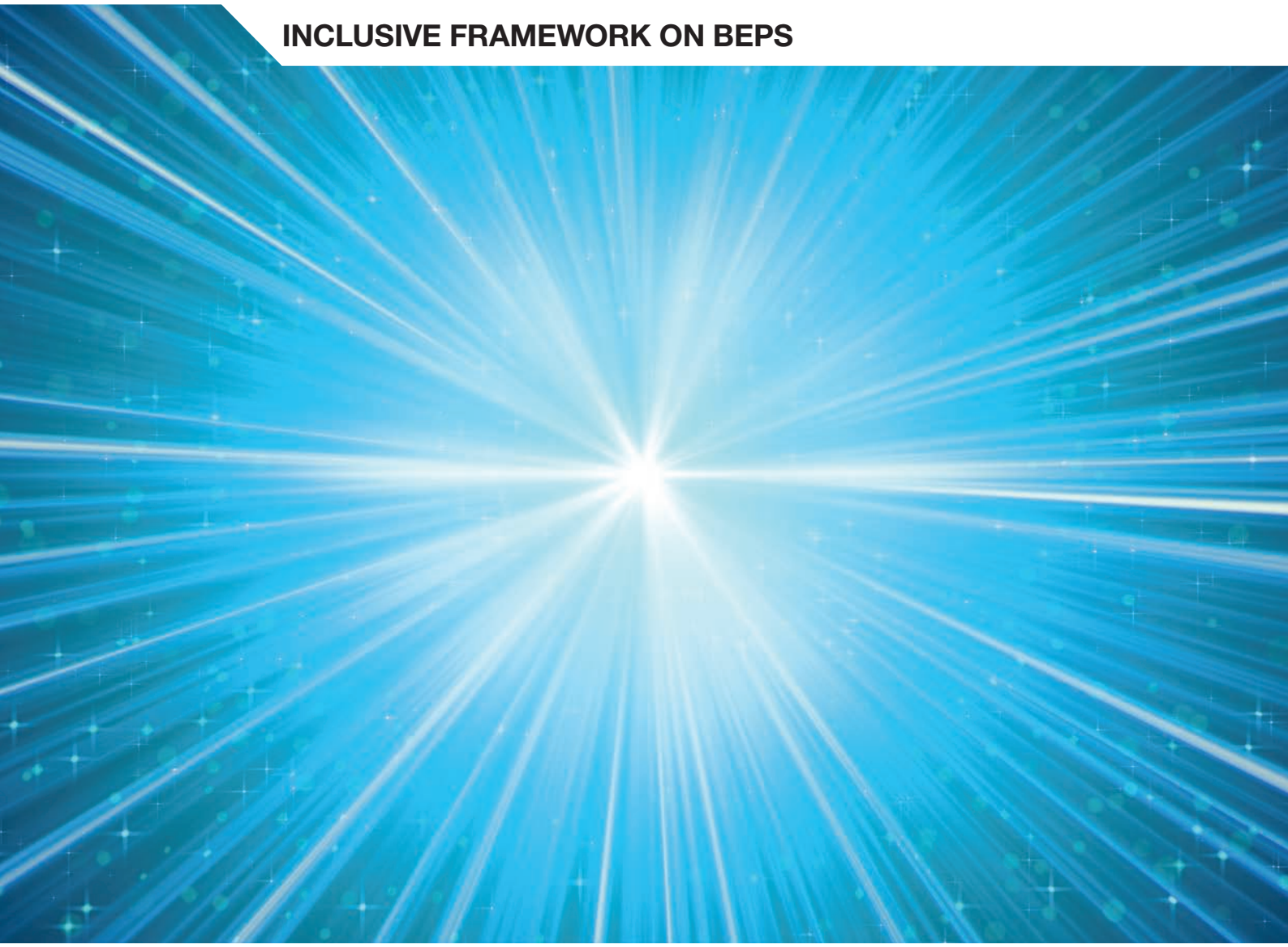
OECD/G20 Base Erosion and Profit Shifting Project

Tax Challenges Arising from Digitalisation –Interim Report 2018

INCLUSIVE FRAMEWORK ON BEPS



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BETTER POLICIES FOR BETTER LIVES

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Foreword

The integration of national economies and markets has increased substantially in recent years, putting a strain on the international tax rules, which were designed more than a century ago. Weaknesses in the current rules create opportunities for base erosion and profit shifting (BEPS), requiring bold moves by policy makers to restore confidence in the system and ensure that profits are taxed where economic activities take place and value is created.

Following the release of the report Addressing Base Erosion and Profit Shifting in February 2013, OECD and G20 countries adopted a 15-point Action Plan to address BEPS in September 2013. The Action Plan identified 15 actions along three key pillars: introducing coherence in the domestic rules that affect cross-border activities, reinforcing substance requirements in the existing international standards, and improving transparency as well as certainty.

After two years of work, measures in response to the 15 actions were delivered to G20 Leaders in Antalya in November 2015. All the different outputs, including those delivered in an interim form in 2014, were consolidated into a comprehensive package. The BEPS package of measures represents the first substantial renovation of the international tax rules in almost a century. Once the new measures become applicable, it is expected that profits will be reported where the economic activities that generate them are carried out and where value is created. BEPS planning strategies that rely on outdated rules or on poorly co-ordinated domestic measures will be rendered ineffective.

Implementation is now the focus of this work. The BEPS package is designed to be implemented via changes in domestic law and practices, and via treaty provisions. With the negotiation for a multilateral instrument (MLI) having been finalised in 2016 to facilitate the implementation of the treaty related measures, 67 countries signed the MLI on 7 June 2017, paving the way for swift implementation of the treaty related measures. OECD and G20 countries also agreed to continue to work together to ensure a consistent and co-ordinated implementation of the BEPS recommendations and to make the project more inclusive. Globalisation requires that global solutions and a global dialogue be established which go beyond OECD and G20 countries.

A better understanding of how the BEPS recommendations are implemented in practice could reduce misunderstandings and disputes between governments. Greater focus on implementation and tax administration should therefore be mutually beneficial to governments and business. Proposed improvements to data and analysis will help support ongoing evaluation of the quantitative impact of BEPS, as well as evaluating the impact of the countermeasures developed under the BEPS Project.

As a result, the OECD established an Inclusive Framework on BEPS, bringing all interested and committed countries and jurisdictions on an equal footing in the Committee on Fiscal Affairs and all its subsidiary bodies. The Inclusive Framework, which already has more than 100 members, will monitor and peer review the

implementation of the minimum standards as well as complete the work on standard setting to address BEPS issues. In addition to BEPS Members, other international organisations and regional tax bodies are involved in the work of the Inclusive Framework, which also consults business and the civil society on its different work streams.

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Abbreviations and acronyms

3-D	Three-Dimensional
AEOI	Automatic Exchange of (financial account) Information
ALP	Arm's Length Principle
APA	Advance Pricing Arrangement
ARPU	Average Revenue Per User
ATAD	Anti-Tax Avoidance Directive
BEAT	Base Erosion and Anti-Abuse Tax
BEPS	Base Erosion and Profit Shifting
B2B	Business-to-Business
B2C	Business-to-Consumer
CbC	Country-by-Country
CbCR	Country-by-Country Report
CFA	Committee on Fiscal Affairs
CFC	Controlled Foreign Company
COGS	Cost of Goods Sold
CRA	Canada Revenue Agency
CRS	Common Reporting Standard
DEMPE	Development, Enhancement, Maintenance, Protection and Exploitation
DPT	Diverted Profits Tax
DTC	Double Tax Convention
ECI	Effectively Connected Income
EEA	European Economic Area
EL	Equalisation Levy
ETCB	Estonian Tax and Customs Board
EU	European Union
FTA	Forum on Tax Administration
G20	Group of Twenty
GAAR	General Anti Avoidance Rule
GILTI	Global Intangible Low-Taxed Income
GST	Goods and Services Tax
GVC	Global Value Chain
HST	Harmonised Sales Tax
IaaS	Infrastructure-as-a-Service
ICT	Information and Communication Technology

IMF	International Monetary Fund
IP	Intellectual Property
ISP	Internet Service Provider
IT	Information Technology
KBC	Knowledge-Based Capital
LDT	Levy on Digital Transactions
MAAL	Multinational Anti-Avoidance Law
MCAA	Multilateral Competent Authority Agreement
MLI	Multilateral Instrument to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting
MNE	Multinational Enterprise
MOSS	Mini One-Stop-Shop
MTC	Model Tax Convention
OECD	Organisation for Economic Cooperation and Development
OTT	Over-the-Top
OURdata	Open, Useful, Reusable Government Data
P2P	Peer-to-Peer
PaaS	Platform-as-a-Service
PE	Permanent Establishment
PPT	Principal Purpose Test
R&D	Research and Development
SaaS	Software-as-a-Service
SAS	US Census Bureau's Services Annual Survey
SEP	Significant Economic Presence
SME	Small and Medium-sized Enterprise
TFDE	Task Force on the Digital Economy
TCJA	Tax Cuts and Jobs Act
TIEA	Tax Information Exchange Agreement
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
VAT	Value Added Tax
VAT/GST	Value Added Tax/Goods and Services Tax
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

Chapter 1. Introduction to the Interim Report on the Tax Challenges Arising from Digitalisation

This chapter provides an overview of the impact of digitalisation on society and the global economy, including its role in fostering innovation. It outlines the history of work relating to the tax issues arising from digitalisation, including the 2015 BEPS Action 1 Report as well as the work undertaken since then by the more than 110 members of the OECD/G20 Inclusive Framework on BEPS.

1.1. Overview

1. Digitalisation is transforming many aspects of our everyday lives, as well as at the macro-level in terms of the way our economy and society is organised and functions. The breadth and speed of change have been often remarked upon, and this is also true when one considers the implications of this digital transformation on tax matters.

2. This chapter first looks at the significant impact that digitalisation is making on our broader environment, and provides an update from the 2015 BEPS Action 1 Report on *Addressing the Tax Challenges of the Digital Economy,*[1] which described the evolution of information and communications technology (ICT). It then considers the history of work relating to the tax issues arising from digitalisation, including the OECD's 1998 Ottawa report on *Electronic Commerce: Taxation Framework Conditions*,[2] and the 2015 BEPS Action 1 Report. The 2015 Report described both the exacerbation of BEPS issues as a result of digitalisation, and, at the same time, identified a number of broader tax challenges that go beyond the scope of BEPS. The final section of this chapter describes the work undertaken by the Inclusive Framework on BEPS since 2015 through to the delivery of this Interim Report, which has included the involvement of a wide range of stakeholders.

3. Digitalisation raises a large number of public policy challenges, and is also changing the nature of policy-making itself, through the emergence of a new range of tools available to both develop and implement effective policies. The work being undertaken to consider the impact of digitalisation on the international tax rules and other aspects of the tax system forms only one part of this broader unfolding transformation. Considering the broader policy challenges, the OECD's *Going Digital* project launched in 2017 aims to help policymakers better understand digital transformation and develop and implement a resilient framework that fosters a positive and inclusive digital economy and society.[3]

1.2. The digital transformation

4. The digital transformation is changing the way people interact with each other and society more generally, raising a number of pressing issues in the areas of jobs and skills, privacy and security, education, health as well as in many other policy areas. Digitalisation is an important source of entrepreneurship, lowering barriers to entry and more broadly affecting the business environment by bringing down transaction costs, increasing price transparency and improving productivity (see Box 1.1). It is now easier for businesses to communicate with suppliers, customers, and employees using Internet-based tools, and developments in ICT are also leading to the emergence of new and transformed business models.

Box 1.1. How large are the productivity effects?

Evidence on productivity impacts from new production technologies come mainly from firm- and technology-specific studies. A sample of these studies is provided below. These studies suggest sizeable potential productivity impacts. However, the studies follow a variety of methodological approaches, and often report results from a few, early-adopting technology users, making aggregate estimates difficult to derive.

- In the United States, output and productivity in firms that adopt data-driven decision making are 5% to 6% higher than expected given those firms' other investments in ICTs (Brynjolfsson, Hitt and Kim, 2011).
- Improving data quality and access to data by 10% i.e., presenting data more concisely and consistently across platforms and allowing them to be more easily employed would increase labour productivity by 14% on average, but with significant cross-industry variations (Barua, Mani and Mukherjee, 2013).
- Autonomous mine haulage trucks could in some cases increase output by 15% to 20%, lower fuel consumption by 10% to 15% and reduce maintenance costs by 8% (Citigroup-Oxford Martin School, 2015).
- Autonomous drill rigs can increase productivity by 30% to 60% (Citigroup-Oxford Martin School, 2015).
- By raising productivity new technologies can also improve financial performance among adopters. A recent case study shows that by developing a significant Internet of Things and data analytics capability, a leading United States automaker saved around USD 2 billion over five years (2011-14 and most of 2015). A 1% increase in maintenance efficiency in the aviation industry, brought about by the industrial Internet, could save commercial airlines globally around USD 2 billion per year (Evans and Anninziata, 2012).

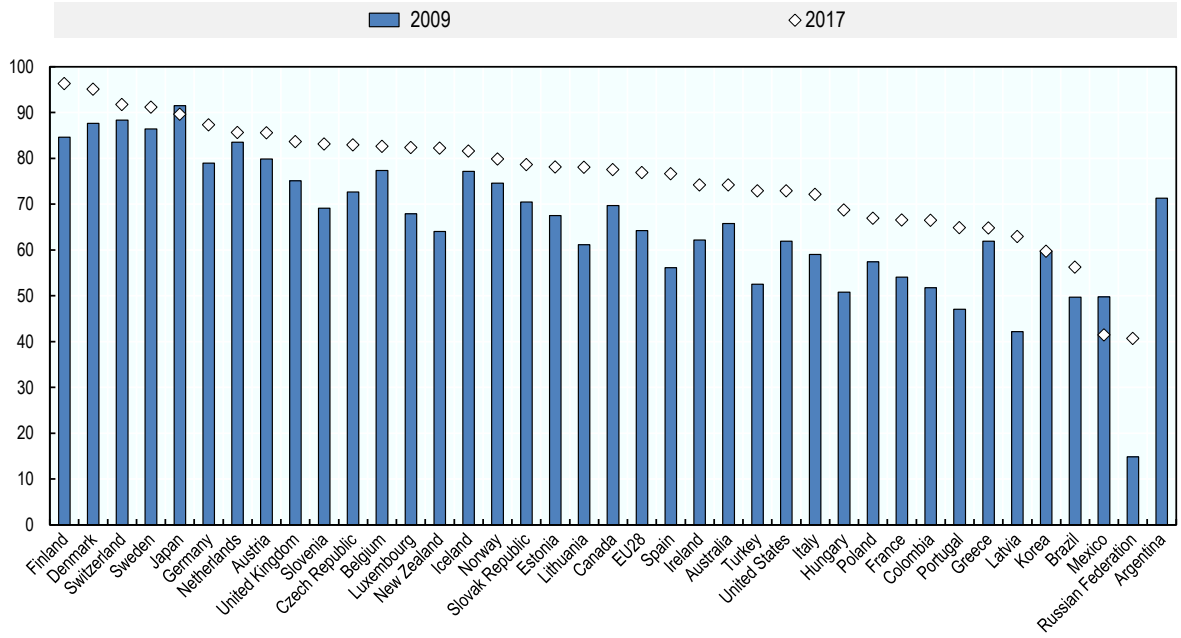
Source: OECD (2017c)

5. Ubiquitous digital devices, connectivity and "smart" technology are bringing significant changes that are profoundly affecting relationships and markets. ICT has become part of the foundational infrastructure for business and society, evidenced in a heavy reliance on efficient and widely accessible online communication networks and services, data, software, and hardware.

6. Part of the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project delivered in 2015, the Action 1 Report, *Addressing the Tax Challenges of the Digital Economy*,[4] described the evolution over time of ICT and highlighted the interactions between its various layers. Since then, the diffusion of technologies, which had already begun to significantly change the economy and many aspects of our daily lives, has intensified. The use of cloud computing among firms has accelerated, with close to 50% of large businesses using cloud computing services in 2016, and a large proportion of businesses now with some degree of web presence (See for example Figure 1.1).

Figure 1.1. Business with a web presence

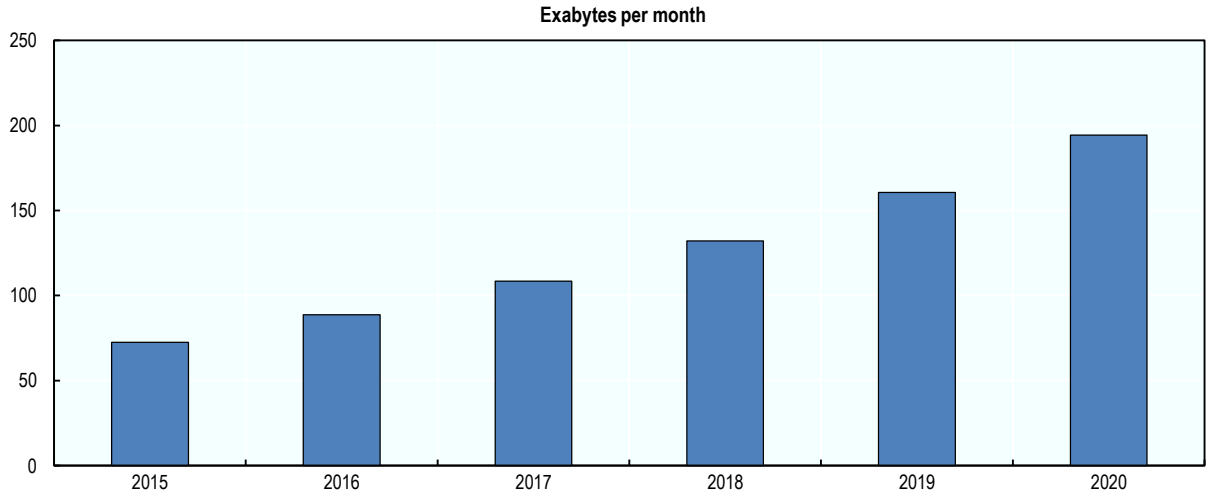
As a percentage of total businesses.



Notes: 2009 series - the following countries show different year data: Canada (2007), Iceland (2010), Mexico (2008), New Zealand (2008) and the United States (2007).
2017 series - the following countries show different year data: Australia (2016), Brazil (2015), Canada (2013), Switzerland (2011), Colombia (2015), Japan (2015), Korea (2015), Mexico (2012), New Zealand (2016), the Russian Federation (2014) and the United States (2012).
Source: Eurostat; OECD; UNCTAD, February 2018.

7. Connectivity has become increasingly ubiquitous, with 83% of adults in OECD countries accessing the Internet in 2016, and 95% of businesses now benefitting from a high-speed Internet connection.[5] The increasingly central role of digital technologies to people's lives can be seen in the growth of global Internet traffic (Figure 1.2).

Figure 1.2. Global Internet traffic forecast, 2015-20[6]



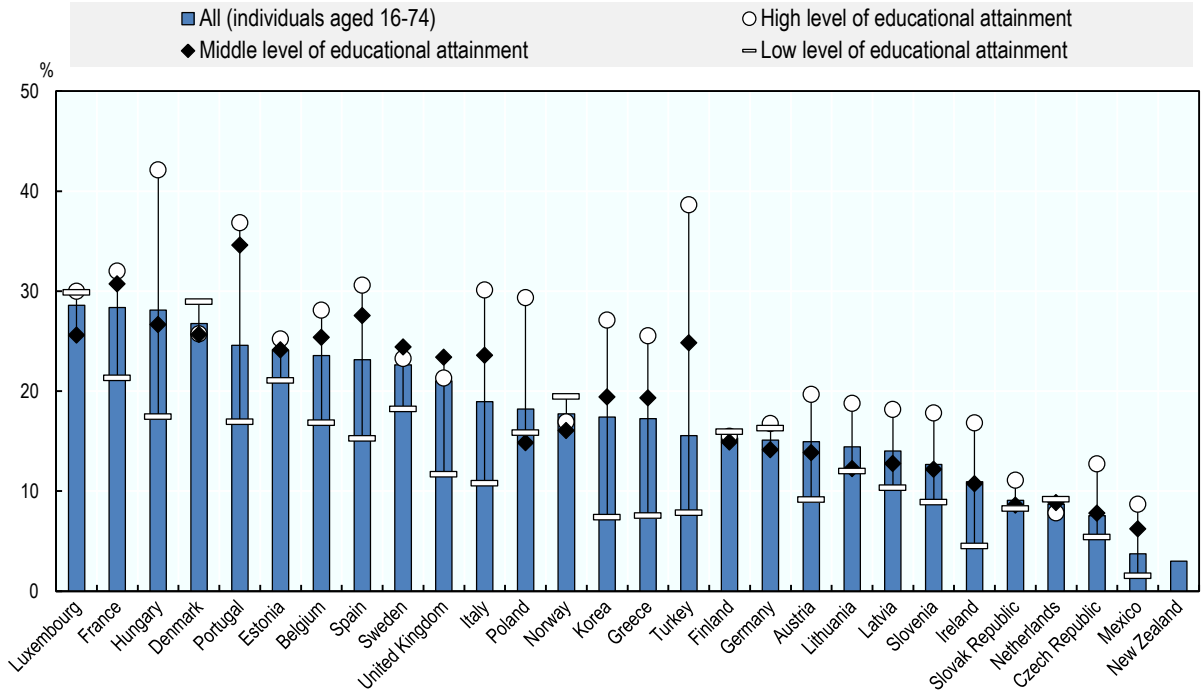
Source: Cisco (2016).

8. An enormous amount of data is now generated by these constantly connected users and devices. Today, the annual volume of data created across the globe is estimated to double every year, with more than 44 zettabytes of data[7] expected to have been produced by 2020.[8] This data is being collected by businesses and governments, and combined with advances in data analytics and technology diffusion, are providing the insights necessary to transform and shape the way people behave and organisations operate.

9. Scientific innovation continues to push the digital frontier, as was recognised in the 2015 BEPS Action 1 Report, which identified a number of emerging technologies, including the Internet of Things, digital (crypto-)currencies, the sharing economy, 3-D-printing, advanced robotics, and open government data, which are combining in new and innovative ways. Only a few years later, the growing importance of these trends has been confirmed. The Internet of Things (i.e., online connectivity between devices) is expanding exponentially – up 31% from 2016 to 2017, and is expected to reach 2.5 times current levels by 2020.[9] Although many observers have raised concerns about their underlying stability and value, more than 1 500 crypto-currencies are now in existence.[10] Their underlying distributed ledger technology, blockchain, is also offering a number of other applications, many of which are still being explored. This includes enhanced security and protection features, which could provide a more secure record of transactions and other dimensions of economic activity. This is particularly important noting the significant numbers of digital security incidents now being experienced by individuals online (See for example Figure 1.3.).

Figure 1.3. Digital security incidents experienced by individuals in a 3-month period, 2015

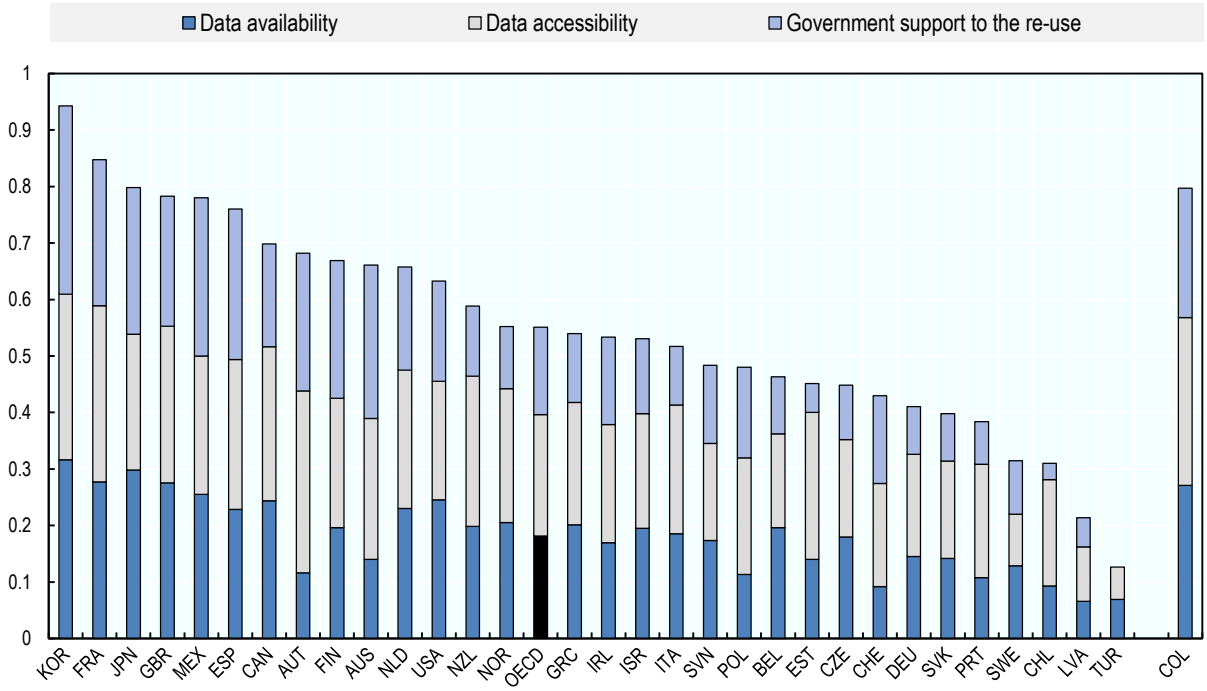
As a percentage of all individuals and by level of educational attainment.



Note: Data for Korea refer to 2016 for all individuals but the breakdown by level of educational attainment refers to 2014. Data for New Zealand and Switzerland refer to 2014. Data for Iceland refer to 2010. Data for Korea, Mexico, New Zealand and Switzerland follow a different methodology.
Source: OECD, ICT Access and Usage by Households and Individuals (database), http://oe.cd/hhind (accessed June 2017).

10. Further, in recent years, 3D-printing has increasingly entered the mainstream, shifting from bespoke use for the development of prototypes towards replacing traditional mass manufacturing methods, changes which are also altering the supply chain. In the aerospace industry for example, Boeing is already using 3D printing to create more than 50 000 units of over 900 distinct parts for both its aircraft and spacecraft. We have also seen "narrow" artificial intelligence (machine based systems that can carry out tasks only within a delineated field) deployed and growing in a diverse number of fields, with some forecasts estimating that "broad" or "general" artificial intelligence (machine based systems that can learn and resolve innovative problems) could be achieved in the not too distant future. Meanwhile, open government data (the publication of machine-readable data by public entities) is becoming the default approach for governments as an effort to ensure that it is available for appropriate use by business, civil society and the public at large (see Figure 1.4.).[11]

Figure 1.4. Open Useful Reusable Government Data Index (OURdata), 2017[12]



Note: Data for Hungary, Iceland and Luxembourg are not available. Denmark does not have a Central/federal data portal and therefore are not displayed in the Index.
Detailed methodology and underlying data available in the annex online (http://dx.doi.org/10.1787/gov_glance-2017-en)
Information on data for Israel: http://dx.doi.org/10.1787/888932315602.
Source: OECD Survey on Open Government Data

11. In this changing environment, the challenges for policymakers are complex as the future is far from certain. There are multiple possible trajectories, with many of these being explored in the OECD's Going Digital project.[13] Digitalisation is also changing the nature of policy-making itself with a new range of tools available to develop, monitor and evaluate the effectiveness of a range of different policies and their outcomes. It is, thus, also important to be able to harness technological innovation to support the delivery of more effective and tailored solutions and foster a supportive environment for innovation and growth, as well as ensure that the risks from digitalisation are mitigated or avoided through appropriate safeguards. For tax matters, this means that policy development and implementation must be designed to allow for the changing environment, while being sufficiently clear to provide the certainty and clarity that facilitates sustainable, long-term economic growth.

1.3. Work under the OECD/G20 BEPS Project on the tax challenges arising from digitalisation

1.3.1. The OECD/G20 BEPS Project

12. Launched in 2013, the OECD/G20 Base Erosion and Profit Shifting (BEPS) Project consisted of 15 separate action areas targeting the gaps and mismatches in the international tax system that facilitated the shifting of profits by multinational enterprises

(MNEs) away from where the underlying economic activity and value creation took place. Action 1 of the BEPS Project undertook to consider the tax challenges raised by digitalisation for both direct and indirect taxation.

13. To carry out this work, the Task Force on the Digital Economy (TFDE) was established as a subsidiary body of the Committee on Fiscal Affairs (CFA), with the participation of more than 45 countries[14] including all OECD and G20 members. In preparing the 2015 BEPS Action 1 Report, the TFDE drew from previous work on this topic, including the 1998 Ottawa report on *Electronic Commerce: Taxation Framework Conditions*,[15] as well as the work of the Technical Advisory Group on Monitoring the Application of Existing Treaty Norms for Taxing Business Profits.[16]

14. The 2015 BEPS Action Report, *Addressing the Tax Challenges of the Digital Economy*, was released in October 2015 as part of the BEPS package. The full BEPS package was endorsed by the G20 Leaders in November 2015, more than 110 countries and jurisdictions having committed to its implementation as members of the Inclusive Framework on BEPS, which was established in June 2016.

1.3.2. BEPS issues exacerbated by digitalisation

15. The 2015 Action 1 Report recognised that digitalisation and some of the business models that it facilitates present important challenges for international taxation. The report also acknowledged that it would be difficult, if not impossible, to 'ring-fence' the digital economy from the rest of the economy for tax purposes because of the increasingly pervasive nature of digitalisation. Instead, it considered digitalisation as a transformative process affecting all sectors brought by advances in ICT.[17]

16. The report identified a number of key features of digitalisation that are potentially relevant from a tax perspective. These include mobility, reliance on data, network effects, the spread of multi-sided business models, a tendency towards monopoly or oligopoly, and volatility. There was recognition that digitalisation has also accelerated and changed the spread of global value chains in which MNEs integrate their worldwide operations. More specifically, the report observed new phenomena such as the collection and exploitation of data, network effects and the emergence of new business models, such as multi-sided platforms, as exacerbating the challenges to the existing tax rules.

17. The report recognised that some of these key features, while not generating unique BEPS issues, can exacerbate BEPS risks. Accordingly, they were identified and taken into consideration during the work conducted under the BEPS Action Plan. The related outcomes were expected to have a significant impact in reducing BEPS risks arising as a result of digitalisation, in particular through the modifications of the definition of permanent establishment (Action 7), the revised transfer pricing guidance (Action 8-10) and recommendations on the design of effective controlled foreign company (CFC) rules (Action 3). Since reaching agreement over the BEPS package in 2015, countries have begun implementing these measures. The impact of these measures on the challenges raised by digitalisation is discussed further in Chapter 3 of this report.

1.3.3. The broader tax challenges raised by digitalisation

18. The 2015 Action 1 Report also identified a number of broader tax challenges raised by digitalisation, notably in relation to nexus, data and characterisation. These challenges go beyond BEPS and chiefly relate to the question of how taxing rights on income generated from cross-border activities in the digital age should be allocated

among countries. The 2015 Report also recognised that in the area of indirect taxation, new challenges arose in particular with respect to the collection of Value Added Tax/Goods and Services Tax (VAT/GST) on the continuously growing volumes of goods and services that are purchased online by private consumers from foreign suppliers.

19. To address these indirect tax concerns, it was recommended that countries implement the OECD's International VAT/GST Guidelines,[18] and in particular the destination principle for determining the place of taxation of cross-border supplies, and consider implementing the mechanisms for the effective collection of VAT/GST presented in the Guidelines. The 2015 Action 1 Report also identified a number of possible approaches for a more effective VAT/GST collection on the significantly growing volume of imports of low value goods from online sales.

20. To tackle the broader direct tax issues raised by digitalisation, the TFDE analysed three options, namely (i) a new nexus rule in the form of a "significant economic presence" test, (ii) a withholding tax which could be applied to certain types of digital transactions, and (iii) an equalisation levy, intended to address a disparity in tax treatment between foreign and domestic businesses where the foreign business had a sufficient economic presence in the jurisdiction.

21. None of these options were ultimately recommended in the 2015 Action 1 Report, however it was concluded that countries could introduce any of these options in their domestic laws as additional safeguards against BEPS, provided they respect existing treaty obligations, or in their bilateral tax treaties. Further, it was recognised that the measures developed in the BEPS Project would mitigate some aspects of the broader tax challenges and that the implementation of the measures to address the VAT/GST challenges that were included in the 2015 Action 1 Report, particularly the International VAT/GST Guidelines, would lead to a more effective and efficient collection of these taxes in the market jurisdiction. It was agreed to continue to monitor developments in respect of the digital economy, with a further report to be delivered by 2020.

1.4. Taking forward the work on tax and digitalisation since 2015

22. Following the delivery of the 2015 BEPS package and a call from the G20 to engage an even broader range of countries in the implementation of the measures, the OECD/G20 Inclusive Framework on BEPS was established in June 2016. Open to interested countries and jurisdictions, today the Inclusive Framework has more than 110 members participating on an equal-footing, committed to the implementation of the 2015 BEPS package and to working together further on BEPS-related issues.

23. With the establishment of the Inclusive Framework, a further mandate of the TFDE was agreed in January 2017, including for the delivery of an interim report by the end of 2018 and a final report in 2020.[19] In March 2017, the G20 called on the TFDE to deliver an interim report by the 2018 IMF/World Bank Spring Meetings – a request that was reiterated by the G20 Leaders at their July 2017 Hamburg Summit. With this timeframe in mind, the TFDE resumed its work, including the monitoring of developments in digital technology and business models, the individual measures taken by countries to address the broader tax challenges raised by digitalisation, and the extent of implementation and impact of the relevant Actions from the BEPS package.

24. A critical element contributing to the development of the BEPS package in 2015, and which has been continued through the work of the Inclusive Framework, has been a process of continuous liaison with stakeholders. Leading up to the preparation of this

Interim Report, a Request for Input on the tax challenges raised by digitalisation was issued in September 2017, which saw more than 50 submissions received from academics, civil society, from businesses directly as well as professional services firms.[20] To explore these issues in more detail with stakeholders, a public consultation was held on 1 November 2017 in California, bringing together a selection of commentators to discuss these issues in the presence of members of the TFDE. This event was attended by more than 100 participants, and was also streamed live.[21]

1.5. The Interim Report on the tax challenges arising from digitalisation

25. This Interim Report reflects the recent work of the TFDE and overall, the progress made by the Inclusive Framework since the 2015 Action 1 Report in considering the tax issues raised by digitalisation, and taking into account the latest developments.

26. It first provides an in-depth analysis of value creation across different digitalised business models, focusing on the main characteristics of digital markets and processes of value creation. The analysis is complemented by case studies with the aim of identifying the key factors that are prevalent in more highly digitalised businesses (Chapter 2). It then describes the current progress in the implementation of the BEPS package, with a focus on specific measures relevant to digitalisation and the resulting impact on the behaviour of highly digitalised businesses (Chapter 3). It also provides an overview of recent tax policy developments that are potentially relevant to digitalisation, with a focus on measures enacted by countries that seek to address aspects of the broader tax challenges identified in the 2015 Action 1 Report (Chapter 4).

27. The Report then offers a description of the challenges identified with respect to the continuing effectiveness of international tax standards in light of the issues raised by the digitalisation of the economy, drawing from the analysis set out in Chapter 2. It provides a sense of direction that reflects the commitment of the Inclusive Framework members to work towards a consensus-based, global solution on these matters (Chapter 5). The Report goes on to recognise that there is no consensus on the merits of, or need for, interim measures, and that a number of countries consider that an interim measure will give rise to risks and adverse consequences irrespective of any limits on the design of such a measure. Those countries that are in favour of the introduction of interim measures consider that there is a strong imperative to act pending a consensus on a global solution, and have identified a number of considerations which could limit the potential for divergence and mitigate the possible adverse effects of such measures (Chapter 6).

28. Finally, it looks beyond the impact of digitalisation on the international tax rules to consider how digitalisation is changing other parts of the tax system in important and sometimes dramatic ways, providing both new opportunities and new risks for policymakers and tax administrations (Chapter 7). Directions for the future work of the Inclusive Framework to address the tax challenges raised by digitalisation are set out in the final chapter of the report (Chapter 8).

29. This Interim Report outlines a number of areas where there are clear differences of view held by countries, including over the need for future reform of the international tax system. These differences are presented in order to identify the points of divergence and lay the groundwork for future work on the development of a consensus-based solution that bridges these different positions as part of the Inclusive Framework's delivery of its 2020 Final Report.

Notes

[1] OECD (2015)

[2] OECD (2001)

[3] Further information about the OECD Going Digital project is available online at http://www.oecd.org/going-digital/

[4] OECD (2015)

[5] OECD (2017a)

[6] One exabyte is equal to 10^{18} bytes

[7] One zettabyte is equivalent to a trillion gigabytes, with a trillion being 1 000 billion).

[8] International Data Corporation (2014)

[9] Gartner (2017), Gartner Newsroom website, https://www.gartner.com/newsroom/id/3598917 (accessed 12 February 2018).

[10] Cryptocurrency Market Capitalizations website; https://coinmarketcap.com/ (accessed 12 February 2018).

[11] OECD (2017b)

[12] OECD (2017b). Data for Hungary, Iceland and Luxembourg are not available. Denmark does not have a Central/federal data portal and therefore are not displayed in the Index. Detailed methodology and underlying data available in the publication annex online.

[13] Further information about the OECD's *Going Digital* project can be found online at the *Going Digital* website: http://www.oecd.org/going-digital/ (accessed 12 February 2018)

[14] References in this report to "country" or "countries" should be read as a reference to "country or jurisdiction" and "countries and jurisdictions", respectively.

[15] OECD (2001)

[16] OECD (2005)

[17] OECD (2015) *Executive Summary,* p.11.

[18] OECD (2017d)

[19] Information on the Task Force on the Digital Economy and its mandate can be found online in the Online Guide to OECD Intergovernmental Activity available at https://oecdgroups.oecd.org/default.aspx

[20] The submissions received as well as the Request for Input are available online at http://www.oecd.org/tax/beps/public-comments-received-on-the-tax-challenges-of-digitalisation.htm (accessed 12 February 2018)

[21] The recording of the public consultation held on 1 November 2017 is available online at http://www.oecd.org/tax/beps/public-consultation-on-tax-challenges-of-digitalisation-1-november-2017.htm (accessed 12 February 2018)

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Chapter 2. Digitalisation, business models and value creation

This chapter considers the impact of digitalisation on business models and value creation. It describes the main features of digital markets and how these shape value creation, looking in particular at more highly digitalised business models. Three characteristics that are frequently observed in certain highly digitalised business models are identified.

2.1. Overview

30. Technological advances have brought about a rapid decline in the unit cost of data processing, leading to dramatic increases in the use of digital information which can be manipulated at high speeds and low marginal costs. This change has facilitated the adoption and integration of digital products and transactions, inducing an ongoing, structural transformation of the economy.

31. This chapter presents an in-depth analysis of value creation across different digitalised business models, with the aim of informing the current debate about international taxation. Section 2 describes the main characteristics of digital markets. Such characteristics shape the three different processes of value creation identified in Section 3 (value chain, value network and value shop) and analysed in detail in Section 4 through business case studies. Section 5 identifies three key factors that are prevalent in more highly digitalised businesses and it accounts for the related differing views of the members of the Inclusive Framework on BEPS. Section 5 lays the groundwork for the discussion in Chapter 5 on the implications of digitalisation for the international tax framework.

32. It emerges that the structure of businesses and the process of value creation have significantly evolved, especially for some enterprises. In attempting to understand these changes, it is important to highlight a number of the most salient, common characteristics of digitalised businesses. These characteristics, which will become common features of an even wider number of businesses as digitalisation continues, include: cross-jurisdictional scale without mass; the heavy reliance on intangible assets, especially intellectual property (IP); and the importance of data, user participation and their synergies with IP.

33. **Cross-jurisdictional scale without mass**. Digitalisation has allowed businesses in many sectors to locate various stages of their production processes across different countries, and at the same time access a greater number of customers around the globe. Digitalisation also allows some highly digitalised enterprises to be heavily involved in the economic life of a jurisdiction without any, or any significant, physical presence, thus achieving operational local scale without local mass (referred to as “scale without mass,” hereafter).

34. **Reliance on intangible assets, including IP.** The analysis also shows that digitalised enterprises are characterised by the growing importance of investment in intangibles, especially IP assets which could either be owned by the business or leased from a third party. For many digitalised enterprises, the intense use of IP assets such as software and algorithms supporting their platforms, websites and many other crucial functions are central to their business models.

35. **Data, user participation and their synergies with IP**. Data, user participation, network effects and the provision of user-generated content are commonly observed in the business models of more highly digitalised businesses. The benefits from data analysis are also likely to increase with the amount of collected information linked to a specific user or customer. The important role that user participation can play is seen in the case of social networks, where without data, network effects and user-generated content, the businesses would not exist as we know them today. In addition, the degree of user participation can be broadly divided into two categories: active and passive user participation. However, the degree of user participation does not necessarily correlate

with the degree of digitalisation: for example, cloud computing can be considered as a more highly digitalised business that involves only limited user participation.

36. **Relationship between digitalised business models and value creation**. Among members of the Inclusive Framework, the existence of these three frequently observed characteristics of digitalised businesses is generally acknowledged but there is no consensus on their relevance and importance to the location of value creation and the identity of the value creator. There is general agreement that cross-jurisdictional scale without mass and the increased reliance on intangible assets can be highly relevant to the value creation of digitalised businesses, however, there is also agreement that these factors are not exclusive or unique to digitalised businesses.

37. While there is general agreement that data and user participation are common characteristics of digitalised businesses, there are differences of opinion on whether and the extent to which data and user participation represent a contribution to value creation by the enterprise. For some members of the Inclusive Framework, the role of user participation is seen as a unique and important driver of value creation in digitalised businesses. These countries point to the participation and sustained engagement of users which allows digital businesses to collect large amounts of data through the intensive monitoring of users' active contributions and behaviour. These countries also point to the contribution of content by users, which can be central to a digital business' offering and central to attracting other users and generating network effects.

38. These countries also take the view that user participation (e.g., reviews, provision of services) can play an important role in building up the trust and reputation of certain digital businesses and contributing to their brand and the growth of user networks. For example, these countries would consider that in some business models the collection through a digital platform of data and content contributions from users in a jurisdiction and the use of that data to attract other users to the platform and to direct advertising back at the users, are activities integral to the creation of value by the business that effectively take place in that jurisdiction, even if the platform is operated remotely. For these countries, user participation may create value for the digital business. Users employ specific business models to interact with each other. For example, the provision of content accessible by other users increases the platform's utility and value. In the past, such content had either to be produced or bought by the relevant businesses. For these countries, user contribution is something genuinely new and goes beyond the mere consumption of a service (i.e., the provision of access to the business model).

39. In contrast, there are countries that view data collection from users, user participation, and the provision of user generated content as transactions between the users (as providers of data/content) and the digitalised business, with the digitalised business providing financial or non-financial compensation to the users in exchange for such data/content. That non-financial compensation could come in the form of providing, for example, data hosting, email services, or digital entertainment. Countries that support this view agree that the interaction between users and the digitalised business is a transaction that could be subject to income taxation, although they also observe that income tax systems today rarely capture these types of barter transactions where there is no financial compensation (i.e., cash payment) on either side of the transaction. These countries do not agree that the action by the digitalised business to source data from users is an activity to which profit should be attributed to the digitalised business solely because the data acquired may be valuable. In this sense, the user's supply of data would not be different from other business inputs sourced from an independent third party in the

business' supply chain (for example, data storage, broadband access, electricity). Nonetheless, some of these countries are of the view that user data may be recognised as contributing to valuable intangible assets of digitalised businesses and in that sense, may be considered as giving rise to the broader challenges identified above in relation to intangibles. However, there are other countries who do not view the provision of user generated content or the interactions between users and the digitalised businesses as barter transactions between users and digitalised businesses.

40. Differences in views over whether and the extent to which data and user participation contribute to value creation will have an impact on whether there are considered to be tax challenges arising from changing business models, whether those are unique to the application of international tax rules to digitalised firms, or whether any challenges apply to the international tax rules more broadly. Additionally, since the degree of user participation may not closely correlate with the degree of digitalisation, a pure focus on data and user participation without reference to other characterising factors may imply that the tax challenges affect only a specific, more limited group of digitalised businesses.[1] In this context, further work may be needed to assess whether the different views can be reconciled in order to reach consensus on the extent of the long term tax challenges and, in turn, how long term solutions could be developed. The tax implications of the analysis set out in this chapter on digitalisation, business models and value creation, are considered in more detail in Chapter 5.

2.2. The infrastructure of the digitalising economy

41. Before investigating the value creation process, it is useful to lay down the main characteristics of digital markets, i.e., the infrastructure on which digitalised businesses develop. The objective of this section is to establish a wide-ranging understanding of the market dynamics of the digitalisation of the economy before any discussion of the implications of digitalisation for the tax system. This is important for a better grasp of the broader effects of any tax measures considered later in the report and because the characteristics of digital markets shape the process of value creation described in Sections 3 and 4 of this chapter. One difficulty with describing a multitude of relevant features of digital markets and of digitalised business models is to present them in a comprehensive but concise way. In line with this aim, this section adopts a classification of business models/lines derived from the literature (Hagiu and Wright, 2015a).

42. The economic impact of digitalisation has been the subject of an increasing amount of theoretical and empirical research since at least the early 2000s.[2] This economic literature often builds on the analysis of markets understood as offline or online places where two (or more) parties exchange goods or services. Digital (or online) markets are distinct from offline markets in so far as they are characterised by an exacerbation of certain features which are, however, not exclusive to them. Although the language and focus of the analyses often vary, there is widespread consensus on the defining characteristics of digital markets:

- Direct network effects: In digital markets, utility from the consumption of a specific good or service is often dependent on the number of other end-users consuming the same good or service. This effect is called a *direct* network externality, sometimes also referred to as a direct network effect or consumption externality; it is a positive externality in that the larger the network, the larger the end-user utility. The most obvious examples are social media and online messaging services. Both applications are practically useless to the user if he or

she is the only person using them, however, their value increases as the number of other users increases. The effect is also apparent, for instance, in the case of online gaming or operating systems.

- Indirect network effects: In contrast to direct network effects, *indirect* network effects arise in the context of multi-sided markets. As will be discussed in more detail below, they occur when a specific group of end-users (e.g., users of a social network) benefit from interacting with another group of end-users (e.g., advertisers on a social network), for instance, via an online platform. Digitalisation has allowed the emergence of online platforms and networks, and we have seen an increasing number of platform-based businesses in many different sectors such as, for example, accommodation rental, transportation or peer-to-peer e-commerce.
- Economies of scale: In many cases the production of digital goods and services entails relatively higher fixed costs and lower variable costs. Software development, for instance, requires considerable investments in infrastructure and human labour; however, once the final programme has been developed it can be maintained, sold or distributed at very low marginal costs. While in many cases marginal costs will remain non-negligible, there are also a range of non-rival consumption goods,[3] such as software, e-books or music, which can be reproduced at an effective marginal cost of zero.
- Switching costs and lock-in effects: Digital transactions can be carried out on different electronic devices; however, end-user devices often rely on different operating systems. As a result, customers may be locked-in to a particular operating system once they have acquired a specific device. This effect is due to psychological as well as monetary switching costs which end-users have to incur in order to switch from one system to another. Again, social media or email services provide a good example as a change from one application to another entails the transfer of a wide range of personal data and contacts; another example would be a change from a specific smartphone (including operating system) to another, implying a loss in access to previously accumulated applications and data.
- Complementarity: Many of the goods and services traded in digital markets are complements; that is to say, customers derive more utility from consuming two (or more) complementary goods together. For instance, utility from using a laptop or smartphone is greatly increased when it is used together with corresponding software programmes, e.g., operating systems, applications or games. Similarly, utility from spending time on a social media platform is increased when the user also has a smartphone with a range of applications allowing him or her to share more content.

