiary and thereby limit the exposure of the US parent company’s revenue to Canadian income.

147. ES: *Tribunal Supremo* (TS) [Supreme Court], 20 June 2016, 2555/2015, *Dell Spain*, Case Law IBFD. This interpretation is also mentioned in J.L. Migoya Vargas, *Spain*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* p. 17 (IFA Cahiers vol. 103B, 2018), Books IBFD. The case is analysed, discussed and (correctly) criticized in A.J. Martín Jiménez, *The Spanish Position on the Concept of a Permanent Establishment: Anticipating BEPS, beyond BEPS or Simply a Wrong Interpretation of Article 5 of the OECD Model?*, 70 Bull. Intl. Taxn. 8, p. 458 et seq. (2016), Journal Articles & Papers IBFD.

148. The fact that an enterprise may carry out business in local markets without having servers located in those market jurisdictions or having servers located there but owned and operated by another entity has led the Israeli tax authorities to adopt an interpretation of a PE that includes “significant digital activity in Israel”, even in cases in which the non-Israeli corporate tax resident does not have a server in Israel. See, e.g. E. Lempert & O. Levy, *Israel*, in *Withholding Tax in the Era of BEPS, CIVs and the Digital Economy* pp.20-22 (IFA Cahiers vol. 103B, 2018), Books IBFD, in which the authors discuss IL: Israel Tax Authorities (ITA) Circular, Transactions over the Internet of Non-Resident Corporations in Israel, 2016-4 (11 Apr. 2016). Although the debate among tax scholars and policymakers has, for quite some time, included the possibility of adding significant digital or economic presence to the definition of a PE, this interpretation is not in line with the current definition of PEs in international tax law and, therefore, cannot be supported.

149. See, similarly, para. 131 *OECD Model: Commentary on Article 5 (2017)* in respect of websites hosted on servers; and Reimer, *supra* n. 129, at p. 313.

**Figure 3 – Illustration of a (fictive) typical cloud computing business model, in which the servers used to provide cloud computing-as-a-service to the users are owned and operated by local subsidiaries of the CCSP and local sales, marketing and customer support are performed by local representatives of the CCSP.**



As regards whether activities such as user support, sales and marketing activities may be performed without creating a PE of the CCSP, it is argued here that the implementation of BEPS Action 7 has, in at least three ways, limited the options for a CCSP to structure its business in a way that avoids a taxable presence in user jurisdictions.

First, the anti-fragmentation rule implemented in article 5(4) of the OECD Model (2017), states that preparatory or auxiliary activities cannot be separated from core activities to avoid creating a PE in the user jurisdiction, provided that the functions are performed by related parties, as defined in article 5(8) of the OECD Model (2017), and that the functions are complementary and part of a cohesive business operation.<sup>[150]</sup> Hence, even though, for example, support services or marketing activities of a general nature may be considered auxiliary<sup>[151]</sup> (i.e. *not* specially developed for the purposes of the individual user and based on strategies developed, instructed and controlled by the CCSP),<sup>[152]</sup> these will still create a PE if the sales-related activities are not considered auxiliary, e.g. if employees of the CCSP take active part in the negotiation of important parts of cloud computing contracts by participating in decisions related to the

<sup>150</sup> Art. 5(4) and (8) *OECD Model (2017)*.

<sup>151</sup> See paras. 71 and 128 *OECD Model: Commentary on Article 5 (2017)*, explicitly mentioning that the advertising of goods or services may be of a preparatory or auxiliary character.