43. These characteristics can be used to describe specific aspects of digital or non-digital markets; as such, they are not exclusive to the digitalised economy. However, the ongoing shift towards digital products and transactions has greatly magnified their relevance and, owing to the fact that they mutually reinforce each other, they have led to a structural transformation of the economy (OECD, forthcoming).

44. In particular, low marginal costs and the global reach of the Internet allow digitalised businesses to quickly increase their scale in operations. Direct and indirect network effects increase the value created by digitalised businesses since larger user bases directly translate into increases in utility and, thus, also economic value. In addition, complementarities between different business lines, for example, in the

development of various end-user devices, operating systems and applications, give rise to economies of scope. As common development costs can be shared across business lines and applications can be streamlined to reduce the cognitive cost to users, digitalised businesses can achieve competitive advantages by expanding their range of activities. Such advantages can become persistent as users are reluctant to incur the costs associated with switching between devices, operating systems and applications.

45. As a result, digital markets are often not competitive in the sense that single firms become large enough to influence market prices (i.e., they are not price-takers). On the one hand, this implies that it may be more difficult for new firms to gain significant market shares if an incumbent firm already dominates the market (OECD, 2015b). On the other hand, low marginal costs and non-rivalry of many digital goods also imply that new entrants can replace an incumbent firm in relatively short time simply by offering a qualitatively superior good. Once a critical mass of end-users has switched to the new product, it becomes possible for the formerly dominant firm to lose its entire market share within a short time span. This has been the case, for instance, with search engines, web browsers and social media platforms (Evans, 2011).

46. The impacts of this digital transformation are further amplified through the fact that digitalisation has also led to an acceleration of economic activities. In the digital space, transactions between end-users in different jurisdictions can be concluded without loss of time and digital content can be accessed immediately from any device connected to the Internet. As a result, digital products and services disseminate faster, markets clear faster, ideas circulate faster and it becomes much easier for businesses to identify, engage and develop their customer bases. This increase in the speed of economic activity implies that businesses can gain significant competitive advantages by being the first to move into, and potentially dominate, a new market.[4]

47. Taken together, these structural changes brought about by digitalisation are transforming the economy, leading to the emergence of new business models and to the substantial transformations of old ones. In particular, the concepts of indirect network effects and multi-sided markets are crucial for understanding the success of several of the most innovative digitalised businesses. The following two subsections therefore discuss these concepts in more detail, providing a first assessment of how they have impacted business models.

2.2.1. Digital multi-sided markets

48. Like offline markets, digital or online markets can be single- or multi-sided. In single-sided markets, sellers engage with only one specific set of customers, e.g., a reader buying a book in a book shop. In multi-sided markets, there are more than one set of customers acquiring different products and services from a company. Multi-sided markets have existed before, for example in the form of television where advertisements are displayed to an audience and newspapers also presenting advertisements to a readership. Nonetheless, the digitalisation of the economy has facilitated the emergence of new enterprises rooted in multi-sided markets.

49. In particular, digitalisation has greatly reduced communication costs, allowing businesses to quickly reach a global base of suppliers, users or customers and to establish user networks across different jurisdictions through websites, online platforms and mobile applications. New digitalised businesses often function as intermediaries linking different user groups which would otherwise find it difficult to interact directly in an offline (or non-digital) environment. Being able to create such networks and enable cross-

jurisdictional exchanges between various end-user groups is at the heart of multi-sided markets and has enormous potential for value creation. Economic analysis has introduced the concept of multi-sided markets to study some of the new, digitalised business models that have begun leveraging off the ability to create vast networks (Rochet and Tirole, 2003, 2006; Ellison and Fudenberg, 2003; Armstrong, 2006).

50. Multi-sided markets are defined by the joint presence of two characteristics: *indirect* network externalities and *non-neutral pricing* strategies. Indirect network effects occur when an increase in end-users on one side of the market increases the utility of end-users on another market side. Take the example of an online platform which helps individuals to rent accommodation by linking hosts and guests. Both types of end-users, hosts and guests, indirectly benefit if there are more end-users on the other side of the market: guests benefit from having more hosts to choose from and hosts benefit from having more guests.

51. As illustrated by this example, the online platform plays a crucial role in facilitating exchange and bringing together the two sides of the market (e.g., hosts and guests); without it, most of the transactions would not have taken place and guests would probably have booked more traditional accommodation.

52. As seen from this perspective, online platforms essentially provide intermediation services across the different sides of a digital market (Caillaud and Jullien, 2003; Rosenblatt and Stark, 2016) and may differ according to the degree of control over their users (Aslam and Shah, 2017). The economic success of digitalised business models relying on the intermediation between different groups of end-users depends crucially on reaching a critical mass of end-users on either side of the market. In this regard, the Internet has allowed digitalised businesses to reach a large number of participants on both sides of the market. A key feature allowing online multi-sided platforms to reach considerable scale has been their ability to adapt their price structures by levying different membership and usage fees on each side of the market (Lambrecht et al., 2014).

53. This leads the discussion to the second characteristic of multi-sided markets: the non-neutral pricing structure. As Rochet and Tirole (2003, 2006) have shown, the prevalence of positive indirect externalities implies that the firm operating the platform can reap benefits over and above the marginal utility of end-users, allowing them to increase the number of users (or transactions) by charging more on one side of the market while reducing the price for end-users on other sides. As a consequence, pricing structures are non-neutral in the sense that optimal prices can be below the marginal cost of provision on one market side while being above on the other side(s); end-users with lower price elasticities will typically be overcharged and vice versa.

54. This result also implies that it may be optimal for platform operators, depending on the magnitude of the indirect network externalities as well as on price elasticities, to provide goods or services free of charge to end-users on one (or potentially more) market sides. As a consequence, so-called *barter transactions* may arise, implying that goods or services are effectively traded, without monetary compensation, against other valuable inputs such as for example, user engagement, user data or user-generated content. Such a strategy is, for instance, adopted by many social networking platforms, email service or media providers. In these cases, end-users often benefit from "free" access to a specific service. However, platform operators typically compensate for this by extracting data from users and transactions and then by selling services based on that data to the other side of the market. The primary example is the sale of customers-targeted advertisements to advertisers on the other side of the market.

2.2.2. Emergence of new business models in digital markets

55. The previous subsections describe digital markets, i.e., the infrastructure on which different digitalised businesses operate. Subsection 2.2 focuses instead on the many different digitalised businesses that operate in such digital markets. To better understand how the emergence of single- and multi-sided digital markets have changed the value creation process, this section introduces the main economic characteristics of business models. Their process of value creation will be discussed in greater detail through the case studies in Section 4 and in Annex 2.A.

56. In the digitalisation of the economy, businesses interact with users through many different types of online or web-based interfaces, often called platforms in the press and in the literature. to avoid confusion and to align the definition with other OECD publications (OECD, forthcoming), this chapter uses the term "platform" only to refer to multi-sided platforms as defined here in accordance with Hagiu and Wright (2015a, 2015b).[5]

57. According to an earlier definition (Rochet and Tirole, 2003, 2006), a platform is referred to as multi-sided only if there are indirect network externalities affecting the price structures across market sides. Hagiu and Wright add two further requirements: (i) the platform allows for direct interactions between end-users on different market sides and (ii) end-users on each market side have to affiliate themselves with the platform (implying non-zero switching costs).

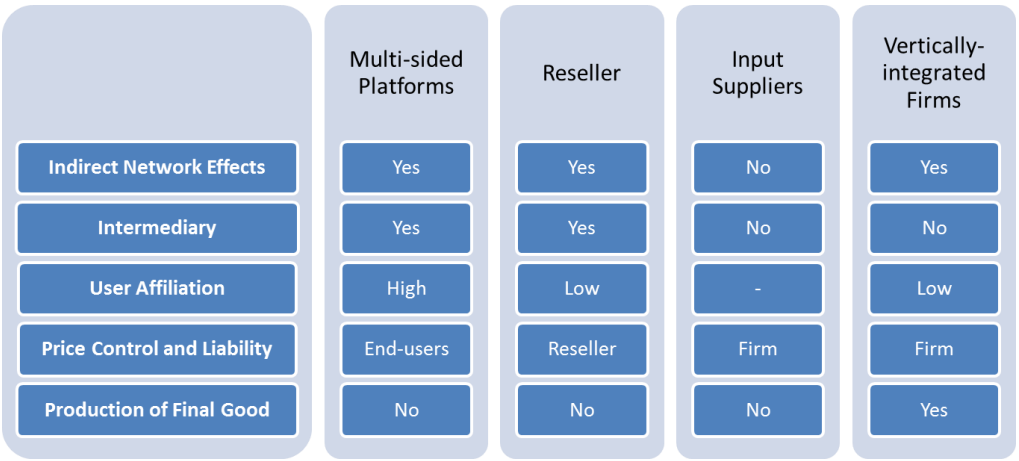
58. This stricter definition allows for a more precise differentiation between multi-sided platforms and other digitalised businesses. The authors discuss four stylised types of businesses operating in single- or multi-sided markets. For the classification to be effective, it is important to specify that it categorises business models or, differently said, business lines and not overall companies. For example, Amazon Marketplace belongs to one category while Amazon e-commerce belongs to another. Because of the economies of scope described above, it is often not possible to classify an entire company into a specific type as digitalised companies, and particularly the more established companies, frequently have more than one business line. Figure 1 summarises each type of business according to a range of criteria. Although all of them may use websites, applications or similar interfaces to sell their products and interact with customers, only the first group of businesses are multi-sided platforms in the strict sense defined in the previous paragraph.

- Multi-sided platforms: platforms that allow end-users to exchange and transact while leaving control rights[6] and liabilities[7] towards customers mostly with the supplier; end-users affiliate with the platform and interact across market sides so that indirect networks become crucial; e.g., Uber, Didi Chuxing, Airbnb, Xiaozhu, BlaBlaCar, Weibo, Amazon Marketplace, Taobao, Facebook, NetEase or Google, Deliveroo, Foodora, UberEATS.
- Resellers: businesses that acquire products, including control rights, from suppliers and resell them to buyers; resellers control prices and assume liability towards customers; they do not allow for the interaction of end-users and they do not necessarily require customers to affiliate to the online platform; e.g., Amazon e-commerce, Alibaba, JD.com, Spotify, Tencent's music distribution, or Netflix (where it purchases content).
- Vertically integrated firms: businesses that have acquired ownership over suppliers and have, thus, integrated the supply side of the market within their business; e.g., Amazon e-commerce (warehousing and logistics), Xiaomi (end-

user devices and applications), Huawei (hardware and cloud computing), Netflix (film production).

- Input suppliers: businesses or individuals supplying intermediary inputs required for a production process of goods or services in another firm. In contrast to multi-sided platforms, input suppliers are not intermediaries and interact only with the other firm and not with the final customer (e.g., Intel or Tsinghua Unigroup).

Figure 2.1. Characteristics of stylised digitalised business models



Source: OECD own research; based on Hagiu and Wright (2015a, 2015b).

59. Distinguishing between these stylised business models allows for a range of interesting observations which should lead to a better understanding of the dynamics of the digitalisation of the economy, including its implications for the tax system.

60. Digitalisation has been essential for the emergence of multi-sided platforms and input suppliers, whereas resellers and vertically-integrated firms have been standard organisational structures employed well before the digitalisation of the economy. An additional observation is that several of the larger digitalised companies started with one line of business that was a multi-sided platform and then gradually developed into more integrated or hybrid structures as they created additional business lines. In terms of market dynamics, traditional, vertically-integrated firms have sometimes been challenged by newly emerging multi-sided platforms suggesting that in some cases the latter may have comparative advantages over the former. This has been the case, for instance, in the transportation and accommodation sectors as traditional taxi and hotel businesses have been challenged by multi-sided platforms such as Uber, Didi Chuxing, Lyft, Expedia, Taobao, Airbnb and Booking.com.

61. The decision over whether or not to operate as a multi-sided platform can be understood as a strategic choice by businesses. As mentioned above, because of economies of scope, many digitalised companies combine different elements of the four stylised models or they use different models for different sectors of activity. For instance, the Alibaba and Amazon online stores operate as resellers for segments of the market where demand fluctuations are expected to be low, however, AliExpress and Amazon Marketplace are multi-sided platforms catering to market segments with more volatile demand. In this way, the risk of low demand remains with the seller and the multi-sided platform does not bear inventory risk. Similarly, music streaming businesses like Spotify and Deezer often operate two different business models: a free or "freemium"

subscription service that is entirely financed by advertisements (multi-sided platform) and a "premium" subscription service that is financed by a membership fee (reseller). Netflix, on the other hand, started out as a pure reseller but has now integrated film production into its business model.

62. The choice between the different business models, in particular multi-sided platforms and resellers, and hybrid combinations among them depends on business development strategies as well as other factors such as:

- Economies of scale and scope;
- The strength of direct and indirect network effects;
- Informational asymmetries between suppliers, market operators and users;
- Marginal cost advantages across organisational forms.

63. Based on Hagiu and Wright (2015a), Box 2.1 describes the specific factors driving the choice of operating as one business type instead of another. Box 2.1 aims at developing a comprehensive understanding of the dynamics of the digitalisation of the economy, beyond its implications for the tax system.

64. Overall, this section has described the structural economic characteristics of digital markets and of the businesses operating in such markets. In order to describe a multitude of relevant characteristics in a comprehensive but concise way, we have adopted a classification of business models/lines derived from the literature (Hagiu and Wright, 2015a; OECD, 2015c). The aim of this section has been twofold. First, before any discussion of the implications for the tax system, it is important to establish a wide-ranging understanding of the market dynamics of the digitalisation of the economy. Such understanding will lead to a better grasp of the broader effects of any tax measure suggested later on in the report. Second, the characteristics described in this section will shape the process of value creation described in Sections 3 and 4 of this chapter.

Box 2.1. The choice of type of business

Multi-sided platform versus reseller

From the perspective of the digitalised business, the choice of whether to operate as a multi-sided platform or reseller is driven by three main factors (Hagiu and Wright, 2015a). First, direct and indirect network effects increase the informational advantage of the company over the suppliers, implying that reselling becomes more attractive, especially if the company invests in data collection and analysis.

Second, economies of scope across products and customers favour reselling. For example, online platforms providing only one type of service such as accommodation or transportation typically operate as multi-sided platforms. Since each transaction matches very specific supplies and demands and as the economic benefits from expanding the range of products are limited, it is more beneficial for operators to leave control rights and liabilities with individual suppliers. In contrast, if products are more standardised, an existing reseller can easily adapt its business to include wider product ranges at lower average costs. Having established a global customer base reinforces this effect as users are more likely to return to the same reseller once they have created an account. If economies of scope are stronger it is thus beneficial to acquire control rights and operate as a reseller.

Third, marginal cost advantages between individual suppliers and resellers also affect the decision. The more extreme the relation between (higher) fixed and (lower) marginal costs, the less costly it is to adapt to demand fluctuations. For example, in the case of digital goods such as music or films, marginal costs are driven only by limits to computational power. A reseller (or vertically-integrated firm) owning the rights to a specific film or song incurs comparatively small risks associated with sudden reductions in demand. If marginal costs are instead higher, as for instance in the case of transportation services, idle periods represent a larger risk due to the fact that the firm still has to cover capital and labour costs. For products with less volatile demand, resellers could still have a cost advantage compared to individual suppliers; however, if demand is more volatile, it would be riskier and therefore cost-intensive for the platform-based business to operate as a reseller. Under such conditions it is thus often more efficient to provide goods or services through a multi-sided platform.

Multi-side platforms and resellers versus input suppliers

In contrast to multi-sided platforms and resellers, input suppliers do not operate as intermediaries. Instead, they produce or possess intermediary inputs, required for a specific production process, which they sell to other, typically vertically-integrated firms through standard single-sided markets. They are distinct from other business types discussed here in so far as they do not interact with customers of the final good. Intel or Tsinghua Unigroup, for example, are input suppliers as they provide microprocessors and other parts required for the construction of personal computers without directly interacting with customers.

Vertically-integrated firms versus resellers

The choice of whether to integrate or operate as a reseller is driven by several well-studied factors. On the one hand, vertical integration creates co-ordination benefits as it allows the firm to control and manage operations. This, in turn, increases production efficiency as it allows the firm to exploit economies of scale and scope. Some online streaming companies, for instance, started out as pure resellers and then expanded their operations gradually to include film and media production. On the other hand, vertical integration also carries additional costs as it implies that the firm has to hire additional employees which then exert costly effort to support additional operations.

A vertically-integrated firm, on the one hand, has control over the production process; it decides which technology to use, where to locate production and how many employees to hire. Ultimately, decisions over its output level therefore drive its average cost per unit of production. Resellers, on the other hand, do not operate production processes. Instead, they typically engage in market research and acquire tangible or intangible goods directly from producers or intermediaries; average costs are thus driven by producer prices although they could still be very low if marginal production costs are close to zero.

On the consumer side of the market, however, vertically-integrated firms and resellers face similar strategic choices. Being able to (re-)sell goods via an online platform allows them to reach a global customer base. If the marginal costs of production are indeed very low, as is the case for digital (or intangible) goods, vertically-integrated firms can adjust prices to attract demand from digital or non-digital substitute goods such as in the case of books. Resellers face a similar decision once they have acquired the rights for specific intangible goods such as films, music or other media content, for example. However, if marginal costs remain well above zero, both types of firms need to decide whether and how much to invest in inventories depending on the demand fluctuations for the various final goods they offer. Given that the development of an online platform and a global user base constitutes a significant share of fixed investment costs, firms with larger product ranges benefit from economies of scope in the sense that offering more products via the same website reduces average costs compared to competitors with smaller product ranges.

2.3. The value creation process

65. The previous section outlined how digitalisation has affected the structure of markets. As a consequence, it has not only enabled businesses to develop new products and services, but brought about structural economic changes which have affected fundamental aspects of the business models of multinational enterprises (MNEs) and start-ups alike (Brynjolfsson and McAfee, 2015; OECD, 2015a), including their process of value creation. This section is concerned with how digitalisation has impacted value creation in business models. Confronted with a multitude of processes of value creation, this section begins by classifying all of them, from the more traditional through to the most highly digitalised, into three groups: value chains, value networks and value shops. This section then systematically describes the process of value creation for each of these three groups.

2.3.1. Three concepts of value creation

66. Discussions of value creation tend to start with the value chain. Developed by Michael Porter in the mid-1980s, the value chain is a standard tool in academia and business applied to analyse a firm's competitive advantage (Porter, 1985). Value chain analysis divides a firm into discrete activities in order to understand how to create superior value, where superior value has two sources: by offering differentiated products which can justify a premium price or by reducing costs.

67. Since its publication, Porter's value chain has had several main critiques, all highly relevant in the context of digitalisation: (1) its limited ability to incorporate value created from information flows; (2) the fact that it was originally designed for applicability to domestic firms; and (3) its limited applicability to services.

68. Regarding the first critique, it is clear that a key feature of the digitalisation of the economy is the efficient and rapid transmission of data and information enabled by the Internet. While Porter saw the Internet as an enabler that increased efficiency, he did not see it as altering business strategy (Porter, 2001). Others, however, saw a clear need to adapt Porter's value chain to account for the fact that information had long been seen as central to value creation. In response, Rayport and Sviokla (1995) introduced the concept of the virtual value chain which serves as a useful refinement of Porter's value chain. It describes how value can be created from information captured in the course of primary activities.

69. Regarding the second critique, the value chain concept was broadened to account for the possibility that production processes may span several jurisdictions by introducing the concept of the global value chain (GVC). The GVC describes the need to co-ordinate business activities across geographies. This is highly relevant in the digitalised economy given the ease with which steps in the production processes of digitalised business, as well as their final goods or services, can cross borders. Indeed, when value creation is referred to, it is now the underlying assumption that the steps involved are not contained within a single geographic location or even a single firm. As explained in Section 5, this will have important implications for the tax system.[8]

70. Finally, regarding the third critique of Porter's value chain, while the value chain is well-suited to describing a process whereby inputs are converted to outputs in a sequential manner – think of a traditional assembly line manufacturer – the value chain concept is less able to describe business models engaged in the provision of services as a general category (both less or non-digitalised services, to more highly digitalised services). Stabell and Fjeldstad (1998) were the first to make this point. Citing the example of an insurance company, they ask: "What is received, what is produced, and what is shipped?" While an application of the value chain concept to an insurance business model would encourage an analyst to view uninsured people as a raw material or input to production, this is imprecise.

71. Stabell and Fjeldstad (1998) offer the solution that Porter's value chain is but one of three generic value configurations. In addition to the value chain, which models value creation that begins with raw materials and proceeds to a finished product, they identify two alternative models: the value network and the value shop. Given that businesses in the era of digitalisation are increasingly concerned with the provision of services, as opposed to the manufacture of tangible goods, it makes good sense to broaden our consideration of value creation along those lines.

72. The concept of the value chain models businesses where value is created on the basis of a linear production process as, for instance, in traditional, vertically-integrated manufacturing businesses. It also includes resellers in so far as their primary activities follow a sequential pattern. The concept of the value network portrays businesses where value is created by linking users, suppliers or customers (i.e., creating a network relationship) using a mediating technology. This category covers all types of multi-sided platforms. The concept of the value shop describes businesses where value is created by marshalling resources, that is, hardware and software as well as specialised knowledge, to resolve customer problems/demands. This includes digital and non-digital service providers that (i) do not operate linear production processes and (ii) do not act as intermediaries across multi-sided markets.

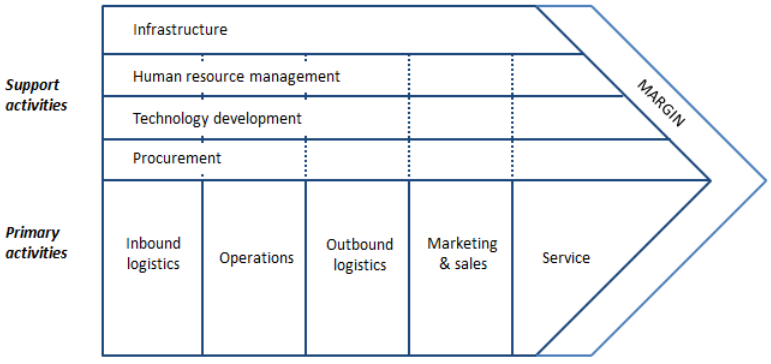
73. It is important to note that any classification of value creation processes will have limits when applied to the reality of actual companies and their lines of business. Whereas there may be other useful frameworks, the classification proposed in this section is effective in two ways. First, it helps systematise the large variety of businesses heavily reliant on digitalisation by organising their process of value creation according to three sets: value chains, value networks and value shops. Second, it systematically describes such processes of value creation across business models. Each of these three concepts of value creation is considered in more detail in the following subsections.

2.3.2. The value chain

74. The value chain is a theory of the firm that models a long-linked technology[9] (Thompson, 1967), where value is created by converting inputs into outputs through discrete but related, sequential activities (each of which can be thought of as a production function). It is a systematic way of examining all of the activities that a firm performs to design, produce, market, deliver and support its product(s) and how each of these functions interacts.

75. The basic value chain is comprised of five primary activities and four support activities (see Figure 2.2), the effectiveness of which determines the profit margin.

Figure 2.2. The value chain



Source: Porter, 1985

76. Primary activities are grouped together on the basis that they are involved in the physical creation of a product and its sale and transfer to the final customer. They include inbound logistics, operations, outbound logistics, marketing and sales and service.[10] As set out by Porter (1985), they are described in more detail as follows:

- Inbound logistics: Activities associated with receiving, storing and disseminating inputs to the product, such as material handling, warehousing, inventory control vehicle schedule and returns to suppliers.
- Operations: Activities associated with transforming inputs into the final product form, such as machining, packaging, assembly, equipment maintenance, testing, printing, and facility operations.
- Outbound logistics: Activities associated with collecting, storing and physically distributing the product to buyers, such as finished goods warehousing, material handling, delivery vehicle operation, order processing and scheduling.
- Marketing and sales: Activities associated with providing a means by which buyers can purchase the product and inducing them to do so, such as advertising, promotion, sales force, quoting, channel selection, channel relations and pricing.
- Service: Activities associated with providing service to enhance or maintain the value of the product, such as installation, repair, training, parts supply and product adjustment.

77. How a business carries out each activity is largely a reflection of its product(s). For example, for a reseller (e.g., Alibaba, Amazon retail, Carrefour, JD.com, Spotify premium services, Walmart), inbound and outbound logistics are the most critical, whereas the category of operations is the primary activity most important for a manufacturer (e.g., Apple's manufacturing business line, Huawei, Siemens). Other important factors in shaping the characteristics of a specific value chain are a business's history, its strategy and the underlying economics of the activities themselves. In any business, all the categories of primary activities will be present to some degree and play some role in contributing to a business's competitive advantage.

78. Primary activities are sustained by support activities providing purchased inputs, technology, human resources and various business-wide functions. Support activities include procurement, human resource management, technology development and firm infrastructure. Each of the first three support components can be associated with specific primary activities as well as supporting the entire chain. Firm infrastructure, on the other hand, is not associated with individual primary activities but supports the entire chain. As set out by Porter (1985), the four support activities are described in more detail as follows:

- Procurement: Activities associated with the function of purchasing inputs used in the firm's value chain. Purchased inputs include raw materials, supplies and other consumable items as well as assets such as machinery, laboratory equipment, office equipment and buildings.
- Human resource management: Activities associated with recruiting, hiring, training, human capital development and compensation of all types of personnel.
- Technology development: Activities broadly grouped into efforts to improve the product(s) and process(es), from basic research and product design to media research.
- Firm infrastructure: Activities including general management, planning, finance, accounting, legal, government affairs and quality management.

79. With reference to the business models identified in Section 2, examples of businesses in this group include traditional, vertically-integrated manufacturing firms producing tangible goods (e.g., BMW, Coca Cola, Unilever, IKEA) but also any other firms operating linear production processes aimed at producing intangible goods or services such as, for instance, movies, games, music or software (e.g., Disney for films,

Sony for games, Microsoft for software but also Netflix where it creates original content). It also includes resellers operating websites for various types of tangible (e.g., Alibaba, Amazon retail, JD.com, Walmart) and intangible products (e.g., Netflix where it purchases content, Spotify, Tencent's music distribution business line). Finally, it also includes input suppliers, such as companies that create goods for sale to resellers (e.g., Intel) and companies that have created and developed apps for sale through app stores.

2.3.3. The value network

80. Whereas the early 20th century was the era of mass production of products, from cars onwards, the early 21st century is the era of mass production of services. One of the effects of digitalisation is that businesses are increasingly likely to be providing services, rather than being engaged in the manufacture of tangible goods. This development challenges the suitability of the value chain described in Subsection 3.2 as a one-size-fits-all framework for examining value creation. Instead, the concept of the value network is a more natural framework for many more highly digitalised firms and, in particular, platform-based businesses such as multi-sided platforms as defined in Subsection 2.3.

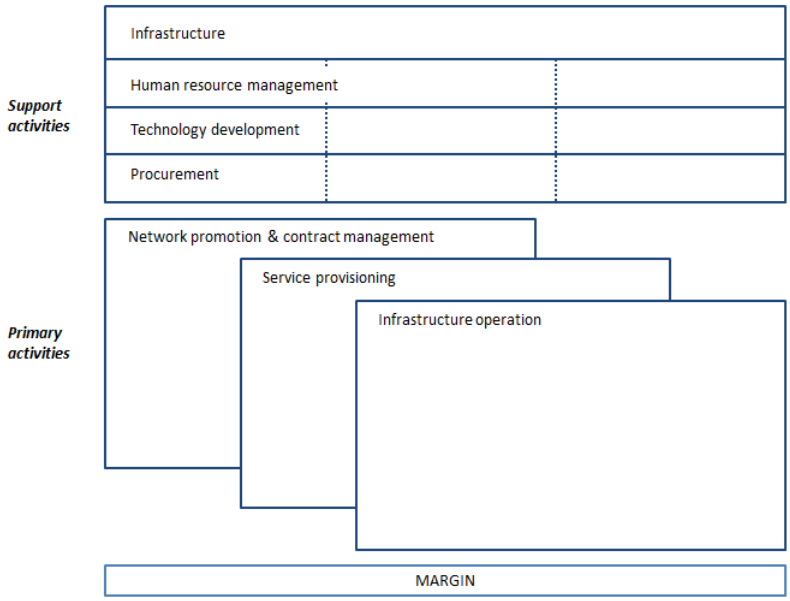
81. Value networks rely on a mediating technology: a technology used by platform operators to link customers interested in engaging in a transaction or relationship (whether for financial consideration or not). The mediating technology facilitates exchange relationships among end-users distributed in space and time. Examples of traditional, non-digital value networks include employment agencies that bring together employers and job seekers, and banks that join investors and borrowers. However, digitalisation, in particular the Internet, has greatly expanded the role of mediating technology, linking users and customers with every conceivable kind of supplier and service (Hagel and Singer, 1999).

82. Internet-enabled value networks include social networks that bring individuals together in a social capacity and allow advertisers to target specific user groups. Search engines fulfil a similar function by providing certain web-based services for free while generating revenues from targeted advertising and the monetisation of user data. Commercial peer-to-peer platforms allow users to trade goods and services. Other platform operators facilitate collaborative consumption of durable goods or assets by enabling individuals to connect and share spare resources such as cars or housing.

83. These business models develop procedures and services for, and process information about, producer and customer needs. The term value "network" emphasises the notion that a critical determinant of value to any particular user is the set, or network, of other users that are connected. In a value network, value is created through the action of linking: the organisation and facilitation of exchange between users. Linking may be direct, as in the case of a telephone service, social network or other service in which two users who otherwise would not have been in contact are brought together. In this case, links are made using data volunteered by the users (i.e., phone numbers or social network usernames, or identification of a particular need) or linking may be indirect, as in retail banking or insurance where one customer is not linked directly to another customer, but a group of customers is linked through a common pool of funds.

84. The basic value network is comprised of three primary activities and the same four support activities presented in the value chain (Figure 2.3), the effectiveness of which determines the profit margin.

Figure 2.3. The value network



Source: Stabell and Fjedstad, 1998

85. The primary activities that comprise a value network are:

- Network promotion and contract management: Activities associated with inviting potential users to join the network, selection of users that are allowed to join and the initialisation, management, and termination of contracts governing service provisioning and charging.
- Service provisioning: Activities associated with establishing, maintaining, and terminating links between customers and billing for value received. The links can be synchronous as in telephone service or asynchronous as in e-mail service or banking. Billing may require measuring individuals' use of network capacity in volume or time (e.g., telephone calls billed by the minute, data usage by volume).
- Network infrastructure operation: Activities associated with maintaining and running a physical and information infrastructure. The activities keep the network in an alert status, ready to service user requests.

86. As in the value chain, how a business carries out each activity is largely a reflection of its product(s) or service(s). However, as opposed to the sequential ordering of activities in the value chain, activities in a value network are performed concurrently, as represented in Figure 2.3 by the overlap of primary activities.

87. Revenue in value networks may be generated through subscription fees (e.g., LinkedIn Premium) or pay-as-you-go fees when services are consumed (e.g., Airbnb, BlaBlaCar). In other cases, such as Instagram, Facebook, Twitter and Weibo, the business may, in what may be perceived by some countries as a type of barter transaction, offer access to the platform without a demand for financial compensation upon the user providing some input valuable to the platform operator. Such input could be personal information about the user's interests that can be employed to generate revenue from targeted advertising. It could also be content accessible by other users, which increases the platform's utility and value. As explained in Section 2, this non-neutral pricing

mechanism, which allows firms to price below marginal cost on one side of the market, is typical of companies operating in multi-sided markets.

88. With reference to the business models identified in Section 2, examples of businesses which have a value network approach to value creation include varieties of multi-sided platforms, such as e-commerce intermediaries (e.g., AliExpress, Amazon Marketplace, app stores such as Apple's App Store), collaborative consumption firms (e.g., Airbnb, BlaBlaCar, Didi Chuxing) and social networks (e.g., Facebook, Nice, Kuaishou, Sina Weibo, Tencent Weibo, Twitter, Qzone).

2.3.4. The value shop

89. While the concept of the value network describes a slice of the more highly digitalised group of firms, not all service business models depend upon network relationships. Another variety of service that is not well-described by the value chain or by the value network is the concept of the value shop. The value shop operates in single-sided markets where interactions take place with one specific type of user or customer; it is characterised by the use of an intensive technology applied in order to solve a specific customer demand or problem. Intensive technology is the combination of hardware, software and knowledge used to change a specific outcome, usually found in the category of professional services. The problem to be solved, or in other words the type of consumer demand, determines the intensity of the shop's activities.

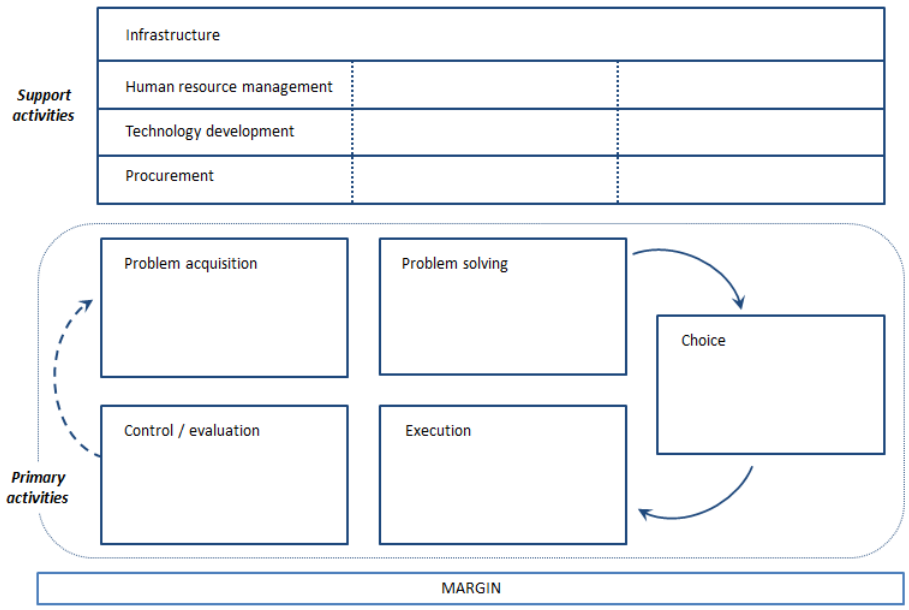
90. Examples include medical technology used to diagnose and treat a patient's disease, laboratory technology used in university research to conduct experiments, business consulting, specialised data analysis, software development or cloud computing; all of these examples entail highly customised technological solutions that allow businesses to outsource their technological infrastructure.

91. Customer problems are defined as differences between an existing state and an aspired state; for example, non-digitalised business operations could be the existing state whereas digitalised, cloud-based operations the aspired state. Problem-solving, and thus value creation, is the change between one state and another, where the intensive technology is the solution's means.

92. It is important to note that the value shop is often born out of a strong information asymmetry between the business and its customer; the asymmetry is the reason that the customer approaches the business. And while customer problems may be solved with more or less standardised solutions, the value creation process of a value shop is organised to deal with unique cases.

93. The basic value shop is comprised of five primary activities and the same four support activities presented in the value chain (Figure 2.4), the effectiveness of which determines the profit margin.

Figure 2.4. The value shop



Source: Stabell and Fjedstad, 1998

94. The primary activities that comprise a value shop are:

- Problem-finding and acquisition: Activities associated with recording, reviewing and formulating a problem to be solved. Problem-finding and acquisition have much in common with the marketing and sales activity in the value chain. The customer owns the problem to be solved.
- Problem-solving: Activities associated with generating and evaluating alternative solutions.
- Choice: Activities associated with choosing among alternative solutions to the problem. Choice is an activity category that in most contexts is of limited importance in terms of effort and time but is important from the point of view of value.
- Execution: Activities associated with communicating, organizing, and implementing the chosen solution.
- Control and evaluation: Activities associated with measuring and evaluating the extent to which implementation has solved the initial problem.

95. As Figure 2.4 shows, the value shop is a cyclical value system, where post-executing evaluation can be the problem-finding activity of a new problem-solving cycle.

96. Value creation in the value shop flows from the delivery of relatively certain solutions to customer demands, rather than for services offered at low prices. Reputation is an important signal of value, which is demonstrated through prizes, the hiring of star employees, publications in prestigious journals and strong customer demand in the form of long queues or difficult access.

97. With reference to the business models identified in Section 2, examples of businesses in this group include input suppliers of computing power to other businesses (e.g., cloud computing firms) as well as vertically -integrated professional services firms.

2.3.5. Business model classification according to their process of value creation

98. The subsections above have described value creation according to three categories: the value chain, value network and value shop. These provide a broad classification of value creation in an era of digitalisation. Though we have thus far referred to value creation in business models, it is worth emphasising that it is more precise to refer more specifically to value creation in business lines. As described, the structure and dynamics of the digitalisation of the economy, and in particular economies of scope, facilitate modular business models as firms take advantage of their market power as well as of the complementarities to be realised across business lines. Indeed, it is even common for one business model to span multiple value creation categories. For example, Amazon's retail business is considered a value chain, as are some of its other business lines, such as its audio books business, Audible, whereas Amazon Marketplace, which links buyers and sellers in order for them to trade, is considered a value network and Amazon Web Services is considered a value shop. The business model of Alibaba is similarly modular. For clear analysis, we will consider value creation in individual business lines in isolation before considering a firm's business model as a whole.

99. Figure 2.5 summarises the main features of each value creation concept, as presented above. In addition, recognising that it may be useful to understand each value creation concept by attaching specific firm names, the last row provides examples of digitalised economy business lines in each category. Business lines have been grouped into types (e.g., manufacture of goods, resellers, multi-sided platforms of various types, including social networks, cloud computing) in order to orient readers on the basis of common business model classifications. However, it should be noted that this list of businesses does not aim to be exhaustive. Using the empirical framework analysed here, Section 4 will explore value creation according to a case study developed after studying and consulting real businesses, with additional case studies explored in Annex 2.A.

Figure 2.5. Three concepts of value creation

	Value Chain	Value Network	Value Shop
General description	A value chain's objective is the conversion of inputs into outputs through discrete but related, sequential activities (each of which can be thought of as a production function). The final goods may be manufactured by the company itself or acquired. In general, the final goods are standardised.	A value network's objective is to serve as an intermediary, facilitating (1) bilateral interactions between itself and its customers, and (2) multilateral interactions between its customers (e.g., buyers/sellers; passengers/drivers). Value creation may be in the formation of direct links between customers (e.g., a telephone call or a friend request) or of indirect links (e.g., a commerical bank can make a loan by virtue of the deposits that customers supply in aggregate).	A value shop's objective is to solve a problem, thereby tranforming an existing state to a more desired one. The problems are characterised by information asymmetry (i.e., the shop has more information than its customers). The process to arrive at a solution may be labour intensive with respect to professionals & specialists, & may either be standardised or highly customised.
Primary technology	Long-linked: linear process that begins with inputs & proceeds to deliver a finished product to a final consumer	Mediating: used by organisations to link users or customers interested in engaging in a transaction	Intensive: forms of hardware & knowledge used to change some specific object
Value creation logic	Value is created by transferring a product from the firm to its customers	Value is created by organising and facilitating exchange between (linking) customers	Value is created by (re)solving a customer problem or demand
Primary activity categories	Activities organised sequentially: • Inbound logistics • Marketing • Operations • Service • Outbound logistics	Activities organised simultaneously, in parallel: • Network promotion & contract management • Service provisioning • Infrastructure operation	Activities organised as an iterative cycle: • Problem-finding & acquistion • Execution • Problem-solving • Control/evaluation • Choice of approach to find solution
Traditional business model examples	• Assembly line manufacturing • Wholesale distribution business	• Employment agencies bringing together employers & job seekers • Banks joining investors & borrowers	• Medical technology used to diagnose & treat a disease • Professional services (legal, consulting, financial)
Digital economy business model examples	**Manufacture of goods (vertically-integrated firms)** Tangible goods: • Unilever, Coca Cola, GE, Siemens, BMW, IKEA, Microsoft (PCs, tablets, Xbox), Apple (PCs, tablets, iPhone), Huawei (devices), Sony (devices, electronics), Intel, IBM, Cisco, Tsinghua Unigroup (microchips), Xiaomi Intangible goods & digital content: • Creative content: Disney, Netflix, Sony • Software (one-time purchase of standard package): Microsoft, Adobe, SAP, Dassault Systems, Dropbox, Weiyun, Google Drive **Resellers** Tangible goods: • Alibaba, Amazon retail, JD.com, Tencent, Walmart Intangible goods & digital content: • Creative content: Netflix, Sony (films/music), Spotify, Tencent's music distribution business line, Deezer, Amazon Audible • Software (one-time purchase of standard package): Amazon, Best Buy **Input suppliers** • Companies that have created goods for sale to resellers: Intel, Tsinghua Unigroup • Companies that have created apps to supply to app stores	**Multi-sided platforms** E-commerce intermediary • Tangible goods: AliExpress, Amazon Marketplace, eBay, Etsy • Intangible goods: Trivago, Booking.com, Hotels.com, Kayak; Google Play, Apple iTunes store Service intermediary • Collaborative consumption / sharing economy: AirBnB; Blablacar, Drivy, Turo, Uber, Didi Chuxing, Ola; Deliveroo, Foodora, TaskRabbit, Upwork • Social networks: Facebook, LinkedIn, Sina Weibo, Tencent Weibo, Twitter, Nice, Kuaishou, Qzone • Online gaming and gambling • Search engines: Google, Bing, Yahoo, Baidu, NetEase • Email: Gmail, Yahoo, Hotmail, NetEase • Online content: Dailymotion, SoundCloud, TripAdvisor reviews, Vimeo, YouTube • E-payments: Transferwise, Alipay, Tenpay, Paypal, Worldpay	**Cloud computing / input suppliers of computing power to other businesses** (X-as-a-Service, potentially completely vertically integrated) IaaS: • AWS, Alibaba, Microsoft, IBM, Huawei, Cisco, Intel PaaS: • AWS, Alibaba, Microsoft, IBM, SAP SaaS business lines generally fall into the value chain category with the exception of software that is customised for users. **Professional services (vertically-integrated firms)** • IoT consulting: GE, Siemens • Data analysis

2.4. Business model case study

100. This section sets out a useful framework for the analysis of various value creation processes. Section 4 and the related Annex apply this framework to several digitalised business model types: a reseller of tangible goods as an example of a value chain, two multi-sided platforms: a ride-for-hire company and a social network as examples of value networks, and finally, a cloud computing company as an example of a value shop. For each business case, the process of value creation is analysed in detail with the objective of isolating the features relevant for the tax system.

101. The main body of the chapter focuses on the case of the social network as the business model where the implications of digitalisation for the tax system are the most apparent. The examples of a reseller of tangible goods, a ride-for-hire company and a cloud computing company will be analysed in Annex 2.A.

102. Our approach is to first identify the business model's inputs, outputs and relationships. This serves to illustrate the important transactions between the business headquarters and other related entities as well as between the business and its final customers, including identification of which transactions may be cross-border.

103. Next, in order to focus on how the business model has changed over time, we compare the more highly digitalised business to its more traditional counterpart (where clear comparisons can be made).[11] The aim of the comparison is to evaluate whether digitalisation has enabled new means of value creation. Such an understanding will then inform our evaluation of the effects of digitalisation on the tax system.

2.4.1. Value network: Social network supported by advertising revenue

Business model overview

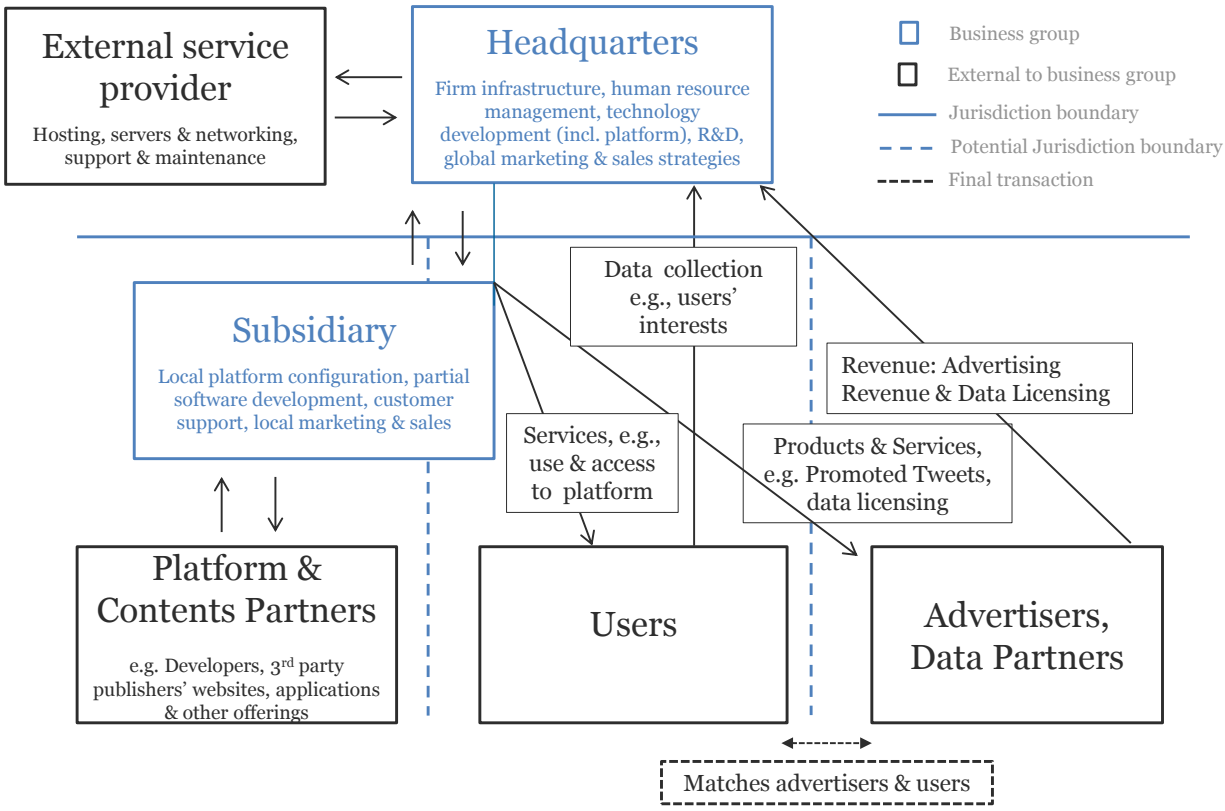
104. The social network considered here is a multi-sided platform that collects user data and provides advertising services. This type of business model has two objectives. First, on one side of the market it aims to provide a platform for users to connect to one another and share content. A user participates by linking to other users, where links are formed on the basis of relationships in the real world or on the basis of topical interest not necessarily dependent on a relationship between users (e.g., Facebook, LinkedIn, Nice, Kuaishou, Sina Weibo, Tencent Weibo, Twitter, and Qzone). From a user's perspective, social networks operate by collecting the content generated by the set of users to whom an individual is linked into a web or news feed, a data format used for providing users with frequently updated content. Users access news feeds via the web or via apps, and access is generally provided without requiring the payment of fee. The traditional equivalent of this business model could be a membership-based social club.

105. Second, on the other side of the market, the social network aims to enable customers who wish to advertise on the platform to reach their target audiences (i.e., the users on the other side of the market) in an effective and efficient manner. Advertising space is purchased by parties wishing to advertise their ideas, brands, products and services, and amplify their visibility and audience reach. Social network companies have a variety of means of offering advertising space on their platforms, including promotion of content that appears in news feeds, as well as promotion of trends and of certain user accounts. The placement of advertising is based on attributes such as geography, demography, interests, content keywords, events and device type. The traditional

equivalent of this business can be seen in the placement of more traditional forms of advertising, such as television or radio commercials.

106. As typical of operators in multi-sided markets, the two objectives of linking users and providing advertising services are complementary: the fulfilment of the first objective provides market research for the second. Users of the social network provide data in the form of geographic and demographic information, volunteered content and behavioural data in the course of interacting with the network. This data allows the company to learn about its user base. From the company's perspective, its user communities are of value because they are the means of attracting the main commercial customers: advertisers. The general social network business model is illustrated in Figure 2.6.

Figure 2.6. Schematic of a social network business model



Revenue

107. Social networks tend to generate revenue by selling advertising space to third parties that wish to advertise to users on the platform and by potentially licensing user data collected to third parties. It is common for social network companies to derive the majority of their revenue from the first channel.

Use and ownership of intellectual property

108. Social network companies generally protect their intellectual property rights with a combination of trademarks, trade dress, domain names, copyrights, trade secrets and patents. They may also enter into confidentiality and invention assignment agreements with employees, contractors and other third parties, in order to limit access to, and disclosure and use of, confidential information and proprietary technology. As described in more detail below, algorithms are instrumental for data analysis, which allows the platform to maximise the user experience and as well provide highly targeted and efficient advertising business.

Data

109. A social network company uses data in two main ways: to enhance the user experience and to help advertisers to better target customers in order to increase advertising sales. Though the social network's commercial customers are advertisers, it is nonetheless important to enhance the user experience to maximise the number of users, the size of the network and the amount of time users spend interacting on the platform. All of these factors increase the potential for the social network to secure more advertising revenue. Social networks are conscious of the need to balance advertising content with user-generated content, and for advertising content to be well-targeted in order to maximise the user experience. User data and user-generated content form the basis of targeting strategies: the larger the amount of data and user-generated content and the more refined the data analysis, the larger the potential profit. The information offered by users is distilled into keywords that describe a user's characteristics or interests. Advertising content is then pushed to users with the profiles that companies wish to reach.

Value network

110. As described, the value network is comprised of three primary business activities: network promotion and contract management, service provisioning and network infrastructure operation. This section compares a social network company to an example of one of its traditional counterparts: a television company that broadcasts programs interspersed with commercial advertising.

111. Figure 2.7 shows the value networks for a traditional television agency (Panel A) and for a social network company supported by advertising revenue (Panel B). By comparing the two across each of the primary value network activities, the next paragraphs explore how the key elements of the traditional television company business have changed as a consequence of digitalisation.

Figure 2.7. Value network: A social network company's business activities compared to those of a traditional television company

Panel A: Value network of a traditional television company			
	Network promotion & contract management	**Service provisioning**	**Network infrastructure operation**
Primary activities	For advertiser customers: • Source advertiser customers through sales presentations • Contract with advertiser customers on the terms & conditions (e.g. pricing, broadcast time & duration) • Advertiser customers are generally domestic (geographically bounded) For TV audience: • Produce or purchase TV shows & programs to attract television viewers • Access to channel provided for free Other: • Contract with infrastructure distributors (e.g., cable & satellite operators, telecom) Data collection: • Database to manage contracts with advertisers Tech-IP: • Database management tools	For advertiser customers: • Create schedule of ad slots • Formulation of ad placement strategies (e.g. prime time) • Measure effectiveness of an advertising campaign at its conclusion (e.g. ratings of a given show) For TV audience: • Broadcast of TV shows & programs • Balance ad length & ad display in between or during the shows/programs • Aim to maximise well-targeted advertising Data collection: • Collection of data to estimate viewership details (e.g., age, location, sex) • Viewership analysis (e.g., who is watching and why, television rating points to target advertising Tech-IP: • Infrastructure (electronics, servers, hardware) • Devices to monitor viewership • Computer-generated imagery, symbols, graphics, & the software to create it	• Invest in hardware • Market research to collect data & analyse information Data collection: • Sampling devices installed to audience (dairies/people meters) • Storage of viewership data • Devices to monitor viewership Tech-IP: • Infrastructure
Technology	Telephone, fax, television network hardware, computing & database infrastructure	Telephone, fax, television network hardware, computing & database infrastructure	Telephone, fax, television network hardware, computing & database infrastructure
Panel B: Value network of a social network company supported by advertising revenue			
	Network promotion & contract management	**Service provisioning**	**Network infrastructure operation**
Primary activities	For advertiser customers: • Source advertiser customers **by demonstrating wealth of user data** • **Advertiser customers are global** **For social network users:** • **Social network users are global** • **Particularly important to attract & retain influential people as users** • **No need for media partners to distribute ads** Data collection: • Database to manage the contracts with advertisers, relevant vendors & partners • **Storage of basic social network user profile data** • **Advertising customers are recruited by demonstrating a wealth of social network user data** Tech-IP: **Platform**	For advertiser customers: • Ad placement • **Measure user engagement with ads *in real time*** • **Potential to adjust ad placement strategy** • **Rates based on user engagement with ads** **For social network users:** • **Platform to create, consume & distribute content** • **Balance mix of user content & advertising** • **Aim to maximise well-targeted advertising** • **Customer service: ensure privacy & security** Data collection: • **No traditional market research; need supplanted by user data provided through the social network** • **Social network users contribute: user-created content (posts), demographic & geographic data, browsing & online action history** Tech-IP: • **Platform** • **Algorithms to optimise ad placement strategies** • **Auction platform for setting advertising prices**	• Invest in computer hardware • **Platform development** • **Development of mobile phone interface, compatible with developer & other content providers/websites** Data collection: • **Storage of data reflecting network infrastructure use (e.g., across regions) for resource optimisation** Tech-IP: • **Platform** • **Algorithms**
Technology	**Computer hardware, software, app, algorithms**	**Computer hardware, software, app, algorithms**	**Computer hardware, platform capable of accommodating peak traffic**

Network promotion and contract management

112. As previously noted, network promotion and contract management is the category of activities associated with inviting potential customers to join the network, selection of customers that are allowed to join and the initialisation, management, and termination of contracts governing service provisioning and charging.

113. A social network company's business model is the fostering of a social network that then serves as an audience for customers who sell advertising on the social network. To best serve their advertiser clients, social networks seek to foster broad and engaged user communities. To this end, they seek to recruit influential people to the network, including world leaders, government officials, celebrities, athletes and journalists, as well as media outlets and famous customers' brands. Since the social network operates in a two-sided market, it can use the pricing flexibility described in Section 2: as the transactions with the users on one side of the market can be priced at zero, a seemingly free service has the potential to attract a large amount of users.

114. The need for network promotion exists for a traditional television company in a manner similar to a social network company: both aim to foster a community of users interested in the content made available. In the first case, this takes the form of programs broadcast on a television channel, whereas in the second it takes the form of posts made available on the social network's website or app.

115. Moreover, both a traditional television company and a social network are interested in two kinds of network promotion: viewers/users consuming content on their platforms as well as advertisers reaching viewers or interacting with users.[12] A difference, however, is that television viewers do not interact with one another in the same direct way in which social network users interact.

Users connected to users

116. Promoting its user-to-user network is a key aspect of a social network company's business model: the more users and the more time they spend on the network (and the more they engage), the more content they create and the more they are available to be targeted by advertising. All of these factors are central to increasing the value of the advertising business of the platform. Direct network effects are more important for a social network compared to a television company, where viewers do not interact directly on the platform itself, and thus no data is available to be collected from such interactions.

117. As described above, in order to encourage users to join its network, social networks offer the use of their platforms to users without requiring any financial payment. In addition, barriers to engaging with the social network website can be low. While an account is generally required in order to post content, an account can in some cases be opened without any information that reveals an individual's real identity (e.g., Twitter) and in other cases users need not even have to have an account to view the network's content. By lowering such barriers, the company aims to encourage users to visit its website or mobile app as often as possible and for as long as possible. However, some social networks require a real identity (e.g., Facebook, Sina Weibo). In these cases, the social network also serves as a means of validating a user's identity on other platforms.

Advertisers connected to users

118. The recruitment of advertiser customers and the maintenance of relationships with advertising clients is one way in which social networks and traditional television companies are quite alike. Both require sourcing of businesses to which they can sell advertising space. As social network users are spread globally, the businesses that it seeks to work with may also be global. This is in contrast to television networks, which generally operate in local regional markets due to regulatory barriers and language differences.

Service provisioning

119. In some ways, the service provision activities of social network companies' advertising business lines are similar to those of traditional television companies: both require the means to place advertisements so as to reach target audiences. However, a clear difference between a social network company and a traditional television company in the placement of advertisements is that all of a social network's content resides online and can be targeted to users at the individual level. In contrast, traditional television companies advertise to a relatively larger group of viewers at once. An advertiser customer places its commercials according to the shows that its target audience is likely to watch.

120. As a result, strategies to measure user engagement with advertisements are different, and this represents a key difference between the two business models. A social network company is able to be more precise relative to a traditional television company. This stems from its ability to collect data on users' movements and activities on the Internet, which cannot be accomplished on television: while estimated television ratings and viewership data aims to ascertain how many people – and who – watch a given commercial, this only delivers rough estimates compared to a social network company's metrics. For example, an advertising campaign focused on boosting usage of a given app would track the number of app installs that can be attributed to the related promoted product.

121. Social networks build a profile of a user's interests, sentiments and preferences by analysing their content (i.e., posts and tweets) as well as groups of followers and clickstream histories. Social networks are able to know precisely, and in real-time, how users are engaging with promoted products, in many cases even identifying the extent to which an advertisement has led to the purchase of a product that was the basis of the advertisement. As a result, they are much better equipped to assess the effectiveness of the advertising campaign.

122. Underlying the provision of service to advertising customers is the fact that, in both cases, television viewers and social network users are attracted to the platform by the content made available. It is important to note that in the case of a television company, content is either produced by the company or purchased from a third party for broadcast. However, in the case of a social network, a very large proportion of the content is contributed by the users themselves. The content is original and it is contributed without financial compensation.

123. The content and data provided on an individual level that enable social networks to be particularly adept at targeting advertising also opens its users up to privacy and security concerns. Thus, as part of its customer service, they must protect their

communities from hacking, account theft/identity fraud, etc. This is not something with which a television company need be systematically concerned.

124. Finally, another difference between a social network company and a television company in terms of service provisioning is that while television companies may provide advertisers with basic information collected by rating agencies about viewership levels and demographics for various programs and time slots, social network companies offer services that focus relatively more on the placement of ads using data analysis driven by sophisticated algorithms and big data. In addition, social network companies may not require the same type of market analysis as a TV network since the content provided by users may generally be compelling enough to attract other users to the site and to keep them there, which happens in part because it is tailored at the individual user level and users are able to interact with one another. Therefore, such social network companies may provide content of a higher interest for the audience.

Network infrastructure operation

125. Network infrastructure operation for both business models are comprised of: (i) gathering data about potential target audiences for advertising purposes; (ii) forming strategies according to which those target audiences can be reached; and (iii) setting rates according to different advertisement characteristics. Though a social network and a traditional television company have the fact of these activities in common, they go about each in different ways.

126. Whereas a traditional television company will engage in market research, on behalf of itself or by contracting with a third-party, a social network company has the benefit of generating its own user data digitally due to the community it fosters on its platform. A social network company gathers user-generated content, as opposed to profile or demographic data, which may enable it to learn more about users' interests and preferences. Moreover, user data is available on the social network platform in real-time, in contrast to the backward-looking data gathered by market research surveys and through viewership numbers. As a consequence, social network companies are able to identify trending topics and tailor the promoted products that they offer to what users most want to see.

127. Regarding the setting of advertisement rates according to different advertisement characteristics, just as other highly digitalised firms are able to price differentiate using data on product supply and demand, social network companies generally rely on an auction to set the prices of their advertising products. This allows them to extract the maximum price that businesses are willing to pay for advertising.[13] A traditional television company, in contrast, may set prices according to advertisement characteristics (e.g., commercial length) and popularity of certain time segments (e.g., during major sports matches, peak viewership). Ultimately, the price of advertising on a social network is linked to the user engagement achieved, however, little is publicly known about the exact pricing formulae used by the various companies.

128. Finally, as a consequence of the greater ease with which a social network company is able to cross jurisdictions with respect to inbound logistics, its operational activities also take place across jurisdictions.

Technology

129. The key difference is a social network company's development of its platform, the core of the company's operations. The platform is the result of substantial investment in technological inputs: computer hardware and software, software engineers, website designers, algorithms, servers, etc. In particular, a social network company must ensure the stability and integrity of its platform by maintaining privacy and sufficient server space to handle a great volume of user traffic.

2.5. Common characteristics of digitalised businesses models

130. The previous section with its Annex 2.A analysed digitalised business models through a number of practical case studies comparing the value creation process of highly digitalised businesses and their traditional counterparts. It emerges that, while the main objectives and primary activities have remained unchanged, the structure of businesses and the process of value creation have significantly evolved, especially for some enterprises. Using the analysis in Section 4 together with the economic theory and empirical evidence, this section first isolates some of the most salient, common characteristics of more digitalised business models. These common characteristics are cross-jurisdictional scale without mass, the importance of intangible assets, and the importance of data, user participation and their synergies with IP. In relation to other determinants of value creation (e.g., administrative, marketing and people functions), there appears to be less difference between traditional and more digitalised businesses. For this reason, the focus of the analysis is on the main differences between traditional and more digitalised businesses. The section concludes by considering the extent to which these factors represent key drivers of value creation in digitalised businesses, reflecting the diversity of views among members of the Inclusive Framework on BEPS. The implications for international taxation of this chapter's analysis of the business models of digitalised firms are addressed in Chapter 5 of this report.

2.5.1. Cross-jurisdictional scale without mass: The global reach of business functions and activities

131. While globalisation has allowed businesses to locate various parts of their production process across different countries, and at the same time access a greater number of customers across the globe, this trend has intensified with digitalisation. The increased commercial reach of businesses as a result of digitalisation has occurred regardless of the location of the businesses users and/or customers or the businesses' headquarters or the even the distance between the two.

132. Through the use of remote technology, many digitalised businesses can effectively be heavily involved in the economic life of different jurisdictions without any, or any significant physical presence, thus achieving operational scale without mass.[14] One consequence of this development is that a growing number of businesses may have an economic presence in a jurisdiction without having a physical presence.

133. While the relation between physical presence or material substance and scale varies across the cases analysed in Section 4 and in Annex 2.A., it is clear that digitalisation is also driving a process of de-materialisation in many of the business models of more digitalised firms.[15] The process of digitalisation of the economy is perhaps still only at its early stages even in the most advanced economies (OECD, forthcoming). As growing numbers of firms invest in digitalisation, e.g., by moving to

cloud-based operations, it will become increasingly easy for formerly purely domestic firms to interact digitally with their customers. As a result and as the opportunities of digitalisation are not restricted to large multinationals, small firms are also more capable of reaching a global customer base.

134. While digitalisation has been a key enabler that has allowed many firms to achieve cross-jurisdictional scale without mass, it should also be acknowledged that the growing global economic footprint of firms is not unique to digitalised business models. The fact that an increasing number of firms are able to achieve an increased economic presence in a jurisdiction without maintaining a significant physical presence is also a function of globalisation more generally and is not unique to digitalised businesses.

2.5.2. Reliance upon intangible assets, including intellectual property rights

135. Intangible assets can be an important driver of business value. The location in which a business' intangible assets are controlled/managed can therefore have a material impact on where that business' profits are subject to tax. The analysis in this chapter shows that intangibles are crucial contributors of value for digitalised businesses. The business case studies in Section 4 and Annex 2.A clearly point in this direction and there is also considerable empirical evidence supporting this finding.

136. Based on the analysis of the World Intellectual Property Organisation (WIPO) statistical database, the demand for intellectual property (IP) rights[16] experienced strong growth over the previous decade. Taking industrial designs, patents, trademarks and utility models together, total IP rights applications have increased by an annual average of around 7.1% from 2004 to 2016, leading to an increase of more than 125% over the same period (WIPO, 2018). Using more granular data, WIPO (2016) shows that while trademarks (36.5 million) and patents (10.6 million) make up for the largest stock of IP rights currently in force, global filing activity increased markedly in 2015 for most types of IP: 27% for utility models, 13.7% for trademarks, 7.8% for patents and 0.6% for industrial designs. New filing activity for all four types of IP rights is concentrated in Asia which accounts for 95.6% of new applications for utility models, 68% of industrial designs, 61.9% of patents and 55.3% of trademarks. For patents, around four-fifths of all new filings in 2015 were registered in just five offices: China (38.1%), the United States (20.4%), Japan (11%), the Republic of Korea (7.4%) and Europe (5.5%). Clausen and Hirth (2016) show the increasing importance of intangible assets on firms' balance sheets over time; interestingly, these effects are also shown to persist throughout the economic crisis of 2008 to 2012.[17]

137. The phenomenon of increased use and filing of IP rights seems to translate into aggregate growth, confirming the importance of intangibles in value creation. Corrado et al. (2009) develop an empirical approach to measure stocks of intangible assets and their contribution to growth in the United States over the period 1973 to 2003. They distinguish three broad groups of intangibles: computerised information, innovative property and economic competencies.[18] Their research shows that the business capital stock is significantly understated under traditional accounting practices; growth rates of output per hour are estimated to be around 10-20%higher when intangibles are included and the stock of intangibles is shown to have reached parity with tangible capital as a source of growth after 1995. Corrado et al. (2012) reproduce a similar analysis for European countries. Although European businesses are found to invest less in intangible assets compared to US businesses, the growth contributions of intangibles remain sizeable, thus confirming the increasing importance of intangibles for growth. Taken

together, these empirical contributions provide evidence that more digitalised enterprises are characterised by the growing importance of investment in intangibles which implies a substantial positive effect on firm value and output growth.

138. While the heavy reliance upon intangibles represents a common characteristic of digitalised businesses, the exploitation of intangible assets are becoming an increasingly important driver of value creation in all businesses, not just digitalised businesses.

2.5.3. Data and user participation

139. As highlighted throughout the business model case studies in Section 4 and in Annex 2.A, the fact that businesses are making increasing and more intensive use of data has allowed them to significantly improve their products and services. This has had positive effects on productivity growth.[19] Although with different intensities across business lines and companies, the use, collection and analysis of data is becoming an integral part of the business models of the most digitalised firms. As the process of digitalisation continues, these features can be expected to become an increasingly important part of the business models of an even wider range of firms.

140. Data analysis has often allowed firms to extract more of the consumers' surplus through pricing and, therefore, increase their potential profitability. In particular, benefits from data analysis are likely to increase exponentially with the amount of information linked to a specific customer. This effect is due to economies of scope: the more varied the information a dataset contains the more insights it provides. More comprehensive datasets allow digitalised businesses, for instance, to better target online advertisements to specific user groups. Worldwide transactions and direct interactions with a global customer base will become increasingly digital, implying that more firms will benefit from data collection, analysis and its potential monetisation in the future.

141. Some businesses monetise customer data directly by selling targeted online advertisements to customers on a different market side; other businesses use collected data primarily to improve their operations, product design or marketing activities. In some cases data collection and the subsequent accumulation of big datasets has also supported significant increases in firm value on the basis of the expected gains from data exploitation.

142. In order to understand how data can be a relevant component of the value creation process, it is important to understand the nature of the economic gains leveraged from these data. Following the results from the business case studies as well as previous analysis by OECD (2015d), this process can be described as a value cycle involving several interconnected phases:

1. Data origination: this phase involves the generation of digital data from online activities such as transactions, production or communication; it also includes user-generated content, i.e., active data origination by users or customers, and data generated from user behaviour through cookies. While it may be straightforward to collect or input digital data online, data on offline activities is increasingly being collected through sensors mounted on production machines, end-user products or other physical objects; the interconnection of such objects through the Internet - the Internet of things - is expected to further accelerate the ability of firms to collect data.
2. Data collection leading to big data: Data collection processes lead to increasing volumes of digital data being stored by private as well as public entities.

However, without further manipulation and analysis by businesses, the economic value of this type of big data is typically limited. While the data sources, i.e., the users or machines located in a specific jurisdiction, may not always be particularly mobile, the databases covering information on their characteristics, preferences, usage patterns and behaviours are digital and, therefore, highly mobile. Also, the source of data origination and the location of the database may not always be found in the same jurisdiction.

3. Data analytics: Processing, interpretation and analysis of the data is necessary in order to generate economic value. Its analysis is not linked to any specific location; digitalisation allows businesses to decouple the location of the data source from the location of data storage, analysis or deployment. Data analysis related to a specific jurisdiction can be carried out, for example, by highly skilled data scientists in another jurisdiction, generally the headquarters, or it can be automated by an algorithm.
4. Knowledge base: The knowledge accumulated through analytical activities becomes the basis for the economic value generated throughout the value cycle as described in the Annex for the case of e-commerce retailers using customer data to improve marketing and price differentiation. In addition, knowledge bases can be automatically updated or enhanced on an ongoing basis, for example, through machine learning processes.
5. Data-driven decision making: Knowledge gained through the previous phases, such as through data analysis, is used to inform decision making and is thus transformed into economic value.

User participation

143. As highlighted in Subsection 5.3, data and data analysis are becoming increasingly fundamental assets in business decision making. It is not new to see businesses analysing internal data coming from sales, inventories and production to optimise their processes and make more efficient decisions. What has changed with digitalisation is that users now play an increasingly significant role, their data being analysed by businesses to gain insights about markets and demand trends. This information can be used in making strategic inventory or product and services placement decisions, for example, or to create entirely new products and brands to address limitations in current supply offerings. Moreover, the analysis of customer data allows businesses to acquire significant competitive advantage by focusing on the improvement and personalisation of the user experience.

144. There are different views as to whether and the degrees to which customer data and user-generated content contribute to value creation. At one extreme, for social networks, user participation is a central feature of the business. Without user participation in the platform and without user-generated content, the business as we know it would not exist, although it has to be recognised that it is the platform developed through investment in information technology (IT) and intangibles such as algorithms that attracts the users. Users contribute with several types of content and by actively expanding the network (by adding friends). This and the detailed information they provide can be used to offer targeted advertising services. At the other extreme, for a vertically-integrated business the main interaction with the customer is the sale and purchase of a product. In this case, there is the possibility of data collection and user participation in the production process, but it is limited (although it will expand in the future) and less likely to contribute to the value creation process in a meaningful way. An intermediary position would be that of a

value shop process. In this context, user generated big data is more important for an accurate and sophisticated delivery of the product or service of the company.

145. These examples show how digitalisation has reshaped the role of users, allowing the possibility for them to become increasingly involved in the value creation process. This phenomenon occurs to different degrees of intensity depending on the type of business activities and the market conditions, also depending on how user participation and data are exploited.

146. Evaluating the intensity of user participation is a complex task since it involves a wide range of actions and interactions with many parts of a business. User actions can be of different types and can vary in their scope and importance. They range from bookmarking a page, watching a video or more actively writing a product review or inviting or adding friends to a network. Taking a closer look at distinct user activities and their value to businesses can be helpful in gaining a deeper understanding of the presence and extent of user participation, its relevance and intensity in the context of any given business and whether and the degree to which the user contributions add to the value creation process.

147. User participation can be divided in two broad categories: active and passive. Passive user participation does not necessarily require the user to enter any information but data is collected by the company, for example through cookies even after the user is no longer on the specific platform of the business but using other websites. Active user participation involves an explicit action. Data is actively created by a distinct user action and the content is limited to what the user decides to share. Users generally transmit information in exchange for services, products or other goods with express intention. Examples of active engagement range from bookmarking a page to creating and uploading a video or post. Both of these activities require the user to spend time entering information with varying levels of attention and interaction and in the latter cases the user's contribution is on a par with content that may well have been commercially sourced and paid for in the past under some traditional business models. They also bring value to the firm in different ways. To better characterise active participation, we define three broad categories where the participation can be low, medium or high depending on the value of the user action.

148. First, activities such as bookmarking, tagging and rating are different kinds of filtering actions and are the basis of recommendation mechanisms (like those that can be found, for example, on film and music streaming or e-commerce websites). They require a low amount of effort to be performed. A second and higher level of participation is needed for activities such as writing comments, reviews (e.g., TripAdvisor), taking and uploading photos and videos (e.g., Instagram, SoundCloud, Nice, Kuaishou or YouTube). In this case the user actively creates the content of the platform (i.e., user-generated content), helps other users to choose a product and increases trust in the platform. A third and most intensive form of user engagement involves actions to directly enlarge the platform by adding friends, creating communities and networking. This activity is extremely valuable for many social networks since more users will bring more data (including user-generated content) and, ultimately, more revenues. At the same time they contribute to the platform reaching a critical mass which is a major competitive advantage and hence, source of profitability.

149. Passive user participation, on the other hand, is characterised by the lack of direct activity by the user, although even the most passive contribution is likely to have involved some active steps, e.g., downloading an app, using a particular device or

providing consent for user data to be collected. Data collection is a by-product of the Internet and is gathered without the user's direct involvement or active transmission of the data. The best known example is the use of cookies to capture browsing activity, but it also extends to knowledge of the location, IP address or type of device in use. Generally, the aim is to capture user preferences and behaviours which can also be directly monetised, for example, when advertising is paid on cost-per-click or cost-per-impression basis.

Trust mechanism

150. As reported in OECD (forthcoming), ratings and reviews appear to facilitate trust in sellers and providers, and are one of the main drivers of customer trust in peer platforms. In other words, ratings and reviews build a trust mechanism. Some countries consider this an important driver of value creation. Customers value written reviews more than ratings alone and are likely to trust reviews when there is a critical mass of comments in relation to a specific product or service. These trust mechanisms and reputation systems are fundamental components of collaborative platforms. They help address potential concerns about the quality of the "product" and allow peer customers to make better -informed choices while making consumption decisions with otherwise incomplete and/or minimal information. The accountability of these systems has become crucial for many businesses, making the authenticity of user feedback highly valuable. Some companies, like Amazon, actively defend the integrity of their reviews by prosecuting fake reviews websites. In addition to having a critical trust-building function, these systems can also be a factor in regulating behaviour through monitoring, feedback-systems and the exercise of peer-pressure (Strahlevits, 2006).

User-generated content

151. User-generated content describes any form of content such as video, blogs, discussion form posts, digital images, audio files, and other forms of media that are created by customers or end-users of an online system or service and are publicly available to other customers and end-users. User-generated content is an extremely valuable asset to many businesses, since it attracts traffic, contributes to trust-building as discussed earlier, and in some cases, can represent the core of the business. For example, in its annual report for 2016, TripAdvisor describes its rich user-generated content as one of its key strengths and assets. It allows the firm to attract other users, create a community and convert visitors into repeat users that will in turn create more content and add greater value. Similar considerations apply to businesses such as Yelp where the vibrant community of contributors is described as the heart of the business. Each review, tip and photo expands the depth of the platform content, driving powerful network effects. On the other hand, it is also the platform, developed through investment in IT and intangibles such as algorithms that has an important role in attracting the users. Data and IT are intertwined in this regard.

User participation across business lines

152. Having broadly defined user participation and contribution, it is possible to obtain a suggestive characterisation of user participation intensities for some of the business lines and value creation processes described in the preceding sections. This analysis is by no means exhaustive and can only partially describe user participation in different businesses. Also, businesses belonging to the same category could have different characteristics, and therefore an in-depth evaluation of the facts, circumstances and

business model relating to any individual business is necessary to undertake a comprehensive classification. Rather, this exercise is carried out for illustrative purposes.

153. Figure 2.8 relates the intensity of user participation to different business lines. At the bottom of the scale, a business characterised by low user participation could be cloud computing together with a vertically -integrated business. Passive data is employed to a limited extent as are data provided by active participation. It is to be noted that data stored by the user in the cloud should not be considered user-generated content since it is generally not available for detailed analysis by the cloud provider (or only in circumstances strictly connected with the purposes agreed upon by the client) and it is either not shared or only shared among a few users. Of course, specific cloud computing businesses might have higher degrees of user participation, e.g., cloud storage providers like Dropbox or Weiyun, where users actively expand the networks/user base of the enterprise by inviting others to share files.

154. A business category featuring slightly higher user participation intensity would be a tangible goods e-commerce operator. Browsing data, reviews and ratings are employed to stimulate sales, customise services and improve customer targeting. On the other hand, intangible goods e-commerce operators could offer even more interaction opportunities and thus have higher participation intensity in comparison to tangible goods e-commerce. Users can increase the customer base by sharing their playlists (e.g., Deezer, Spotify or Tencent) or actively create content for online games.

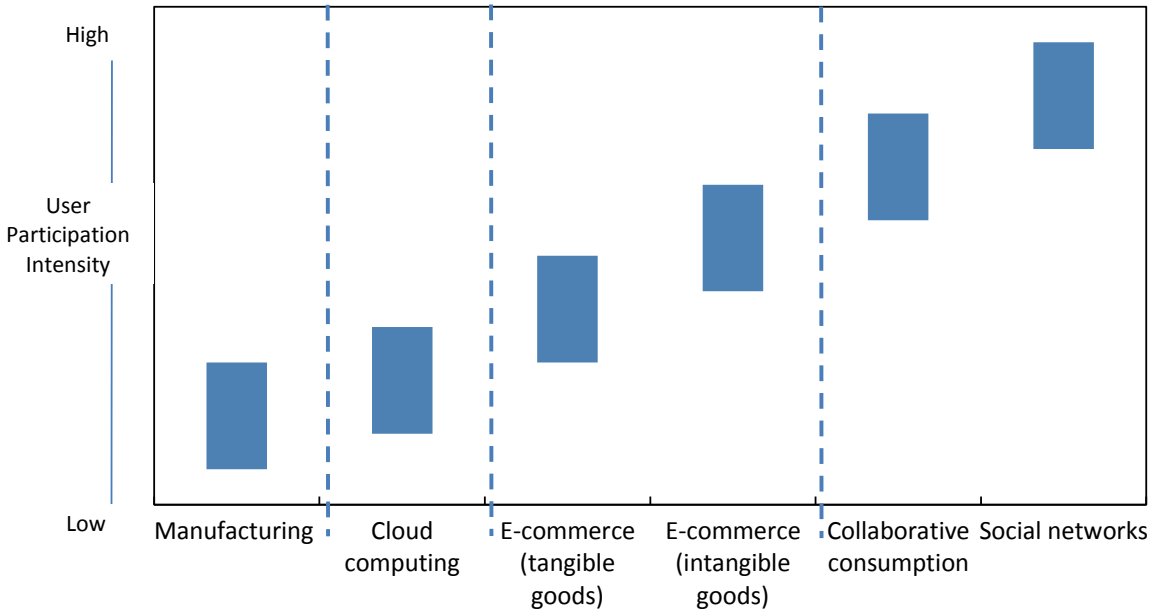
155. Collaborative consumption businesses are characterised by high user participation intensity. Much of the information provided passively may be essential to the delivery of the service and users must often disclose their preferences to access the services. (e.g., when searching for accommodation, information on desired city, size, budget and neighbourhood, etc., will be necessary to support the transaction). User-generated content is also important: users write reviews and share product or service descriptions often consisting of photos and different kinds of information, depending on the platform. As stressed before, reviews and comments are essential to building trust with the user base. Users often bear the burden of verifying the product quality (e.g., ratings of Uber and Didi Chuxing drivers or accommodation on Trivago and Booking.com).

156. Finally, social networks appear to be the most user participation intensive businesses: user participation is the essential feature of the service. The size of the user base and the users' level of engagement are critical to the success of these businesses and significant determinant of their financial performance. Social network users provide different types of user-generated content and actively expand the platform network. For platforms like Facebook or Weibo, for example, trends in the number of users affect revenues by influencing the number of advertisements they are able to show and their value to marketers. User activity and participation statistics are key indicators for such businesses. Annual reports and initial public offering documents often disclose information concerning trends regarding active users, and present metrics such as average revenue per user (ARPU) for different geographical areas to indicate the different monetisation rates and potential.

157. Figure 2.8 illustrates how the degree of user participation intensity of different types of businesses might be classified. It shows that the degree of user participation does not necessarily correlate with the degree of digitalisation: for example, cloud computing can be considered as a more highly digitalised business but one that involves more limited user participation. In other words, not all highly digitalised businesses are purely based on data and user participation to the same extent and for many of these businesses

other characteristics such as scale without mass are also important (e.g., cloud computing). As stressed before, the classification of business lines and value creation processes according to their user participation intensities presented here is not intended to be definitive, but is only intended to be suggestive.

Figure 2.8. Intensity of user participation



158. For some members of the Inclusive Framework on BEPS, the role of user participation represents a unique and important driver of value creation in digitalised businesses. This includes the collection of user data, both passively (such as on user preferences or behaviour) and actively (such as solicitation of user-generated content like reviews and posts). User data is then analysed by the business and may be employed to sell advertising targeted to the users or to customise the business's products and services to make them more valuable. In some cases, user contributions may be posted on the platform in a way that draws other users and increases the value of the platform, generating network effects. These countries point to the participation and sustained engagement of users which allows digital businesses to collect large amounts of data through the intensive monitoring of users' active contributions and behaviour. These countries also point to the contribution of content by users, which can be central to a digital business' offering and central to attracting other users and generating network effects. Finally, these countries take the view that user participation (e.g., reviews, provision of services) can play an important role in building up the trust and reputation of certain digital businesses and contributing to their brand and the growth of user networks.

159. In contrast, other countries view data collection from users, user participation, and the provision of user generated content as transactions between the users (as providers of data/content) and the digitalised business, with the digitalised business providing financial or non-financial compensation to the users in exchange for such data/content. That non-financial compensation could come in the form of providing, for example, data

hosting, email services, or digital entertainment. Countries that support this view agree that the interaction between users and the digitalised business is a transaction that could be subject to income taxation, although they also observe that income tax systems today rarely capture these types of barter transactions where there is no financial compensation (i.e., cash payment) on either side of the transaction. These countries do not agree that the action by the digitalised business to source data from users is an activity to which profit should be attributed to the digitalised business solely because the data acquired may be valuable. In this sense, the user's supply of data would not be different from other business inputs sourced from an independent third party in the business' supply chain (for example, data storage, broadband access, electricity). Nonetheless, some of these countries are of the view that user data may be recognised as valuable intangible assets of digitalised businesses and in that sense, may be considered as giving rise to the broader challenges identified above in relation to intangibles. However, there are other countries who do not view the provision of user generated content or the interactions between users and the digitalised businesses as barter transactions between users and digitalised businesses. On these questions, there is no consensus among countries.

160. Differences in views over whether and the extent to which data and user participation contribute to value creation will have an impact on whether there are considered to be tax challenges arising from changing business models, or whether those are unique to the application of international tax rules to digitalised firms, or whether any challenges apply to the international tax rules more broadly. Additionally, tax challenges may not arise for some digitalised businesses if such challenges are defined by purely referring to the reliance on data and user participation. Not all digitalised businesses rely upon data and user participation to the same degree.

161. In this context, further work may be needed to assess whether the different views can be reconciled in order to reach consensus on the extent of the long term tax challenges and, in turn, how long term solutions could be developed. The tax implications of the analysis on digitalisation, business models and value creation which is set out in this chapter, are considered in more detail in Chapter 5.

Annex 2.A. Digitalised business models

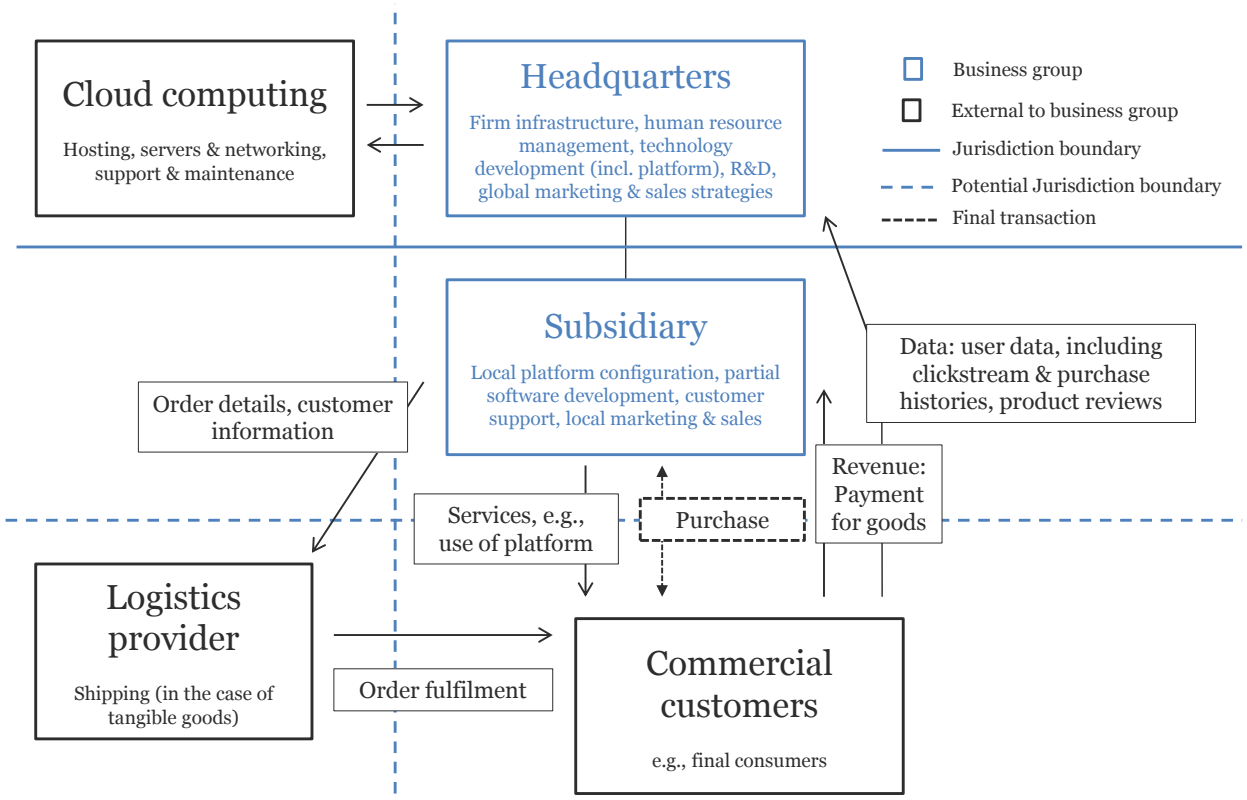
Value chain: Reseller of tangible goods

Business model overview

162. A reseller creates value by selling goods to final customers through an online store. The general value proposition is to resell goods purchased from input suppliers to final customers at a mark-up. The goods sold may be tangible (e.g., books) or intangible (e.g., digital downloads of music or software). A reseller's online store may exist with or without accompanying brick-and-mortar retail locations.

163. Annex Figure 2.A.1 illustrates the components of a reseller business model using a general schematic. The headquarter entity is responsible for the company's infrastructure (e.g., organisational structure, control systems), human resource management, technology development (including of the platform and the crucial IT infrastructure), research and development, as well as global marketing and sales strategies. The headquarter entity has a subsidiary located in a different jurisdiction (and likely multiple subsidiaries located in multiple locations). The subsidiary is responsible for local sales, either in its own jurisdiction or a proximate jurisdiction (in the case where the subsidiary serves a region). This may require a degree of local platform configuration, such as translation of the main website into the local language (or languages). The subsidiary handles interactions with final customers. Customers visit the company's website in their language, select items to purchase and submit user information such as an email address, a physical address for delivery of goods and payment details. The customer's order is then either filled by the subsidiary directly or handed to a third-party logistics company for fulfilment of the order. Local subsidiaries may engage in software development, as well as local customer support and local marketing and sales.

Annex Figure 2.A.1. Schematic of a general reseller business model



Revenue

164. The primary source of profit in a reseller business model is the mark-up on the sale of goods (tangible or intangible) to customers. Some resellers offer premium services, such as free incremental shipping on eligible items, via a subscription model (e.g., Amazon Prime). Resellers may also sell the customer data that they gather to third parties.

Use and Ownership of intellectual property

165. IP is an important value driver for many digitalised businesses, including resellers. IP rights are exclusive rights held by the owners of a variety of knowledge-based assets that qualify for legal protection under applicable IP laws. The main types of IP rights are patents, copyrights, design rights, trademarks, and geographical indications. Trade secrets are sometimes considered to be IP rights, too, though many countries do not expressly define them as such.

166. Reseller businesses often have trademarks, service marks, copyrights, patents, domain names, trade dress, trade secrets and proprietary technologies which are all crucial for the digital operations of the business. An online reseller would not exist without a platform supported by patents and proprietary technology. They may also sign confidentiality and/or license agreements with employees, customers, partners, and others to protect proprietary rights.

Data

167. Customers provide data when they interact with the company's website or app. The interaction may be active, such as when users create a profile, save items of interest for future reference or make a purchase. It may also be passive, such as when users browse the website or authorise the company to access their browser histories or geolocation data. It may also be possible for the company to access information via other websites or apps open at the same time. Such data collection, and the value that can be extracted from it through data analysis, is an important aspect of the reseller business model.

168. A reseller extracts value from customer data in two main ways. First, it may use personalised data such as demographic information as well as data about the customers behaviour and product use to understand customer preferences and, based on these preferences, improve their products and target their marketing at the individual user level. Online stores or apps may be tailored to each individual consumer. Second, a reseller may also use data to engage in differential pricing, charging customer different prices based on their personal information.

169. Little is publicly known about resellers' potential differential pricing strategies. While some companies have denied that they change prices based on personal information, however, anecdotal evidence is nevertheless plentiful (Mohammed, 2017). In a summary of evidence of price differentiation by US retailers, a 2015 Council of Economic Advisors report also outlined three categories of price differentiation strategies: (i) exploring the demand curve, i.e., conducting online experiments to learn about demand elasticities, (ii) steering and differential pricing based on demographics, and (iii) behavioural targeting and personalised pricing (CEA, 2015). To the extent that such strategies are employed, resellers are able to capture consumer surplus[20] for themselves by using data, thereby maximising profits.

Value chain

170. As described above, Porter's value chain is comprised of five primary business activities: inbound logistics, operations, outbound logistics, marketing and sales, and service. Annex Figure 2.A.2 shows the value chains for a traditional reseller (Panel A) and for a digitalised reseller (Panel B). By comparing traditional and digitalised retail business models across each of the primary activities of the value chain, the next paragraphs explore how the key elements of the traditional retail business model have changed with digitalisation.

171. In the value chain, the role of technology is to support each primary activity. This can be said of both the traditional economy and of the digitalisation of the economy. However, technology has taken on a position of paramount importance in the context of digitalisation. Given that the use and development of technology is a key source of competitive advantage amongst digitalised companies, we also consider the roles of technology in traditional versus digitalised business models for each primary activity.

Annex Figure 2.A.2. Value chain: A digitalised reseller's business activities compared to those of a traditional reseller

Panel A: Value chain of a traditional retail company					
	Inbound logistics	**Operations**	**Outbound logistics**	**Sales & marketing**	**Service**
Primary activities	• Source suppliers (of raw materials for production or finished goods) • Receipt & storage of supplies • Acquisition of real estate: factories, warehouses & retail stores Data collection: • Supply chain management data IP: • Network of suppliers, technology related to supply chain management	• Maintain inventory & payment systems • Potential manufacture of goods (if model is not to purchase finished goods) Data collection: • Inventory data IP: • Technology related to inventory management	• Transport of goods from warehouses to retail stores • Stocking of retail stores Data collection: • Data on transportation of final goods IP: • Technology related to inventory management & tracking of inventory	• Set retail prices • Advertising Data collection: • Consumer data through potential tracking of purchases • Market research • Data on competitors to aid price setting IP: • Technology related to tracking of consumer purchases	• Customer service support (e.g., returns) provided in-store Data collection: • Data on the quality of products & services (via customer surveys) IP: • Technology related to understanding consumer preferences
Technology	Telephone, fax, computing & database infrastructure to carry out purchasing	Telephone, fax, computing & database infrastructure to maintain inventory	Telephone, fax, computing & database infrastructure to track inventory & goods sold	Radio/TV/print advertising, telephone, fax, database of good sold & customers	Telephone, fax, database of customers
Panel B: Value chain of a digital e-commerce retail company					
	Inbound logistics	**Operations**	**Outbound logistics**	**Sales & marketing**	**Service**
Primary activities	• Source suppliers (of raw materials for production or finished goods) **globally** • Receipt & storage of supplies **globally** • Acquisition of real estate: factories &warehouses **(no retail space)** Data collection: • Supply chain management data **in real time** IP: • **Software to monitor supply chain** • **Potential IP on robots**	• Maintain inventory & payment systems • Potential manufacture of goods (if model is not to purchase finished goods) • **Platform development** Data collection: • Inventory data **in real time** IP: • **Development of website & algorithms to target consumers**	• **Receive & process internet orders globally** • **Assembly of orders & shipment to final consumers globally** Data collection: • Data on transportation of final goods **in real time** IP: • **Development of software to monitor outbound logistics**	• Set retail prices **where analysis of user data enables price differentiation** • Advertising **where analysis of user data enables targeting at individual level** Data collection: • **Definite** collection of consumer data through purchase histories & **browsing histories** • **Market research is implicit in the collection of consumer data** • Data on competitors to aid pricing IP: • **Development of algorithms to target customers** • **Development of algorithms to price differentiate**	• Customer service support (e.g., returns) provided **virtually** • **Online order tracking** • **Service improved by availability of product reviews** Data collection: • Data on the quality of products & services **maintained in customer review database** IP: • **Customer review database made public**
Technology	**Computer hardware; software; potential development of robots**	**Computer hardware, software, algorithms**	**Computer hardware, software, algorithms**	**Software, algorithms**	**Software, algorithms**

Inbound logistics

172. In many ways, the inbound logistics activities of a digitalised reseller are similar to those of a traditional reseller: both require the sourcing of products/suppliers; the receipt and storage of products to sell; and the use of warehouse facilities in which to keep inventory. However, there are also a number of differences.

173. The first difference is one of geographic reach: whereas a traditional reseller would generally operate and serve a customer base within a single jurisdiction or in a limited number of jurisdictions, the sale of goods online allows a digitalised reseller to directly reach customers globally. This, in turn, implies that a share of inbound logistics

activities be performed globally as well. For example, the sourcing of suppliers of final goods may be performed in both the headquarter jurisdiction as well as in market jurisdictions, particularly if the retailer aims to cater to local customer preferences.

174. In addition, a digitalised reseller that sells goods globally may arrange to have a portion of product inventory in or near market jurisdictions, which in turn may imply the presences of warehousing or fulfilment facilities in or near market jurisdictions. A final difference in inbound logistics is that, whereas a traditional reseller maintains a physical retail shop and thus requires retail real estate, while a digitalised reseller has a need for warehouse real estate, at least historically, there has been less need for "brick and mortar" retail stores. This allows the business to save on the fixed costs of retail real estate – through purchase or tenancy costs - as well as the variable costs of labour to run its retail operations.

Operations

175. As with inbound logistics activities, the operations activities of a digitalised reseller are similar to those of a traditional reseller: both must maintain inventory and payment systems, and engage in the potential manufacture of goods. The key difference is that a digitalised reseller faces the technological development of an online platform, the core of its operations and sales strategy.