<sup>152</sup> This description is in line with the generic description of cloud computing business models in OECD/G20, *Action 1 Final Report*, *supra* n. 1, at pp. 175-176, sec. B.3.; OECD/G20, *Inclusive Framework Interim Report*, *supra* n. 7, at pp. 73-79; and P. Pistone, J.F. Pinto Nogueira and B. Andrade Rodríguez, *The 2019 OECD Proposals for Addressing the Tax Challenges of the Digitalization of the Economy: An Assessment*, 2 Intl. Tax Stud. 2, p. 11 (2019), Journal Articles & Papers IBFD.

type, quality or quantity of the cloud services provided.<sup>[153]</sup> The criticism has – correctly – been raised in the international tax literature that the Commentaries lack guidance on what should be considered “complementary functions” and what should be considered “a cohesive business operation”.<sup>[154]</sup> However, it could be argued that all three types of activities should be considered complementary functions, as they are natural elements in the value chain of the provision of cloud computing-as-a-service to users, which should be considered the cohesive business operation of a CCSP.<sup>[155]</sup>

Second, local representatives with limited authority, i.e. lacking the authority to conclude contracts in the name of the enterprise, may constitute deemed agency PEs if they play the principal role leading to the conclusion of contracts for the provision of services by the enterprise. Even though the subjective nature of whether or not an agent has played the “principal role” has been said to increase legal uncertainty,<sup>[156]</sup> representatives will most likely be regarded as playing such a role if they send emails, make telephone calls or visit potential customers and discuss the cloud services provided under online (standard) contracts and are remunerated for doing so based (partly) on the number of cloud contracts concluded in this jurisdiction.<sup>[157]</sup> This also seems to be in line with the object and purpose of deeming an agency PE to exist based on agents, which covers cases in which the activities that a person exercises in the market jurisdiction are intended to result in the regular conclusion of contracts to be performed by a foreign enterprise – in other words, where the local representatives act as the sales force of the CCSP.<sup>[158]</sup>

Third, commissionaire arrangements, i.e. agents concluding contracts with customers in their own name, constitute deemed agency PEs, provided that the agent is “dependent”.<sup>[159]</sup> If, however, the economic risk profile of the local representatives corresponds to that of resellers, i.e. if cloud computing-as-a-service is resold in the name of and at the risk of the local representatives, they should not be deemed agency PEs of the CCSP.<sup>[160]</sup> It has been argued that, as a consequence of the implementation of the BEPS recommendations targeting dependent commissionaires, such commissionaires are currently being converted into resellers, which should result in more functions being performed, more risks assumed and more assets used by the resellers in the user markets and, hence, more income being allocated to the user jurisdictions.<sup>[161]</sup>

Consequently, it is here argued that the above-mentioned amendments to the PE concept have increased the number of user jurisdictions in which taxable revenue may be generated from a business model based on the provision of cloud computing-as-a-service. However, even though the full effect of the changes happening in response to the implementation of BEPS Action 7 and BEPS Actions 8-10 is yet to be seen, concerns have been raised that (too) little taxable profit continues to be realized in the market jurisdictions. The argument is that it is still possible to conduct remote selling and that, in the event that a taxable presence is created, the main profit will remain with the CCSP, assuming that the CCSP is the developer and owner of the intellectual property, including user data and algorithms, and performs the functions that control risks and functions relating to the DEMPE functions of intangibles.<sup>[162]</sup>

### 3.2.3. Preliminary findings on the creation of a PE

Based on this analysis, server farms will create PEs of a CCSP in accordance with article 5 of the OECD Model (2017) only in situations in which the CCSP owns and operates the server farms. In such a case, the profit attributed to such a server PE, pursuant to article 7 of the OECD Model (2017), will typically be limited. In practice, however, server farms are typically owned and operated by local subsidiaries of

---

153. Para. 72 *OECD Model: Commentary on Article 5 (2017)*.

154. See S. Watson, N. Palazzo-Corner & S. Haemmerle, *UK View on Revised PE Standards in the Multilateral Instrument*, 24 Intl. Transfer Pricing J. 3, sec. 2.4. (2017), Journal Articles & Papers IBFD. The authors state that the lack of clarity in the definition of “complementary functions” and what should be considered “a cohesive business operation” has caused concern among businesses, and the authors expect that this will inevitably lead to disputes between taxpayers and national tax authorities.