176. The technological inputs that underlie the platform – computer hardware and software, software engineers, website designers, algorithms and intellectual property more generally – are each key investments for a digitalised reseller, whereas these inputs are of limited relevance in the traditional reseller context. Some digitalised resellers undertake this capital investment themselves, while others may outsource these functions (e.g., through a cloud computing company). In either case, technological development is a key aspect of the business model.

177. Inventory management is generally similar for both, though for a digitalised reseller the principal concern relates to warehoused goods (instead of inventory in both warehouses and retail stores). Regarding the maintenance of a system to receive payments, as payments to a digitalised reseller are entirely electronic, there is no need to arrange for the periodic physical transport of cash and checks to the bank. Inventory and payments systems may be maintained in the headquarter jurisdictions or in the regional headquarters.

Outbound logistics

178. The main outbound logistics activities of a traditional reseller include transporting goods from warehouses to retail stores and stocking retail stores. In contrast, neither of these activities is necessary for a digitalised reseller. Goods are sold directly from the company's network of warehouses without need to house stock at a retail space.

179. A digitalised reseller receives orders from customers via its online platform, where requests may be placed from any foreign, non-headquartered jurisdiction in which the company has a commercial presence. Though a digitalised reseller need not maintain retail stores in market jurisdictions, it most likely still requires warehousing facilities and employees that work to fulfil orders. While digitalised resellers have generally employed many warehouse workers, warehousing tasks are expected to become increasingly automated in the future.

180. As customers typically leave retail stores with their purchases, outside of those businesses where home delivery has accounted for a reasonable share of their trade, there has generally been no need to arrange for outbound shipment. In contrast, the assembly of orders received on the Internet and shipment to final customers is a key feature of a digitalised reseller's business. Assembly and shipment is processed at fulfilment centres, which exist in countries around the world and can make extensive use of robotic technology to manage the receipt, storage, collection and shipment of products. For the shipment of products, digitalised resellers may rely upon third-party delivery companies. However, they may also operate their own delivery businesses.

Sales and marketing

181. As mentioned above in the discussion of how consumer data is used in a retail context, the sales and marketing activities of a digitalised reseller differ from those of a traditional reseller in several important ways. Whereas traditional resellers collected data about their potential consumers from previous orders and market research surveys, Internet browsing leaves a digital trail of information that is far richer than what was available previously because this data is much more expansive in its scope and can be gathered in real time and in vast quantities. The data captured by digitalised resellers is also of higher quality because it all pertains to the patterns of behaviour and preferences of individual users. The use of this data creates several key differences between digitalised and traditional reseller models.

182. The first key difference relates to the setting of retail prices. A digitalised reseller always has the potential to price differentiate using data on product supply and consumer demand, where consumer demand for a given product may be assessed by analysing users' purchase and clickstream histories. Price differentiation may allow a digitalised reseller to transact at the maximum prices that consumers are willing to pay.

183. A digitalised reseller may price differentiate at the individual level, whereas traditional resellers could only differentiate very roughly, for example, by age through the offering of discounts for different age groups (e.g., discounts for seniors). Whereas a traditional reseller affixes physical price tags to each and every product in inventory, a digitalised reseller can change prices digitally. The ability to adjust prices in real-time may allow the firm to capture more consumer surplus relative to a traditional reseller by price differentiating with greater frequency.

184. The second key difference relates to the marketing activities. An important aspect of a digitalised reseller's business is its ability to analyse consumer information in a way that allows for the tailoring and targeting of the advertising to the preferences and behaviour of the individual consumer. Whereas traditional resellers tended to rely on advertising that blanketed a more general audience (e.g., print, television, billboards), a digitalised reseller can embed advertising in specific webpages that consumers visit, whether on its own site (e.g., by offering tailored versions of its website to each visitor) or elsewhere on the web (e.g., more traditional paid advertising). While online advertising offers the advertiser the ability to target its advertising dollar with greater precision, the cost structure of such advertising generally involves a "pay per click" approach, which ensures that the advertiser only pays when a consumer has actively acknowledged the existence of the advertisement, These features ensure that online advertising is capable of delivering advertisers with a much more valuable product than their traditional counterparts.

185. To some extent, data analysis and targeting of this kind has an equivalent in traditional retail: resellers may capture data on individual consumer's purchase histories, for example through loyalty cards, and analyse past purchases in order to recommend products in the future (along with price differentiation). However, these approaches have been much more limited in the context of the traditional business models and there are still substantial differences in a digitalised reseller's ability to analyse user data in that the company systematically collects and analyses a large amount of data as a way to continuously improve its business and its value. In particular, through the capture of clickstream data, a digitalised reseller is able to monitor each and every product that a consumer browses (without necessarily purchasing).

186. To the extent that a digitalised reseller can identify desirable items not purchased, it can exploit this information by promoting or offering those items at lower prices, thereby transacting at the maximum price that a consumer is willing to pay for each item. Internet browsing leaves a digital trail, which is useful for understanding consumer preferences, and computing power has enabled rapid analysis and tailored marketing (including pricing) in real-time. Moreover, data analysis happens in real time, allowing relevant product suggestions to appear as a customer is browsing.

Service

187. The customer service activities of a traditional reseller would consist of in-store personnel support, for example, in processing returns. Such support is more likely to be provided electronically by a digitalised reseller in the form of email correspondence or online chat sessions, but is otherwise not markedly different. One key difference of a digitalised reseller is the maintenance of an online review system in which users offer advice to one another concerning a recent purchase.

Technology

188. While technology development is categorised as a support activity of a value network rather than as a primary activity, we also compare the two business models along this dimension given the importance of technology in the digitalised economy. Indeed, technological infrastructure is a key input into a digitalised reseller's business, requiring substantial upfront investment and expertise.

189. A key piece of a digitalised reseller's business model is its platform, which allows the company to replace a network of physical retail stores with a single online store that may be adapted to each individual consumer. The fact that the retail space exists online allows the company to tap into a wide-ranging and rich stream of user data available digitally and to analyse it in order to better target its products to the needs of its customers. These abilities rely on sophisticated technology, software and algorithms, each of which is a key source of value and competitive advantage of a digitalised reseller.

Value network: Ride-for-hire company

Business model overview

190. In general, a ride-for-hire business model can be described as a digital platform that creates value by matching drivers and passengers so that they can complete a ride on a pay-as-you-go basis. It is built around the following main steps. First, the ride-for-hire company recruits drivers with access to their own cars. It then orchestrates the drivers centrally, e.g., monitors their active hours and locations in order to offer a transportation

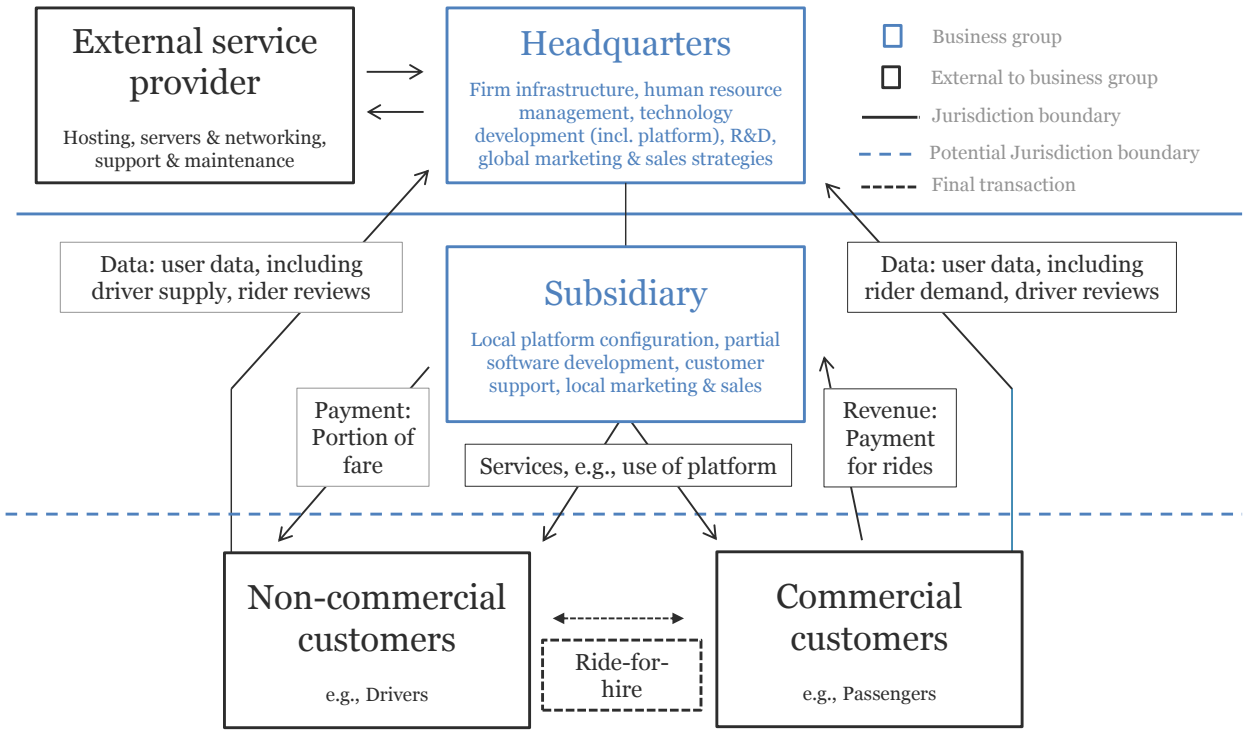
platform. Third, the company develops a platform, including a mobile app, which allows passengers to book a ride. Finally, it ensures transaction quality using a review system whereby drivers and passengers have the option of rating the quality of the interaction.

191. Annex Figure 2.A.3 illustrates the business model. The headquarter entity is responsible for the company's infrastructure (e.g., organisational structure, control systems), human resource management, technology development (including of the platform), research and development, as well as global marketing and sales strategies.

192. The platform is provided to an entity for use in another location (likely for a fee, though the details of this potential remuneration are not known). The entity may provide local services, such as local configuration of the platform and partial software development. The local version of the platform is used by non-commercial customers (i.e., the drivers) as well as commercial customers (i.e., the passengers). The final service takes place between the passenger and the driver, with payment sent electronically from the passenger to the ride-for-hire company.

193. Ride-for-hire companies generally rely on an external (i.e., cloud computing) service provider for hosting of the app, storage of data and other computing services such as the running of data analysis algorithms.

Annex Figure 2.A.3. Schematic of a ride for hire business model



Revenue

194. A ride-for-hire company's primary source of revenue is the sum of commissions earned on rides, which depending upon the fee structure of the business, could be as high as 20 or 30%of the total transaction. In most cases, the price of a ride is set dynamically based on the supply of drivers and the demand of passengers in a given location (e.g.,

Didi Chuxing, Lyft, Ola and Uber), although in some cases (e.g., BlaBlaCar) the price is set based on an estimate of the costs incurred by the driver. In order to use the company's app, a passenger must provide his or her credit card details so that he or she can be automatically charged for the fare when a ride ends. Revenue may also be earned through other, complementary business lines, such as food delivery platforms (e.g., UberEATS).

Use and ownership of intellectual property

195. A ride-for-hire company may own various patents and trademarks to protect its intellectual property together with app icons and app designs. The patents are often utility patents, which mainly relate to business methods. Examples of utility patents include those on translated view navigation for visualisations and systems and methods for providing dynamic supply positioning for on-demand services. Ride-for-hire companies may also have trademarked logos, app icons and app designs. Patents and trademarks may be held by the headquarters or by foreign subsidiaries.

Data

196. User data, of both drivers and passengers, is a key input of the service provided by ride-for-hire companies. A vast amount of data will be stored, such as ride history, including origin and destination, payment details and basic user information, such as name, phone number and email address, which can be analysed to help the company tailor its services and pricing. For example, user location is important in enabling the ride-for-hire service as driver-passenger matches are made according to the optimal locations of all drivers and passengers in the network.

197. The user data collected also serves as an input into the company's surge pricing algorithm, which sets the price of fares according to driver supply and passenger demand in real time. This enables the company to extract consumer surplus via first-degree price differentiation known as personalised pricing: setting tailored prices for the same good (Shapiro and Varian, 1999).

198. Under surge pricing, higher passenger demand for a given supply of drivers prompts fares to rise. A passenger either accepts to ride at the higher fare or may wait until the fare declines to match his or her reserve price. In this way, surge pricing enables ride-for-hire companies to transact at the maximum price a passenger is willing to pay, thereby transforming consumer surplus into revenue. This pricing strategy is common for firms that operate as multi-sided platforms that link buyers and sellers (Rochet and Tirole, 2006).

199. Finally, user data is used to improve the service. Drivers and passengers review each transaction, and user reviews are aggregated into a rating that the company can use to quality-assure its network. The company may also analyse user data in order to provide an improved service, for example by offering inducements to drivers to get on the road at the relevant time interval(s) and in the relevant location(s). The road traffic data collected, for example, on the length of the driver or the number of passengers at a certain time may have commercial value for other businesses such as logistics or public transport companies.

Value network

200. As described, the value network is comprised of three primary business activities: network promotion and contract management, service provisioning and network

infrastructure operation. Annex Figure 2.A.4 shows the value network activities for a traditional taxi company (Panel A) and for a digital ride-for-hire company (Panel B). The following paragraphs compare the two value networks as a means of exploring how this business model has changed with digitalisation.

Annex Figure 2.A.4. Value network: A ride for for-hire company's business activities compared to those of a traditional taxi company

Panel A: Value network of a traditional taxi company			
	Network promotion & contract management	**Service provisioning**	**Network infrastructure operation**
Primary activities	Drivers: • Recruitment spanning a limited geographic area • Verification of permission to drive – local • Good driving record • Agreement to labour contract Passengers: • No passenger requirements/vetting Data collection: • Driver database IP: • None	• Drivers/passengers matched in person/by dispatcher • Driver & passenger complete a ride - locally • Passenger pays in cash or by credit card • Driver earns sum of fares less commissions • Fares set in compliance with local regulations Data collection: • Record of completed rides IP: • None	• Cars owned & maintained by company or drivers • Vehicle standards set by regulation Data collection: • Minimal storage of user information IP: • None
Technology	Telephone	Radio network linking drivers &/or dispatcher; electronic payment technology	Telephone, fax
Panel B: Value network of a digital ride-for-hire company			
	Network promotion & contract management	**Service provisioning**	**Network infrastructure operation**
Primary activities	Drivers: • Recruitment **globally** • Verification of permission to drive – **global** • Good driving record • **Acceptable driver rating** • Agreement to labour contract Passengers: • **Global passenger base** • **Passengers must provide credit card** • **Acceptable passenger rating** Data collection: • Driver **& passenger** database • **Storage of user profile data, including ratings** IP: • **Development of ratings algorithms**	• Drivers/passengers matched **by app** • Driver & passenger complete a ride - **globally** • Passenger pays **through app** • Driver earns sum of fares less commissions • Fares set **using a supply-demand algorithm** • **App updates pushed to all users as relevant** Data collection: • **User locations in real time** • **Passenger credit card data** • **Driver bank information** IP: • **Running of algorithms to match users** • **Running of algorithms to set fares**	• Cars owned & maintained **by drivers** • Vehicle standards **set by company** Data collection: • **User data, including driver & passenger locations in real time** IP: • **Development of app & platform** • **Development of algorithms to match users & set fares**
Technology	**App, platform, algorithms**	**Software, app, algorithms**	**Computer hardware, software, app, algorithms**

Network promotion and contract management

201. Network promotion and contract management is the category of business activities associated with inviting potential customers to join the network, selection of customers that are allowed to join and the initialisation, management, and termination of contracts governing service provisioning and charging. Initialisation, management and contract management must be done for both commercial and non-commercial customers.

202. A clear similarity between the network of a ride-for-hire company and that of a traditional taxi company is that they both require drivers (although this is likely to change

with the anticipated arrival of driverless cars) with an available vehicle and passengers. Both a ride-for-hire company and a traditional taxi company require proof that the driver is qualified and capable of driving according to local regulations. Drivers must also agree to a labour contract with the business, and driver contract management may look rather similar for a ride-for-hire company and a traditional taxi company. However, there are several striking differences.

203. One difference is that, while there are no hurdles to becoming a traditional taxi passenger, a ride-for-hire company's passengers are required to have the company's app and therefore to reveal their identity to both the driver (by their name and phone number) and the company (by their name, phone number and credit card). As a result of having user-specific information, ride-for-hire companies are able to build profiles over time of both drivers and passengers based on their location, ride histories, willingness to pay premium prices and ratings. Whenever drivers and passengers complete a ride, each is prompted to rate the quality of the interaction. Ratings are aggregated into a score that ride-for-hire companies use in order to maintain the quality of their networks (of both the drivers and the passengers). Whereas any individual can take a taxi ride, only passengers with positive ratings can use the app and thus the service; and whereas any qualified driver can operate a taxi, only drivers with positive ratings can use the app and thus the service. The quality assurance of the ride-for-hire company's network represents value created by the digitalisation of a traditional business model.

204. Another difference between the network of a ride-for-hire company and that of a traditional taxi company is the former's far greater scale, both in terms of geographic span and number of drivers. A ride-for-hire company is able to maintain a network of drivers and passengers on a global basis. To become a ride-for-hire driver, an individual needs to provide: a driver's license (verified by the company locally or by a third party); an acceptable vehicle (though drivers may also rent vehicles from the company or third party companies); appropriate license plates for the vehicle; and proof of commercial insurance for the vehicle. Beyond these steps, all that is required is the company's app. In most countries, traditional taxi drivers need to meet much more stringent regulatory requirements including often having to pass a specific exam before they can work start working in the industry. This allows the company to recruit and contract work to a great number of drivers, with fewer barriers to entry and without having large management operations in the locations where final transactions take place or employing a substantial number of workers there. The fact that ride-for-hire companies are able to maintain networks of drivers globally is another source of value, as a passenger can use the service to which he or she is accustomed almost anywhere in the world.

205. Similarly, on the passenger side, an individual need only download the app and provide a means of electronic payment within it. Ride-for-hire companies are able to build consumer bases through the transmission of data and without the presence of employees or management in non-headquarter jurisdictions.

Service provisioning

206. Service provisioning is the category of activities associated with establishing, maintaining, and terminating links between customers and billing for value received, where billing requires measuring customers' use of the service.

207. The activity of a driver providing a ride to a passenger is comprised of three main components: (i) the driver and the passenger must be matched; (ii) once matched, they complete a ride; and (iii) the passenger pays for the ride. While both traditional and

digitalised business models share these components – a passenger is clearly taken from point A to point B in a hired car in both cases – they achieve this objective in different ways.

208. In the most basic version of a traditional taxi business model, the passenger/driver match is unaided by technology or an intermediary. The entire transaction takes place in a single jurisdiction, with no or very little transactional data stored. The transaction is settled between the passenger and the driver directly.

209. In a slightly more advanced version of a traditional taxi business model, a passenger can arrange a taxi ride by phone.[21] In this case, the driver and passenger are matched by an intermediary, such as a dispatcher. The match no longer happens physically and, indeed, the ride need not take place in the same location as the dispatcher. Nonetheless, driver-passenger matches require human labour, and are thus not infinitely scalable.

210. Some data may be stored, such as the passenger's address and phone number. The data may be used to establish a client record for future use, but is likely not analysed systematically and on a large scale. The price of the ride is set according to a fixed schedule that may vary by time of day (e.g., rush hour surcharge). The transaction may be settled between the passenger and the driver directly. Alternatively, electronic payment for the ride may be routed to the company before the driver receives his or her share.

211. In contrast to taxi companies, a digitalised ride-for-hire company makes passenger-driver matches with the app or platform using real-time user data, mapping technology and algorithms. Compared to a traditional taxi dispatcher, the ride-for-hire platform is vastly more technologically advanced. It inputs data pertaining to passenger and driver locations in a given area, and the company's algorithms rapidly and efficiently match passengers and drivers into pairs. The platform is able to process many matches simultaneously, which makes it easily scalable.

212. A ride-for-hire is initiated by a passenger through the app. The company inputs user data – current location as well as destination – into its algorithm in order to match the passenger with a nearby driver. Once a match is made, each party's information is made available to the counterparty, after which the driver arrives at the location specified by the passenger and the digital match becomes a physical match. Passengers are given precise estimates regarding when their drivers will arrive, and can spot them on a map if their arrival location is imprecise. Likewise, drivers can spot whether passengers have deviated from the agreed-upon pick-up location. It is clear that in this context, the IT infrastructure and the synergy between data and algorithms are major drivers of value creation.

213. Users may download the app from anywhere for use in any jurisdiction in which the company operates. Thus, as with a taxi ride arranged by a dispatcher, the driver-passenger pair and the platform need not be in the same location. What is different with ride-for-hire companies, however, is the scale at which driver-passenger matches can be made with limited human intervention. The number of matches is only limited by computing power, and can be done with speed and efficiency around the world. Regarding payment for a ride, the payment mechanisms of the two business models are similar if we compare a ride-for-hire company to a traditional taxi company that collects payment from passengers electronically before disbursing a portion to the driver. The transaction is not settled between the passenger and the driver but between the passenger and the company via the payment information provided through the app.

214. Finally, there are also differences in the provisions of customer service between a ride-for-hire company and a traditional taxi company, chiefly because the former's collection of data – user information as well as transaction reviews – put it in a position to analyse that data and respond to customers' feedback and needs. Additionally, all transactions are electronically recorded and the passenger systematically receives a receipt for the transaction by email.

215. By differentiating between passengers based on their needs and/or preferences, ride-for-hire companies can capture more consumer surplus, a form of second-degree price differentiation known as product versioning or menu pricing. However, a variety of price discrimination existed in the traditional taxi business model. Different vehicle types existed previously (e.g., small car or van), as did private car services that allowed customers to differentiate by car class by paying a premium (e.g., business car or limousine).

Network infrastructure operation

216. Network infrastructure operation is the category of activities associated with maintaining and running the firm's physical and information infrastructure. The traditional and the digitalised business models are similar with respect to physical infrastructure in that they each rely on physical vehicles, owned and maintained either by the company or the drivers. However, there are clear and striking differences between the two. First, as explained in Section 2, it is typical of a multi-sided platform that the control rights and liabilities towards customers are retained by the suppliers of the service, in this case the drivers. This implies that the platform matching drivers and passengers outsources to the drivers the risks associated with vehicle purchase, maintenance costs, and periods of latent use. This is an additional source of competitive advantage. The second important difference with the traditional tax business is the ride-for-hire company's substantial information infrastructure compared to a traditional taxi company's very limited information infrastructure.

217. A ride-for-hire company's information infrastructure has several aspects. First, its service depends upon data describing the precise locations of drivers and passengers, so that efficient matches can be made by a computer algorithm. Second, the company collects and stores user data, including ride history, user profile details and payment or bank information, which leads to product development and an ability to maintain the quality of its network. In addition, ride-for-hire companies use user data as an input to a sophisticated price-setting algorithm. In a traditional taxi business model, fares are set according to a schedule (sometimes set by government regulation) that often varies with time (e.g., during rush hour) and will be affected by the levels of traffic and the time taken to complete the journey. While some of these factors still affect the pricing of ride-for-hire companies, they have also relied upon surge pricing, wherein an algorithm sets fares in real time according to some of the traditional factors (e.g., traffic and anticipated length of the journey) as well as the supply of drivers and the demand of passengers in a given geographic area at a given point in time.

Technology

218. A clear difference between the two business models is a ride-for-hire company's development of its platform, which forms the core of the company's operations by connecting passengers and drivers using Internet connectivity and running the algorithms by which the company sets prices. The technological inputs that underlie the platform are

each key and substantial investments, whereas these have been much less important for the traditional taxi company. While this has a physical aspect: computer hardware, servers, etc., it also has a knowledge-based capital and intellectual property component: software, software engineers, algorithms, etc. Reflecting this stark difference between the two business models, the question of whether ride-for-hire companies should be classified as transport companies or as digital service companies is a matter of continuing debate.

219. Core technology services may be outsourced to third parties (e.g., cloud computing firms). A ride-for-hire company may rely upon other service providers (e.g., Google maps for its location data) and to enable users to view one another's precise location in the app.

220. The only technology required by a traditional taxi company, in contrast, is a potential radio communication network linking drivers and/or drivers and a taxi dispatcher, and the potential storage of user information (e.g., name, phone number, address) in order to service repeat passengers.

Value shop: Cloud computing

221. We describe cloud computing as an example of a value shop. The choice of cloud computing as a case study rests on the observation that this business model seems to be fundamental in accelerating the digitalisation of other businesses and, therefore, of the entire economy.

Business model overview

222. A cloud computing business creates value by providing a broad set of on-demand computing services to customers. The services are generally supplied in a standardised and highly automated way and, as explained in more detail below, they can be broadly classified as infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS) and software-as-a-service (SaaS).

223. Cloud computing enables a range of technology-based business activities to take place on a network of remote servers hosted on the Internet rather than on a local server or a personal computer. This enables businesses – both small and large – to outsource certain activities. By relying on cloud computing, customers do not have to make large upfront investments in hardware, releasing resources for their core business. By lowering the cost barriers to entry, cloud computing can facilitate market entry for start-ups and smaller players which usually lack the financial and/or technical resources to build their own infrastructure.

224. Instead, they can provision the right type and size of resources they need and access them on demand. For example, without cloud computing services, an individual company must maintain its own computing capability sufficient to handle a maximum load: an e-retailer would need to maintain computing capabilities large enough to handle substantial spikes in site traffic, for example during the holiday season, although the computing need would be much lower throughout the rest of the year.

225. Additionally, through the cloud, companies can access the most recent technology as cloud devices can be constantly updated remotely. These benefits are driving the rapid adoption of e-cloud services across various sectors of the economy, allowing companies to become more and more digitalised and to leverage digitalisation to grow.

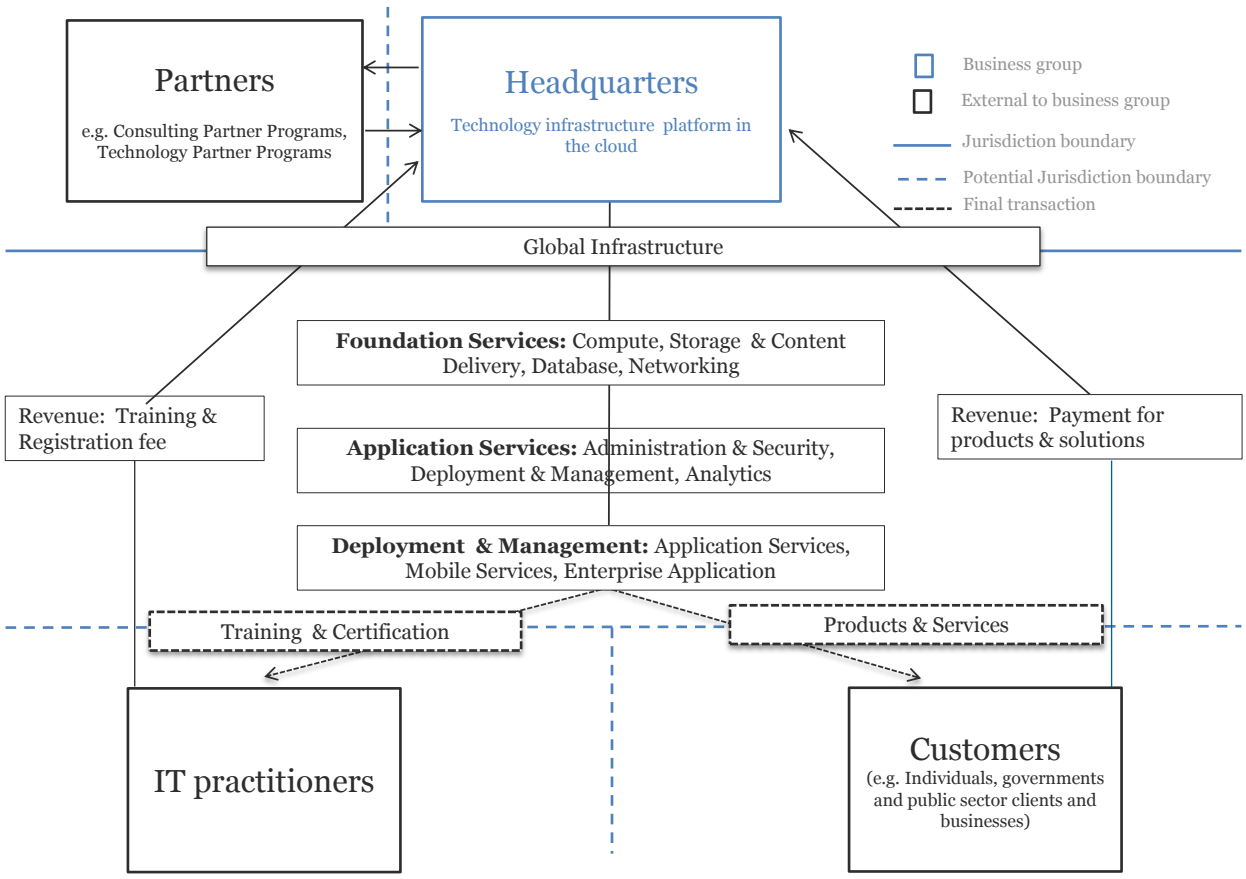
226. Computing services include virtual servers in the cloud, the ability to run and manage web apps using remote computing, the ability to run code on remote computers in response to events and the ability to run batch code jobs at scale. Storage services include storage in the cloud and data transport.

227. Database services include data warehousing, database management and caching systems. Migration services include database migration and data transport (with a possible physical component). Networking and content delivery services include access to a virtual private cloud (an isolated cloud that the customer can control) and use of a global content delivery network (whereby content such as videos are transferred to viewers at high transfer speeds).

228. Two publicly known examples of cloud computing customer case studies are Airbnb and Spotify. One year after Airbnb launched, the company migrated its computing services to Amazon Web Services in order to gain flexibility in server usage. Amazon Web Services enabled Airbnb to achieve scale extremely rapidly: the number of Airbnb guests went from 4 million in January 2013 to 15 million in June 2014. Airbnb uses Amazon Web Services for its application, memory caching (used to speed up database-driven websites by caching data in storage, thereby reducing the number of times an external data source must be read) and search servers. Airbnb also uses Amazon Web Services to house backups and static files, including 10 terabytes of user pictures, among other services. Spotify relies on Amazon Web Services to store the company's huge volume of music content while remaining accessible to users of the Spotify website and mobile application worldwide. In addition, Spotify relies on Amazon Web Services CloudFront to deliver the Spotify application and software updates to users.

229. Annex Figure 2.A.5 illustrates the general business model schematic for a full-service (i.e., providing IaaS, PaaS and SaaS) cloud computing company. In general, a full-service cloud computing company may group its services into three broad categories: foundation services, application services and deployment and management services. It markets and sells its services to customers in exchange for payment, which generally entails an ongoing relationship as the cloud computing services integrate into the technological fabric of the clients' operations.

Annex Figure 2.A.5. Schematic of a cloud computing business model



230. Cloud computing companies may run programmes for certain customers in order to support their business models with additional consulting and technology support. Such programs are meant to encourage high-profile users to develop and promote their services. Cloud computing companies may also offer training and certification programs to help customers build knowledge and technical skills. Participants pay fees for training courses and registration fees for the exams that grant certification.

Revenue

231. In cloud computing business models, revenue is generated through the global sales of services. While the pricing strategies of cloud computing services vary, a key appeal to customers is that services can often be consumed on a pay-as-you-go basis, which allows them to pay for what they use without upfront expenses or long-term commitments. Some cloud computing companies have stated that their strategy is to prioritise infrastructure innovation in order to keep costs down, viewing cloud computing as a high-volume, low-margin business.

Use and ownership of intellectual property

232. The creation of proprietary computer hardware, network infrastructure, software and algorithms is a key source of competitive advantage for a cloud computing company. Cloud computing companies own various IP assets.

Data

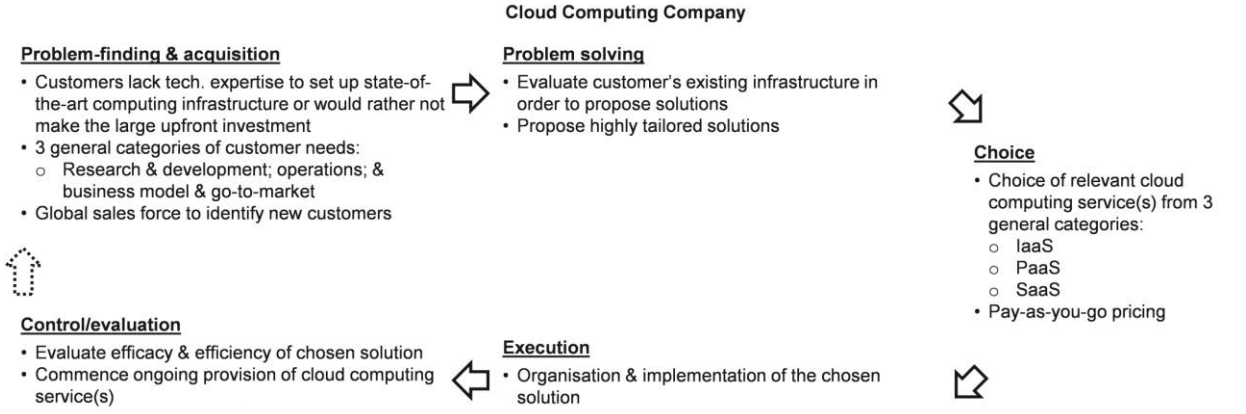
233. Apart from the storage of customers' data on servers, a cloud computing company makes limited use of data because ensuring the confidentiality of all information entrusted to the company is a key customer concern. The exception is when some companies help their customers develop better insight through their analysis of customer data – where the customers provide their consent.

Value shop

234. As described, the value shop is comprised of five primary business activities: problem-finding and acquisition, problem-solving, choice, execution and control and evaluation. Whereas the value chain or value network overviews compared highly digitalised business models to their traditional counterparts, it is difficult to imagine the traditional counterpart of a cloud computing company.

235. Of all of the business models surveyed, the cloud computing business model is the one that appears truly new. The next paragraphs explore the business model according to the value shop framework described earlier, which is illustrated in Annex Figure 2.A.6, on its own and not in comparison to the pre-digital world.

Annex Figure 2.A.6. Value shop: Cloud computing business activities



Technology		
ICT	**Data collection**	**IP**
• Investment in or access to electricity grids • Investment in hardware required to support network infrastructure & computing power	Limited	• Patent on operating system & software apps (e.g., Office 365)

Problem-finding and acquisition

236. As previously noted, problem-finding and acquisition is the category of activities associated with the recording, reviewing, and formulating of the problem to be solved and choosing the overall solution approach. Problem-finding and acquisition have much in common with the marketing and sales activity in the value chain: identifying a customer need and applying resources towards solving it. Depending upon the geographic scope of their operations, cloud computing companies generally maintain regional or global sales forces geared at acquiring customers, which include governments and other public sector clients, individuals and corporations.

237. As mentioned, some cloud computing companies' stated sales strategy is to gain market share by keeping prices low in order to boost volume. Another means of attracting customers is through a pricing strategy: pay-as-you-go pricing allows smaller businesses, in particular, to scale rapidly without large upfront costs. In this way, cloud computing services support the digitalisation of the economy and the emergence of more highly digitalised businesses with the characteristics referred to earlier: economies of scale and the ability to build large, often cross-country networks. Clients can achieve operational scale without mass, since they do not need to invest in their own IT infrastructure. Additionally, they achieve the ability to conduct business across jurisdictions with ease, as cloud computing services are already available in most regions around the world and they can be provided wherever there is Internet connectivity.

238. The problems serviced by cloud computing companies are plentiful in the digitalised economy: their services span nearly all technological infrastructure needs of businesses, from server space to database management to application services.

Problem-solving

239. Cloud computing firms generally offer services according to the following main categories:

- Infrastructure-as-a-service (IaaS): IaaS refers to the delivery of infrastructure such as computing capacity. Also known as hardware-as-a-service, IaaS encompasses all of the physical computing resources that support delivery of applications as a service, such as computing services, database storage and networking capabilities. IaaS provides major cost savings to customers, as it provides access to additional computing capacity on demand, without the need for a major capital investment in additional hardware.
- Platform-as-a-service (PaaS): PaaS is a method by which an entire computing platform can be utilised remotely over the Internet via cloud computing. PaaS refers to a broad collection of application infrastructure, including operating systems, application platforms and database services. PaaS provides a way for customers to outsource their platform infrastructure needs and therefore avoid the need to purchase and implement a new platform. This service model typically allows cloud computing companies to charge customers only for the share of the resources they use, which is especially useful for a business that requires a specific application it would only use on occasion.
- Software-as-a-service (SaaS): SaaS is a software model that incorporates the delivery and management of a software application to a remote client via the Internet. SaaS relies on the centralised hosting of a software application that is typically accessed via a web browser application. SaaS can be configured to allow public access or private access, where only users with the proper credentials are granted access to a particular hosted software application.

Choice

240. Choice refers to the need to choose among alternative problem solutions. Cloud computing companies' choices span a range of on-demand computing resources for customers. Depending on the service, the choice may be entirely digital, such as the lease of computing power or the running of code on a remote server, or may involve physical steps, such as the transportation of data from a customer's location to a cloud computing company's facility for import to the cloud.

Execution

241. Execution activities are those associated with communicating, organising, and implementing the chosen solution. When a customer purchases a cloud computing service, it can select availability zones or allow the cloud computing company to choose availability zones for it. Customers may choose to be hosted in certain availability zones in order to be closer to their markets or to meet legal requirements.

242. Cloud computing services are generally centrally provided in one or a small number of jurisdictions within a wider region. Nonetheless, an important aspect of cloud computing customer service is modularity of operations. Availability zones are often connected to each other through a fibre-optic network, which allows the provider to ensure continuity of customer service in the event that computing power at one availability zone fails by automatically switching to another. Moreover, fail-safe connectivity may also be set up across regions. This implies that a given customer may rely on a multitude of availability zones within and/or across regions.

243. An important competitive advantage of cloud computing companies is the service that they provide to their customers. Key customer concerns are the security of their data and continuity of their processes, as in many instances customers rely crucially on cloud computing companies to provide services to their customers (e.g., Amazon Web Services provides Netflix's streaming ability).

Control and evaluation

244. Control and evaluation is the category of activities associated with measuring and evaluating the extent to which implementation has solved the initial problem.

245. Cloud computing companies also work with their customers to devise custom solutions to their business problems. Cloud computing companies ensure that they provide sufficient technical support to key customers. They also host webinars and conferences where technical experts provide insights into operations and new products. Finally, cloud computing companies often provide training programs, which further aid the development of technical skills necessary to use the company's services.

Technology

246. Cloud computing services are enabled by heavy investment in technology hardware and infrastructure, including machinery such as servers, networking equipment and electric power systems, in order to ensure sufficient technological capacity. In areas of particular operational sensitivity, cloud computing companies may choose to develop their infrastructure internally rather than procuring it from unrelated parties. Examples of internally-developed infrastructure technology and hardware include servers, network routers, custom-built silicon, custom storage server racks to store disk space and the programming of electrical gear.

247. Cloud computing companies depend upon their relationships with Internet service providers (ISPs), from whom they generally lease fibre-optic infrastructure from ISPs to connect its data centres. In addition, another key component of the technology is access to sufficient electrical power. Cloud computing data centres are huge consumers of electricity due to the immense energy required to power as well as to regulate the temperature (i.e., cool down) the servers. Cloud computing companies must also lease or purchase real estate in order to house their data centres.

248. Cloud computing services depend on the companies' maintenance of their global cloud infrastructures. As mentioned, the cloud infrastructure is often organised according to regions, where each region may in turn contain two or more availability zones. Availability zones consist of one or more discrete data centres from which cloud computing services are run. Services may be run by multiple data centres joined by fibre connections. For example, an application run in one data centre may draw on customer data stored in another.

249. Each availability zone is isolated, but availability zones within a region are connected. By connecting availability zones, cloud computing companies are able to offer resource backups, i.e., the storage of resources in multiple locations such that failure at one location can be overcome by switching to the resource stored in the backup location. This structure allows stability and continuity of service. Resources can also be replicated across regions to allow for even greater security.

250. Cloud computing services may vary by availability zone. Not all services are available at each. However, a customer's service selection is not limited by its geography; if a service offering is not available in a given region, it can simply select to rely on another. The consequence of relying upon cloud computing services in a location further from the location of final consumers is longer latency, i.e., a longer delay before a transfer of data begins after an instruction has been given. This is an important issue for example for video or music live streaming.

Notes

[1] Among the different views, some countries specifically consider that corporate profits represent the excess of sales revenue (price multiplied by quantum of sales) over the costs of their supply, and are a function of both demand and supply. Therefore, according to these countries, value created within the supply chain, representing the contribution of supply side, must be taken into account with the contribution of the demand for determining corporate profits attributable in a tax jurisdiction.

[2] For an overview of the earlier thinking on this issue see Varian et al. (2004) and Shy (2001, 2011); more recent contributions are collected in Peitz and Waldfogel (2012), Goldfarb et al. (2015) and Bauer and Latzer (2016).

[3] Non-rival goods may be consumed by one consumer without preventing simultaneous consumption by others. Most examples of non-rival goods are intangible.

[4] The literature on competition and regulation policy for digital markets has addressed many related issues such as market definition, mergers, exclusionary strategies and monopolisation (see Evans and Schmalensee, 2013; Evans, 2016; Filistrucchi et al., 2013; Kuchinke and Vidal, 2016). Many of the findings of these contributions have informed the analysis of this chapter as they shed important light on the features of digital markets. Nonetheless, to keep the analysis focused on tax policy, this chapter does not directly discuss competition issues which are instead discussed in OECD (2015b) and in the literature cited there.

[5] This approach allows Hagiu and Wright to link the relatively new literature on multi-sided markets to standard microeconomic theories of vertical integration, transaction costs and the boundaries of the firm going back to Coase (1937) and Williamson (1976). For a more recent summary, see Gibbons (2005).

[6] The business customer affiliated with the platform retains control of the inputs used to provide the service to the customers on the other side of the market. For example, the owner of an

apartment rented out through a platform will retain ownership and control of the apartment. The same is the case for a driver with respect to the car used to provide transport services.

[7] The business customer affiliated with the platform is responsible for any damage inflicted to the customers on the other side of the market. For example, the owner of an apartment rented out through a platform will be responsible for ensuring that the apartment remains in a habitable condition.

[8] See OECD (2014, forthcoming) for more detail and a discussion of related, non-tax policy implications.

[9] A long linked technology is a production process consisting of a fixed sequence of steps to transform standardised inputs into standardised outputs.

[10] Each primary activity can be divided into a number of distinct sub-activities. For example, for a pharmaceutical company, the primary activity operations can be divided into three distinct steps: (i) research aimed at the discovery of a new drug; (ii) clinical testing of a potential new drug and legal approval; and (iii) patenting and manufacturing.

[11] As previously noted, the distinction between traditional businesses and digitalised businesses is not always clearly defined. Businesses are best viewed as existing at some point along a spectrum that spans traditional, non-digitalised businesses through to the most highly digitalised businesses.

[12] Traditional advertisers were also concerned with efficiently interacting with the users on the other side of the market. For example, the success of the television advertising model was largely based on the size of audience; thus, substantial effort went into delivering attractive content.

[13] In some cases, however, the social network company may not automatically award advertising space to the advertiser offering the higher price, where there may be other considerations such as the impact of placing the particular advertisement on the quality of the user experience.

[14] Mass refers to a firms' physical presence in the location of the user or the customer's market.

[15] The one possible exception is cloud computing, where considerable physical infrastructure is required, although it is also clear that the increasing use of cloud computing services by other businesses is also a key driver of this process of dematerialisation.

[16] According to the WIPO, IP rights are granted either for industrial property or copyrights. While the latter includes authors' rights over literary or artistic creations, the former is subdivided into patents and utility models, industrial designs, trademarks, service marks, layout-designs of integrated circuits, commercial names and designations, geographical indications and protection against unfair competition.

[17] The authors use balance sheet data from Compustat covering US businesses from 1980 to 2012.

[18] The first category covers mainly business investments in computer software as captured by the National Income and Products Accounts tables (published by the US Bureau of Economic Analysis). The second category is based on two data series: The National Science Foundation's industrial research and development (R&D) expenditure series capturing scientific R&D in the traditional sense and the Census Bureau's Services Annual Survey (SAS) covering revenues from non-scientific commercial R&D devoted to product or process innovations. The third category covers economic competencies and is also based on two distinct components. On the one hand, it covers spending on strategic planning, product redesigning as well as investments in brand names; on the other hand, it accounts for investments in firm-specific human and structural resources. This information is sourced from the SAS as well as the US Bureau of Labour Statistics.

[19] In addition to productivity-enhancing effects, OECD (2015d) also discusses the positive effects that these processes can have on well-being and inclusive growth.

[20] Consumer surplus is defined as the difference between the total amount that consumers are willing and able to pay for a good or service (indicated by the demand curve) and the total amount that they actually do pay (i.e., the market price).

[21] Although, as the traditional taxi industry becomes increasingly digitalised, it is now increasingly common for traditional taxi companies to offer their service via an app.

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Chapter 3. Implementation and impact of the BEPS package

This chapter concerns the implementation and impact of the package of BEPS measures released in October 2015. It focuses specifically on those BEPS Actions that are most relevant to digitalisation, and considers the impact of those measures to date in addressing BEPS concerns, as well as the broader tax challenges that go beyond BEPS that were identified in the 2015 BEPS Action 1 Report.

3.1. Overview

252. This chapter describes the current progress in the implementation of the measures outlined in the base erosion and profit shifting (BEPS) package, with a particular focus on the measures relevant to digitalisation and their impact on the behaviour of highly digitalised businesses. These relevant measures include the direct tax measures developed under Action 7 (prevent the artificial avoidance of permanent establishment (PE) status), Actions 8-10 (assure that transfer pricing outcomes are in line with value creation), Action 3 (strengthen Controlled Foreign Company (CFC) rules), Action 5 (tackle harmful tax practices) and Action 6 (prevent treaty abuse). They include also the new guidelines and implementation mechanisms relating to Value Added Tax (VAT) that were agreed under Action 1 to level the playing field between domestic and foreign suppliers.

253. In the area of direct taxes, while it is still relatively early days, evidence is available that countries have gone a long way in achieving a widespread implementation of the various BEPS measures, and that this is already having an impact. While the adoption rate of the permanent establishment (PE) related provisions (Action 7) through the Multilateral Convention (MLI) is currently low, this does not reflect the full degree of implementation and impact of the MLI over time, as indicated by the early responses of some digitalised MNEs (e.g., Amazon, eBay, Facebook) that have already started changing their trade structures based on remote sales models to local reseller models. Equally important, a significant number of MNEs have already taken pro-active steps aimed at aligning their corporate structures with their real economic activity, either by reconsidering their transfer pricing positions and/or by relocating valuable assets, such as intangibles, in jurisdictions where substantial economic activities take place (i.e., so-called "on-shoring" of assets).

254. This early evidence of the impact and implementation of some key BEPS measures holds much promise for the resolution of double non-taxation concerns exacerbated by digitalisation. For example, the recent US tax reform includes the concerted implementation of strengthened CFC rules (Action 3) and anti-hybrid rules (Action 2), and similarly important reforms involving the treatment of CFCs and hybrid mismatch arrangements have taken place in Japan and in European Union (EU) Member States (through the EU Council's Anti-Tax Avoidance Directives).

255. At the same time, the relevance and impact of the BEPS measures that have been implemented are much less evident for the broader direct tax challenges raised by digitalisation (i.e., nexus, data, and characterisation). For a large number of countries, these challenges remain to a large extent unaddressed. This is because the relevant measures of the BEPS package were primarily designed to target instances of double non-taxation rather than the more systematic tax challenges posed by digitalisation.

256. In the area of indirect taxes, the success and impact of the BEPS implementation process is also evident. An overwhelming majority of OECD and G20 countries have adopted rules for the VAT treatment of business-to-consumer (B2C) supplies of services and intangibles by foreign suppliers in accordance with the OECD International VAT/GST Guidelines. Early data shows that this has led to significant additional revenue in the adopting countries. For example, the European Union (EU) has identified that the total VAT revenue declared via its simplified compliance regime in 2015 (the EU regime's first year of operation) was in excess of EUR 3 billion.

3.2. Introduction

257. The 2015 BEPS Action 1 Report concluded that digitalisation presents no unique BEPS issues. Nonetheless, some key features of highly digitalised business models can exacerbate BEPS concerns and additionally, create a number of broader tax challenges.[1] In direct taxation, the 2015 BEPS Action 1 Report described the broader challenges as relating to nexus, data, and characterisation. In the indirect tax context, they were described as relating to the collection of VAT[2] on cross-border transactions, particularly where goods, services and intangibles are acquired by private consumers from foreign suppliers.

258. At the time the 2015 BEPS Action 1 Report was adopted, there was a clear expectation that the consistent and widespread implementation of the BEPS package would substantially address many of the double non-taxation concerns raised by digitalisation. Specifically, the work on Action 3 (strengthen Controlled Foreign Company (CFC) rules), Action 7 (prevent the artificial avoidance of permanent establishment (PE) status) and Actions 8-10 (assure that transfer pricing outcomes are in line with value creation) was recognised as particularly important in tackling aspects of BEPS behaviour exacerbated by digitalisation.

259. Additionally, there was an expectation that the implementation of some recommendations of the BEPS package had the potential to affect the scope of the broader direct tax challenges related to nexus, data, and characterisation (OECD, 2015[1]).[3] This is notably the case for the amendments to the PE definition under Action 7 (Sub-section 3.3.1), as well as the new guidelines and collection mechanisms related to VAT agreed under Action 1 (Sub-section 3.4).

260. As the implementation of the BEPS measures is still in its early stages, data on the impact of the measures remains limited. Therefore, a systematic assessment of the effect of the various BEPS measures will only be possible in the coming years when the full impact of the behavioural responses of taxpayers will begin to be reflected in the micro- and macro-level data and when new sources of data covering the post-BEPS period become available.[4]

261. In the area of VAT, however, evidence is already available that countries are implementing the principles recommended in the 2015 BEPS Action 1 Report on indirect taxation, which have now been enshrined in the OECD International VAT/GST Guidelines (OECD, 2017[2]). Not only are these measures being adopted by a large number of countries, but they are already beginning to yield substantial additional tax revenues in the market jurisdiction, where these measures have been implemented.

262. There is also growing evidence that businesses are beginning to change the nature of their tax planning arrangements for corporate tax purposes in some countries and regions. For example, in some countries a number of global businesses supplying digital products and services have already altered their structures in respect of their cross-border sales (e.g. Amazon, E-bay, Facebook, Google).[5] They have moved towards the conclusion of sales contracts through local distribution activity in response to the measures developed under Action 7 (prevent the artificial avoidance of permanent establishment (PE) status), even though these measures have very recently begun to be introduced. While it had previously been the case that the OECD Transfer Pricing Guidelines had stipulated that taxation should occur in line with functions, assets and risks, the measures delivered under the BEPS Project provided more guidance and clarity in this regard, and already a number of MNEs involved in heavily digitalised activities

have proactively taken steps aimed at aligning their corporate structures with their real economic activity. This has notably been evidenced by relocating some valuable assets (such as intangibles) and risks from low-tax jurisdictions to other jurisdictions where substantial business activities take place (so-called "on-shoring" of assets).[6] These early responses to the implementation of some BEPS measures hold promise for the resolution of some double non-taxation concerns raised by digitalisation. Their relevance and impact are, however, much less evident for the broader direct tax challenges related to profit allocation and nexus, which in the view of many countries remain to a large extent unaddressed.

263. This chapter describes the current progress in the implementation of the BEPS package, with a particular focus on the measures relevant to digitalisation and their impact on the behaviour of highly digitalised businesses. The chapter is structured as follows. First, it briefly describes the implementation of the measures of the BEPS package that were identified as most relevant to the digitalisation of the economy. The chapter also provides a preliminary assessment of the impact of the relevant BEPS measures on tax structures commonly used by highly digitalised businesses and their effect on some aspects of the broader tax challenges arising from digitalisation.

3.3. Implementation of the BEPS package

264. A comprehensive description of the implementation of the various measures of the BEPS package, with a focus where relevant on the significance of these measures for digitalised businesses, is included in Annex 3.A. In contrast, this section will focus on describing the progress in the implementation of the measures of the BEPS package that were identified as particularly relevant in tackling BEPS behaviour exacerbated by digitalisation as well as the broader tax challenges of digitalisation. These include the actions taken to implement the direct tax measures developed under Action 7 (Prevent the artificial avoidance of permanent establishment (PE) status), Actions 8-10 (Assure that transfer pricing outcomes are in line with value creation) and Action 3 (Strengthen CFC rules). It also includes a description of the implementation of the new guidelines and implementation mechanisms relating to VAT that were agreed under Action 1 to level the playing field between domestic and foreign suppliers.

3.3.1. Implementation of the key direct taxation BEPS measures

265. The most relevant BEPS direct tax measures for highly digitalised businesses include changes to international standards – i.e., amendments to the PE definition in Article 5 of the OECD Model Tax Convention (Action 7) and revisions to the OECD Transfer Pricing Guidelines related to Article 9 of the OECD Model Tax Convention (Actions 8-10) – and a domestic tax measure – i.e., guidance based on best practices for jurisdictions intending to limit BEPS through CFC rules (Action 3). Other measures of the BEPS package are also considered as they are likely to impact highly digitalised businesses, such as the new standard on treaty abuse (Action 6) and the measures related to harmful tax practices (Action 5).

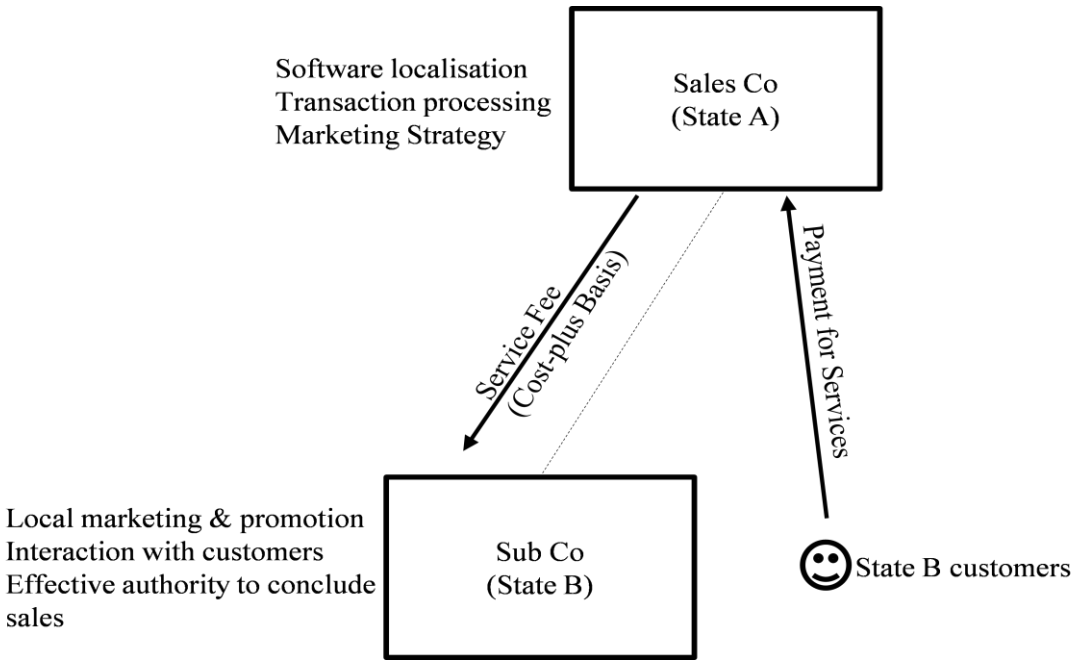
266. While most of these changes are not minimum standards, their implementation has particular relevance to highly digitalised businesses and it is expected to ensure a better alignment between the location of taxable profits and the underlying economic activity.

Preventing the artificial avoidance of permanent establishment status (Action 7)

267. The possibility to reach and interact with customers remotely through the Internet, together with the automation of some business functions have significantly reduced the need for local infrastructure and personnel to perform sales activities in a specific jurisdiction (i.e., scale without mass). The same factors create an incentive for MNEs to remotely serve customers in multiple market jurisdictions from a single, centralised hub. In certain cases, however, the MNE group continues to maintain a degree of presence in countries that are significant markets for its products, for instance by establishing a local subsidiary responsible for supporting and facilitating the sales (so-called "trade structures"). The latter is typically remunerated for the services it provides on a cost plus basis.

268. Figure 3.1 shows that these structures can present some BEPS concerns. This is the case when the functions allocated to the staff of the local subsidiary under contractual arrangements (e.g., technical support, marketing and promotion) do not correspond to the substantive functions performed. For example, the staff of the local subsidiary may carry out substantial negotiation with customers effectively leading to the conclusion of sales. Provided the local subsidiary is not formally involved in the sales of the particular products or services of the MNE group, these trade structures generally avoid the constitution of a dependent agent PE in the market jurisdiction.

Figure 3.1. Scenario involving the avoidance of permanent establishment status



269. In response to these BEPS risks, Action 7 resulted in the amendment of key provisions of Article 5 of the OECD Model Tax Convention and its Commentary. The changes aim to prevent the artificial avoidance of PE status which is the main treaty threshold below which the market jurisdiction is not entitled to tax the business income of a non-resident. In addition, the 2015 BEPS Action 1 Report noted that these changes could help mitigate some aspects of the broader direct tax challenges regarding nexus, if widely implemented. These expectations were primarily relevant for situations where

businesses have some degree of physical presence in a market (e.g., to ensure that core resources are placed as close as possible to customers) but would otherwise avoid the PE threshold.

270. More specifically, Action 7 provided for the amendment of the dependent agent PE definition through changes to Article 5(5) and 5(6) of the OECD Model Tax Convention. The amendments address the artificial use of *commissionnaire* structures[7] and offshore rubber stamping arrangements. Some structures common to all sectors of the economy involved replacing local subsidiaries traditionally acting as distributors with commissionaire arrangements. The result was a shift of profits out of a certain jurisdiction but without a substantive change in the functions performed there. Other structures more specific to highly digitalised businesses, such as the online provision of advertising services, involved contracts substantially negotiated in a market jurisdiction through a local subsidiary, but not formally concluded in that jurisdiction. Instead, an automated system managed overseas by the parent company could be responsible for the finalisation of these contracts. Such arrangements allowed a business to avoid a dependent agent PE under Article 5(5). Where the recommendations of Action 7 are implemented, these structures and arrangements would result in a PE for the foreign parent company if the local sales force habitually plays the principal role leading to the conclusion of contracts in the name of the parent company (or for the transfer of property or provision of services by the parent company), and these contracts are routinely concluded without material modification by the parent company.

271. Action 7 also recommended an update of the specific activity exemptions found in Article 5(4) of the OECD Model, according to which a PE is deemed not to exist where a place of business is used solely for activities that are listed in that paragraph (e.g., the use of facilities solely for the purpose of storage, display or delivery of goods, or for collecting information). The proposed amendment prevents the automatic application of these exemptions by restricting their application to activities of a "preparatory or auxiliary" character.[8] This change is particularly relevant for some digitalised activities, such as those involved in business-to-consumer (B2C) online transactions and where certain local warehousing activities that were previously considered to be merely preparatory or auxiliary in nature may in fact be core business activities. Under the revised language of Article 5(4), these types of local warehousing activities carried out by a non-resident no longer benefit from the specific activity exemptions usually found in the PE definition if they are not preparatory and auxiliary in nature. This would be the case, for example, for a large warehouse maintained by a non-resident enterprise in a market jurisdiction in which a significant number of employees work for the main purpose of storing and delivering goods owned and sold by the non-resident enterprise and that a warehouse constitutes an essential part of the non-resident enterprise's sales/distribution business.

272. The various measures outlined in the final 2015 BEPS Action 7 Report are currently being implemented in a number of existing tax treaties through the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent BEPS (the MLI, Box 3.1), as well as in the course of bilateral tax treaty negotiations. Based on the provisional positions of the jurisdictions that have signed the MLI[9], however, it is estimated that the changes recommended under Action 7 will only be implemented in a fairly limited number of bilateral treaty relationships. The latest projections are as follows:

- For the revised dependent agent PE definition (Article 5(5) of the OECD Model): It is estimated that, based on the positions taken so far, this revised definition would apply to around 17**%** of the 1 246 tax agreements currently covered by the MLI (i.e., approximately 206 bilateral tax agreements).
- For the revised provision defining specific-activity exemptions (Article 5(4) of the OECD Model): It is estimated that, based on the positions taken so far, this revised provision would apply to around 22**%** (i.e., approximately 277 bilateral tax agreements).[10]

273. While these early projections indicate a low adoption rate, they do not necessarily reflect the full degree of implementation or the impact of the MLI over time. It is possible, for instance, that jurisdictions that have reserved on the PE related provisions of the MLI will withdraw their reservations following the completion by the Inclusive Framework on BEPS of its work on "Attribution of Profits to Permanent Establishments".[11] Further, some digitalised MNEs have already started restructuring their trade structures based on remote sales in some countries (e.g., Amazon, e-bay, Facebook, Google), although not all market jurisdictions have experienced and benefited from such restructuring to the same extent.[12]

274. Furthermore, the adoption rate of the new PE definition may also increase over time as governments will base treaty negotiations on the 2017 OECD Model incorporating those changes. The OECD Model has long served as the basis for the negotiation of bilateral tax treaties, and the expectation is that countries will continue to draw on the OECD Model for future tax treaty negotiations.[13]

Box 3.1. The Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting

Developed by over 100 countries and jurisdictions, the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting (the Multilateral Instrument, or MLI) and its accompanying Explanatory Statement, is a ground breaking tool, allowing countries to rapidly amend their bilateral tax treaty network with a single instrument.

During a signing ceremony at the OECD on 7 June 2017, 77 countries and jurisdictions expressed their commitment to update their tax treaty networks in line with the BEPS package, 67 of which signed the MLI, with a further 9 jurisdictions formally expressing their intention to sign in the near future.[1] Since the first signing ceremony, 9 additional jurisdictions have signed the MLI which now covers 78 jurisdictions. More jurisdictions are expected to join the MLI in the coming period. Based on the current signatures, more than 1 200 existing tax treaties will already be modified by the MLI, and additional treaties will be covered as more parties join the MLI.

The MLI reflects the treaty-related minimum standards that were agreed as part of the BEPS package and to which all countries and jurisdictions within the Inclusive Framework on BEPS have committed. These standards relate to the prevention of treaty abuse (Action 6)[2] and the improvement of dispute resolution (Action 14). The MLI further enables signatories to implement all the other tax treaty measures developed in the BEPS Project that are not minimum standards. These include, *inter alia*, measures relating to hybrid mismatch arrangements that regulate the claiming of treaty benefits (e.g., provisions on dual-resident companies and fiscally transparent entities), measures to make Mutual Agreement Procedures (MAP) more effective, including a mandatory binding MAP arbitration provisions (which so far 28 jurisdictions have committed to implementing) and measures to prevent the artificial avoidance of permanent establishment status through *commissionaire* arrangements. Recognising the need to accommodate a variety of tax policies, the MLI is a flexible yet robust instrument that provides the possibility to apply optional and/or alternative provisions where there are multiple ways to address BEPS, while not diverging from the BEPS minimum standards. Further, given the importance of countering treaty abuse and improving dispute resolution, some signatories prioritise the implementation of the minimum standard measures, while planning to opt in for other provisions at a later stage.

The jurisdictions that have signed the MLI are now preparing for its ratification in accordance with their domestic processes. For the modifications made by the MLI to have effect with respect to an existing bilateral tax treaty, both parties to the treaty will have to ratify the MLI in accordance with their domestic procedures for which the timing will vary between countries. It is anticipated that the first modifications may enter into effect in 2018.

The OECD is the depositary of the MLI and will continue to work with the signatories to ensure the clarity of the MLI and its relation with existing treaties, maximising the impact of the treaty-related BEPS measures.

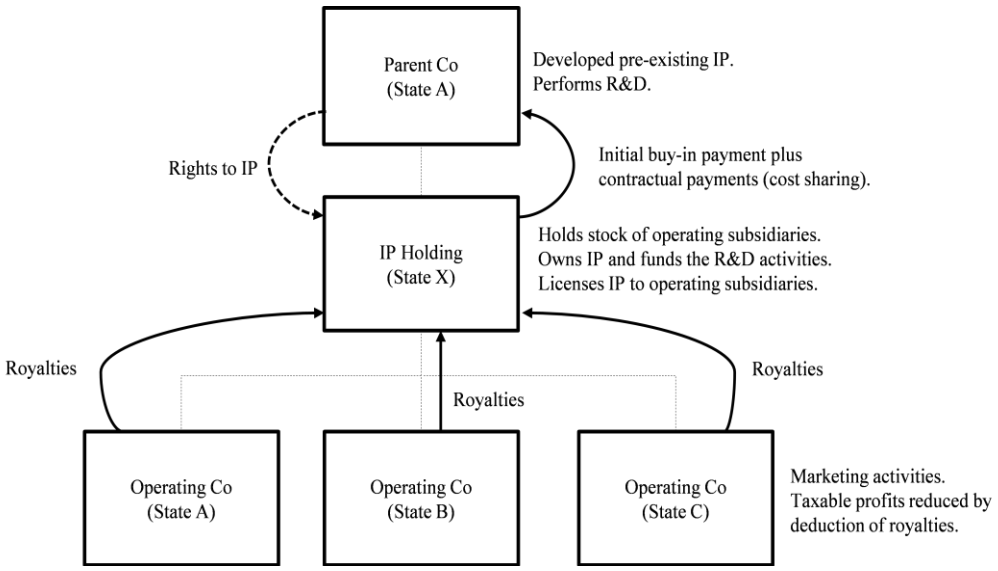
1. China's signature also covers Hong Kong, China. The provisional MLI positions are available online (OECD, 2018[3]). Bermuda has indicated that it has bilaterally invited all of its DTA partners to update its treaties to the standard articulated by the MLI.
2. The 2015 BEPS Action 6 Report (OECD, 2015[4]) provides for a simplified and a detailed Limitation on Benefits provision. Given that the detailed Limitation on Benefits provision requires substantial bilateral customisation, which would be challenging in the context of a multilateral instrument, the MLI does not include a detailed Limitation on Benefits provision.

Assuring that transfer pricing outcomes are in line with value creation (Actions 8-10)

275. The BEPS Project identified a number of structures employed by MNEs to separate income from the underlying economic activities. For example, it is possible to create BEPS opportunities by contractually allocating assets and risks to affiliated entities located in low-tax jurisdictions in a way that is not fully reflected in the actual conduct of the parties. Business models where intangible assets are central to the firm's profitability, such as those of highly digitalised businesses, have typically involved the transfer of intangible assets or their associated rights to entities in low-tax jurisdictions that may have lacked the capacity to control the assets or the associated risks. To benefit from a lower effective tax rate at the group level, affiliates in low-tax jurisdictions had an incentive to undervalue the intangibles (or other hard-to-value income-producing assets) transferred to them. At the same time, they could claim to be entitled to a large share of the MNE group's income on the basis of their legal ownership of the intangibles, as well as on the basis of the risks assumed and the financing provided (i.e., cash boxes). In contrast, affiliates operating in high-tax jurisdictions could be contractually stripped of risk, and avoid claiming ownership of other valuable assets.

276. Figure 3.2 shows the use of a cost-sharing arrangement to transfer the valuable intangibles initially developed by a member of a MNE group to a capital rich associated enterprise (IP Holding) situated in a low-tax jurisdiction (State X). These intangibles are subsequently licensed to other operating subsidiaries engaged in marketing and sales activities, without the IP Holding company being effectively involved in the performance of the development, enhancement, maintenance, protection or exploitation (DEMPE) functions related to those intangibles. This enabled the MNE group to park the bulk of its profits in a "cash box". This is the affiliate in the low-tax jurisdiction (IP Holding) that holds the capital to fund the activities of the group. The affiliate has ownership over the most valuable assets, even in situations where such contractual allocation of assets and risks did not fully reflect the actual conduct of the parties.

Figure 3.2. Scenario involving a cash box not performing any DEMPE functions



277. Actions 8-10 of the BEPS Action Plan developed guidance to minimise the instances in which BEPS would occur as a result of these structures. In particular, the guidance seeks to address the prevention of BEPS by moving intangibles among group members (Action 8), the allocation of risks or excessive capital among members of an MNE group (Action 9) and transactions which would not occur between third parties (Action 10). All these work streams gave special consideration to the specificities of highly digitalised business models.

278. The guidance developed under BEPS Actions 8-10 was incorporated into the OECD Transfer Pricing Guidelines in 2016 to ensure that transfer pricing outcomes are aligned with value creation. While the Transfer Pricing Guidelines play a major role in shaping the transfer pricing systems of OECD and many non-OECD jurisdictions, the effective implementation of these changes depends on the domestic legislation and/or published administrative practices of the countries. Whereas in several jurisdictions the amendments became immediately effective, some jurisdictions may need to take further legislative or administrative action to bring the changes into effect. In any case, all Inclusive Framework jurisdictions have been requested to complete a questionnaire that will allow the monitoring of the status of implementation of the guidance developed under BEPS Actions 8-10.

279. Overall, tax administrations are now better equipped to address profit shifting by MNE groups through mechanisms such as:

- Identification of actual business transaction between the associated enterprises by supplementing, where necessary, the terms of any contract with evidence of the actual conduct of the parties.
- An analytical framework to determine which associated enterprise assumes risk for transfer pricing purposes, with contractual allocations of risk being respected only when they are supported by actual decision-making.
- Guidance to accurately determine the actual contributions made by an associated enterprise that solely provides capital without functionality. Specifically, if the capital provider does not exercise control over the investment risks that may give

rise to premium returns, that associated enterprise should expect no more than a risk-free return.

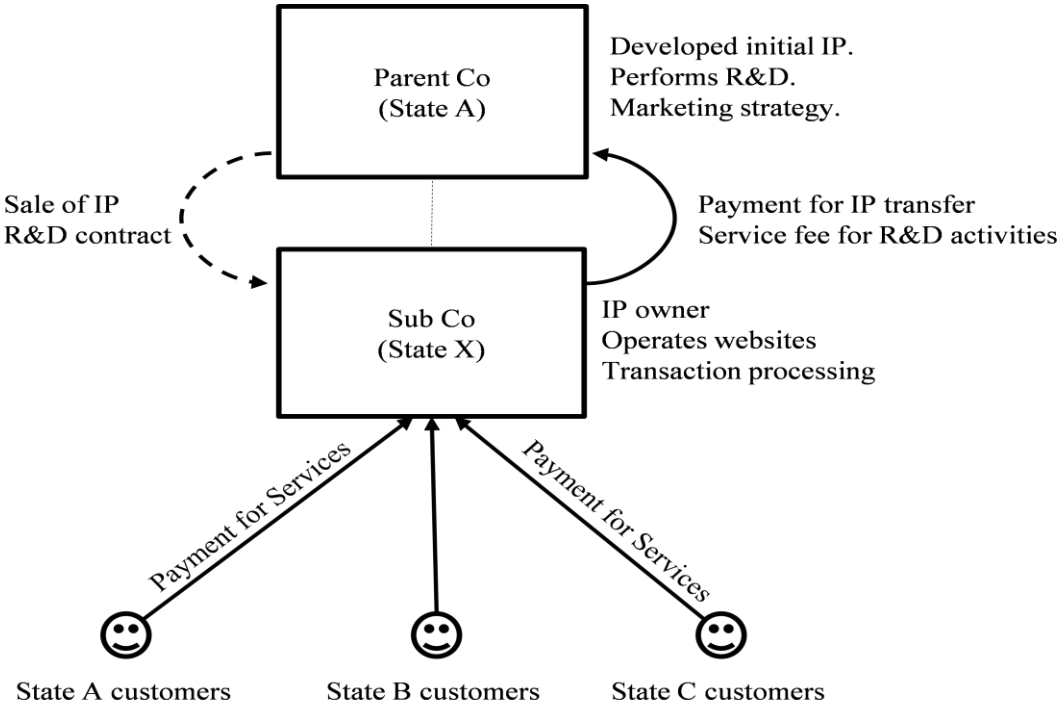
- Guidance on transactions that involve the use or transfer of intangibles which ensures that legal ownership of an intangible by an associated enterprise alone does not determine entitlement to returns from the exploitation of this intangible.

280. Anecdotal evidence is already available on the impact that these tools are having on the transfer pricing positions of some MNEs involved in highly digitalised activities (e.g., "on-shoring of assets", see Sub-section 3.5.1.).

Strengthening controlled foreign company rules (Action 3)

281. The mobility and flexibility inherent in highly digitalised business models enables these MNEs to manage their global operations on an integrated basis from a central location that may be removed geographically from both the locations in which the research and development operations are carried out and the location in which their suppliers or customers are located. Figure 3.3 shows that an MNE group can allocate substantial income to a subsidiary in a low-tax jurisdiction (State X, the CFC jurisdiction) by locating key intangibles there and using those intangibles to remotely sell digital goods and services through the Internet to third-party customers located in other jurisdictions. Typically, the subsidiary in State X has limited personnel and does not itself perform any significant business activities in relation to the online sales (e.g., functions performed by local staff, marketing and promotion for local customers, after-sale services).

Figure 3.3. Scenario exploiting the lack of robust controlled foreign company rules



282. Under this structure the income arising from the remote sales will not give rise to any tax liability in the jurisdictions where the customers are located (State A, B and C), while being subject to minimal or no taxation in the CFC jurisdiction (State X). Additionally, the payments will generally not be subject to domestic taxation at the level

of the shareholders (Parent company) in the ultimate residence country (State A). This result can be achieved because many jurisdictions either do not have a CFC regime, have a regime with inadequate coverage of certain categories of passive or highly mobile income
(e.g., online sales of products and services to third-party customers), or have a regime that can be easily avoided using hybrid mismatch arrangements. For all these reasons, the lack of comprehensive and effective CFC rules was identified in the 2015 BEPS Action 1 Report as a relevant issue in the existing framework.

283. The 2015 BEPS Report on Action 3 provided recommendations in the form of six building blocks, including a definition of CFC income which sets out a non-exhaustive list of approaches or combination of approaches on which CFC rules could be based. Specific consideration is given to a number of measures that would target income typically earned in the digital economy, such as income from intangible property and income earned from the remote sale of digital goods and services to which the CFC has added little or no value. These approaches include categorical, substance, and excess profits analyses that could be applied on their own or in combination with each other. With these approaches to CFC rules, mobile income typically earned by highly digitalised businesses would be subject to tax in the jurisdiction of the ultimate parent company. This would counter offshore structures popular among many highly digitalised MNEs that result in exemption from taxation, or indefinite deferral of taxation in the residence jurisdiction. Comprehensive and effective CFC rules in the residence country of the ultimate parent company would also reduce the incentive to shift profits from a market country into a low-tax jurisdiction.

284. Countries seeking to amend their CFC rules have already shown interest in the recommendations regarding income from online sales and services. Under the EU Council's Anti-Tax Avoidance Directive (ATAD1),[14] for example, all of the 28 EU Member States are required to introduce CFC rules that draw heavily on the recommendations of Action 3.[15] Article 7 of that Directive provides two alternative methods to define the income earned by a CFC. One is based on formal classifications and covers a broad range of income categories, including "*royalties and any other income generated from Intellectual Property*" and "*income from invoicing companies that earn sales and services income from goods and services purchased from and sold to associated enterprises*". This method may in some cases cover sales income generated primarily from the use of underlying intangible property (i.e., "embedded royalties") but is limited by a substance carve-out rule available to a CFC that "*carries on a substantive economic activity supported by staff, equipment, assets and premises, as evidenced by relevant facts and circumstances*". The other method is based on a standalone substance test which captures income "*arising from non-genuine arrangements which have been put in place for the essential purpose of obtaining a tax advantage*". In accordance with the best practices outlined in the 2015 BEPS Action 3 Report, it looks at the significant people functions within the group to determine whether the CFC is conducting non-genuine arrangements. This method may not always reach income from online services, where the CFC may typically be established with the necessary substance to comply with transfer pricing rules.

285. More recently, as part of its broader tax reform legislated in 2017, commonly referred to as the Tax Cuts and Jobs Act ("TCJA"), the United States has implemented a number of key measures to prevent base erosion, which will help to address double non-taxation in US-headquartered MNEs, as well as substantially reduce the incentive to shift profits into low-tax jurisdictions. This includes a new feature in its CFC regime based on

an excess profit analysis: the tax on global intangible low-taxed income ("GILTI").[16] This tax on excess returns ensures a combined (foreign and US) effective corporate tax rate of at least 13.125% (until 2026, and 16.4% thereafter)[17] on the excess of a shareholder's net CFC income over a routine or ordinary return. The simplified method used to determine such excess returns could include income from intangibles and risk-shifting derived outside the United States, including income from online sales and services, generally irrespective of the level of activity in the CFC. The GILTI tax is, however, applied on a global basis rather than using a country-by-country approach, leaving the possibility to locate investment in low-tax jurisdictions and to blend with excess profits from low-tax and high tax jurisdictions. For previously untaxed foreign earnings accumulated overseas before 2018 that benefited from a US deferral under previous rules (potentially combined with no or minimal foreign taxes), the US tax reform also includes a transition tax or deemed repatriation rule. This transition tax imposes a one-time tax on post-1986 deferred foreign earnings computed in a manner that ensures an effective tax rate of 15.5% for liquid assets (i.e., foreign earnings held in the form of cash and cash equivalent) and an effective tax rate of 8% for illiquid assets (i.e., remaining earnings reinvested in the business). This tax liability can be paid in instalments over an eight-year period.

286. Similarly, Japan amended its CFC rules in March 2017 and implemented many of the recommendations of Action 3, such as new provisions on the taxation of "abnormal income" earned by a foreign subsidiary. These provisions were designed to capture extraordinary excess profits earned by a foreign subsidiary, thus addressing BEPS risks raised by intangible property and online sales and services[18]. Other countries (e.g., Colombia, Chile) have also recently adopted aspects of the Action 3 recommendations into their domestic law, but they have not implemented the specific recommendations regarding intangible property income and income earned from online sales and services.

3.3.2. Other relevant direct tax measures

287. The flexibility of many digitalised businesses in choosing the location of their key resources creates an incentive to use conduit companies located in a country with a favourable treaty network to obtain tax treaty benefits generally granted only to resident companies (treaty-shopping arrangements). To address this BEPS concern, a minimum standard was agreed under Action 6 on anti-abuse provisions that countries must include in their treaties.[19] In addition, the minimum standard requires the inclusion of an explicit statement in the preamble of each treaty clarifying that the treaty is not intended to create opportunities for non-taxation or reduced taxation through tax evasion or avoidance (such as treaty-shopping strategies). Taken together, these requirements will ensure that the source country can apply its domestic law in cases of avoidance, unconstrained by treaty rules aimed at preventing double taxation.

288. So far, the implementation of this minimum standard has been widespread. Countries have started to implement the necessary treaty changes either through the MLI or by updating their tax treaties through bilateral negotiations. To date, the tax treaties of 78 jurisdictions are covered by the MLI, which will update more than 1 200 bilateral tax treaties, ensuring that approximately one-third of existing treaties will be brought into line with the Action 6 minimum standard.

289. In addition, as intangibles and income arising from their exploitation are by definition geographically mobile, digitalised MNEs have an incentive to locate their

intangibles in tax jurisdictions where preferential regimes for intellectual property (IP) income are available. To address this BEPS issue, a minimum standard was agreed under Action 5 which requires that preferential tax regimes provide benefits only where the taxpayer undertakes substantial activities (the nexus approach). According to this standard, tax benefits may be provided to income derived from IP assets only to the extent that the related, underlying research and development (R&D) activities are undertaken primarily by the taxpayer itself or in the tax jurisdiction providing the benefits. As set out in the 2017 Progress Report on Harmful Tax Practices (OECD, 2017[5])[20] almost all OECD and G20 countries with IP regimes are now fully compliant with the "nexus approach" (a total of 19 out of 21 such regimes). Among new members of the Inclusive Framework on BEPS, 31 IP regimes have been identified; virtually all of these regimes (29 out of the 31) do not comply with the nexus approach and are being abolished or amended.

290. Finally, as part of the Action 5 minimum standard, members of the Inclusive Framework on BEPS have committed to the compulsory, spontaneous exchange of information on tax rulings that could present BEPS risks. For the first time, information on rulings in key risk categories (e.g., cross-border unilateral Advance Pricing Arrangements (APAs)), including certain rulings issued since January 2010 will be spontaneously exchanged with all relevant jurisdictions, subject to the necessary legal frameworks being in place. The first annual report on the peer review of the rulings transparency framework was released on 4 December 2017. By 31 December 2016, almost 10 000 relevant rulings had been identified and almost 6 500 have been exchanged between tax administrations around the world, providing authorities with useful information about potential risks to their own tax base. With additional and timelier information, the authorities will be able to also take action more efficiently against BEPS arrangements. This enhanced international co-operation may have a significant impact on taxpayers' behaviour, including that of highly digitalised companies.

3.4. Implementation of the recommended solutions and available options to address the VAT challenges of the digital economy

291. The 2015 BEPS Action 1 Report outlined how highly digitalised businesses could structure their affairs so that little or no VAT is paid on remotely delivered services and intangibles. To address these BEPS risks, the 2015 BEPS Action 1 Report concluded that the solution is provided by the OECD's International VAT/GST Guidelines (OECD, 2017[2]).[21] In particular, the implementation of Guidelines 3.2 and 3.4 on place of taxation for business-to-business (B2B) supplies of services and intangibles will minimise such BEPS risks and ensure that the right to levy VAT is allocated to the jurisdiction where these services and intangibles are used for business purposes, irrespective of how the supply and acquisition of these services and intangibles is structured.[22] The OECD International VAT/GST Guidelines have been endorsed by over 100 countries, jurisdictions and international organisations and serve as reference for an increasing number of countries around the world for designing and implementing legislation addressing the abovementioned BEPS risks.

292. In addition, the 2015 BEPS Action 1 Report concluded that one of the broader tax challenges arising from digitalisation is the challenge associated with the collection of VAT on cross-border trade in goods, services and intangibles, particularly where they are acquired by private consumers from suppliers abroad. Digitalisation has magnified this challenge as the evolution of technology has dramatically increased the capability of

private consumers to shop online and the capability of businesses to sell to customers around the world without the need to be physically present or otherwise in the consumer's country. Considering also that digitalised foreign seller may have no nexus in a market jurisdiction and that a market jurisdiction may have limited means to require a foreign seller to apply and remit VAT on services and intangibles supplied to final consumers in that jurisdiction, no or an inappropriately low amount of VAT may be collected on these supplies by such sellers, with adverse effects on countries' VAT revenues. This can also result in an uneven playing field between domestic suppliers, who have an obligation to collect VAT on supplies to local customers, and foreign suppliers who may have no such obligation or where it may be difficult to enforce VAT-related obligations.

293. Against this background, new guidelines and VAT collection mechanisms were agreed in the 2015 BEPS Action 1 Report. In accordance with the destination principle, they allow a jurisdiction's tax authorities to collect VAT on services and intangibles supplied cross-border by foreign suppliers to final consumers (business-to-consumer or B2C) in that jurisdiction (i.e., the jurisdiction where the customer is located). The 2015 BEPS Action 1 Report highlights that the most efficient and effective levels of compliance by foreign suppliers can be achieved if the relative obligations in the jurisdictions of taxation are limited to what is strictly necessary for the effective collection of the tax. Therefore, the 2015 BEPS Action 1 Report recommends that the foreign supplier be allowed to register for VAT in the market jurisdiction under a simplified registration and compliance regime. This simplified registration and collection regime operates separately from the traditional registration and collection regime without the same rights, such as input tax recovery, or obligations such as full reporting. These measures have now also been incorporated in the OECD International VAT/GST Guidelines.

294. The implementation of these agreed measures enables the market country to secure the VAT revenues arising from B2C digital supplies to market country consumers. It also levels the playing field between domestic and foreign suppliers because foreign suppliers are required to charge VAT on sales to local customers as domestic suppliers do. Moreover, the recommended mechanisms mitigate the compliance costs for digital suppliers by limiting the compliance obligations to what is strictly necessary for the effective collection of the tax.

295. This work has already greatly enhanced compliance levels by promoting more consistent and effective implementation of the agreed approaches.

296. To date, over 50 jurisdictions, including the overwhelming majority of OECD and G20 countries, have adopted rules for the VAT treatment of B2C supplies of services and intangibles by foreign suppliers in accordance with the OECD International VAT/GST Guidelines. These jurisdictions include the 28 EU Member States, Albania, Andorra, Argentina, Australia, Bahamas, Belarus, China, Colombia, Ghana, Iceland, India, Japan, Kenya, Korea, Mexico, New Zealand, Norway, Russia, Saudi Arabia, Serbia, South Africa, Switzerland, Tanzania and Turkey. Among those that have not yet implemented the rules, many jurisdictions are now considering a reform in light of the principles of the Guidelines. This is notably the case for Costa Rica, Indonesia, Israel, Malaysia, Singapore,[23] Thailand, the Philippines, Tunisia, and a number of the Gulf Cooperation Council countries. Columns 1 and 2 in the table in Annex Table 3.B.1 provide a summary of jurisdictions that have implemented or are considering implementing the recommended solutions.

297. The early data on the impact of these measures is very promising. This is the case, for example, in South Africa where the revenue collected through the application of the recommended principles and collection mechanisms amounted to ZAR 585 million for 2016/2017. In the EU, as the earliest adopter of these principles, has identified the total VAT revenue declared via its simplified compliance regime in 2015 (the EU regime's first year of operation) was in excess of EUR 3 billion (Deloitte, 2016[6]). Approximately 70% of the total cross-border B2C supplies of services and intangibles that are in scope of the EU regime are captured.[24] Moreover, this regime has allowed businesses to achieve a notable reduction in their compliance burden, which according to estimates is 95% lower than what it would have been without such simplification measures.[25]

298. The experiences shared by various jurisdictions indicate that essential elements for the successful implementation of a VAT collection mechanism include: consultation with the business community in the design phase; proper communication strategy to publicise its implementation and to explain key compliance aspects; and the availability of clear guidance for taxpayers.

299. As evidenced by the increasing number of jurisdictions that have already implemented such mechanisms or that are considering doing so, the effective implementation and operation of these rules and mechanisms are considered priorities for many countries around the world, to ensure that VAT is properly paid on the continuously growing online trade in services and digital products. There is thus a need for both governments and businesses to promote the coherent and consistent implementation and operation of these rules across jurisdictions. This will not only further enhance the levels of compliance but will also support tax authorities' enforcement capacity, notably by facilitating international administrative co-operation.

300. The need for coherence and consistency in the implementation of the VAT rules across countries resulted in the development of further guidance in 2017 to support governments in the implementation of best practices in the design and operation of the collection mechanism recommended by the 2015 BEPS Action 1 Report and the OECD International VAT/GST Guidelines. This guidance has been included in the report on "*Mechanisms for the Effective Collection of VAT/GST Where the Supplier Is Not Located in the Jurisdiction of Taxation*"[26] published on 24 October 2017. It builds on the research, analysis and experience of the jurisdictions that have or are in the process of implementing a simplified registration and collection regime and the businesses that have registered or are considering registering for such regimes. This new implementation guidance has been welcomed by tax administrations as well as the business community as a significant further step to support enhanced compliance levels while limiting compliance costs for digital suppliers by promoting the consistent and coherent implementation of these collection mechanisms across jurisdictions.

301. As recognised also by the 2015 BEPS Action 1 Report, the exchange of information and administrative co-operation can and should play a significant role in addressing and overcoming the challenges in operating and policing these collections mechanisms, notably to support the enforcement in relation to the foreign suppliers and the monitoring of compliance levels. There are a number of existing OECD mechanisms for the exchange of information and mutual administrative cooperation which were also identified in the OECD International VAT/GST Guidelines as potentially very helpful to address enforcement challenges.[27] Activating these existing instruments and providing a framework for their practical application for VAT purposes is essential in this undertaking. Scoping OECD work in this area is still ongoing.

302. Further ongoing work to promote the consistent implementation and operation of the recommended rules across jurisdictions focuses on the role of online platforms and other intermediaries in the VAT collection process, with an emphasis on the design and implementation of measures to secure the efficient and effective collection of VAT on the trade generated and executed by platforms and intermediaries. A number of jurisdictions have started collecting VAT from digital platforms and have reported positive outcomes in securing additional tax revenues. Some jurisdictions are also following in this direction and some others are expected to do so in the future.

303. Both tax administrations and the business community have signalled an urgent need for work on consistent solutions in this area which should be both efficient and effective in securing tax revenue without creating undue administrative and compliance costs. Against this background, the OECD Working Party No.9 on Consumption Taxes (WP9), in close consultation with the business community through the Technical Advisory Group to WP9 (TAG) is currently analysing (i) the functions performed by digital platforms in online sales and delivery chains and (ii) the possible role of platforms performing these functions in the collection of VAT on online sales including an overview of approaches implemented or considered by tax authorities around the world. It is anticipated that this work will result in a report which will include possible guidance and approaches based on good practice. This work is scheduled to be completed within 2018 and is not intended to delay or impinge on jurisdictions' current domestic policy development and implementation strategies.[28]

304. Additionally, the 2015 BEPS Action 1 Report outlined options to facilitate the collection of VAT on the importation of low-value goods from online sales. Based on reducing or removing VAT exemption thresholds, these approaches rely on the intervention of online vendors or other parties involved in the supply chain for online sales, such as e-commerce platforms or express couriers. A number of countries have announced or are actively considering the removal of their VAT exemption thresholds for the importation of low-value goods from online sales and the implementation of approaches for a more efficient collection of VAT for low-value imports. For example, the 28 EU Member States have recently approved proposals for modernising VAT collection in cross border e-commerce. These proposals provide for the extension of the Mini-One-Stop-Shop (MOSS) registration system to cover imports of low-value goods and all cross border services to final users and to remove the exemption for low value consignments with effect from 2021. Australia has already enacted legislation on the GST treatment of low-value imported goods, with effect from 1 July 2018. Switzerland will change its rules regarding the treatment of low value imports as of 1 January 2019.

305. Notably in the area of cross-border supplies of services and intangibles, the overall progress described in this section has facilitated greater compliance with the tax rules by businesses in the booming e-commerce sector and has ensured that consumption taxes can be levied effectively in the country of consumption.

3.5. Preliminary findings on the impact of the BEPS package in the context of digitalisation

306. As previously explained, a systematic assessment of the effect of the various BEPS Actions will only be possible when appropriate micro- and macro-level data becomes available, including information on the behaviour of taxpayers gathered by tax authorities, for example through their audit capacity, the Country-by-Country (CbC) reports or the standard tax returns. Nonetheless, this section provides a preliminary

assessment of the effectiveness of the BEPS measures, with a distinct analysis of their impact on the BEPS issues and separately, on the broader direct tax challenges related to nexus.

3.5.1. Impact of the BEPS package on BEPS issues

307. Although the implementation of the BEPS package has only very recent begun, there are already indications of its impact on the tax planning and structuring decisions of MNE groups. The implementation of the measures described in this Part has made a number of cross-border tax planning schemes unfeasible or no longer financially attractive, including for highly digitalised businesses. This will restore both source and residence taxation in a number of cases where cross-border income would otherwise go untaxed or would be taxed at very low rates. There are also expectations that this should help establishing a more level playing field where domestic SMEs and MNEs are taxed similarly. Examples of common tax structures effectively being curtailed include:

- **IP holding companies using preferential tax regimes such as "IP regimes"** (see the example in Annex Figure 3.A.1). Tax benefits arising from intellectual property (IP) regimes can only be granted to the extent that underlying research and development expenditure activities are undertaken primarily by the taxpayer itself or in the tax jurisdiction granting the tax benefits.[29] This is the new "nexus" approach.
- **Treaty-shopping structures** (see the example in Annex Figure 3.A.3). It is increasingly difficult to establish conduit companies and/or special purpose holding companies in low-tax jurisdictions with the aim of avoiding withholding taxes on passive income. In addition, any tax rulings or similar arrangements granted by tax authorities reducing the effective taxation of taxpayers now have to be disclosed.
- **The use of "cash boxes"** (see the example in Figure 3.2). A cash-rich entity in a low-tax jurisdiction that provides funding for the development of valuable intangibles but does not have the capacity to control the risks associated with its investment is now accorded no more than a risk-free return on its funds under the revised transfer pricing rules.
- **The use of "trade structures" based on remote sales** (see the example in Figure 3.1). Where the amended dependent agent PE definition (Action 7) has been fully implemented, it will be more difficult for a digitalised business to remotely supply online products and/or services into a market without creating a dependent agent PE in that jurisdiction, if the sales force of a local subsidiary habitually plays the principal role leading to the conclusion of such sales, and the contracts are routinely concluded without material modification by the overseas supplier. The new dependent agent PE threshold may now be met by the overseas supplier even if the local subsidiary does not formally conclude those contracts, and even if the contracts are standard form contracts. It may also be more difficult to avoid a fixed place of business PE in connection with BEPS strategies involving the remote sale of physical goods through online platforms. Where the updated specific-activity exemptions to the PE definition are adopted, it may be difficult for a non-resident enterprise to establish a large warehouse in a market country whilst at the same time avoiding the PE threshold in that country, unless the local activities carried on through that warehouse are preparatory and auxiliary in nature. Finally, it should be noted that the successful implementation of the recommended mechanisms to ensure that VAT is paid on cross-border trade

in services and digital products will remove another important incentive for online retailers to relocate offshore and sell at a distance from the market by closing the gap between the obligations of domestic enterprises and foreign suppliers in connection with sales to local customers.

308. As a result of the BEPS package, MNEs are expected to take steps to align their corporate structures with their real economic activity. In a number of cases, including certain highly digitalised businesses, evidence of this has already emerged. These steps include business restructurings or changes to their transfer pricing positions, usually by re-evaluating the location of people functions, and of risk assumption and risk management.[30] This is corroborated by publicly available information on the relocation of valuable assets (such as intangibles) and risks from low-tax jurisdictions to other jurisdictions where substantial business activities take place, notably in terms of people functions (so-called "on-shoring" of assets).[31] Additional relevant data is expected to emerge over time, notably from the CbC reports which will start to be exchanged across jurisdictions in June 2018. These trends are likely to grow as more countries implement national legislation to adopt the various measures included in the BEPS package.