155. Two examples are included in the Commentaries: see paras. 81-82 *OECD Model: Commentary on Article 5 (2017)*. From these it can be said that (i) in a bank, the verification of information provided by clients is a complementary function to a decision regarding a loan application, and part of a cohesive business operation of providing loans to clients; and (ii) a store selling appliances provides a complementary function to a small warehouse in which identical items are stored, and is part of a cohesive business operation of storing goods in one place for the purpose of delivering these goods in accordance with the obligations incurred by their sale.

156. Dhuldhoya, *supra* n. 127; M.C. Villareal Regalado, *Treaty Abuse and Permanent Establishments: Proposed Changes to Articles 5(5) and 5(6) of the OECD MC*, in *Preventing Treaty Abuse* (D.W. Blum & M. Seiler eds., Linde 2016).

157. Para. 90 *OECD Model: Commentary on Article 5 (2017)*.

158. *Id.*, at para. 88.

159. Prior to the implementation of the recommendations in the OECD/G20, *Action 7 Final Report*, *supra* n. 127, only a dependent agent who habitually exercised the authority to conclude contracts in the name of the cloud computing service provider (CCSP) or binding on the CCSP was deemed to constitute a PE of the CCSP: see *OECD Model Tax Convention on Income and on Capital* art. 5(5) (26 July 2014), Treaties & Models IBFD. Furthermore, paras. 21, 32.1 and 33 *OECD Model: Commentary on Article 5 (2014)* clarified that such “authority to conclude” should be viewed in the context of contracts that constituted the proper business of the enterprise and that only persons who, in exercise of this authority – or by the nature of their activity – involved the enterprise in business activities in the market jurisdiction to a particular extent would be deemed to constitute a PE. See Dhuldhoya, *supra* n. 127; and P. Baker, *Dependent Agent Permanent Establishments: Recent OECD Trends*, in *Dependent Agents as Permanent Establishments* pp. 24-28 (M. Lang et al. eds., Linde 2014), who argue that the controversy surrounding the interpretation of “the authority to conclude contracts in the name of” originates in the differences of interpretation between civil law and common law countries. See also D. Feuerstein, *The Agency Permanent Establishment*, in *Permanent Establishments in International and EU Tax Law* p. 107 (F. Brugger & P. Plinsky eds., Linde 2011).

160. Para. 96 *OECD Model: Commentary on Article 5 (2017)*.

161. See, e.g. *Inclusive Framework Interim Report*, para. 273, where it is stated that some digitalized multinational enterprises “have already started restructuring their trade structures based on remote sales in some countries (e.g., Amazon, eBay, Facebook, Google), although not all market jurisdictions have experienced and benefited from such restructuring to the same extent”. See also, B. Larking, *A Review of Comments on the Tax Challenges of the Digital Economy*, 72 Bull. Intl. Taxn. 4a (Special Issue) (2018), Journal Articles & Papers IBFD.

162. See, e.g. OECD/G20, *Public Consultation Document*, *supra* n. 3, at para. 3; and Procter & Gamble, *supra* n. 137. See also Maduke & Miklaucic, *supra* n. 137, at p. 22.

the CCSP, remunerated for their services in accordance with the arm's length principle under article 9 of the OECD Model (2017). Such server farms will generally not be at the disposal of the CCSP and, as a consequence, will not constitute a PE of the CCSP.

In addition, following the implementation of BEPS Action 7 in article 5 of the OECD Model (2017), local representatives performing user support, sales and marketing activities on behalf of the CCSP will typically constitute a PE or other taxable presence of the CCSP, generating taxable revenue in the market jurisdictions.

Consequently, only in the case of remote selling of cloud computing-as-a-service – i.e. cases in which the users are resident in a jurisdiction not containing any server farms, local representatives or the CCSP itself – will the allocation of taxing rights to the user jurisdictions depend on the payments being classified as royalties.