309. Further responses to the BEPS package include a growing number of cases in which some heavily digitalised MNEs have decided to change or begin changing their trade structures (e.g., Amazon, eBay, Facebook, Google),[32] usually by converting from a remote sales model to a commercial model where online sales with in-country customers are recognised in a local entity (such as a buy-sell distributor).[33] Some countries in which these restructurings have occurred have also seen a broadening of their corporate tax base, as the local taxpayer of the MNE group is no longer characterised as a provider of routine services remunerated on a cost-plus basis. Instead, the income from the sales with in-country customers is recognised at the level of the local taxpayer (subsidiary or PE) after deduction of the relevant expenses (e.g., direct cost of goods sold, direct costs of sales and provision of services, local marketing and promotion). In accordance with the arm's length principle, this generally entails a shift in the market country from a remuneration based on a return on costs to a remuneration based on sales, and arguably leads to a higher exposure to risk associated with commercial opportunities (i.e., higher positive or negative returns). Other countries, however, have seen similar restructuring with no (or minimal) corresponding broadening of their corporate tax base, highlighting the uncertainty that currently surrounds the attribution of profits to a local taxable presence (i.e. PE or subsidiary). For instance, in situations where the contract conclusion is largely automated and does not involve inventory management (e.g. software-as-a-service), it is unclear whether the remuneration paid to the local buy-sell subsidiary or PE (after restructuring) will in practice be significantly greater than the remuneration paid to a local subsidiary performing support functions for similar sales contracted offshore (before the restructuring).

310. Further, it is recognised that not all market jurisdictions have benefitted from the positive results generated by these restructurings. This is largely because the low rate of adoption of the new dependent agent PE definition and of the updated specific activity exemptions in the context of the MLI has led to limited material changes in the incentive to adopt trade structures based on remote sales in a large number of countries. At the same time, the recent implementation of robust CFC rules in some key countries is expected to significantly reduce the incentive to shift profits derived from online sales into low-tax jurisdictions.

3.5.2. Impact of the BEPS package on the broader direct tax challenges

311. The lack of currently available data limits any assessment of the impact of the BEPS package on the broader direct tax challenges raised by digitalisation. However, in the area of VAT, useful and reliable information has begun to emerge from the widespread implementation of the new guidelines and collection mechanisms that facilitate taxation of cross border trade of digital services and products in accordance with the destination principle. As described above, the early data shows significant additional revenue raised by jurisdictions implementing the OECD International VAT/GST Guidelines. The additional revenue figures estimated by the EU and South Africa unequivocally show the importance of the OECD International VAT/GST Guidelines in substantially strengthening the revenue raising abilities of adopting countries. Not only are the Guidelines and the related work instrumental in securing additional revenues for the adopting countries, but they are also playing a crucial role in reducing the business compliance burden, with some estimates pointing to a significantly lower compliance burden compared to a situation where such simplification measures had not been implemented.[34] Lower compliance costs often translate in a lower cost of capital and therefore, in more resources for investment and growth.

312. Separately, there has been a limited impact of the implementation of the other measures of the BEPS package on the broader direct tax challenges. Clearly, a number of countries have seen significant benefits from the on-shoring of assets and the reorganisation of trade structures, which can potentially result in additional income for both source and residence taxation. These benefits, however, have so far been concentrated in a limited number of jurisdictions. More importantly, there is a growing perception that the BEPS measures will not address the tax challenges that have a broader impact and relate primarily to the allocation of taxing rights among different jurisdictions (in particular nexus, data, and characterisation for direct tax purposes). This is largely due to two factors. First, the measures recommended in the BEPS project were designed to close the "gaps" and "loopholes" identified in the tax system that created opportunities for double non-taxation (i.e. tax avoidance), not to resolve the broader direct tax challenges raised by digitalisation. In particular, none of the direct tax measures of the BEPS package were conceived to address the circumstances where there is no physical presence of the foreign enterprise in the country where customers are located (i.e., to address the nexus issue), and/or to rebalance the impact of operational scale without mass on the distribution of taxing rights. Similarly, none of the BEPS measures were conceived to clarify the possible treatment and relative value of data and user participation (i.e., profit attribution issue). Also the revised PE definition may not necessarily result in an increase of the tax base in the market jurisdiction to reflect the greater reliance of some digitalised businesses on data collection and user participation. Second, the low level of adoption of some key BEPS measures for tackling BEPS issues exacerbated by digitalisation – i.e., the PE-related treaty provisions – has had limited impact in reducing the pressure on source taxation caused by the growing importance of cross-border trade in digital products and services.

313. The ability of the international tax rules to address the broader tax challenges raised by digitalisation is discussed further in Chapter 5. In the absence of a more fundamental reform at an international level, several countries have taken steps to introduce measures that are potentially relevant to the digitalisation of the economy as set out in Chapter 4.

Annex 3.A. Implementation of the direct tax measures contained in the BEPS package

314. The OECD/G20 Base Erosion and Profit Shifting ("BEPS") Project was launched following a request by G20 Leaders in June 2012 to identify the key issues that lead to BEPS. The OECD's February 2013 Report, *Addressing Base Erosion and Profit Shifting*, became the basis for the 15-point BEPS Action Plan which was endorsed by the OECD Council, as well as by G20 Leaders at their July 2013 Summit in Saint Petersburg.

315. Organised around three pillars, the objectives of the BEPS Project were to (i) reinforce the coherence of corporate income tax rules at the international level, (ii) realign taxation with the substance of the economic activities, and (iii) improve transparency. As a result of an ambitious work programme that was completed in only two years, the BEPS package of 15 measures was delivered in October 2015.

316. In 2016, the Inclusive Framework on BEPS was established with a broad mandate to ensure the consistent, widespread and effective implementation of the BEPS package that had been released in October 2015. To date, 113 countries and jurisdictions representing more than 93% of global GDP have joined the Inclusive Framework on BEPS and are taking action to close the loopholes and address the mismatches in international tax law that have facilitated BEPS.

317. For the four minimum standards[35], implementation is ensured by a rigorous peer review and monitoring framework[36] and the agreed monitoring procedures already well-advanced. Beyond the four BEPS minimum standards, many countries have also begun implementing other components of the BEPS package, which have the potential to alter the global corporate tax landscape significantly (e.g., the revised Transfer Pricing Guidelines under Action 8-10, anti-hybrid mismatch rules under Action 2, interest limitation rules under Action 4). Finally, standard-setting work[37] and the delivery of practical guidance are key elements of the Inclusive Framework's on-going work to ensure that all countries and jurisdictions, including developing countries, are supported in the implementation process.

318. All members of the Inclusive Framework on BEPS have agreed to implement the BEPS minimum standards. The minimum standards were agreed in particular to tackle avoidance in cases where no action by some countries would have created negative spill overs on other countries, with wider implications for the level and distribution of welfare across nations. To ensure consistent implementation of these minimum standards, Inclusive Framework on BEPS members agreed to a peer review process for the period 2016-20.[38] Peer reviews of Actions 5, 13 and 14 are now underway, while the peer review of the Action 6 minimum standard will commence in 2018.

319. The minimum standards are organised around three pillars:

- **Better aligning taxation with value creation**, which includes the substantial activity requirement for preferential regimes (Action 5) and measures to prevent treaty shopping (Action 6);
- **Improving transparency**, which includes Country-by-Country Reporting (Action 13) and exchange of information on certain tax rulings (Action 5);
- **Ensuring greater certainty**, which includes measures to enhance the effectiveness of dispute resolution (Action 14).[39]

320. Chapter 3 of this report contains a detailed description of the implementation of the measures of the BEPS package that are most relevant to digitalisation (i.e., Action 7, Actions 8-10, and Action 3), together with an assessment of their impact on the behaviour of highly digitalised businesses. In addition, given that the BEPS measures form part of a coherent package in which all aspects are expected to have an impact, this annex describes the current progress in the implementation of the measures of the BEPS package that are not specifically addressed in Chapter 3, namely the minimum standards on harmful tax practices (Action 5), tax treaty abuse (Action 6) and Country-by-Country reporting (Action 13), as well as domestic law measures other than CFC rules (Actions 2, 4 and 12). The discussion of these measures includes, where relevant, a focus on the significance of these measures for digitalised businesses.

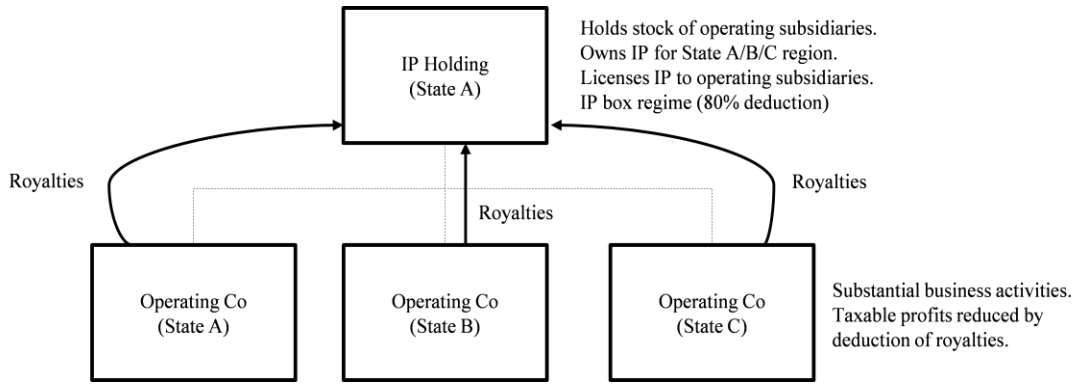
1. Implementation of the minimum standards

A regulatory framework for preferential tax regimes (Action 5)

321. As explained in Chapter 2, intangible assets are generally central to the value creation process of digital companies. In addition, intangibles and income arising from their exploitation are by definition geographically mobile. In this context, the desire to attract investment and offer a competitive tax environment has led a growing number of countries to introduce preferential tax treatments for income arising from the exploitation of intellectual property (IP). This is generally implemented through a 50% to 80% deduction or exemption of qualified IP income.

322. This creates an incentive for MNEs to locate their intangibles in tax jurisdictions where preferential regimes for IP income are available.[40] This incentive is generally increased by the ability to deduct the royalty payments for the use of the IP. The result is that the profits of affiliated entities carrying out substantial business activity can be significantly reduced, while minimal or no taxation is secured in the affiliate where the IP is located (Annex Figure 3.A.1).

Annex Figure 3.A.1. Scenario involving a preferential IP regime



323. The Action 5 minimum standard on preferential tax regimes to counter harmful tax practices is a key pillar of the BEPS package to tackle arrangements aimed at securing minimal or no taxation of returns from intangibles. To realign the location of taxable profits with the location of the underlying economic activity and value creation, a key part of the 2015 BEPS Action 5 Report requires that preferential tax regimes provide benefits only where the taxpayer is undertaking substantial activities. According to the nexus approach, tax benefits may be provided to income derived from IP assets only to the extent that the related, underlying research and development (R&D) activities are undertaken primarily by the taxpayer itself or in the tax jurisdiction providing the benefits.[41]

324. The impact of Action 5 is broad in its scope and affects all preferential regimes, well beyond IP regimes. Nonetheless, because of its focus on the digitalised economy, this chapter concentrates on IP regimes. In this context, there has already been significant progress. As set out in the 2017 Progress Report on Harmful Tax Practices (OECD, 2017[5]), with the exception of two countries, all OECD and G20 countries with IP regimes now comply with the "nexus approach" - a total of 19 out of 21 such regimes. Among new members of the Inclusive Framework on BEPS 31 IP regimes have been identified. Virtually all of these - 29 out of the 31 regimes – do not comply with the nexus approach and are being abolished or amended.[42]

Transparency of tax rulings (Action 5)

325. Tax rulings can play a useful role in providing certainty to taxpayers. Nonetheless, transparency in relation to rulings is critical to shed light on possible BEPS mismatches in different jurisdictions and consequently, to ensure a level playing field across different firms. For instance, some structures used by highly digitalised companies have involved the use of unilateral advance pricing arrangements (APAs) in one or multiple jurisdictions to create and exploit mismatches in the treatment of cross-border intra-group transactions for transfer pricing purposes.

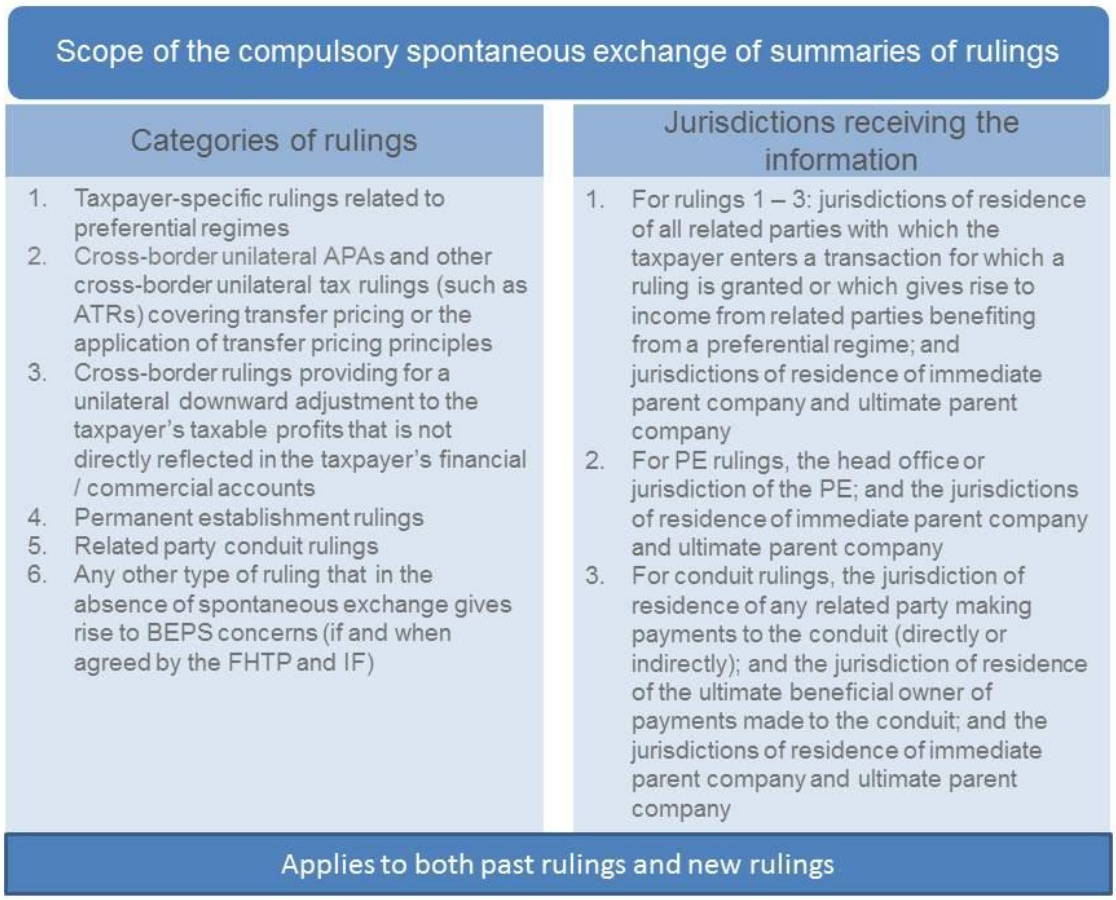
326. To ensure greater transparency on how MNEs are taxed in some cross-border situations, one component of the transparency pillar of the BEPS minimum standards relates to the exchange of information on certain types of tax rulings. As part of Action 5, members of the Inclusive Framework have committed to the compulsory, spontaneous exchange of information on tax rulings that could present BEPS risks (Annex Figure 3.A.2). For the first time, information on rulings in key risk categories, including

certain rulings issued since January 2010 will be spontaneously exchanged with all relevant jurisdictions, subject to the necessary legal frameworks being in place.

327. All jurisdictions in the Inclusive Framework are investing significant resources to identify, prepare and begin exchanging information on rulings in line with the agreed framework. In some cases, jurisdictions have had to enact specific legislative and regulatory changes to allow spontaneous exchange of tax rulings. For the 28 EU Member States, a Directive for the exchange of information on rulings was adopted in 2015 (amended Directive 2011/16/EU on administrative cooperation in the field of taxation).

328. The first annual report on the peer review of the rulings transparency framework was released on 4 December 2017. By 31 December 2016, almost 10 000 relevant rulings had been identified and almost 6 500 have been exchanged between tax administrations around the world, providing authorities with useful information about potential risks to their own tax base. With additional and timelier information, the authorities will be able to also take action more efficiently against BEPS arrangements. This enhanced international co-operation may significantly impact taxpayers' behaviour, including that of highly digitalised companies.

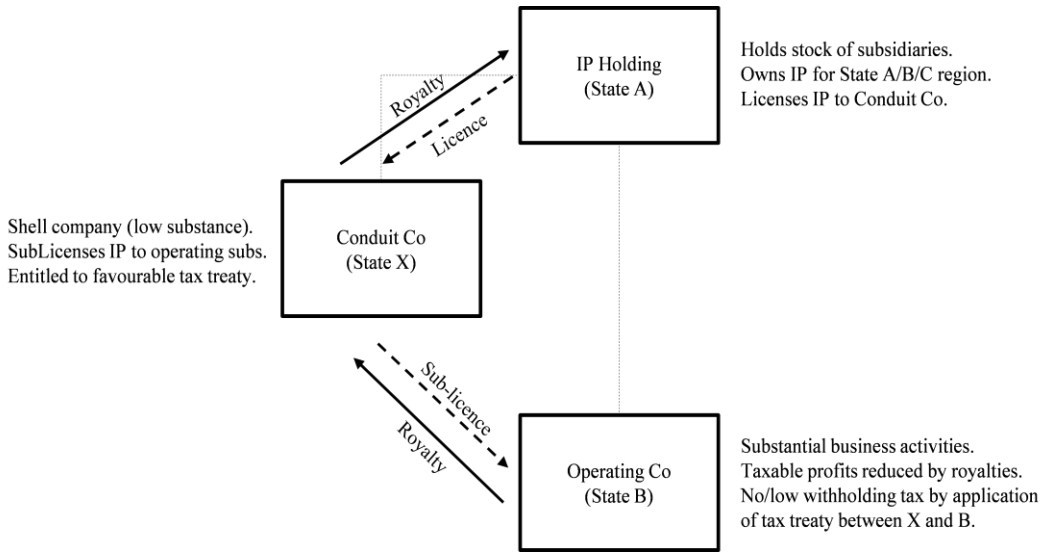
Annex Figure 3.A.2. Framework for tax rulings exchange



Measures to prevent tax treaty abuse (Action 6)

329. Digitalised businesses are in many instances less reliant on local personnel and tangible assets to perform their activities. This increases the mobility of the global value chains of MNEs and makes it easier for some MNEs to choose the location of their key resources, such as intangible property assets[43], based on the tax rate levied in a specific jurisdiction. This implies that, through base eroding payments such as royalty payments, profits can be reduced substantially in affiliates where substantial business activity occurs (see Annex Figure 3.A.1). Withholding taxes generally apply on outbound payments such as royalties or interest. To reduce such taxes MNEs have sometimes used a conduit company located in a country with a favourable treaty network to obtain tax treaty benefits generally granted only to resident companies (treaty-shopping arrangements). As illustrated in Annex Figure 3.A.3, these tax strategies generally involve the conduit being interposed between the affiliates of an MNE group. The aim is to claim the benefits of a double tax treaty (between State X and State B) which is more favourable than the double tax treaty that would apply in the absence of the conduit company (the treaty between State A and State B).

Annex Figure 3.A.3. Scenario involving a treaty shopping arrangement



330. The BEPS package recognises that tax treaty abuse, and in particular treaty shopping, raises some of the most serious BEPS concerns. The minimum standard agreed under Action 6 includes anti-abuse provisions that countries have committed to include in their treaties.[44] In addition, the Action 6 minimum standard requires the inclusion of an explicit statement in the preamble of each treaty clarifying that the treaty is not intended to create opportunities for non-taxation or reduced taxation through tax evasion or avoidance (including through treaty-shopping arrangements). These anti-abuse provisions and principles of interpretation will permit the denial of treaty benefits in circumstances in which the granting of benefits would not be in accordance with the object and purpose of the treaty. This will ensure that the source country can apply its domestic law in cases of avoidance, unconstrained by treaty rules aimed at preventing double taxation.

331. The Action 6 anti-abuse rules will apply broadly to address the treaty-shopping arrangements of highly digitalised businesses and the BEPS concerns. Their potential relevance for highly digitalised businesses can be illustrated by two examples. First, the principal purposes test (PPT) rule may be, in some cases, an effective response to a foreign company's artificial avoidance of PE status, especially when the relevant treaty has not been updated to include the modifications developed through the work on Action 7. Second, the PPT rule may be used to target situations in which there is indeed a taxable presence in the form of a PE or a group company, but the relevant taxable income is reduced by deductible, outgoing intra-group payments such as interest and/or royalties. Where such payments are artificially diverted through a shell or conduit company in a treaty jurisdiction (i.e., through a treaty-shopping arrangement) and the deductible payments are subject to a withholding tax under domestic law, the new PPT rule will allow the source country to apply its withholding tax without any treaty limitation.

332. Implementation of the Action 6 minimum standard has been widespread. Countries have started to implement the necessary treaty changes either through the Multilateral Convention to Implement Tax Treaty Related Measures to Prevent BEPS (the Multilateral Instrument, or "MLI") or by updating their tax treaties through bilateral negotiations. To date, the tax treaties of 78 jurisdictions are covered by the MLI, which will ensure that more than 1,200 bilateral tax treaties reflect the Action 6 minimum

standard. Also, with additional jurisdictions continuing to join the MLI, this figure will increase.

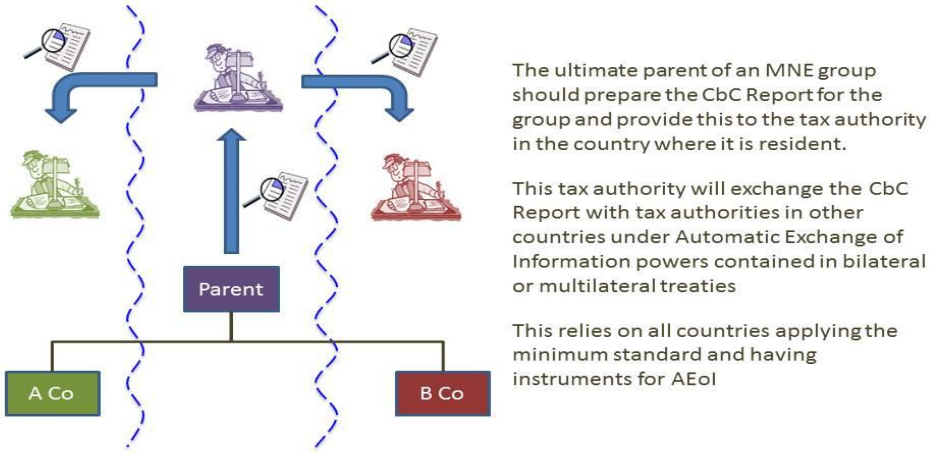
Transparency with Country-by-Country reporting (Action 13)

333. In the past, national tax administrations had limited information on where the profits of MNEs were located and how they were taxed in some foreign jurisdictions. A key component of the transparency pillar of the BEPS minimum standards is the obligation for all large MNEs to file Country-by-Country (CbC) reports (Action 13).[45] The CbC template was designed to support the risk-assessment capacities of tax administrations, particularly when used in conjunction with other sources of information such as the Master File and Local File which are part of the documentation package agreed under BEPS Action 13 (but not of the minimum standards). CbC reports will be important for the risk-assessment of digital businesses which, thanks to the highly intangible nature of their business, the resulting mobility of their profits and their integrated global value chains, have a greater ability to artificially concentrate large parts of their taxable income in low or no tax jurisdictions where no or limited economic activities take place.

334. Most Inclusive Framework jurisdictions have now implemented legislation for CbC reporting and legislation is in place for around 95% of the MNEs expected to be affected by CbC reporting requirements.[46] The first CbC reports have now been filed (i.e., by the end of 2017) and will be exchanged by June 2018. From that date, tax administrations will be able to better understand MNEs' global operations. Consequently, they will be better placed to assess the tax risks involved, allowing more targeted and effective use of their resources.

335. As well as putting in place the domestic legal framework to require CbCR[47], jurisdictions have also moved quickly to ensure that CbCRs will be automatically exchanged between tax administrations (Annex Figure 3.A.4). The exchanges will be carried out on a confidential basis and pursuant to an appropriate international instrument being the Multilateral Convention on Mutual Administrative Assistance in Tax Matters, a double tax convention (DTC) or a tax information exchange agreement (TIEA). To date, 68 jurisdictions[48] have signed the Multilateral Competent Authority Agreement (the CbC MCAA), which is designed to operationalise the exchange of CbC Reports between jurisdictions that are parties to the Multilateral Convention on Mutual Administrative Assistance on Tax Matters. As of January 2018, over 1400 bilateral exchange relationships have been activated under the CbC MCAA with respect to jurisdictions committed to exchanging CbC reports. Some bilateral Competent Authority Agreements have also been signed, where jurisdictions intend to exchange CbC Reports under a DTC or TIEA.[49]

Annex Figure 3.A.4. Filing and exchange of country-by-country reports



2. Implementation of domestic measures to tackle BEPS in the context of digitalisation

336. The BEPS package also recommended the coordinated implementation of a number of measures requiring domestic law changes. These measures were presented as agreed common approaches with regards to limiting excessive interest deductibility (Action 4) and neutralising hybrid mismatches (Action 2). Other measures constitute guidance based on best practices for jurisdictions intending to limit BEPS through controlled foreign company (CFC) rules (Action 3) and increase transparency through mandatory disclosure rules (Action 12). Excessive interest deductions, hybrid instruments, hybrid entities, and the diversion of income to low-taxed subsidiaries without substance have long been widely used in aggressive tax planning. Given that progress in the implementation of CFC rules has already been described in Chapter 3, this section is focused on other domestic measures implemented by countries.

337. Action 2 of the BEPS package provides a number of relevant recommendations[50] tackling the design of domestic rules and the development of tax treaty provisions to neutralise the effect of hybrid instruments and entities. The work of Action 4 is also important in the context of highly digitalised businesses. It resulted in an agreed framework for best practices aimed at reducing opportunities for BEPS via interest and other deductible financial payments. Finally, another important component of the overall package is the 2015 BEPS Report on Action 12, which includes an overview of mandatory disclosure regimes[51] and sets out recommendations for a framework for countries wishing to implement or amend mandatory disclosure rules to obtain early information on aggressive or abusive tax planning schemes and their users. Taken together, these measures will make it more difficult for MNEs to engage in aggressive tax planning as they will allow countries to identify and respond to these schemes in a timely manner.

338. Many countries have begun implementing the recommendations on domestic tax measures to neutralise the effect of hybrid instruments and entities. The EU Council's Anti-Tax Avoidance Directive 2016/1164/EU (ATAD1),[52] amended by the Directive 2017/952/EU (ATAD2),[53] requires all 28 EU Member States to introduce rules based on Action 2 (hybrid mismatches) by 31 December 2019.[54] Some EU Member States have already implemented those provisions in their domestic law.[55] Similarly, the United States recently adopted - as part of the Tax Cuts and Jobs Act (TCJA) - anti-hybrid provisions (hybrid mismatches) in accordance with the recommendations outlined in Action 2.[56] There are a further six countries (Japan, Liechtenstein, Korea, Mexico, Norway and South Africa) that have already partially adopted the Action 2 recommendations into their domestic law, and a number of others are actively reviewing their rules with a view to considering full implementation of the Action 2 measures into their domestic law (e.g., Australia, Malaysia and New Zealand). In total, there are more than 35 countries that have (or will shortly have) the Action 2 hybrid mismatch and branch mismatch rules, or elements of these rules, in their domestic legislation.

339. Recommendations under Action 4 (interest deductibility) have also seen increasing interest from countries. EU Member States have committed under ATAD1 to translate into their domestic law provisions that limit the amount of intra-group net interest that a company can deduct from its taxable income based on a fixed ratio of its earnings (earnings before interest, tax depreciation and amortisation (EBITDA)).[57] The United States introduced a similar limitation on the deductibility of interest in excess of 30% of a business's adjusted taxable income (similar to EBITDA). Various other countries have either already taken similar legislative steps (e.g., Argentina, India, South Korea, South Africa, Viet Nam), or are in the process of aligning their domestic legislation with the recommendations of Action 4 (e.g., Norway, Japan, Malaysia, and Turkey).

340. The guidance related to mandatory disclosure rules (Action 12) is also being considered by a number of countries. In addition to countries that already have mandatory disclosure rules targeted at aggressive tax planning arrangements (e.g., Canada, Ireland, Israel, Mexico, Portugal, South Africa, the United Kingdom and the United States), the EU Commission has recently submitted proposed legislation drawing on some of the best practices contained in the 2015 BEPS Action 12 Report,[58] and other countries have started internal reviews and public consultation processes (e.g., Australia, Japan, Poland and Sweden).

Annex 3.B. Implementation of the Measures on VAT/GST covered by the 2015 BEPS Action 1 Report[1]

Annex Table 3.B.1. Implementation of the Measures on VAT/GST covered by the BEPS Action 1 Report

Jurisdiction	Implementation of the B2C Guidelines[2]	Implementation of simplified registration and compliance regimes[3]	Implementation of mechanisms for collecting VAT/GST on the importation of low-value goods from online trade	Available data on the impact of implementation of the recommended solutions and available option[4]
Albania	Yes (as of January 1, 2015)	No (standard registration applies)	No	Not available
Andorra	Yes (as of January 2013)	No (standard registration applies)	No	Not available
Argentina	Yes (as of February 1, 2018)	No (withholding mechanism will apply)	No	-
Australia	Yes (as of July 1, 2017)	Yes	Yes (as of July 1, 2018)	Not available
Austria	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Bahamas	Yes (as of January 1, 2015)	No (standard registration applies)	No	Not available
Belarus	Yes (as of January 1, 2018)	Yes	No	Not available
Belgium	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	VAT revenue collected increased from EUR 1.5 mln (3rd quarter of 2015) to EUR 2.0 mln (2nd quarter of 2016)
Bulgaria	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	Net effect of the MOSS operation in 2016: EUR 5.1 mln
Canada	Yes (as of January 1, 1991)	No (self-assessment mechanism by customer applies)	No	Not available
China	Yes (as of 2009)	No (withholding mechanism applies)	No	Not available
Colombia	Yes (as of January 1, 2018)	No (withholding mechanism applies)	No	Not available

Jurisdiction	Implementation of the B2C Guidelines[2]	Implementation of simplified registration and compliance regimes[3]	Implementation of mechanisms for collecting VAT/GST on the importation of low-value goods from online trade	Available data on the impact of implementation of the recommended solutions and available option[4]
Costa Rica	Under consideration	Under consideration (withholding mechanism under consideration)	No	N/A
Croatia	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Czech Republic	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Denmark	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Estonia	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Finland	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
France	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Ghana	Yes (as of 2013)	No (standard registration applies)	No	Not available
Germany	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Greece	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Hungary	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Iceland	Yes (as of November 1, 2011)	No (standard registration applies)	No	Not available
India	Yes (as of July 1, 2017)	Yes	No	Not available
Indonesia	Under consideration	N/A	No	N/A
Ireland	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Israel	Under consideration	N/A	No	N/A
Italy	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Japan	Yes (as of October 1, 2015)	No (standard registration applies)	No	Not available

Jurisdiction	Implementation of the B2C Guidelines[2]	Implementation of simplified registration and compliance regimes[3]	Implementation of mechanisms for collecting VAT/GST on the importation of low-value goods from online trade	Available data on the impact of implementation of the recommended solutions and available option[4]
Kenya	Yes (as of September 2, 2013)	No (standard registration applies)	No	Not available
Korea	Yes (as of July 1, 2015)	Yes	No	Not available
Latvia	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study5
Lithuania	Yes (as of July 1, 2002)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study5
Luxembourg	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study5
Malaysia	Under consideration	N/A	No	N/A
Malta	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study5
Mexico	Yes (as of 1980)	No (self-assessment mechanism by customer applies)	No	Not available
Netherlands	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study5
New Zealand	Yes (as of October 1, 2016)	Yes	No	Not available
Norway	Yes (as of July 1, 2011)	Yes	No	Not available
Poland	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study5
Portugal	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study5
Romania	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study5
Russia	Yes (as of January 1, 2017)	Yes	No	Not available
Saudi Arabia	Yes (as of January 1, 2018)	No (standard registration applies)	No	N/A
Serbia	Yes (as of January 1, 2017)	No (standard registration applies)	No	Not available
Singapore	Yes[59]	Yes[60]	Under consideration	Not applicable

Jurisdiction	Implementation of the B2C Guidelines[2]	Implementation of simplified registration and compliance regimes[3]	Implementation of mechanisms for collecting VAT/GST on the importation of low-value goods from online trade	Available data on the impact of implementation of the recommended solutions and available option[4]
Slovak Republic	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Slovenia	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
South Africa	Yes (as of June 1, 2014)	Yes	No	Data for 2016/2017: 223 registrations as e-commerce vendors; Revenue of ZAR 585 mln generated.
Spain	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Sweden	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]
Switzerland	Yes (as of 2010)	No (standard registration applies)	Under consideration	Not available
Tanzania	Yes (as of July 1, 2015)	No (standard registration applies)	No	Not available
Thailand	Under consideration	Under consideration (withholding mechanism under consideration)	No	N/A
The Philippines	Under consideration	N/A	No	N/A
Tunisia	Under consideration	N/A	No	N/A
Turkey	Yes (as of January 1, 2018)	Yes (in progress)	No	Not available
United Kingdom	Yes (as of January 1, 2015)	Yes	Under consideration at EU Level	See data available for all EU countries in the November 2016 assessment study[5]

1. This table includes countries that operate a VAT/GST system and have implemented the solutions and available options provided in the International VAT/GST Guidelines or that are considering doing so, according to the information currently available.
2. Implementation of the approaches recommended by the International VAT/GST Guidelines for the application of the destination principle to remote digital supplies to consumers (B2C).
3. Implementation of mechanisms based on simplified registration and compliance regimes for the effective collection of VAT/GST on inbound B2C supplies. Simplified registration and compliance regime operates separately from the traditional (standard) registration and compliance regime, without the same rights (e.g., input tax recovery) and obligations (e.g., full reporting) as a traditional regime. See OECD (2017), International VAT/GST Guidelines, Chapter 3, C.3.2.
4. Recommendations and options to address the VAT/GST challenges of the digital economy.

5. The EU has identified the total VAT revenue declared via its simplified compliance regime (MOSS) in its first year of operation (2015) as in excess of EUR 3 billion. Approximately, 70% of the total cross-border B2C supplies of services and intangibles that are in scope of this regime are captured by this simplified compliance regime. Moreover the availability of MOSS allowed businesses that adopted it to achieve a notable reduction of the compliance burden, which according to estimates, is 95% lower than what it would have been without such simplification measure (i.e., the MOSS allowed businesses using it to save about EUR 500 million in compliance costs). Source: Deloitte study on the "VAT Aspects of cross-border e-commerce – Options for modernisation Final report – Lot 3 – Assessment of the implementation of the 2015 place of supply rules and the Mini-One Stop Shop" (November 2016) available at the European Commission's website (https://ec.europa.eu/taxation_customs/sites/taxation/files/vat_aspects_cross-border_e-commerce_final_report_lot3.pdf).

Notes

[1] The salient characteristics of highly digitalised businesses are also outlined in Chapter 2 on Digitalisation, Business Models and Value Creation. These frequently observed characteristics include: cross-jurisdictional scale without mass; reliance on intangible assets, including intellectual property (IP); and data, user participation and their synergies with IP.

[2] For ease of reading, the terms "value added tax" and "VAT" are used to refer to any national tax by whatever name or acronym it is known, such as Goods and Services Tax (GST), which embodies the basic features of a value added tax i.e., a broad-based tax on final consumption collected from but in principle not borne by businesses through a staged collection process whatever method is used for determining the tax liability (e.g., invoice-credit method or subtraction method).

[3] The broader direct tax challenges raised by digitalisation were described in detail in Chapter 7 of the 2015 BEPS Action 1 Report. These challenges are also further described in this report in Chapter 5 on Adapting the International Tax System to the Digitalisation of the Economy.

[4] Important information on how companies have responded to the BEPS measures will also become available from Country-by-Country Reports (CbCR), which have been filed by the end of 2017 and will be exchanged in June 2018. As a result of the BEPS Action 11 Report (OECD, 2015[8]), countries are currently working towards an agreed approach to making anonymised and aggregated CbCR data available through the OECD, although these data are not expected to be released until 2019. In addition, new data sources such as those on special purpose entities and foreign direct investment by immediate and ultimate country of investment is becoming available for some countries, which will also support further analysis of the use of intermediary structures such as conduit companies.

[5] See among others, the press release from Facebook in December 2017 announcing a shift to local selling structures in countries where it has an office to support sales to local advertisers (Wehner, 2017[9]). This impact is further discussed below in paragraphs 309 and 310.

[6] This impact is further discussed below in paragraph 308.

[7] A "commissionnaire arrangement" may be loosely defined as an arrangement through which a person sells products in a State in its own name but on behalf of a foreign enterprise that is the owner of these products. Through such an arrangement, a foreign enterprise is able to sell its products in a State without technically having a permanent establishment to which such sales may be attributed for tax purposes and without, therefore, being taxable in that State on the profits derived from such sales. Since the person that concludes the sales does not own the products that it sells, that person cannot be taxed on the profits derived from such sales and may only be taxed on the remuneration that it receives for its services (usually a commission).

[8] Separately, Action 7 (OECD, 2015[10]) also recommended complementing Article 5(4) with a specific anti-abuse rule to prevent MNE groups from fragmenting their operations in a country

(between separate locations and/or closely related enterprises) in order to inappropriately take advantage of the exemptions from permanent establishment status provided by Article 5(4).

[9]See (OECD, 2017[11]).

[10] These estimates were made on 24 January 2018 based on information taken from the "MLI Database - Matrix of options and reservations" (OECD, 2017[12])

[11] The final Action 7 Report mandated the development of additional guidance on how the rules of Article 7 of the OECD Model Tax Convention would apply to PEs resulting from the changes in the Report, in particular for PEs outside the financial sector. A revised discussion draft containing additional guidance on the attribution of profits to permanent establishments was released on 22 June 2017 (OECD, 2017[18]) and discussed at the 6-7 November 2017 public consultation on transfer pricing matters. Final approval of guidance is expected on 12 February 2018.

[12] E-bay reported to their customers in a number of countries that they changed the contracting party from a foreign to a domestic company (eBay Canada Limited, 2017[13]; eBay Inc, 2017[14]). Similar developments concerning Amazon in European Union countries were reported in the press (Scott, 2015[16]; Zeit Online, 2015[15]). More recently, Facebook announced its decision to move to a local selling structure in countries where they have an office to support sales to local advertisers (Wehner, 2017[9]; Johnston, 2017[17]). Similar developments concerning Google in New Zealand were reported in the press (Johnston, 2018[28]). This impact is further discussed below in paragraphs 309 and 310.

[13] The United Nations (UN) Committee of Experts on International Cooperation in Tax Matters has adopted changes to the UN Model Double Taxation Convention incorporating the key tax treaty recommendations of the BEPS package, including the Action 7 recommendations with respect to the PE definition, as well as the minimum standard on tax treaty abuse under Action 6. The broad adoption of the tax treaty related BEPS recommendations by the UN Committee of Experts demonstrates the broad support for the tax treaty related recommendations developed in the BEPS Project, and will further support the swift and consistent adoption of these BEPS recommendations globally.

[14] (EU Council, 2016[29]).

[15] The European Commission has, under its proposal for a Council Directive on a Common Corporate Tax Base (CCTB), proposed to take a step further to tighten the CFC-rules in EU countries. The proposal states that the substance carve-out rule should only be applicable to a controlled foreign company that is resident or situated in a Member State or in a third country that is party to the EEA agreement. The exception will thereby not be available to controlled foreign companies in third countries, and will significantly tighten the CFC-taxation towards these countries. Further, the alternative method of a standalone substance test from the Anti-Tax Avoidance Directive (2016/1164/EU) point (b) of article 7(2) has been discarded in the proposed CCTB directive. Accordingly, it would no longer be possible for EU countries to limit the CFC-taxation to capture income "arising from non-genuine arrangements, which have been put in place for the essential purpose of obtaining a tax advantage."

[16] Public Law No. 115-97, 22 December 2017, Section 14201 (a) introducing sec. 951A in Subpart F of part III of subchapter N of chapter 1 of the Internal Revenue Code of 1986 (US Congress, 2017[19]).

[17] The combined effective rate of 13.125% applies in situations where the US taxpayer is entitled to foreign tax credits. In cases where the US taxpayer is not entitled to foreign tax credits (e.g., CFC in a jurisdiction with no corporate tax), the effective corporate tax rate can be reduced to as low as 10.5%.

[18] Article 66-6 to 66-9 of Act on Special Measures concerning Taxation; Articles 39-14 to 39-20 of Order for Enforcement of the Act on Special Measures concerning Taxation.

[19] Countries have some flexibility to meet this commitment and should include in their tax treaties either (i) the combined approach of the limitation-on-benefits clause (LOB rule) and a more general anti-abuse rule based on the principal purposes of transactions or arrangements (PPT rule), (ii) the PPT rule alone, (iii) the LOB rule supplemented by a mechanism that would deal with conduit financing arrangements not already dealt with in tax treaties.

[20] The 2015 BEPS Action 5 Report specified that jurisdictions that are not EU Member States could allow the inclusion of all qualifying R&D expenditures undertaken by related parties in the definition of qualifying expenditures provided that those related parties are resident in the jurisdiction granting the tax benefit (see footnote 16 of Chapter IV of the Report, (OECD, 2015[35])).

[21] The OECD International VAT/GST Guidelines set forth a number of principles for the VAT treatment of the most common types of international transactions, focusing on trade in services and intangibles, with aim of reducing uncertainty and risks of double taxation and unintended non-taxation that result from inconsistencies in the application of VAT in a cross-border context. They build on international dialogue among OECD Members and Partners and other relevant stakeholders. They have been incorporated in the OECD Council Recommendation on the Application of Value Added Tax/Goods and Services Tax to the International Trade in Services and Intangibles. This Council Recommendation is the first OECD legal instrument in the area of VAT and the first internationally agreed framework for the application of VAT to cross-border trade which aspires to a global coverage.

[22] Specifically, the implementation of Guidelines 3.2 and 3.4 of the Guidelines will minimise BEPS opportunities for supplies of remotely delivered services and intangibles made to exempt businesses, including exempt entities that operate through establishments (branches) in multiple jurisdictions (multiple location entities). Guideline 3.2 recommends that the taxing rights on cross-border supplies of services and intangibles between businesses be allocated to the jurisdiction where the customer has located its business establishment and that business customers be required to self-assess VAT on remotely delivered services or intangibles acquired from offshore suppliers according to the rules of the jurisdiction in which they are located. Guideline 3.4 provides that when a supply is made to a business that is established in more than one jurisdiction, taxation should accrue to the jurisdiction where the customer's establishment (branch) using the service or intangible is located.

[23] Singapore has announced the introduction of taxation of B2C cross-border supplies of digital services with implementation on January 1, 2020, subject to the passing of legislation in Parliament.

[24] See (Deloitte, 2016[6]).

[25] See (Deloitte, 2016[6]).

[26] The report was developed with the active involvement of both a broad range of jurisdictions beyond the OECD and the global business community, notably through the OECD Global Forum on VAT and the Technical Advisory Group to OECD Working Party No. 9 on Consumption Taxes (WP9 TAG) (OECD, 2017[21]). It provides a general description of basic policy questions and design issues concerning the collection of VAT on supplies of services and intangibles by foreign suppliers together with an overview of key policy and design issues for tax authorities to consider when designing and implementing a registration-based collection regime with or without simplification measures. It also provides more detailed guidance on the design and practical operation of a simplified registration and collection regime as recommended by the VAT/GST Guidelines and by the 2015 BEPS Action 1 Report. It does not aim at detailed prescriptions for

national legislation. Jurisdictions are sovereign with respect to the design and application of their laws. Rather, the report seeks to present a range of possible approaches and discuss associated policy considerations. The report is evolutionary in nature and will be reviewed regularly in light of the rapid development of technology and online sales and delivery processes.

[27] These include: The Multilateral Convention on Mutual Administrative Assistance in Tax Matters; the OECD Model Tax Convention Article 26 (Information Exchange); and the OECD Model Agreement on Exchange of Information.

[28] Developments in jurisdictions that have implemented collection mechanisms through platforms (or that are introducing such measures) and work carried out in other international fora, can inform complement one another through ongoing information sharing.

[29] The 2015 BEPS Action 5 Report specified that jurisdictions that are not EU Member States could allow the inclusion of all qualifying R&D expenditures undertaken by related parties in the definition of qualifying expenditures provided that those related parties are resident in the jurisdiction granting the tax benefit (see footnote 16 of Chapter IV of the Report, (OECD, 2015[35])).

[30] A Thomson Reuters survey of tax directors found "66% proactively taking steps based on the BEPS recommendations; 22% waiting for countries to implement, 7% waiting for all action points in the project to be finalized before you act; 3% waiting for peers to make a move, and 3% not doing anything at all." (Reuters, 2016[32]). See also (KPMG, 2016[33]); (Deloitte, 2017[34]).

[31] For example, in a report presented to the Irish Minister for Finance and Public Expenditure and Reform (Coffey, 2017[22]), relevant data is provided indicating that "*Ireland's national accounts have been impacted by a number of intangible on-shoring events in recent years with the profit generated by these intangible assets now included in gross measures of Ireland's national income. Most notably there was an increase in the stock of intangible assets in Ireland of around €250 billion in Q1 2015 while the Quarterly National Accounts for Q4 2016 show investment in the acquisition of intangibles of around €25 billion*". The same report further specifies that "*In nominal terms Ireland's gross capital stock rose from €756 billion to €1,088 billion, an increase of €332 billion. Changes in the capital stock are usually driven by investment (either outright purchase or internal development) and obsolescence (withdrawal from use) giving entries and exits to the capital stock. However, in 2015 investment in capital was €54.1 billion. Thus nearly 85 per cent of the €332 billion increase in the capital stock cannot be explained by investment. Table 9.8 gives the composition of Ireland's gross capital stock for 2014 and 2015. In the 2015 data, two categories have been suppressed for confidentiality reasons; transport equipment and research and development. The categories reflect aircraft leasing and the on-shoring of intellectual property assets. The categories for which data is provided recorded an increase of €42 billion in 2015 so the remaining €289 billion is accounted for by the missing categories of transport equipment and intangibles. It is probable that the bulk of this was due to intangibles.*"

[32] E-bay reported to their customers in a number of countries that they changed the contracting party from a foreign to a domestic company (eBay Canada Limited, 2017[13]) (eBay Inc, 2017[14]). Similar developments concerning Amazon in European Union countries were reported in the press (Scott, 2015[16]) (Zeit Online, 2015[15]). More recently, Facebook announced its decision to move to a local selling structure in countries where they have an office to support sales to local advertisers (Wehner, 2017[9]). Similar developments concerning Google in New Zealand were reported in the press (Johnston, 2018[28]).

[33] The term "buy-sell distributor" refers to a reseller who takes title to the goods being sold to local customers. This creates a local point of revenue recognition, as the sales revenue generated by transactions with local customers will be reported in that entity's local financial statements and tax return. A "buy-sell distributor" typically bears the risks associated with buying, holding and selling the products. While such reseller models are commonly used for the distribution of goods, they are

less common for the provision of services, especially in countries where commercial law does not enable the resale of services. Further, it should be noted that such local sales structures can be inefficient for enterprises that are potentially able to centralise functions at a regional and/or global level to gain substantial economies of scale with respect to certain functions related to an MNE's sales activities (e.g., infrastructure, customer relationship management, invoicing process).

[34] See (Deloitte, 2016[6]).

[35] As part of the BEPS package, Members of the Inclusive Framework have committed to implement the four minimum standards in the areas of fighting harmful tax practices (Action 5), preventing treaty shopping (Action 6), implementing Country-by-Country Reporting (Action 13), and improving dispute resolution (Action 14). These minimum standards are subject to a rigorous monitoring process (i.e., so-called peer-review).

[36] The mandate of the Inclusive Framework supports international cooperation in four areas: (i) review the implementation of the four BEPS minimum standards; (ii) gather data for the monitoring of the other aspects of implementation, including under BEPS Actions 1 (on the tax challenges of the digital economy) and 11 (on measuring and monitoring BEPS); (iii) finalise the remaining technical work to address BEPS challenges; and (iv) support jurisdictions in their implementation of the BEPS package, including by providing further guidance on the standards and by developing toolkits for low income countries.

[37] Following the delivery of the BEPS package, it was agreed that the Inclusive Framework on BEPS would continue the technical work on some BEPS standards which require further development. These include finalising transfer pricing guidance on the application of transactional profit split methods and on financial transactions and discussing the rules for the attribution of profits to permanent establishments in light of the changes to the permanent establishment definition.

[38] To ensure widespread and efficient implementation, peer reviews will also be undertaken for "jurisdictions of relevance" – jurisdictions that are not members of the Inclusive Framework but whose implementation of a particular minimum standard will be necessary to ensure an effective reduction in BEPS behaviours. The peer reviews are based on terms of reference and a specific methodology for each standard. Further information about the terms of reference and methodology for the peer reviews of the minimum standards, including their schedules for each minimum standard, can be found in Annex C of the OECD report "Inclusive Framework on BEPS: Progress Report", published on 5 July 2017.

[39] Action 14 is a key pillar of the BEPS Project as it provides effective tools to reduce double taxation but does not strictly relate to the exercise undertaken in this report. Under Action 14, a minimum standard was established to improve the effectiveness of dispute resolution mechanisms, including through dispute prevention, availability and access to the treaty mutual agreement procedures (MAP), resolution of MAP cases and implementation of MAP agreements. All of the treaty-related elements of the Action 14 minimum standard may be implemented by joining the MLI (Box 3.1). To date, the MLI covers 78 jurisdictions.

[40] Note that this paragraph is focused on the BEPS issues associated with preferential regimes, and does not discuss the BEPS issues that may arise from the transfer of intangible property between affiliated entities for transfer pricing purposes, or from the pricing of the intra-group royalty payment in accordance with the arm's length principle.

[41] The 2015 BEPS Action 5 Report specified that jurisdictions that are not EU Member States could allow the inclusion of all qualifying R&D expenditures undertaken by related parties in the definition of qualifying expenditures provided that those related parties are resident in the jurisdiction granting the tax benefit (see footnote 16 of Chapter IV of the Report, (OECD, 2015[35])).

[42] The 2015 BEPS Action 5 Report sets out the requirements for closing off regimes and grandfathering of existing members of the Forum on Harmful Tax Practices: no new entrants in existing non-nexus consistent IP regimes are allowed after 30 June 2016 and grandfathering is allowed for a maximum of five years (30 June 2021). For new Inclusive Framework members, the cut-off date for new entrants is 30 June 2018 and grandfathering is allowed up until 30 June 2021.

[43] The following paragraphs are focused on the BEPS issues associated with treaty shopping arrangements, and do not discuss the BEPS issues that may arise from the transfer of intangible property assets between affiliated entities for transfer pricing purposes, or from the pricing of the intra-group royalty payment in accordance with the arm's length principle.

[44] Countries have some flexibility to meet this commitment and should include in their tax treaties either (i) the combined approach of the limitation-on-benefits (LOB) rule and a more general anti-abuse rule based on the principal purposes of transactions or arrangements (PPT rule), (ii) the PPT rule alone, (iii) the LOB rule supplemented by a mechanism that would deal with conduit financing arrangements not already dealt with in tax treaties.

[45] A key step towards implementation is to establish the necessary domestic legal framework to require CbCR. More than 60 jurisdictions have already implemented an obligation for relevant MNEs to file CbCRs, of which more than 45 have completed all necessary domestic processes and have the full legal framework in place. Jurisdictions that have initiated the implementation process already include all 35 OECD Members, 7 non-OECD G20 countries (Argentina, Brazil, India, Indonesia, People's Republic of China, the Russian Federation and South Africa), as well as 24 other jurisdictions (Bermuda, Cayman Islands, Colombia, Côte d'Ivoire, Egypt, Gabon, Guernsey, Hong Kong, Isle of Man, Jersey, Kenya, Liechtenstein, Malaysia, Malta, Mauritius, Monaco, Nigeria, Pakistan, Peru, Qatar, Senegal, Singapore, Uruguay and Vietnam). For the 28 EU Member States, the obligation to implement CbCR is now enshrined in a binding Directive (Council Directive 2016/881/EU). In addition, Master and Local File requirements are implemented or in the process of being in implemented by approximately 40 jurisdictions.

[46] An up to date list of the jurisdictions that have signed the CbC MCAA is available at: www.oecd.org/tax/automatic-exchange/about-automatic-exchange/CbC-MCAA-Signatories.pdf.

[47] The first annual peer review process of the implementation of CbC Reporting which includes all members of the Inclusive Framework commenced in February 2017. Where the peer review process reveals questions concerning the interpretation or operation of the Action 13 minimum standard, these may be dealt with through guidance or be fed into discussions on the review of the minimum standard in 2020.

[48] Multilateral Convention on Mutual Administrative Assistance on Tax Matters: www.oecd.org/ctp/exchange-of-tax-information/convention-on-mutual-administrative-assistance-in-tax-matters.htm. Since the delivery of the BEPS package in October 2015, **25** countries have joined the Convention: Bahamas, Bahrain, Brunei Darussalam, Burkina Faso, Cook Islands, Dominican Republic, Israel, Jamaica, Kenya, Kuwait, Lebanon, Malaysia, Marshall Islands, Nauru, Niue, Pakistan, Panama, Peru, Qatar, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Senegal, Uganda, United Arab Emirates, and Uruguay. Today, there are 117 jurisdictions participating in the Convention.

[49] The first annual peer review process of the implementation of CbC Reporting which includes all members of the Inclusive Framework commenced in February 2017. Jurisdictions that have joined the Inclusive Framework later than February 2017 have not necessarily been able to participate in this first annual peer review process. It is expected that they will be included in the following annual peer review process starting in 2018. Where the peer review process reveals questions concerning the interpretation or operation of the Action 13 minimum standard, these may be dealt with through guidance or be fed into discussions on the review of the minimum standard in 2020.

[50] The report also includes detailed commentary explaining how the recommendations are intended to operate in practice.

[51] Mandatory disclosure regimes differ from other disclosure and compliance initiatives commonly used by countries (e.g., rulings, voluntary disclosure, co-operative compliance programmes) in that they are specifically designed to require taxpayers and promoters to provide tax administrations with early disclosure of potentially aggressive or abusive tax planning arrangements if they fall within the definition of a reportable scheme set out under that regime.

[52] (EU Council, 2016[29]).

[53] (EU Council, 2017[31])

[54] The initial provisions regarding hybrid mismatches between EU Member States in ATAD1 have been extended by ATAD2 to cover more categories of mismatches as well as arrangements involving third countries. Today, the Directive addresses mismatch situations resulting from double deduction, deduction without inclusion, characterisation conflicts of financial instruments, payments and entities and from the allocation of payments. Furthermore, it captures situations involving disregarded permanent establishments and tax residence mismatches. The preamble of ATAD2 explicitly refers to Action 2 as "*a source of illustration or interpretation to the extent that they are consistent with the provisions of the Directive and with Union law*".

[55] The United Kingdom is among the first EU member states that implemented new anti-hybrid rules in accordance with ATAD1 and ATAD2. These new rules became effective on 1 January 2017 (HM Revenue and Customs, 2016[23]; Sheppard, 2017[24]).

[56] The legislation introduces two mechanisms to implement the recommendations of Action 2. The first one (Section 245A(e) of the Internal Revenue Code) disallows the dividend exemption for "hybrid dividends" – that is, a payment for which the payer receives a deduction (or other tax benefit) for the payment in the payer jurisdiction. The second one (Section 267A of the Internal Revenue Code) limits the deductibility of intra-group payments on hybrid instruments or to hybrid entities – that is, a payment which is not included in the income of the payee under the laws of its country of residence, or the payee is allowed a deduction offsetting that income under such laws (Wagam, Catalano and Kravitz, 2018[27]; US Congress, 2017[19]).

[57] The legislation (The Council of the European Union, 2016[25]) includes in Article 4 (4) a grandfathering rule, which means debt in place prior to 17 June 2016 will be excluded from the scope of the interest limitation rule, as will interest used to fund long-term public infrastructure projects. EU Member States which have equivalent rules will be allowed to continue with those rules until the OECD recommends a minimum standard of interest limitation rules or at the latest by 1 January 2024.

[58] Under the current proposal, the new reporting requirements would enter into force on 1 January 2019 (European Commission, 2017[26]), but the starting date of application is still under discussion.

[59] Singapore has announced the introduction of taxation of B2C cross-border supplies of digital services with implementation on January 1, 2020, subject to the passing of legislation in Parliament.

[60] Singapore has announced the introduction of taxation of B2C cross-border supplies of digital services with implementation on January 1, 2020, subject to the passing of legislation in Parliament.

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Chapter 4. Relevant tax policy developments

This chapter outlines the unilateral measures that have been introduced by countries and that are potentially relevant to digitalisation. These types of measures are grouped into four categories and a detailed description of each measure is provided, as well as a description of their common features.

4.1. Overview

341. This chapter provides a description of the design and implementation of a variety of country measures that are potentially relevant to digitalisation, notably where these measures relate to the broader direct tax challenges identified in the 2015 BEPS Action 1 Report (i.e., nexus, data and characterisation).

342. These uncoordinated and unilateral actions can been grouped into four categories: (i) alternative applications of the PE threshold; (ii) withholding taxes; (iii) turnover taxes; and (iv) specific regimes targeting large MNEs.

343. Certain design features are common to some of these unilateral and uncoordinated actions. First, they aim at protecting and/or expanding the tax base in the country where the customers or users are located, generally based on an expanded view of the enterprise's engagement in that country. Second, many include elements linked to a market in the design of the tax base (e.g., sales revenue, place of use or consumption). More generally, they appear to reflect a discontent among some countries with the taxation outcomes produced by the current international income tax system.

4.2. Introduction

344. In 2015, the BEPS Action 1 Report identified a number of broader tax challenges relating to nexus, data, and characterisation for direct tax purposes. These challenges raised questions regarding the ability of the existing international tax framework to determine where economic activities are carried out and value is created for corporate tax purposes. To address these concerns, a range of potential options were analysed by the Task Force on the Digital Economy (TFDE), which included alternatives to the existing permanent establishment (PE) threshold based on a "significant economic presence", the imposition of a new withholding tax on certain types of digital transactions, and the introduction of a separate "equalisation levy".

345. At the time that the Action 1 Report was adopted, however, no agreement had been reached among countries participating in the BEPS Project on the actual scale and impact of these broader direct tax challenges. In particular, no common view emerged on whether changes going beyond the measures proposed in the BEPS package were warranted. The result was that none of the potential options discussed in the Action 1 Report were adopted as agreed international standards. Nonetheless, it was acknowledged that countries could introduce any of these options in their domestic laws, provided that they respected existing tax treaties and other international obligations.

346. Since the release of the Action 1 Report, the lack of consensus in relation to these options has seen many countries around the world explore alternative measures for the taxation of highly digitalised businesses, generally by adopting new tax measures or changing the way they interpret existing laws and tax measures. To date these uncoordinated actions include a variety of measures usually implemented through domestic law changes seeking to protect and/or expand source taxation of online business activities (or more generally of activities of large MNEs), whether based on a measure of profit or some other equivalent factor. While only some of these measures draw upon elements of the options described in the Action 1 Report (e.g., the "equalisation levy"), they all respond, at least to some extent, to similar concerns such as the desire to secure an appropriate tax base in respect of business activities performed in, or closely linked with, the market jurisdiction where goods and services are supplied.

347. It is in this context that the TFDE was mandated to monitor relevant tax policy developments across the world that are potentially relevant to digitalisation, with a focus on measures that seek to address aspects of the broader tax challenges identified in the Action 1 Report. In the absence of global consensus, it was deemed important to keep track of all potentially relevant measures introduced by countries as part of this monitoring, and to ensure a good understanding of the details of their design and implementation (e.g., compliance, impact, revenue collected etc.). Also, this section provides a description of various potentially relevant actions taken by countries to adapt to an increasingly digitalised economy,[1] including a discussion of their potential impact and effectiveness. These tax measures have been grouped into four categories: (i) alternative applications of the PE threshold; (ii) withholding taxes; (iii) turnover taxes; and (iv) specific regimes to deal with large MNEs.

348. It is noted that the technical aspects of the measures described in the Boxes of this section are based primarily on information reported and verified by the countries introducing these measures. The information contained in the Boxes is intended to be descriptive only. Any statements regarding the objectives of the measures, their efficacy and/or their compliance with existing international standards, including consistency with existing bilateral tax treaties, will generally reflect the views of the government introducing the measure and do not represent the considered conclusions of analysis undertaken by the Inclusive Framework on BEPS.

4.3. Alternative applications of the permanent establishment threshold

349. Some countries have responded to the structural changes resulting from digitalisation by reconsidering the way the threshold for source-based taxation of business profits – the permanent establishment (PE) definition – is applied under their domestic law and/or in tax treaties. In contrast to the traditional approach,[2] these amendments or new interpretations of the PE threshold are generally aimed at diluting the requirement for permanence and physical presence at a specific geographical location to establish a nexus for net-basis taxation. Also, these measures generally have the effect of deeming a PE to exist in circumstances where one would not ordinarily exist under the traditional application of the PE definition. The most relevant developments across the globe in this area include measures drawing upon some factors of "digital presence" to establish a taxable presence, or supporting applications of the "service PE" threshold unconstrained by physical presence requirements.[3]

4.3.1. Measures incorporating digital presence factors

350. In general terms, digital presence-type of criteria include a variety of non-physical factors intended to evidence a purposeful and sustained interaction with the economic life of a country through digital means. They are designed to establish nexus in situations where a non-resident enterprise, physically established in a remote location, is proactively taking steps to create and maintain an ongoing interaction with the users and customers of a given country (e.g., typically by leveraging technology, the Internet and other automated tools).[4]

351. While a significant number of countries have announced their intention to modify their domestic and/or treaty PE threshold based on such factors of "digital" or "online" presence,[5] the measures implemented and enforceable so far include the "Significant Economic Presence" test introduced in April 2016 by Israel's Tax Authority (Box 4.1), the expanded definition of a "fixed place of business" for certain digital platforms

introduced in 2017 by the Slovak Republic[6], and the new nexus rule based on the concept of "Significant Economic Presence", which is expected to come into effect in 2019 in India (Box 4.2). While the measure in the Slovak Republic is targeted at specific activities carried out by online platforms (i.e., intermediation services for transportation and accommodation), the measures in Israel and India involve a more general broadening of their existing domestic nexus rules based on the concept of "significant economic presence" (SEP). All these measures are applicable only to non-resident enterprises and allow for net-basis taxation irrespective of the level of physical presence of the non-resident enterprise in the source country. The impact of these measures is, however, expected to be constrained by a number of factors, such as existing tax treaty obligations. For example, Israel's SEP test applies only to a foreign enterprise that is resident in a country with no double tax agreement with Israel. Further, this SEP test is based on administrative guidelines reflecting the views and interpretation of the tax administration, with the result that any potential conflict between the measure and current statute law would be resolved in favour of the latter.

352. Notwithstanding the constraints identified above, these measures may work as an additional safeguard against BEPS. Their application can be effective to tax remote sales from enterprises situated in a low-tax jurisdiction with no double tax treaty. While no additional revenue has yet been reported by the relevant countries in relation to these measures, it has been reported in Israel that some on-going tax audits are being carried out on the basis of the different interpretations outlined in the administrative guidelines.[7]

Box 4.1. Israel's Circular introducing a "significant economic presence" test

For the purpose of making source determination under domestic law,[1] the Circular clarifies that online services provided by a non-resident enterprise from a remote location to in-country customers may create a taxable presence in Israel if these activities constitute a "*significant economic presence*" (SEP).[2] This domestic law measure applies only outside the scope of double tax treaties, when the supplier of the online services is resident in a country with no double tax agreement with Israel. The SEP test may be satisfied absent any physical activities in Israel, and is broadly defined by reference to factors of "*digital presence*" which include, but are not limited to.

- **Online contract conclusion**: a significant number of contracts are concluded online between the foreign company and Israeli customers;
- **Use of digital products and services**: the foreign company offers online services/products that are used by a significant number of Israeli customers;
- **Localised web site**: the foreign company employs a website with localised features targeted at the Israeli market (e.g., Hebrew language, local discounts and marketing, local currency and payment options);
- **Multi-sided business model**: the company generates significant revenue that is closely related to the volume of online activities performed by users located in Israel.

The wording of the Circular indicates that the listed "digital presence" criteria can be applied separately or cumulatively, with no revenue threshold requirement based on local sales. Where the test is satisfied, for the purpose of attributing profits, the Circular merely refers to the domestic rules based on the arm's length principle (i.e., analysis of functions performed, assets used and risks assumed). Also, it leaves unresolved the issue of whether any meaningful profits could be attributed to a taxable presence associated with little or no physical presence in terms of tangible assets and/or personnel.

1. Domestic nexus rules in Israel are generally not based on a strict PE-type of threshold, but refer more broadly to the location of the income-producing activities of an enterprise (Section 4A of the Income Tax Ordinance).

2. Administrative Circular No. 04/2016 (11 April 2016) released to clarify the circumstances in which a foreign enterprise engaged in online activities ("*activities via the internet*") may be liable to corporate income tax in Israel. While the circular provides comments on a broad range of rules relevant for the taxation of a non-resident enterprise (e.g., permanent establishment (PE) definition under tax treaties, registration for VAT purposes), the relevant provisions described in this section relate to the interpretation of the domestic nexus rule for corporate income tax purposes.

Box 4.2. India's new nexus based on a concept of "significant economic presence"

Several amendments to domestic nexus rules for corporate income tax purposes (i.e., the concept of "business connection in India") were recently introduced and are expected to become effective from 1 April 2019.[1] One of these amendments expands the domestic definition of nexus for business income by incorporating the concept of significant economic presence (SEP). The latter constitutes an alternative threshold allowing the taxation of the profits of a non-resident enterprise on a source basis irrespective of the level of physical presence of that enterprise in the taxing jurisdiction.

The legislation provides that a SEP of a non-resident enterprise can be characterised in two distinct situations:

- *A threshold based on local revenue*: "any transaction in respect of any goods, services, or property carried out by a non-resident in India, including the provision of download of data or software in India, if the aggregate of payments arising from such transaction or transactions during the previous year exceeds the amount as may be prescribed", and
- *A threshold based on number of local users*: "systematic and continuous soliciting of its business activities or engaging in interaction with such number of users as may be prescribed, in India, through digital means".

These thresholds create a direct tax liability in India irrespective of the location and/or residence of the taxpayer. Following a consultation with relevant stakeholders, further rules and implementation guidance are expected to clarify the elements of these two thresholds.

The tax base is expected to be limited to profit attributable to transactions or users connected to the SEP. To date, the legislation does not suggest any modifications to standard profit allocation rules, or clarify how profits will be attributed to a SEP associated with little or no physical presence (i.e., in terms of tangible assets and/or personnel). It clarifies, however, that any conflicting provision of double tax treaties (e.g., permanent establishment definition) would prevail over domestic nexus rules, including the concept of SEP. Also, the latter is likely to apply only to situations not covered by tax treaties (i.e., transactions with countries where there is no double tax treaty and abusive transactions such as some transactions involving conduit or shell companies) until such time as corresponding changes are made to double tax treaties concluded by India.

1. Union Budget 2018, Amendment to Section 9(1) of the Income Tax Act of 1961.

4.3.2. Other measures

353. Another relevant development related to digitalisation includes the minority view expressed by some countries that the requirement of physical presence is no longer relevant for the application of the "service PE" definition in Article 5(3) (b) of the UN Model Tax Convention (UN MTC).[8] A similar provision is not included in the OECD MTC itself.[9] The prevailing interpretation of the "service PE" rule contained in the UN MTC is that it operates on the basis of where the services provided by the non-resident enterprise are performed, and that a physical presence of the non-resident enterprise is

implicitly required in the source country, either through employees or other personnel engaged by the non-resident enterprise.[10] A minority view in contrast is that the term "furnishing of services" used in this treaty provision refers to services "used" or "consumed" in the source jurisdiction, and as such can include services performed from a remote location provided the other requirements of the PE definition are met (e.g., duration test).[11]

354. At the origin of this position lies the concern that digitalisation has facilitated the adoption of centralised sales and distribution models, where online services can be performed remotely without any material presence in the markets being served. This broad interpretation, sometimes referred to as the "virtual service PE", has been officially endorsed in Saudi Arabia,[12] as well as embraced by some case law decisions in some jurisdictions such as India.[13] The impact of this measure could potentially go far beyond online activities, and include any remote services supplied to a market (e.g., consultancy services, call centres). However, in the absence of any amendments to the tax treaty provisions themselves, these measures run the risk of being challenged by taxpayers before Courts.[14] So far, no information has been made available on the efficiency of these measures in terms of impact on taxpayer behaviour and/or tax revenue.

4.4. The use of withholding taxes

355. For items of passive income such as dividends, interest, and royalties, domestic laws and double tax treaties commonly use exceptions to the PE threshold to tax a non-resident enterprise that are based on alternative source rules (e.g., residence of the payer, place where the asset or service is used, place of performance etc.). Some of these exceptions are currently reflected in Articles 10 (Dividends), 11 (Interest) and 12 (Royalties) of the OECD Model Tax Convention. They create a specific distributive rule allowing the source state to impose a withholding tax on a gross basis with the residual right to tax belonging to the state of residence of the enterprise.

356. Recent developments across the world tend to show an increasing use of such exceptions in domestic law and double tax treaties for specific categories of digital products and services. The objective is generally to assert taxing rights for the source jurisdiction even when the non-resident enterprise has no physical presence in that jurisdiction. Further, the process of digitalisation has led to a greater blurring in the distinctions between business profits, royalties and technical services in some cases (e.g., cloud computing). This has increased the potential significance of these exceptions to the traditional PE threshold, and has exacerbated the risk of characterisation issues. For example, questions arise regarding whether infrastructure-as-a-service (IaaS) transactions should be treated as services (and hence payments characterised as business profits for treaty purposes), as rentals of space on the cloud service provider's servers by others (and hence be characterised as royalties for the purposes of treaties that include in the definition of royalties payments for rentals of commercial, industrial, or scientific equipment), or as the provision of technical services. The same characterisation issues arise regarding payments for software-as-a-service (SaaS) or platform-as-a-service (PaaS) transactions.[15]

357. Relevant measures in this area identified by the TFDE include, *inter alia*:

- Broadening of the withholding tax for royalties: Some countries have expanded their domestic definition of royalties subject to withholding on a gross basis by incorporating into that category items of income traditionally classified as

business profits in double tax treaties.[16] Such expansion includes, for instance, payments for the use or right to use software,[17] and payments for "visual images or sounds" transmitted through information and communication technology.[18] These definitions generally bring certain SaaS type of transactions within the scope of the withholding tax. Some corresponding changes have also been introduced in recently negotiated double tax treaties.[19] Separately, instead of just broadening the definition of royalties, the United Kingdom recently proposed legislation that would broaden the source definition in certain limited circumstances to enable the taxation of foreign-to-foreign related-party payments connected to local sales. The proposal is targeted at intra-group arrangements that achieve low effective tax rates through holding intellectual property in low or no tax jurisdictions and, if implemented, is expected to impact predominantly on more digitalised businesses.[20]

- Adoption of the withholding tax on fees for technical services: An increasing number of countries create an exception to the PE threshold for certain service fees in their domestic law and/or double tax treaties, allowing a withholding tax on a gross basis in the source country when the payer is resident in that country.[21] The OECD MTC does not contain this exception. It was recently added to the UN MTC as part of its 2017 update[22] in response to the fact that substantial services are now supplied without any physical presence in the source state.[23] The scope of this exception is typically limited to fees for technical services, generally defined as payments in consideration for the services of managerial, technical (i.e., requiring expertise in a technology), or of a consultancy nature. While this definition is not specifically targeted at digital products and services, it generally includes a broad range of cloud computing services (e.g. IaaS, SaaS etc.).[24]
- Introduction of new withholding taxes on other specific categories of income, such as income from online advertising[25].

358. Importantly, most of these measures were adopted or announced for domestic law purposes, and have not yet been translated into corresponding amendments to all (or a meaningful number of) double tax treaties. In practice, this entails that these measures will often be limited by the application of double tax treaties. Where applicable, such measures are usually easy to apply in business-to-business transactions, with relatively limited administrative and compliance costs for both taxpayers and the tax authorities. Collection issues arise, however, for business-to-consumer transactions, as private consumers have little incentive to declare and pay the tax due, and little experience performing tax withholding.

4.5. The use of turnover taxes

359. Recent developments indicate that a meaningful number of countries have taken actions outside the framework of income taxes to assert taxing rights over non-resident enterprises, such as foreign-based suppliers of digital products and services. These measures typically include sectoral turnover taxes targeted at (or including) revenue from online advertising services, such as India's Equalisation Levy (Box 4.3),[26] Italy's levy on digital transactions (Box 4.4), Hungary's advertisement tax (Box 4.5),[27] and France's tax on online and physical distribution of audio-visual content (Box 4.6).[28]

360. These measures are generally combined with broad nexus rules focused on the destination of the supplies, and generally apply both to resident and non-resident enterprises irrespective of their location (e.g., level of physical presence in the taxing

jurisdiction) and/or status.[29] For instance, France's turnover tax delineates the taxable transactions primarily on the basis of their final destination, such as the location of the "public audience" (i.e., viewers) for the online supply of digital content. Similarly, the scope of the advertisement tax in Hungary is ultimately dependent on the location of the targeted public. For online activities, this location is deemed to be in Hungary when the advertisement is displayed predominantly in the Hungarian language. Also, under both tax regimes a tax liability may arise in situations where the payment is made for the display of advertisements to in-country internet users (e.g., online multi-sided platforms), irrespective of the location or residence of the payer and of the supplier. This covers the situation where for example a subsidiary A of a multinational group (resident in country A) buys online advertisement services from the subsidiary of an advertising group (resident in country B) and the online advertisement is targeted to customers in country C (the taxing jurisdiction). In contrast, the scope of the levies adopted by India and Italy are dependent on the location of the payer – i.e., typically a business resident in the taxing jurisdiction – and as such would not cover such situations.

361. In addition, these measures share another important common policy objective. They all seek to improve neutrality by restoring a level playing field between foreign suppliers of certain digital goods and services and similar domestic suppliers, as well as between suppliers of certain digital goods and services and more conventional, brick and mortar suppliers of competing goods and services. Hungary's tax applies to a broad list of advertising services, irrespective of the medium used for their broadcast to the public (e.g., TV and radio, printed newspapers, outdoor billboards, internet websites). Similarly, the turnover tax in France applies to all forms of distribution of audio-visual content, irrespective of their medium (e.g., physical videotape, online streaming) or revenue model (e.g., advertising-based revenue, subscription-based revenue, purchases or rentals). India's Equalisation Levy pursues the same objective, but targets a rather narrow class of digital transactions: online business-to-business advertising services. By design, such narrow scope may fail to achieve neutrality in its treatment of the taxation of digital services more generally (i.e., advertising versus non-advertising digital services, and business-to-business versus business-to-consumer digital services), and lead in some cases to unequal treatment between economically equivalent digital transactions. Italy's levy on digital transactions may be affected by similar limitations depending on the list of transactions that will be effectively covered. Finally, it should be noted that for all these measures, depending on market conditions, there is a risk that a share of the tax burden will be passed on from the supplier to the customer.

362. These measures generally face a number of administrative and compliance issues, particularly in relation to the challenge of trying to collect tax from foreign-based entities that are not located (i.e., physically present) in the jurisdiction of taxation. To address this challenge, these regimes generally introduce a joint liability for the local paying customer (Box 4.3, Box 4.4 and Box 4.5), or create specific reporting requirements on locally-based intermediaries (Box 4.6). To date, according to the limited information currently available, the levels of revenue collected from these measures appears to have been quite modest.[30]

Box 4.3. India's Equalisation Levy

India's Equalisation Levy (EL) is a separate tax that was introduced in 2016, which draws upon some features of the options described in the 2015 BEPS Action 1 Report (notably the "Equalisation Levy"). It effectively works as a 6% charge deducted from the gross amount of consideration paid for the provision of online advertisement services by non-residents. The tax base is the value of the covered transactions, not the income generated by them. It is therefore a gross-based tax or equivalently a turnover tax limited to revenue from online advertisement services supplied by non-residents.

It applies only under the following conditions:

- First, the payment must be made by a business located in India (hereafter, the "payer") to a non-resident enterprise (hereafter, the "payee"). This implies that the EL is only charged on cross-border business-to-business transactions (B2B).
- Second, the payment must be made in consideration for certain listed transactions, such as online advertising and any provision of digital advertisement space. Noteworthy, this list of transactions covered can be expanded by notification from the central government.
- Third, an exemption is available if the total consideration paid by the payer over a year does not exceed a revenue threshold equal to INR 100 000 (equivalent to about USD 1 500 or EUR 1 400).
- Finally, an exemption is also available if the specified services are effectively connected to a permanent establishment (PE) of the payee in India. No payment can be subject to both the EL and India's corporate income tax. This exemption does not, however, necessarily apply to foreign MNEs that adopt a local sales model – i.e., recognition of the advertising revenue in a local reseller (subsidiary or PE) subject to corporate income tax in India. This is because the EL is not restricted to sales of online advertising services to ultimate purchasers, and as such applies to both cross-border intra-enterprise dealings (i.e., between a PE and its head office) and intra-group transactions.

The legal liability of the EL is imposed on the non-resident payee. Nonetheless, the EL is collected by the payer (i.e., the local business in India), who is responsible for remitting the tax to the central government in the month that follows the payment. In contrast, no compliance requirements apply to the non-resident payee.

The EL is not classified by the Indian legislation as a tax on income, but rather as a transaction-based tax that applies to the "amount of consideration" received. As a result, it is unlikely to give rise to double tax relief in another jurisdiction under domestic law or a double tax treaty, and may generate situations of double taxation for foreign enterprises already liable to corporate taxes in their country of residence.

For the period covering June 2016 to March 2017, the Indian government reported that revenue from the EL amounted to approx. 3.4 billion Indian Rupees, which corresponds to around EUR 52 million and USD 47 million.

Box 4.4. Italy's Levy on Digital Transactions

The Levy on Digital Transactions ("LDT") is a transaction-based tax proposed by the Parliament and adopted in 2017. It applies to both resident and non-resident enterprises and is expected to become effective from 1 January 2019.[1] The stated objective is to restore a level playing field between suppliers of digital services and other suppliers of more "conventional" services, by taxing digital transactions whose value, generated by users and user-generated content, is currently not captured (or at least is only partially captured) by existing corporate tax rules. Some parallels can be drawn with the "Equalisation Levy" described in the BEPS Action 1 Report.

The LDT is imposed at a rate of 3% on the "value" of the taxable transactions, i.e., the amount of consideration paid (net of VAT) in exchange for the provision of digital services supplied electronically. The taxable transactions are defined as services delivered over the Internet or an electronic network and the nature of which means that their supply is essentially automated, involves minimal human intervention, and is impossible to complete without information technology.[2] A specific list of taxable transactions will be provided by a forthcoming decree expected to be issued by 30 April 2018.

Focused on the destination of the supplies, the LDT applies only to transactions concluded with customers resident in Italy (including permanent establishments in Italy of non-resident enterprises), other than certain defined small businesses[3] and private individuals, i.e., only business-to-business transactions (B2B).[4] In contrast, the place where the transaction is concluded, together with the residence and/or location of the supplier, is irrelevant.

The tax liability rests formally on the supplier of the taxable transactions, irrespective of its location and/or residency.[5] This includes typically domestic and foreign-based online platforms supplying B2B services to Italian customers. An exemption is, however, available for suppliers that contract no more than 3,000 taxable transactions in a calendar year (i.e., minimum activity threshold). In contrast, the responsibility to collect the tax falls on the Italian customer. The latter withholds the tax when the payment for the service is made and remits it to the tax authorities on the 16th day of the month that follows the payment, unless the supplier declares on the invoice (or other similar documents) that the threshold of 3 000 transactions has not been exceeded.

Importantly, the LDT is not creditable against any other Italian taxes due by the taxpayer (e.g. CIT, local taxes, wage taxes),[6] and does not cover non-monetary transactions (e.g., online platforms with advertising-based revenue models), B2C transactions, and supplies of goods. Domestic-based suppliers will, however, be able to deduct the tax from their domestic corporate tax base, while deductibility for foreign suppliers will depend upon corporate tax rules of other countries. Designed as a transaction-based tax, it should apply to domestic and foreign-based suppliers of online services irrespective of their level of physical presence in Italy and should fall outside the scope of double tax treaties. The estimated revenue of the LDT is EUR 190 million per year (circa USD 235 per year).[7]

1. Paragraphs 1011-1019 of the Article 1 of the Law 205/2017.

2. Article 1, paragraph 1012 of Law No. 205 of 27 December 2017. This definition resembles the definition of electronically supplied services for VAT purposes contained in article 7 of Council Implementing Regulation (EU) No. 282 of 2011.
3. An exclusion is provided for transactions involving an enterprise that qualifies for or has opted for the special tax regime available to certain small enterprises (Article 1, paragraphs 54-89 of Law No. 190 of 2014).
4. Article 1, paragraph 1011 of Law No. 205 of 27 December 2017.
5. Article 1, paragraph 1013 of Law No. 205 of 27 December 2017.
6. The legislation proposed by the Senate initially included a provision allowing for the deduction of the levy against the Italian corporate income tax and social security contributions. This was removed from the final legislation approved by the Parliament.
7. Official Government revenue estimates accompanying the Draft Budget Law for 2018.

Box 4.5. Hungary's advertisement tax

The tax applies to the net sales revenue (exclusive of VAT) of both resident and non-resident enterprises arising from the sale of advertisement time or space in Hungary. The taxable transactions include a broad list of advertising services defined by reference to the various media used for their broadcast to the public (e.g., TV and radio, printed newspapers, outdoor billboards, vehicles, real estate, and internet websites).

In terms of establishing nexus with Hungary, the legislation is focused on the destination of the advertisement and the location of the targeted public. Different proxies apply depending on the type of advertisement concerned. Looking at the particular case of online advertising, for example, nexus is established when the advertisement is displayed predominantly in the Hungarian language, irrespective of the location of the publisher and of the advertiser.

The tax liability rests primarily on the supplier of the taxable transactions, who must register with the tax authorities and fulfil all the compliance requirements. The supplier is generally the publisher of the advertisement – e.g., media content and service providers, publishers of press products and web publishers – irrespective of its location, residence or status.

Also, to improve the collection and enforcement of the tax, including among foreign-based publishers with no physical presence in Hungary, a secondary tax obligation can also arise at the level of the customer (i.e., usually the local advertiser). The latter is liable to the advertisement tax if they cannot provide to the tax authorities a formal declaration from the primary taxpayer (i.e., the publisher) in which the latter recognises its tax liability and commits to comply. This is not a reverse-charge mechanism, as the secondary tax obligation cannot settle or extinguish the primary tax obligation.

Initially the tax incorporated a very progressive tariff. However, following the decision by the European Union (EU) Commission to investigate the tax for its compatibility with the EU State aid rules, the measure was amended in July 2015 to replace the progressive tariff by a 0% rate up to HUF 100 million (circa EUR 320 000) of turnover and a 5.3% rate for the excess. After the EU Commission decision regarding the incompatibility of the first version of the tax with EU State aid rules, Hungary raised, on a temporary basis, the marginal rate of the tax from 5.3% to 7.5% to finance the costs associated with the recovery of the unlawful state aid. This rate applies only to the primary tax obligation. The secondary tax obligation, where applicable, is determined by applying a 5% rate to the monthly actual costs (excluding VAT) generated by the taxable transactions in excess of HUF 2.5 million (circa EUR 8 000).

To date, the local tax authorities have reported relatively low levels of compliance of non-resident enterprises with the measure and, consequently, no meaningful tax revenue.

Box 4.6. France's tax on online and physical distribution of audio visual content

To finance its domestic movie and audio-visual production, France introduced in 2003 an indirect tax targeted at sales and rentals of "videograms" (i.e., a physical object containing audio-visual content, such as a videotape or DVD). This tax may apply to both resident and non-resident enterprises. In 2004, with the rise of electronic commerce, the scope of the tax was extended to online video-on-demand services where movies and audio-visual content are accessed through electronic communications in exchange for a payment. In 2016, to accommodate the growing importance of advertising-based revenue models, the tax was further extended to online video-on-demand services provided for free but monetised through the advertisements displayed to the viewers. On that occasion, the designation of the tax was also changed to "Tax on the online and physical distribution of audio-visual content" (also regularly referred to as the "YouTube tax" in the media).

The tax is imposed at a flat rate of 2%, increased to 10% for movies and audio-visual content containing "pornography" or "incitement to violence". It effectively works as a retail tax on the value of a number of defined transactions concluded with final customers. The taxable transactions include sales and rentals of videograms, together with online video-on-demand services where access to movies and audio-visual content is made available through electronic communications. The objective is to capture all types of distribution models, irrespective of their medium (e.g., videogram, online platforms etc.).

In terms of establishing nexus with France, the tax is generally focused on the destination of the related supply. In the case of the sale and rental of videograms, the tax liability arises if the place of performance of the sale or service is in France. In the case of online video-on-demand services, the tax liability arises if the "audience" (i.e., a person viewing the content not liable to VAT) is located in France (i.e., an Internet user established, domiciled or usually resident).

In contrast, the location, residence or status of the supplier of the covered transaction is irrelevant. Nevertheless, the supplier constitutes the taxpayer and has the responsibility to report and remit the tax. Typical taxpayers include domestic or foreign-based suppliers renting or selling videos in France, or providing online video-on-demand services to users located in France. For example, the legislation makes an explicit reference to online platforms – whose activity is to host, transmit and index digital content for a large audience – as a potential taxpayer irrespective of their tax residence or physical location. Also, as a way to encourage foreign taxpayers with no physical presence in France to comply with these rules, specific reporting requirements apply to advertising intermediaries based in France regarding payments received from advertisers or sponsors.

The tax base is composed of two elements:

- The consideration paid (exclusive of VAT) for the purchase, rental or access to online audio-visual content; and/or
- The consideration paid (including through an advertising intermediary) for the display of advertisements and/or sponsorships linked to a particular

online audio-visual content. Before such consideration is subject to the tax, the taxpayer is allowed a deduction of 4% allowance (increased to 66% where the audio-visual content is created by private users for the purpose of sharing and exchanging among members of a community sharing interests), and only the remaining amount in excess of EUR 100 000 is subject to the tax (de minimis rule).

The second component of the tax base was introduced in 2016 to capture multi-sided business models that monetise data collected from a French audience through advertising opportunities, and ensure a level playing field between economically equivalent transactions irrespective of their revenue model (e.g., advertising-based revenues, subscription-based revenues, purchases or rentals).

Given the recent entry into force of this measure, no information is available yet on the amount of tax revenue collected.

4.6. Specific regimes targeting large MNEs

363. Another category of relevant measures observed across the globe includes more general legislative responses that either create new administrative regimes aimed at restoring a balance of power between the tax authorities and large MNEs, or introduce specific anti-abuse rules to address excessive use of base eroding payments by large MNEs. Rapid digitalisation, its impact on all business models and the ever-more complex tax planning structures implemented by large MNEs[31] are among the main challenges faced by tax authorities worldwide. In this context, a number of countries have introduced specific regimes targeted at large MNEs, such as the Diverted Profits Tax (hereafter, collectively referred to as the "DPT") in the United Kingdom and Australia[32] (Box 4.7 and Box 4.9),[33] the enhanced procedure for cooperation and collaboration for PE in Italy[34], and the base erosion and anti-abuse tax (BEAT) in the United States (Box 4.10). While these new regimes have not been exclusively targeted at highly digitalised businesses, some of the situations that they are targeted towards are relevant for some digitalised businesses.

364. Although the DPT has been designed in some countries as a separate tax, it effectively works as a deterrent complementary to the existing legislative body of anti-abuse rules for income tax purposes. Relatedly, the DPT measures introduced in some countries are tied to the existing international standards on nexus and profit attribution (e.g., dependent agent PE, arm's length principle and transfer pricing rules), and do not expand the coverage of the income tax base. One of the principal objectives of these regimes is to increase the information available to the tax authorities in situations presenting significant tax risks – typically trade structures involving remote sales to avoid the recognition of a PE, or intra-group base eroding payments[35] – and require large MNEs to be more transparent about their global value chain (including in relation to transactions and activities conducted by overseas related entities). One of the key aspects of these measures is their unique administrative regime: a 12-month "review period" during which a dialogue takes place between the tax authorities and the taxpayer, and the latter is encouraged to consider the appropriateness of its tax arrangements and, where necessary, restructure its operations to better reflect the operational realities.[36] This regime usually improves the level of compliance of large MNEs that have an incentive to engage in

aggressive international tax planning strategies, and restores a level playing field with more conventional businesses or SMEs that operate mostly at the domestic level.

365. To date, countries that have implemented a DPT measure have reported positive results in terms of revenue, notably additional corporate tax raised as a result of income tax adjustments and behavioural changes (Box 4.7 and Box 4.8). At the same time, like other anti-abuse rules, the DPT is technically a relatively more complex regime and highly fact-dependent. To reduce uncertainty and ensure the efficient application of the measure, its implementation has required significant investments in terms of resources from the tax authorities (including skilled and experienced personnel). For example, the issuance of a DPT liability is typically subject to a strict governance process, which requires several levels of oversight, senior executive sign-off and additional safeguards (e.g., endorsement from an independent panel etc.). Efficient safeguards are generally required to ensure that the measure is applied in a manner proportionate to the risks involved, and it is likely that the effectiveness of these regimes is to be enhanced in those jurisdictions where there is a history of cooperative relationships between the tax authorities and the taxpayer. Finally, compliance costs for taxpayers associated with the measure can be important, for instance in terms of economic costs associated with restructurings (e.g., conversions to reseller models).

366. Like the DPT, the BEAT adopted in the United States (US) is not targeted specifically towards highly digitalised business models, but applies more generally to MNEs with large operations in the United States. It works as a minimum corporate income tax. This result is achieved through a formula which involves the disallowance of deductions for a range of outbound payments – mainly interest, royalties, rents and certain services. While implementation is still in progress, the projected revenue generated by the BEAT over the next 10 years is estimated at approximately USD 149.6 billion (circa EUR 119.7 billion).

Box 4.7. The United Kingdom's Diverted Profits Tax

The United Kingdom's Diverted Profits Tax (DPT) is a distinct tax, levied at a rate of 25% (i.e., higher than the standard corporate tax rate of 19% in 2017), limited in scope to profits that are considered to be artificially diverted from the United Kingdom.[1] It is combined with a very specific administrative regime, based on a 12-month review period during which a dialogue needs to take place between the taxpayer and the tax authorities to determine the final tax liability. Profits diverted from the United Kingdom are identified according to two basic rules: an avoided permanent establishment (PE) rule and an alternative provision rule.[2] These rules potentially cover a broad range of BEPS arrangements, and are not confined to structures used by highly digitalised businesses.

The avoided PE rule

This aspect of the DPT is focused on non-resident companies that have entered into artificial arrangements to avoid a UK permanent establishment. It is combined with a high sales threshold to limit its impact (and compliance regime) to large MNEs.[3] It draws on some elements of the traditional PE definition for income tax purposes, and shares some common policy objectives with the recent changes proposed to the PE definition under BEPS Action 7.

It is designed to target a specific type of trade structure: the use of an overseas "billing company" supported by personnel based locally (typically a local subsidiary or branch),[4] with the aim of remotely supplying goods and services to final customers directly from the overseas "billing company" rather than from the local subsidiary or branch carrying on the substantive sales activity. Such arrangements are generally characterised by local employees engaged in the sale of products and services to local customers but with the contracts signed overseas. The purpose of the structure is to supply goods and services to in-country customers with the help of locally based activities without creating a dependent agent PE in that country. They are, in practice, often available to businesses providing digital goods and services. The structure falls within the scope of the DPT if it is reasonable to assume that "*one of the main purposes*" of the arrangement in connection to the inbound supplies - i.e., the activity of the person in the United Kingdom, or of the non-resident company, or both - is to avoid a PE in the United Kingdom and to pay local income tax.

If applicable, the measure enables the taxation of the foreign entity that carries on the supplies as if it was carrying on its trade through a PE in the United Kingdom. The tax base must be determined in accordance with standard income tax rules, including transfer pricing, "*on the basis of the best estimate that can reasonably be made*" by the tax authorities at the time of issuance of the charging notice, but subject to review and amendment during a 12 month "review period".[5] In addition, the alternative provision rule of the DPT may apply to deny totally or partially the deduction of a base eroding payment incurred by the foreign entity,[6] together with a 25% charge in lieu of withholding tax on royalty payments made by the non-resident taxpayer in connection with the "avoided PE", subject to any limitations applicable under double tax treaties.

The alternative provision for intra-group transactions

This aspect of the DPT draws on some elements of the transfer pricing rules regarding re-characterisation. It is focused on intra-group transactions (typically involving licensing or

transfer of IP, leasing of equipment, and management services) that involve UK resident companies or non-UK resident companies with a permanent establishment or an avoided permanent establishment.[7] These arrangements are in practice used by MNE groups across all sectors of the economy.[8] The alternative provision rule may apply to both excessive deductions (e.g., base eroding payments) and understated income (e.g., transfer of assets for an undervalued price, charging of unduly low service fees), in situations where the two following requirements are met:

- The "effective tax mismatch outcome" and "80% payment test": the excessive deduction or income diverted from the United Kingdom is subject to a foreign tax liability lower than 80% of the reduction in UK tax resulting from the expense or reduction in income (i.e., the tax benefit);[9] and
- The insufficient economic substance test: it is reasonable to assume that the arrangement is designed to achieve the tax benefit and the tax benefit from the arrangement exceeds other financial benefits.[10]

To assess the tax base, the arrangement under review may be entirely disregarded if it is reasonable to assume that the transaction would not have been concluded in the absence of the tax benefit.[11] When assessing an initial DPT liability (the charging notice), the relevant payment may also be subject to a 30% disallowance if it is "*reasonable to conclude*" that the expense was inflated in light of the arm's length principle. Any final DPT liability charged at the end of the review period, however, will be based on the arm's length principle.

Common features and objectives

The design features described above indicate that the primary objective of the DPT is not to generate a distinct tax liability, but to act as a deterrent and increase compliance with income tax rules. This is corroborated by the fact that in many cases the DPT liability, calculated at the higher 25% rate, can be substituted by a transfer pricing re-assessment for corporate tax purposes during the 12-month review period. The related tax liability will then be calculated at the 19% standard corporate income tax rate.[12] This creates a strong incentive for large MNEs to avoid coming within the scope of the DPT and pay additional income tax, usually by changing their trade structures (e.g., adopting a local reseller model, such as a local buy-sell subsidiary) and/or self-adjusting their transfer pricing arrangements to fully reflect profits arising from UK economic activity.