## 4. Policy Challenges and Options: Aligning Taxation with Value Creation

Today's international tax regime, bolstered by the practical significance of the OECD Model and its method of classification and assignment of source, allocates cross-border income based on classification and on the principle of "economic allegiance" introduced by the League of Nations in the 1920s.<sup>[163]</sup> It was this concept that led to the PE threshold, much later updated by the implementation of BEPS Action 7, as a sufficient nexus to justify the allocation of taxing rights to source states. Even in situations in which the value chain is split between members of a single group, article 7 of the OECD Model, the authorized OECD approach and the arm's length principle set out in article 9 of the OECD Model should ensure that profit is allocated and taxed in accordance with value creation in various jurisdictions. However, it has been argued that the digitalization of the economy has challenged these traditional proxies for taxing business profits at the "source" by decoupling market presence and physical presence.<sup>[164]</sup>

It seems to be the general perception among policymakers that the tax revenues of user jurisdictions are indeed challenged by the digitalization of the economy based on this decoupling of market presence and physical presence. One of the contributing factors to this development is cloud computing, as it enables so-called "scale without mass", and it has been argued to be fundamental in accelerating the digitalization of other businesses and, therefore, of the entire economy.<sup>[165]</sup> The importance of cloud computing is also illustrated by the fact that Amazon is now the world's most valuable public company, with Amazon Web Services controlling 40% of the world's public cloud market and having an annual revenue from providing cloud computing-as-a-service exceeding USD 23 billion.<sup>[166]</sup> Hence, it is obvious that cloud computing business models create value, but discussions are ongoing with regard to *how* and, even more so, *where* such business models are creating value.

As advocated by the OECD/G20 BEPS Project, the international allocation of taxing rights over business profits should be based on the principle of taxing profits where value is created.<sup>[167]</sup> Although value across organizations has long been viewed as a foundational concept, sitting at the core of multiple disciplines, the creation of value is constantly topical in academia, as value is continually reshaped by technology, with new technological advances allowing for new forms of organization.<sup>[168]</sup> This also seems to apply to cloud computing business models, which, as recognized by the OECD, are truly new and hardly comparable to any traditional counterpart.<sup>[169]</sup> In contrast, other highly digitalized business models may, to some extent, be compared to more traditional business models: e.g. Uber may be compared to traditional taxi services, and a social network supported by revenue from advertisements may be compared to a traditional television company. The lack of any comparable traditional business model for cloud computing affects the question of neutrality, which forms part of the Ottawa Taxation Framework Conditions as adopted by the OECD. According to this principle, taxation should seek to be neutral and equitable between different forms of digitalized business models, as well as between traditional and digitalized business models. The intention is that business decisions should be motivated by economic rather than tax considerations. Consequently, taxpayers in similar situations carrying out similar transactions should be subject to similar levels of taxation.<sup>[170]</sup> However, if cloud computing business models are not comparable to traditional business models, it seems questionable to argue on this basis that extended user jurisdiction taxation is urgently needed in order to ensure neutrality and a level playing field.

Another aspect that distinguishes value creation in cloud computing business models from value creation in other so-called highly digitalized business models is the extent to which cloud computing business models make use of data. Apart from the storage of users' data on servers, a cloud computing company makes limited use of data compared to other highly digitalized, multi-sided business models that primarily profit from advertising targeted at their users, based on algorithms developed from collected user data.<sup>[171]</sup> With that said, CCSPs

163. See, e.g. S. Jogaarajan, *Double Taxation and the League of Nations* p. 20 (Cambridge University Press 2018); and, regarding the academic origins of this school of thought, K. Vogel, *Worldwide vs Source Taxation of Income: A Review and Re-Evaluation of Arguments (Part I)*, 16 *Intertax* 8/9, p. 219 (1988).

164. OECD/G20, *Public Consultation Document*, supra n. 3, at para. 12. See, however, OECD/G20, *Inclusive Framework Interim Report*, supra n. 7, in which it is stated that different countries had different views on the scale and nature of these challenges, including whether and to what extent these challenges should result in changes to the international tax rules; these ranged from the view that there was a need to change existing profit allocation and nexus rules to the view that no action was needed beyond addressing BEPS issues. The appropriateness of traditional proxies is discussed by, among others, Olbert & Spengel, supra n. 132; P. Hongler & P. Pistone, *Blueprints for a New PE Nexus to Tax Business Income in the Era of the Digital Economy* (2015), *Journal Articles & Papers IBFD*; and G. Kofler, G. Mayr & C. Schlager, *Taxation of the Digital Economy: A Pragmatic Approach to Short-Term Measures*, 58 *Eur. Taxn.* 4 (2018), *Journal Articles & Papers IBFD*.

165. OECD/G20, *Inclusive Framework Interim Report*, supra n. 7, at p. 72, para. 221.

166. Synergy Research Group, *No Change at the Top as AWS Remains the Leading Public Cloud Provider in all Regions* (19 Nov. 2018), available at <https://www.srgresearch.com/articles/no-change-top-aws-remains-leading-public-cloud-provider-all-regions> (accessed 29 July 2019).

167. See, e.g. OECD/G20, *Action Plan on Base Erosion and Profit Shifting* (OECD 2013), *Primary Sources IBFD*.

168. M. de Reuver, C. Sørensen & R.C. Basole, *The Digital Platform: a Research Agenda*, 33 *J. of Info. Tech.* 2, pp. 1-12 (2017).

169. OECD/G20, *Inclusive Framework Interim Report*, supra n. 7, paras. 234-235.

170. OECD, *Ottawa Taxation Framework*, supra n. 28, at p. 12.

171. OECD/G20, *Inclusive Framework Interim Report*, supra n. 7, at p. 76, para. 233.

– similar to more traditional enterprises – also collect data on their users, e.g. for the purposes of predicting the demand for storage capacity or evaluating the performance of their servers. However, instead of relying (primarily) on targeted advertising, cloud computing business models generate revenue through sales of cloud computing-as-a-service, typically with a high-volume, low-margin strategy.<sup>[172]</sup> Perhaps recognizing this, the European Commission did not include pure cloud computing-as-a-service in their now-abandoned proposal for a directive implementing a digital services tax as an interim measure for taxing businesses that are heavily reliant on user data.<sup>[173]</sup>

The market for cloud computing-as-a-service is characterized by relatively few large market players, which may be explained by CCSPs realizing economy of scale;<sup>[174]</sup> this suggestion is further supported by the recognition that creating high-quality computer hardware, network infrastructure, software and algorithms requires substantial investment in order to ensure sufficient capacity.<sup>[175]</sup> Hence, even though it may appear that cloud computing business models realize revenue exceeding what would be expected of traditional businesses, it should be recalled that CCSPs typically operate with a low margin even though they are required to bear heavy investment costs. These economic features of cloud computing business models should preferably be considered in relation to the principle of the ability to pay. Even though there seems to be no generally accepted definition of the principle and being mindful of the fact that its status as well as its relevance have been debated in the international tax literature,<sup>[176]</sup> it has been argued that the principle of the ability to pay should be understood as requiring the tax burden to be proportional to the taxpayer's capacity to pay it.<sup>[177]</sup> With this interpretation, the ability to pay is expressed objectively in currency units rather than, for example, subjective utility, and it is also assumed to include allowances and deductions for costs incurred in the course of carrying out business. In other words, the capacity – and hence, the obligation – to make contributions should ideally be measured only by the income exceeding the expenses related to the essential needs or the business of the taxpayer.<sup>[178]</sup> On this basis, it is argued that it would be in violation of the principle of the ability to pay to, for instance, impose a turnover tax or withholding tax on gross revenues on which tax relief is typically granted only on a net basis. Should cloud computing-as-a-service be subjected to such a tax, it could jeopardize the profitability of the current business models, as it is to be expected that a higher tax burden on low-margin businesses will, to some extent, result in a decrease in supply and an increase in prices.<sup>[179]</sup> Given the significance of cloud computing, this would likely affect the economy at large.

To summarize the above, it is recommended that policymakers await the full effects of the changes made in the OECD Model (2017), as part of the implementation of the BEPS package, before adopting measures that jeopardize the potential of the digitalization of the economy. The combination of low operating margins, a somewhat limited use of data and the probable conversion of remote selling into local reselling as a response to the lower threshold for the creation of a PE and the updated transfer pricing guidelines may mean that further measures in respect of cloud computing business models become unnecessary. This is also recognized in the OECD/G20 BEPS Action 1 Final Report, in which it is argued that, despite the increased flexibility available to businesses in choosing where their activities take place, many large multinational enterprises will continue to have a taxable presence in the user jurisdiction, and it is therefore important not to overstate the issue of nexus.<sup>[180]</sup>

However, clarification of the legal uncertainty surrounding mixed contracts would be welcomed. The principle of legal certainty requires the law to be clear, easily accessible and comprehensible, as well as to create a balance between stability and flexibility.<sup>[181]</sup> It is not possible to eliminate all uncertainties in law; however, it has been argued that policymakers should persistently strive to minimize legal uncertainty, as the alternative risks distorting the functioning of the market.<sup>[182]</sup> Currently, it is uncertain when to apply unified taxation and when to break down a contract and apply the appropriate taxation to the separate parts. Hence, as the Commentaries on the OECD Model are accepted as a valid legal source, a section with examples should be included in the Commentaries, as is often seen in challenging areas such as the definition of royalties – despite the inherent shortcomings of examples. The examples and further guidelines should explain when the provision of services is a principal part of a contract and when it is ancillary and largely unimportant. Furthermore, these examples and guidelines should also explain whether this distinction should be made from a technical, practical and commercial perspective and/or from the perspective of the typical user of the provided services. The regime governing mixed contracts – and thereby most cloud computing contracts – is a source of legal uncertainty for taxpayers, and failure to provide clarification may have a negative impact on the promotion and development of new business models fostered by the digitalization of the economy, including the cost minimization and operational excellence of cloud computing-as-a-service, which has been said to benefit society as a whole ( see section 2 ). Finally, it is

172. Id., at para. 231.

173. Proposal for a Council Directive on the common system of a digital services tax on revenues resulting from the provision of certain digital services, COM(2018) 148 final (2018), Primary Sources IBFD.

174. The three biggest CCSPs (Amazon, Microsoft and Google) account jointly for approximately 65% of the public cloud computing market: see Synergy Research Group, *supra* n. 166; and OECD/G20, *Action 1 Final Report*, *supra* n. 1, at para. 142.

175. OECD/G20, *Inclusive Framework Interim Report*, *supra* n. 7, at para. 246.

176. For a thorough analysis of the history and development of the principle of ability to pay, see Englisch, *supra* n. 29. In brief, Englisch argues that previously, the principle of ability to pay was closely associated with the benefit principle. As stated in A. Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* bk. V, ch. 2, pt. II (Strahan and Cadell 1776), everyone should contribute "as nearly as possible, in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the state", or, as argued by T. Hobbes, *Leviathan or The Matter, Forme and Power of a Common-Wealth Ecclesiasticall and Civil* (Andrew Crooke 1651), in proportion to their consumption. An alternative interpretation of the principle of ability to pay is to associate it with the so-called "theory of equal sacrifice", supported by, among others, J.S. Mill, *Principles of Political Economy with Some of Their Applications to Social Philosophy* (John W. Parker 1848).

177. Englisch, id., at sec. 19.1.1.

178. Id., at secs. 19.1.1. and 19.1.2.

179. OECD/G20, *Action 1 Final Report*, *supra* n. 1, at Annex E: here, it is recognized that taxpayers bearing the legal responsibility for paying the tax may alter their behaviour and shift the burden of the tax to other parties through changes in supply or in prices. However, the extent of the shifting is likely to depend on market conditions, e.g. competition and elasticity, as well as the specific type of tax imposed.

180. OECD/G20, *Action 1 Final Report*, *supra* n. 1, at p. 100.

181. See Weber & Sirithaporn, *supra* n. 31, and the other works and authors cited in the same footnote.

182. See Weber & Sirithaporn, *supra* n. 31, and the other works and authors cited in the same footnote.

explicitly stated in the preamble of the OECD Model (2017) that among the factors to be taken into account when considering entering into a tax treaty are the various features that encourage and foster economic ties between countries, such as the greater certainty of tax treatment for taxpayers.<sup>[183]</sup>

## 5 Conclusion

Even though the allocation of taxing rights between contracting states is nothing new, the digitalization of the economy raises challenges in respect of the classification of payments and in delimiting the PE threshold. Cloud computing-as-a-service, which is considered to be fundamental in accelerating the digitalization of other businesses, is one of the new business models creating challenges for taxpayers and tax authorities in the allocation of the right to tax payments. Cloud computing contracts are typically complex, as they include various services, and it is therefore necessary first to analyse whether the consideration paid under such contracts should be subject to unified taxation, or whether it should be broken down and its elements provided with separate classifications before taxation is applied. The question of how to distinguish the principal service from ancillary and largely unimportant services under such mixed contracts has already been debated in the international tax literature, without reaching a final conclusion. In order to adhere to the principle of legal certainty, it is argued in this article that the Commentaries on the OECD Model should be updated to reduce this uncertainty and to provide direction on whether the distinction should be conducted from a technical, practical or commercial perspective and/or from the perspective of the typical user.

Furthermore, it is argued in this article that payments for cloud computing-as-a-service in the form of SaaS, PaaS and IaaS, deployed as either public or private cloud computing in accordance with their principal purpose, should, in the vast majority of transactions, be classified as business income under article 7 of the OECD Model (2017) and, hence, be taxable only in the domicile state of the CCSP unless the CCSP has a PE in the user jurisdiction. The reason is that, in the majority of transactions, the payment does not constitute consideration for the right to use an asset included in the definition of "royalties" in article 12(2) of the OECD Model (2017), but instead consideration for the provision of services using intellectual property rights included in that definition. However, special attention should be paid to whether the applicable tax treaty includes technical services or technical assistance within its definition of royalties and whether the technical knowledge used by the CCSP may be considered know-how. Similarly, special attention should be paid if the applicable tax treaty includes ICS equipment and IaaS is deployed as private cloud computing. In such cases, the consideration for the services provided is more likely to be treated as a payment for the right to use the ICS equipment, i.e. a right to use the physical servers, especially if IaaS is deployed on the premises of the user. As a result, such payments may be classified as royalties. Moreover, it cannot be precluded that IaaS deployed as private cloud computing should be classified as capital gains under article 13 of the OECD Model (2017) if significant rights associated with the ownership of an asset are transferred to the user. However, this should rarely be the case, because, inter alia, one of the benefits of cloud computing is that the users do not have to invest in computer equipment.

Finally, assuming that the server farms are owned and operated by local subsidiaries and that local representatives conclude contracts with users in their own name and on their own account, it seems unlikely that PEs will be created within cloud computing business models. However, the implementation of BEPS Action 7 is likely to increase the number of user jurisdictions in which taxable revenue is generated as part of a business model based on the provision of cloud computing-as-a-service. Assuming that local subsidiaries and representatives are remunerated in accordance with the arm's length principle, these jurisdictions should be allocated taxable revenue in accordance with the value created in these jurisdictions. However, in the case of remote selling, income from cloud computing-as-a-service will be taxable in the user jurisdiction only if the payment is classified as royalties, which typically will apply only if the payment is regarded as consideration for the use of or the right to use ICS equipment, which is the case with private cloud computing.

In sum, it is recommended that policymakers await the full effects of the implementation of the BEPS package before adopting measures that might jeopardize the potential of the digitalization of the economy. The combination of low operating margins, a somewhat limited use of data and the probable conversion of remote selling into local reselling may mean that further measures in respect of cloud computing business models become unnecessary.

---

<sup>183</sup>. [OECD Model \(2017\)](#), Introduction, para. 15.5.