Further examination of the measure indicates that the DPT is also, if not primarily, a unique administrative regime designed to incentivise large MNEs to be more transparent and cooperative with the tax authorities. The assessment process, which includes a 12 month review period, is characterised by:

- (i) the upfront payment of the DPT liability with no possibility for suspension or deferral (so-called "*pay first, argue later*" approach);[13]
- (ii) the flexibility of the tax authorities in applying the DPT provisions up until the end of the review period ;[14]
- (ii) the onus is on the taxpayer who is expected to challenge the "*best estimate*" of the tax authorities by providing timely and relevant information during the review period; and
- (iii) the interaction with transfer pricing and the possibility in many situations to make transfer pricing adjustments at any time during the review period and

thereby avoid facing a DPT liability.[15]

Taken together, these enhanced powers of the tax authorities are expected to encourage large MNEs to disclose relevant information in a timely manner on some high risk transactions for transfer pricing purposes. This includes, in particular, information on transactions and activities conducted by overseas related entities that are part of the same value chain as the UK entities. In this respect, the DPT facilitates an analysis of the global value chain of large MNEs on a consolidated basis for transfer pricing purposes, and shares common policy objectives with Actions 12 and 13 of the BEPS project.

Further considerations

The local tax authorities reported that a great majority of MNEs potentially within the scope of the DPT have already taken or are expected to take the necessary steps to avoid the DPT liability (and the associated uncertainty), including by changing their trade structure or disclosing relevant information in a timely manner.[16] These improvements in terms of tax transparency are likely to significantly accelerate the resolution of transfer pricing disputes, to increase compliance with income tax rules, and ultimately to increase revenue collection.

To date, it has been reported that the revenue collected as a result of the DPT in the United Kingdom has totalled GBP 31 million (circa EUR 38 million and USD 46 million) in 2015/16 and GBP 281 million (circa EUR 330 million and USD 376 million) in 2016/17, including additional amounts of corporation tax raised as a result of behavioural changes.[17] In the latter year, of the GBP281 million (circa EUR 330 million and USD 376 million), the amount raised from issuing DPT charging notices was GBP 138 million (circa EUR 162 million and USD 185 million).[18]

1. Designed as a separate tax, the DPT is intended to fall outside the scope of double tax treaties, and as such is unlikely to give rise to double tax relief in another jurisdiction. However, the DPT provides its own relief mechanism for double taxation, by granting a credit for any UK or foreign income tax paid on the same profit (including a CFC charge) within a set time limit.
2. The alternative provisions rule enables to consider a reasonable alternative postulate to the arrangement set-up by the taxpayer, in accordance with the income tax rules and the arm's length principle. It shares common features with "non-recognition" or "re-characterisation" rules, to the extent that it enables in some cases to undo a set of transactions set-up by the taxpayer and to reconstruct another arrangement that is more consistent with the economic substance of the operations.
3. A personal exemption is available for resident and non-resident companies that do not meet the domestic SME definition. In addition, regarding the PE avoidance rule, the UK-related annual sales must exceed £10 million (circa. EUR 11 million), or UK-related annual expenses must exceed £1 million (circa EUR 1.1million).
4. A person (i.e., a UK resident or the UK PE of a non-resident) carrying out activity in the United Kingdom "in connection" with the Supplies is required for the rule to apply (i.e., a local business activity connecting factor). No participation condition is required, but an exemption is available if the person in the United Kingdom is an agent of independent status.
5. In calculating the profits attributable to a foreign entity as a result of an avoided PE, it would be necessary to determine and deduct an arm's length reward to the UK entity (or PE) for the services it provides to the foreign entity. The legislation does not clarify whether any profit would remain attributable to the avoided PE once an arm's length reward has been paid to the UK entity (or PE).
6. The transactions between the foreign entity and related parties may be relevant to the calculation of the profits of the avoided PE of the foreign entity. Specifically, where payments made by the foreign entity to another related entity come within the scope of the alternative provision rule (by failing the sufficient economic substance test), the profits of the avoided PE are determined as if the foreign entity had not entered into the profit stripping transaction.

7. This aspect of the DPT applies only to intra-group transactions or series of transactions (the so-called "material provision") concluded by a UK resident (or UK PE) with a related person (non-resident or UK resident). An exemption is provided for loan relationships (i.e., interest payments;
8. As a result the impact of the DPT is not limited to highly digitalised businesses, but covers potentially all traditional industries as well (BBC NEWS, 2017[1]).
9. The relevant measure is based on a computation of the foreign income tax liability in relation to the arrangement by the taxpayer and/or any other involved related entity, not the statutory tax rate. Some "qualifying" loss reliefs and deductions at the level of the related person are disregarded for this calculation.
10. The "other financial benefits" from the arrangement that can be measured and balanced against the tax benefits are intended to be broad in scope (e.g., economies of scale and scope, group synergies, non-tax location specific advantages such as legal framework, local know-how, lower labour cost). For example, the guidance provided by the tax authorities states "*It is not the amount of the transaction, or the value of whatever is bought or sold through it, that is being tested with reference to the amount of the tax reduction. The question is rather what non-tax economic value the particular transaction generates and whether that is greater than the tax reduction. In that sense it is a test of the commerciality of the transaction, the value it adds taking into account both its direct and indirect effects, and whether it is entered into mainly for tax or other, commercial reasons*." (DPT 1191 (HM Revenue & Customs, 2015[2])).
11. This is an additional requirement posed by the non-recognition rule which is based on a counterfactual analysis of options realistically available to the taxpayer.
12. Section 83 of the Finance Act states that a DPT liability can be displaced by a "*full transfer pricing adjustment*" if "*all of the company's diverted profits for the accounting period are taken into account in an assessment to corporation tax included, before the end of the review period, in the company's company tax return for the accounting period*".
13. The DPT liability must be paid "upfront" within 30 days following the issuance of the charging notice, with no possibility for appeal, suspension or deferral during the review period (i.e., "pay first, argue later" approach). An appeal can be submitted by the taxpayer within 30 days after the notification of the final charge.
14. The provisional tax basis giving rise to a DPT charging notice will be calculated according to the "*best estimate that can reasonably be made*" by the tax authorities in accordance with the arm's length principle, and the taxpayer has no possibility to challenge that assessment before a Court up until the end of the review period.
15. During the review period, based on new information received from the taxpayer, the tax authorities can issue a "supplementary" or "amending" DPT charging notice, as well as make an amended income tax assessment. Also the final DPT charge may change upwards or downwards, including by reducing the charge to zero.
16. The UK tax authorities reported that they have received 48 and 145 DPT notifications in 2015/16 and 2016/17, respectively (HM Revenue and Customs, 2017[3]). The obligation to notify however does not necessarily translate into a DPT charge or a change of tax behaviour. During 2015/16, the UK tax authorities did not issue any DPT preliminary or charging notices, while in 2016/17 they issued 16 DPT preliminary notices and 14 DPT charging notices.
17. These behavioural changes can be the result of an inquiry into the taxpayer's affairs on the basis of the DPT (e.g., self-adjustments during the DPT review period), or the result of spontaneous changes by the taxpayer. The additional revenue from the latter can only be estimated by the relevant tax authorities.
18. The full amounts of tax revenues can be found in the HMRC Annual Report and Accounts 2016/17 (HM Revenue and Customs, 2017[4]). Information on the methodology used to estimate the additional corporate tax revenue can be found in another report (HM Revenue and Customs, 2017[5])

Box 4.8. Australia's Multinational Anti-Avoidance Law

Australia's Multinational Anti-Avoidance Law (MAAL) is an anti-abuse rule for corporate tax purposes adopted in the context of a significant debate in Australia on the level of taxes paid by MNEs.[1] It replicates aspects of the United Kingdom's DPT related to permanent establishment (PE) avoidance, and shares common policy objectives with the recent changes proposed to the PE definition under BEPS Action 7.

The measure works as a PE anti-avoidance rule limited in scope to non-resident enterprises belonging to large MNEs.[2] It is designed to target a very specific type of trade structure: the use of an overseas company (so-called "billing company"), supported by locally based personnel (typically a local subsidiary),[3] with the aim of remotely supplying goods and services to final customers located in Australia. These trade structures are characterised by local employees effectively engaged in the sale of products and services to local customers, where the contracts are signed overseas. The purpose of the structure is to supply goods and services to Australian customers while limiting the tax paid by the MNE group in Australia, such as avoiding the creation of a dependent agent PE in that country. These structures are, in practice, often available to businesses providing digital goods and services. The structures fall within the scope of the MAAL if some or all of the income generated by the inbound supplies is not attributable to an Australian PE, and it is reasonable to conclude that the "principal purpose" of the arrangement is to obtain the related tax benefit (or a tax benefit together with a reduction in foreign taxes).[4]

If applicable, the measure results in the cancellation of the tax benefit obtained by the MNE through a re-characterisation of the arrangement to recognise what would have reasonably been expected to occur had the current scheme not been entered into. Typically, this will result in the income being allocated to a deemed PE of the foreign entity in accordance with the traditional PE definition (e.g., Article 5 of the OECD MTC). Where a PE is deemed, the net profits attributable to the deemed PE are determined in accordance with the arm's length principle.[5] In addition, a 30% gross-based withholding tax may apply on any royalty and/or a 10% gross-based withholding tax may apply on any interest considered as outgoing from the deemed PE,[6] together with an additional penalty of up to 100% of the tax avoided (or 120% if aggravating factors are present).[7]

Coupled with the penalty, the measure is targeted at deterring certain taxpayer behaviours, such as the use of trade structures involving remote sales of digital products and services. To date no reassessment has yet been issued on the basis of the MAAL, but local tax authorities have reported that approximately 38 taxpayers have restructured or are restructuring their trade arrangements in response to this measure, .e.g., by moving to a local sales structure (buy-sell distributors).[8]

To date, based on aggregate income available from MNEs that have reorganised their trade structures in Australia in response to the MAAL, the local tax authorities have estimated that an additional AUD 100 million (equivalent to around EUR 72 million and USD 77 million) in corporate tax revenue will be collected each year, corresponding to the reallocation of about AUD 7 billion (equivalent to around EUR 5 billion and USD 5.4 billion) in tax base to Australia per year.

1. The MAAL is laid down in Section 177 DA of the Income Tax Assessment Act (1936).

2. The personal scope of the measure is limited to non-resident enterprises that are members of a MNE that is globally significant (i.e., AUD 1 billion or more in global or group/consolidated annual income, circa EUR 720 million).
3. A local "associated" or "commercially dependent" entity (usually a subsidiary or PE) that conducts activities "directly in connection" with the supplies is required for the rule to apply (i.e., a local business activity connecting factor).
4. This purpose test is intended to be a lower threshold than the existing "sole or dominant purpose" test that applies under the Australian GAAR. Noteworthy, one of the relevant factors in determining the purpose of the arrangement is whether the inbound supplies are subject or not to a meaningful corporate tax liability in another jurisdiction.
5. The tax base is determined under standard corporate tax rules, with appropriate deductions on the sales income that is attributable to the PE. Also, in calculating the profits attributable to the avoided PE it would be necessary to determine and deduct an arm's length reward to the Australian entity (or PE) for the services provided to the foreign entity.
6. Subject to lower rates available under an applicable tax treaty or domestic exemption.
7. The tax authorities have the power to reduce or waive the penalty.
8. The term local "buy-sell distributor" refers to a reseller which takes title to the goods or services being sold to local customers. This creates a local point of revenue recognition, as the sales revenue generated by transactions with local customers will be reported in that entity's local financial statements and tax return. In addition, a "buy-sell distributor" typically bears the risks associated with buying, holding and selling the products.

Box 4.9. Australia's Diverted Profits Tax

Australia's Diverted Profits Tax (DPT) Act was adopted in April 2017 as a complement to existing anti-abuse rules for income tax purposes.[1] The measure may apply to both resident and non-resident enterprises, and works as an alternative provision rule[2] limited in scope to large MNEs[3] and intra-group cross-border transactions. These transactions typically involve licensing or transfer of intellectual property (IP), leasing of equipment, loans, and management services.[4] The alternative provision may apply to both excessive deductions (e.g., base eroding payments) and understated income (e.g., transfer of assets for an undervalued price, charging of unduly low service fees), provided that the arrangement was set-up for the "*principal purpose of, or for more than one principal purpose of*" securing this tax benefit.[5] The tax authorities' ability to make a determination of the principal purpose is not prevented by the lack of, or incomplete, information provided by the taxpayer. Similarly, the tax authorities are not required to actively seek further information to reach a conclusion on the purpose of the arrangement.

To mitigate the risks and uncertainties inherent in a purpose test, a number of safe harbours were introduced to improve the predictability of the application of the DPT for taxpayers. Specifically, an exemption is available for arrangements that meet one of the following requirements:

- The *de minimis* threshold: the total sum of the income of the local taxpayer, the diverted profit and any other Australian source income of the MNE group of which the local taxpayer is a part, does not exceed AUD 25 million (equivalent to around EUR 16 million and USD 19 million);
- The economic substance test: it is "reasonable to conclude" that the profit earned by each entity (including the local taxpayer) in connection with the arrangement is commensurate to their activities and contribution to the arrangement;[6] or

The sufficient foreign tax test: it is "reasonable to conclude" that foreign taxes paid on the income shifted abroad as a result of the arrangement constitute 80% or more of the reduced Australian tax of the relevant taxpayer. This is broadly equivalent to a foreign tax rate higher than 24% levied on base eroding payments.[7]

The tax base corresponds to the tax benefit of the arrangement, determined by the tax authorities relative to an arrangement that would have taken place if tax wasn't a motivating factor. This may for instance be based on a total or partial assessment of some base eroding payments on the basis of the arm's length principle (e.g., interest, royalties, and management fees). This tax base is subject to a punitive tax rate of 40% (instead of the 30% standard corporate tax rate), but the tax authorities have discretion to permit a substitution between a DPT liability and an amended increased corporate income tax liability, calculated at the lower standard rate. The measure is essentially designed to work as a deterrent and improve compliance with corporate tax rules. Large MNEs are encouraged to avoid the DPT by self-adjusting their income tax arrangements and paying the lower corporate tax rate. In this respect, the DPT shares common policy objectives with the revised transfer pricing guidelines under BEPS Actions 8-10.

Further examination of the measure indicates that the DPT is also, if not primarily, an administrative regime designed to incentivise large MNEs to be more transparent and cooperative with the tax authorities. The assessment process, which includes a 12 month

review period,[8] is characterised by:

(i) the upfront payment within 21 days of assessment of the DPT liability with no possibility for appeal, suspension or deferral up until the end of the review period which is by default 12 months but can be shortened on taxpayer request (so-called "pay first, argue later" approach),[9]

(ii) the flexibility of the tax authorities in the application of the income tax rules up until the end of the review period,[10]

(iii) the onus is on the taxpayer who is expected to challenge the estimation performed by the tax authorities by providing timely and relevant information during the review period, and

(iv) the linkages with income tax adjustments, which may be substituted at any time during the review period to a DPT liability.[11]

Taken together, these enhanced powers of the tax authorities are expected to encourage large MNEs to disclose relevant information in a timely manner on some high risk transactions for income tax purposes. This includes, in particular, information on transactions and activities conducted by overseas related entities involved in the same value chain as the Australian entities. In this respect, the DPT facilitates an analysis of the global value chain of large MNEs on a consolidated basis for income tax purposes, and shares common policy objectives with Actions 12 and 13 of the BEPS project.

The Australian Government expects the DPT to raise AUD 100 million in revenue a year in 2018-19 and 2019-20 (equivalent to around EUR 72 million and USD 77 million). This estimate includes revenue from the DPT and also additional corporate income tax revenue.

1. The DPT Act constitutes an expansion of Part IVA of the Income Tax Assessment Act 1936 laid down in Sections 177H to 177R.
2. The DPT operates usually by considering a reasonable alternative postulate to the arrangement set-up by the taxpayer, in accordance with the income tax rules and the arm's length principle. It shares common features with "non-recognition" or "re-characterisation" rules, to the extent that it enables in some cases to undo a set of transactions set-up by the taxpayer and to reconstruct another arrangement that is more consistent with the economic substance of the operations.
3. The personal scope of the DPT is limited to local taxpayers (i.e., resident enterprises or local PEs of non-resident enterprises) who are member of a MNE group which is "globally significant", i.e., AUD 1 billion or more in global or consolidated annual income (circa EUR 720 million and USD 770 million). The Explanatory Memorandum to the DPT Act estimated the number of taxpayers that could potentially fall within the scope of the measure at 1600. Among the companies that are in the scope, it further expects that only a small percentage would need to engage with the tax authorities to assess a DPT risk.
4. The DPT is designed to focus on certain arrangements – so-called "scheme", i.e., a transaction or series of transactions (or even any action or course of conduct) involving the local taxpayer and a related non-resident entity – that produces a tax outcome for the local taxpayer (and in some instances for the local taxpayer and another taxpayer) more favourable than an alternative tax outcome had the arrangement not been carried out – so-called "tax benefit".

5. This purpose test is clearly intended to be a lower threshold than the existing "*sole or dominant purpose*" test which applies under the Australian GAAR, with an implicit reference to the language of the Principal Purpose Test (PPT) recommended in the BEPS Action 6 Report to assess eligibility to treaty benefits. It applies to the purpose of the local taxpayer and/or any other related entity involved in the arrangement, having regard to all the facts and circumstances. The Explanatory Memorandum contains important guidance to clarify the application of the test. For example, it includes examples of non-tax financial benefits related to the arrangement that may be measured and balanced against the tax benefit: productivity gains and/or costs savings, value added and/or synergies, location specific benefits (e.g., local know-how, lower labour cost), reduction of non-income tax costs, public (non-tax) subsidies. Importantly, other commercial benefits that are not quantifiable may still be relevant when assessing the purpose of the arrangement.

6. The economic substance test examines all of the relevant facts and circumstances, such as the conduct of the parties, the economic and commercial context of the relevant activities, and the object and effect of those activities. The determination is generally based on a transfer pricing analysis looking at the functions performed, the assets used and risks assumed by each entity involved in the arrangement. The Explanatory Memorandum makes an explicit reference to the revised transfer pricing guidelines following BEPS Actions 8-10, notably "the accurate delineation of the actual transaction". Also, the DPT does not apply to arrangements that resulted in commercial transfer of economic activities and functions to a low-tax jurisdiction provided the transfer is done in accordance with arm's length principles and transferred assets and risks are properly priced.

7. The relevant measure is the foreign income taxes effectively paid (i.e., after deduction of losses, use of tax credits and other tax attributes) in relation to the arrangement by the local taxpayer and/or any other involved related entity, not the statutory tax rate. Indirect taxes (and any other foreign equivalents) are not included. This amount is determined on the basis of information provided by the local taxpayer reliable enough to support the conclusion that the foreign tax included has been, will be, or may reasonably expected to be paid in another country. The assessment of the 80% threshold is based on a comparison of the foreign tax actually paid with a theoretical Australian tax liability, which is determined by applying the standard corporate tax rate (30%) to the amount of the tax benefit.

8. The assessment process is led by a specific "Tax Avoidance Task Force" within the Australian tax authorities. It starts with the issuance of a DPT assessment notice which opens a 12-month review period. The latter gives the taxpayer an opportunity to engage openly with the tax authorities by providing additional and relevant information on the disputed arrangement. This documentation may support an amendment to the DPT liability, or an amendment to the corporate tax liability (subject to the 30% rate).

9. Under the DPT regime, upfront payment is required within 21 days after the issuance of the final DPT assessment, with no possibility of appeal during the review period. An appeal can be submitted by the taxpayer within 60 days after the end of the review period, but with restrictions on any new evidence presented by the taxpayer. Any information or documents that the taxpayer did not provide to the tax authorities during the review period will generally not be admissible on behalf of the taxpayer in an appeal against the DPT assessment.

10. Generally, given the flexibility inherent to a purpose test, the provisional tax basis giving rise to a DPT notice will be calculated according to the best estimate that can reasonably be made by the tax authorities in accordance with the arm's length principle. There is no opportunity for the taxpayer to challenge that assessment before a Court up until the end of the review period.

11. During and up until the end of the review period, the tax authorities can issue a supplementary or amending charging notice (the final charge may change upwards or downwards, including by reducing the charge to zero), as well as make an amended income tax assessment.

Box 4.10. The United States' base erosion and anti-abuse tax (BEAT)

The base erosion and anti-abuse tax (BEAT) was adopted in 2017 as part of a broader tax reform – commonly referred to as the Tax Cuts and Jobs Act (TCJA)[1] – which led the United States to move from a worldwide corporate tax system (primarily focused on residence country taxation) to a hybrid territorial corporate tax system. The BEAT applies only to resident corporations and otherwise branches subject to U.S. income tax and is limited in scope to specific intra-group transactions (each as described in more detail below). It relies on a formula-based approach and adjustments to determine any potential tax liability.

Scope

The BEAT only applies to US taxpayers – i.e., domestic companies or permanent establishments (PEs)[2] – that are members of a MNE group whose activities in the United States exceed a high sales threshold – i.e., average annual US domestic gross receipts exceeding USD 500 million over a three-year period.

In addition, the US taxpayer must make "base eroding payments" that account for 3% or more of its total deductions claimed for income tax purposes (reduced to 2% for certain banks and registered security dealers). Under the legislation, "base eroding payments" include any amount paid or accrued by the taxpayer to foreign related parties[3] for which a "deduction is allowable", and also include amounts paid to foreign related parties in connection with the acquisition of depreciable or amortizable property. This definition generally excludes expenditures that are treated by domestic legislation as a reduction in gross receipts rather than a deduction from gross profit, such as the cost of goods sold (COGS).[4] The legislation further excludes the following payments that are otherwise deductible amounts: (i) payments made for routine services without a mark-up – i.e., qualify for the services cost method under domestic regulations (Treasury Regulation section 1.482-9(b)), as modified for this purpose by the legislation; (ii) qualified derivative payments; (iii) payments subject to a withholding tax in the United States.[5]

Computation rules (the formula)

The BEAT amount is determined by the excess (if any) of:

10% (reduced to 5% for 2018, and increased to 13.5% as from 2026)[6] of the "modified taxable income" for the year, defined as the regular corporate tax base plus any "base-eroding payments" (see above); over

the regular corporate tax liability of the taxpayer (21% rate), reduced (but not below zero) by tax credits allowed in that year (except for the research credit and a certain amount of "applicable section 38 credits" – e.g. the low-income housing credit, renewable energy production credit, and energy credits – up until 2025).

Where a positive BEAT liability arises, it is payable in addition to the regular corporate tax liability.

1. Public Law No. 115-97, 22 December 2017, Section 14401 introducing SEC. 59A. in Subpart A chapter 1 of the Internal Revenue Code of 1986. The amendments will apply to base erosion payments that are paid or accrued in tax years beginning after 31 December 2017.
2. The BEAT applies also to foreign companies engaged in a US trade or business for purposes of determining their effectively connected income (ECI) tax liability when there is not a treaty with a PE threshold requirement as in Articles 5 and 7 of the OECD Model Tax Convention.

3. Foreign related parties include any 25% owner (voting power or value) of the taxpayer, related persons thereto, and any other person related to the taxpayer under the U.S. transfer pricing statute.
4. The legislation also specifically includes reinsurance payments, as well as expenditures that constitute a reduction in gross receipts (e.g. COGS) when paid to an affiliate part of a group that "inverted" after 9 November 2017.
5. The exemption is pro-rated (in comparison to the statutory withholding rate) in case of a reduced rate under a double tax treaty. Consequently, where the withholding rate is reduced to zero under an applicable double tax treaty, the entire payment is treated as a "base eroding payment" for the purpose of the legislation.
6. Banks and registered security dealers are subject to a one percentage point higher BEAT rate in every year: 6% in 2018, 11% as from 2019 and 14.5% as from 2026.

4.7. Findings on relevant tax policy developments

367. Recent tax policy developments show that an increasing number of countries have implemented a variety of measures aimed at securing their tax base, including in relation to the remote sales of digital products and services into their market. Certain design features are common to some of these unilateral and uncoordinated actions. First, they aim at protecting and/or expanding the tax base in the country where the customers or users are located, generally based on an expanded view of the enterprise's engagement in that country. Second, many include elements linked to a market in the design of the tax base (e.g., sales revenue, place of use or consumption). Finally, they appear to reflect a discontent among some countries with the taxation outcomes produced by the current international income tax system.

368. Until such time as a global consensus can be achieved on how to address the broader direct tax challenges raised by digitalisation, it is likely that more countries will follow suit and adapt their tax system through a series of uncoordinated measures. In September 2017, a group of European Union (EU) Finance Ministers announced that they consider the adoption of solutions based on the concept of an "equalisation tax" on the turnover generated in Europe by digital companies.[37] These solutions are currently being explored by the EU Commission who is expected to deliver proposed legislation in the course of 2018.[38] While these initiatives are generally taken to increase the level of taxation of digitalised businesses, they are also likely to generate some economic distortions, double taxation, increased uncertainty and complexity, and associated compliance costs for businesses operating cross-border and, in some cases, may potentially conflict with some existing bilateral tax treaties. Further, they have increased the sense of urgency among many countries that common policy options need to be developed to ensure the ongoing relevance and coherence of the existing international income taxation framework.

Notes

[1] This section is not intended to be exhaustive, and the measures described were identified by the TFDE on the basis of their relevance for the discussion of the broader direct tax challenges raised by digitalisation and the experience available from their implementation. Measures that have only been announced by countries without any supporting regulations, or measures whose impact and objectives appeared too remote from the tax challenges discussed in this report, have generally not been included in this section.

[2] The PE definition, used in most tax treaties and domestic provisions, encompasses two distinct thresholds: (i) a fixed place through which the business of the enterprise is wholly or partly carried on; or, (ii) where no place of business can be found, a person acting on behalf of the foreign

enterprise and habitually exercising an authority to conclude contracts in the name of the foreign enterprise. Some countries and treaties also include the so-called "service PE" which deems a PE to exist where services are performed within another country through human agency for a certain period of time (e.g., specified number of days within any 12-month period). In all situations, a certain degree of permanence and physical presence in the source jurisdiction is required, either directly through a place of business (premises, facilities or installations), or indirectly through a person habitually engaging in certain activities in the source country.

[3] This section will not discuss alternative measures to the traditional PE definition that are not directly related to digitalisation, such as the use by some countries of specific thresholds for the offshore petroleum industry and/or the insurance industry.

[4] See paragraphs 279-280 of the 2015 BEPS Action 1 Report (OECD, 2015[26]).

[5] Relevant initiatives that have been identified by the TFDE include, *inter alia*, (i) the draft proposal in Turkey to introduce a new domestic nexus rule based on the concept of "*place of business in an electronic environment*" (draft article 129 and 130 of the Tax Procedural Law n°213 (Devranoglu, 2016[6]), (ii) the draft proposal in Thailand to expand the domestic definition of "*carrying on business in Thailand*" to online activities (Draft E-Commerce Tax Law, open for public consultation until 11 July 2017 (BakerMcKenzie, 2017[7]), (iii) the draft regulation in Indonesia introducing a mandatory registration regime for foreign-based suppliers of online Over-The-Top (OTT) services to in-country customers (Draft Regulation from the Ministry of Trade, July 2017, and Draft Circular from the Ministry of Communication and Informatics (n° 03-2016), April 2016, (BakerMckenzie, 2017[8]), (iv) the government plan in Austria to introduce a "*virtual permanent establishment*" for domestic and treaty purposes, (Austrian Federal Ministry of Finance, 2017[9]).

[6] With effect from 1 January 2018, the repeated activities of a non-resident enterprise in the form of facilitation of conclusion of contracts through an online platform in relation to provision of services of transportation and accommodation are deemed to be activities carried out through a fixed place of business in Slovakia (Income Tax Law, Section 16 paragraph 2) (Ernst and Young, 2017[10]).

[7] (Hoke, 2017[11]) (Kalman, 2018[12]).

[8] Article 5(3)(b) of the UN MTC reads as follows: "*3. The term "permanent establishment" also encompasses: (...) (b) The furnishing of services, including consultancy services, by an enterprise through employees or other personnel engaged by the enterprise for such purpose, but only if activities of that nature continue (for the same or a connected project) within a Contracting State for a period or periods aggregating more than 183 days in any 12-month period commencing or ending in the fiscal year concerned."*.

[9] As from 2008, the Commentary on Article 5 of the OECD MTC includes an alternative provision on services permanent establishments in paragraph 42.23.

[10] Noteworthy, the physical presence requirement is explicit in the "service PE" definition provided in paragraph 42.11-42.48 of the OECD commentary on Article 5 of the MTC.

[11] This minority view has been expressed, among others, during meetings of the United Nations (UN) Committee of Experts on International Cooperation in Tax Matters (United Nations, Committee of Experts on International Cooperation in Tax Matters, 2014[13]).

[12] Official letter of the Saudi Arabia Government, No 01/08/1436 on 10 February 2016 (Ernst and Young, 2016[14]). This statement confirms an approach taken by the local tax authorities (Department of Zakat and Income Tax) in a number of administrative circulars and exchanges with taxpayers (Ernst and Young, 2015[15]).

[13] See for example a recent case in India (The Income Tax Appellate Tribunal Bengaluru, 2015[28]).

[14] For example, in Saudi Arabia, the approach based on a "virtual service PE" has been challenged before a Court because of a conflict with the provisions of the United-Kingdom and Saudi Arabia double tax treaty (Court of Appeal, 2014[25]).

[15] These characterisation issues were identified and described in detail in the 2015 BEPS Action 1 Report (see paragraph 268-270, (OECD, 2015[26])).

[16] There are some differences in the definition of royalties between tax treaties, including between Article 12(2) of the OECD MTC and Article 12(3) of the UN MTC (e.g., payments for the use of, or the right to use, industrial, commercial or scientific equipment). However, most existing tax treaties agree that this definition refers to the specific nature of the rights and properties the use of which gives rise to royalty payments. Also, payments for the use of software do not generally qualify as royalties *per se*, only some of these payments can be classified as royalties if they are made primarily for the use or the right to use the copyright embedded in the software.

[17] This interpretation prevails in countries like Greece (Article 38 (1) of the Income Tax Code, (Sakellariou, 2016[16])) and the Philippines (Circular No 77-2003 (Bureau of Internal Revenue (Philippines), 2003[17])).

[18] See Finance Act 2017 in Malaysia modifying the royalty definition in section 2(1) of the Income Tax Act (Ernst and Young, 2017[18]).

[19] See, among others, Article 12 (2) of the Cyprus-Luxembourg Income and Capital Tax Treaty, signed on 8 May 2017; Article 12 (3) Azerbaijan-Malta Income Tax Treaty, signed on 29 April 2016. Following this trend, the UN Committee of Experts on International Cooperation in Tax matters is currently discussing possible amendments to the commentary on Article 12 in relation to software-related payments (United Nations, 2017[19]).

[20] See the United Kingdom's consultation document *Royalties Withholding Tax*, released on 1 December 2017, which describes the plan to introduce a new tax liability on certain payments for the use or exploitation of rights over intellectual property and other intangible assets in the United Kingdom with effect from April 2019 (HM Revenue and Customs and HM Treasury, 2017[20]).

[21] (Alessi, Goede and Wijnen, 2012[27]).

[22] Article 12A(3) of the UN MTC: "*The term "fees for technical services" as used in this Article means any payment in consideration for any service of a managerial, technical or consultancy nature, unless the payment is made: (a) to an employee of the person making the payment;(b) for teaching in an educational institution or for teaching by an educational institution; or (c) by an individual for services for the personal use of an individual*".

[23] The UN Commentary released with the new Article 12A makes it clear that the provision was adopted in response to the fact that "*it is now possible for an enterprise resident in one State to be substantially involved in another State's economy without any substantial physical presence in that State. In particular, with the advancements in means of communication and information technology, an enterprise of one Contracting State can provide substantial services to customers in the other Contracting State and therefore maintain a significant economic presence in that State without having any fixed place of business in that State and without being present in that State for any substantial period.*" (United Nations, Committee of Experts on International Cooperation in Tax Matters, 2017[21]).

[24] Brazilian Federal Revenue Service, Advance Tax Ruling Request No 191/2017 (Giacobbo, 2017[24]).

[25] See for instance the new draft legislation on e-commerce in Thailand (BakerMcKenzie, 2017[7]). India also introduced an Equalisation Levy limited to payments for online advertising services which uses the design typical of withholding taxes, except that the levy is not classified as an income tax under domestic legislation (Box 4.3).

[26] Chapter VIII of Finance Act 2016, No 28. This provision is not part of the Income-tax Act, 1961.

[27] Act XXII of 2014 on Advertisement Tax (AT Act).

[28] Article 56 (V) of the Law n° 2016-1918, adopted on 29 December 2016, and modifying Article 1609 B of General Tax Code.

[29] Except for India's Equalisation Levy, which applies only to payments made to non-resident enterprises (i.e., cross-border business-to-business transactions).

[30] India's Equalisation Levy generated approximately INR 3.4 billion for the period covering June 2016 to March 2017, which corresponds to around USD 47 million or EUR 52 million. The Hungarian tax authorities reported that no meaningful revenue has yet been collected from the Advertisement Tax in relation to foreign-based suppliers/publishers. No information is yet available in France on the revenue collected from the tax on the distribution of audio-visual content. Italy estimates that the revenue of the levy on digital transactions will be EUR 190 million per year (circa USD 235 million per year).

[31] The BEPS issues that are exacerbated by digitalisation were described in details in the 2015 BEPS Action 1 Report (paragraph 180-242).

[32] In the case of Australia, the DPT was implemented in two successive steps. First the Multinational Anti-Avoidance Law (MAAL) was adopted in December 2015 to introduce a PE anti-avoidance rule (Box 4.8). Subsequently, another provision entitled "Diverted Profits Tax" was introduced in 2017 to include an anti-abuse rule for transfer pricing purposes (Box 4.9).

[33] In New Zealand a draft Bill incorporating elements of a DPT-type of measure was released by the Government for public comments in March 2017. This announcement has not translated into a legislative proposal to be introduced into the Parliament.

[34] Article 1-bis of Law Decree 50 of 24 April 2017 (Zucchetti, 2017[22]).

[35] As noted above, the range of arrangements potentially covered by the DPT is broad, and not exclusively targeted at structures implemented by highly digitalised MNEs.

[36] The assessment process of a DPT generally starts with the issuance of a charging notice based on a risk assessment by the tax authorities (i.e., so-called "reasonable" estimate). This initial DPT liability needs to be paid upfront by the taxpayer, and opens a 12 month review period during which the taxpayer is expected to provide relevant and timely information to challenge the best estimate of the tax authorities, and demonstrate that the arrangement is not within the scope of the DPT. During the review period, based on new information received from the taxpayer, the tax authorities may amend the initially estimated DPT liability, as well as make an amended income tax assessment. Also the final DPT charge may change upwards or downwards, and can typically be substituted by an additional income tax liability.

[37] (Finance Ministers of Italy, France, Germany and Spain, 2017[29]). This initiative received the support of six additional EU Member States at the EU Digital Summit in Tallinn on 29 September 2017.

[38] (European Commission, 2017[23]).

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Chapter 5. Adapting the international tax system to the digitalisation of the economy

This chapter considers the implications of the changes arising from digitalisation for the international tax system, in particular, with respect to the existing profit allocation and nexus rules. It identifies the different views held by members of the Inclusive Framework on BEPS on the question of whether and to what extent the changes arising from digitalisation should result in changes to the international tax rules. This chapter also describes the next steps to take forward the work of the Inclusive Framework towards a consensus-based solution by 2020.

5.1. Overview

370. The digitalisation of the economy is having a widespread impact. As described in Chapter 2, the depth of this transformation is seen nowhere so clearly as in highly digitalised business models, and it is also far reaching, with it being difficult, if not impossible to ring fence the digital economy.[1]

371. It is important to consider the implications of these changes for the international tax system. As noted in the 2015 BEPS Action 1 report, the broader tax challenges raised by digitalisation go beyond the issue of how to put an end to BEPS. In the digital age, they chiefly relate to the question of how taxing rights on income generated from cross-border activities should be allocated among countries.[2] This chapter begins with an analysis of the two of the key fundamental concepts in the international income tax system: profit allocation and nexus rules. It analyses how certain characteristics frequently observed in highly digitalised business models, scale without mass, heavy reliance on intangibles and data and user participation, may interact with those rules. In turn, it is possible to identify how it could create outcomes which do not align the location where profits are taxed with the location of the activities which are creating value for the enterprise.

372. Members of the Inclusive Framework have different views on the question of whether and to what extent these features of highly digitalised business models and digitalisation more generally should result in changes to the international tax rules. There is acknowledgement of the continuing evolution of digital technologies. Nonetheless, there is no agreement over the tax implications of scale without mass and a greater reliance on intangibles. Further, with respect to data and user participation, there is no consensus on whether, and the extent to which they should be considered as contributing to a firm's value creation, and therefore, any impact they may have on the international tax rules.

373. While acknowledging these divergences, members of the Inclusive Framework agree that they share a common interest in maintaining a single set of relevant and coherent international tax rules, to promote, inter alia, economic efficiency and global welfare. As such, they have agreed to undertake a coherent and concurrent review of the two key aspects of the existing tax framework, namely the profit allocation and nexus rules that would consider the impacts of digitalisation on the economy.

374. Further work will need to be carried out on the analysis of the value contribution of certain characteristics of highly digitalised business models as well as digitalisation more broadly, and to inform that debate, technical solutions would also be explored to test the feasibility of different options with respect to the profit allocation and nexus rules. This process will include gathering input from a broader group of stakeholders including business, civil society and academia. An update on this work will be provided in 2019, as members work towards a consensus-based solution by 2020. Throughout these stages of work, it will be important to continue to monitor the latest developments: from the evolution of new technologies and rapidly evolving business models, to the adoption and impact of countries' legislative proposals that aim to address these challenges.

5.2. Introduction

375. The rapid spread of digitalisation, coupled with the liberalisation of trade policy, has increased the pace of globalisation and induced an ongoing structural transformation of the economy. As this transformative process is having an impact across the board, it would be difficult, if not impossible, to ring-fence the digital economy from the rest of the economy.[3] The digital transformation has not changed the fundamental nature of the core activities that businesses carry out to generate profits (i.e., source and acquire inputs, create or add value, sell to customers etc.). Nonetheless, as shown in the 2015 BEPS Action 1 report and, in particular with respect to more highly digitalised business models, as described in Chapter 2 of this report, digitalisation has driven considerable changes in the way businesses operate. This has led to the emergence of new business models and to the substantial transformation of old ones. These changes have placed pressure on the basic concepts underlying the existing international tax rules, which were created almost a century ago.

376. The BEPS Project produced a substantial renovation of the international tax rules, underpinned by the principle that the location of taxable profits should be aligned with the location where economic activities and value creation take place. The 2015 BEPS package has had and will continue to have an important impact in addressing BEPS concerns, including those relevant to digitalised business models as indicated in Chapter 3. The question remains of whether they adequately address the broader direct tax challenges identified in the 2015 BEPS Action 1 report regarding nexus, data and characterisation. These broader tax challenges raised by the digitalisation of the economy go beyond the issue of how to put an end to BEPS, and chiefly relate to the question of how taxing rights on income generated from cross-border activities in the digital age should be allocated among countries.[4] Concerns about the inadequacy of the current rules to deal with the broader tax challenges is evidenced by the increasing number of uncoordinated, unilateral actions taken since 2015, as described in Chapter 4.

377. Against this background, this chapter describes the challenges that the digitalisation of the economy presents for the continuing effectiveness of the international tax system. To this end, this chapter first reviews two of the fundamental rules underlying the existing international rules for the taxation of business profits. It goes on to describe a number of outstanding issues associated with or exacerbated by digitalisation that could undermine the sustainability of these long-standing rules. Finally, with a view to advancing discussions on these complex issues and reaching consensus on a multilateral solution by 2020, this chapter also outlines the key areas of the international income tax system that the Inclusive Framework has agreed to review, and details the next steps in delivering this objective.

5.3. Fundamental rules of the international income tax system

378. The set of rules that affect the tax treatment of cross-border business activities is constituted primarily by domestic tax law, tax treaties and other international law instruments, such as the Multilateral Instrument. As indicated in the 2015 BEPS Action 1 report,[5] many of these rules originate from principles devised in the 1920s – e.g., the "origin of wealth" principle[6] – at a time when factors contributing to the value created by MNEs were relatively immobile and required intensive use of labour and tangible assets. In particular, it is possible to identify two key rules that frame the taxation of business profits from cross-border activities:

- ***The nexus rule to determine jurisdiction to tax a non-resident enterprise***. Under most tax treaties, business profits derived by an enterprise are taxable exclusively by the state of residence unless the enterprise carries on business in the other state (i.e., the source state) through a permanent establishment (PE) situated therein. This is sometimes called the "nexus" rule (e.g., Articles 7 of the OECD and United Nations (UN) Model Tax Conventions), as it identifies the profits that are taxable by a country by reference to their relationship to a PE. The latter is generally defined by reference to a threshold that determines the circumstances in which a foreign enterprise is considered to have a sufficient level of economic activity in a state to justify taxation in that state. This threshold generally requires a certain level of physical presence of the foreign enterprise in the taxing jurisdiction, either through a "fixed place of business" or through the actions of a "dependent agent" (Articles 5 of the OECD and UN Model Tax Conventions). For example, material operations in a market involving activities such as distribution, inventory management and local marketing (i.e., bricks and mortar economy) would typically be covered by this definition and thus meet the PE threshold. In contrast, the mere export of goods by a foreign enterprise that are not produced or distributed through a local facility would not be covered by this definition. Consequently, except where separate distributive rules apply (e.g., Articles 6, 10, 11, 12, 13, or 17 of the OECD and UN Model Tax Convention),[7] the determination of the jurisdiction with taxing rights depends on a nexus rule that looks at the substance of a business activity and attributes the primary right to tax to the country in which this income-producing activity physically takes place.
- ***The profit allocation rules, based on the arm's length principle***. Once it has been established that a particular country should be allowed to tax the profits of an enterprise, it is necessary to have rules for the determination of the relevant share of the profits that will be subjected to taxation. Profit allocation rules perform this function. The internationally accepted principle underlying profit allocation is the arm's length principle (ALP).[8] The ALP is broadly applied in a similar manner in two cases: when a country has taxing rights over the business profits of a resident taxpayer (e.g., Article 9 of the OECD and UN Model Tax Conventions) or when these business profits are attributable to the PE of a non-resident taxpayer (e.g., Articles 7 of the OECD and UN Model Tax Conventions).[9] Application of the ALP requires an analysis of the functions performed, assets used and risks assumed by each associated enterprise (and/or PE) – i.e., the factors deemed to materially contribute to the business profits earned from the relevant transaction(s). Such an analysis (referred to as a "functional analysis") is performed for each business entity separately, requiring the determination of the distinct contributions of each associated enterprise (and/or PE) to the creation of value reflected in the profits from the relevant transaction(s). In this exercise, establishing the exact nature and location of the functions performed by people, taking into account assets used and risks assumed, are the primary proxies used to reflect real economic activities and value creation. This is the approach taken by the OECD Transfer Pricing Guidelines[10] and the OECD report on the Attribution of Profits to Permanent Establishments[11] (e.g., "significant people functions").

379. To summarise, the taxation of a non-resident enterprise depends on rules that are strongly rooted in physical presence requirements to determine nexus and allocate profits. The principal focus of the existing tax framework has been to align the distribution of taxing rights with the location of the economic activities undertaken by the enterprise,

including the people and property that it employs in that activity. This conceptual approach was recently reinforced by the BEPS Project, which sought to realign the location where profits are taxed with the location where economic activities take place and value is created. However, the effectiveness of these rules may be challenged by the ongoing digitalisation of the economy to the extent that value creation is becoming less dependent on the physical presence of people or property.

5.4. Digitalisation, value creation and the international income tax system

380. The ongoing digitalisation of the economy raises questions regarding the relevance and effectiveness of some key concepts underlying the existing international tax rules, namely nexus and profit allocation rules. To achieve progress on these complex issues, this section of the report examines the tax challenges raised by the digitalisation of the economy and outlines the different views among countries on their potential implications for the international tax system. Finally, this section identifies the key areas of the international income tax system that the Inclusive Framework has agreed to review.

5.4.1. Digitalisation and the challenges for tax policy makers

381. The 2015 BEPS Action 1 report identified a number of broader tax challenges raising questions as to whether the current international tax framework can appropriately deal with the changes brought about by the digitalisation of the economy. With respect to direct taxes, it was recognised that the these challenges relate to the allocation of taxing rights between source and residence jurisdictions, and raised questions of whether the existing paradigm used to determine where economic activities are carried out and value is created for tax purposes continues to deliver appropriate results.[12] These challenges were classified into three broad categories, which substantially overlap:

- **Nexus**: The continual increase in the potential of digital technologies and the reduced need in many cases for extensive physical presence in order to carry on business, combined with the increasing role of network effects generated by customer interactions, can raise questions as to whether the current rules to determine nexus with a jurisdiction for tax purposes are appropriate.[13]
- **Data**: The growth and sophistication of information technologies that have accompanied the digitalisation of the economy has permitted an increasing number of companies to gather and use information across borders to an unprecedented degree. This raises the issues of how to attribute value created from the generation of data through digital products and services, and of how to characterise for tax purposes a person or entity's supply of data in a transaction (e.g., as a free supply of a good, as a barter transaction, or in some other way). Further, the fact that users of a participative networked platform contribute user-generated content, with the result that the value of the platform to existing users is enhanced as new users join and contribute, may raise other challenges.[14]
- **Characterisation**: The development of new digital products or means of delivering services creates uncertainties in relation to the proper characterisation of payments made in the context of new business models, particularly in relation to cloud computing.[15]

382. When considered together, the broader tax challenges raised by digitalisation relate directly to the operation of and interaction between two of the basic concepts that underlie the international tax rules: namely, the rules for determining nexus and the allocation of profit.

383. Extending the work on the tax challenges of digitalisation described in the 2015 BEPS Action 1 report, Chapter 2 of this report looked more specifically at highly digitalised business models, and analysed the effects of digitalisation on how these businesses operate and create value. In particular, a number of salient features were identified that are frequently observed in the business models of some highly digitalised firms: cross-jurisdictional scale without mass, heavy reliance on intangible assets, especially intellectual property (IP) and the importance of data, user participation and their synergies with IP. These characteristics are not exclusive to highly digitalised business models. They can also be found to varying degrees, in more traditional business models, and have gained greater prominence as a function of globalisation more generally. The third feature, data and user participation, is more evident in a subset of highly digitalised business models. Noting that these features, which are frequently observed in certain highly digitalised businesses, may also become more prevalent in other parts of the economy as a result of increasing integration of digital technologies, it is useful to consider their potential implications for the international tax system, as described below, recognising that Inclusive Framework members have different positions on those tax implications which are discussed in Section 5.4.2.

384. An expansion of business models as a result of the phenomenon of "scale without mass" is impacting the distribution of taxing rights over time by reducing the number of jurisdictions where a taxing right can be asserted over the business profits of an MNE. For example, in many instances, scale without mass has led to an increasing share of the profits from cross-border activities not being taxed in the market jurisdiction, including in situations where the foreign enterprise has an important economic presence in that market. These impacts may highlight issues inherent in existing tax rules, which rely predominantly on physical factors to determine a taxable presence and allocate profits, when applied in the digital age.

385. An increasingly heavy reliance on intangibles may also pose challenges to the existing tax framework. The BEPS Project has significantly contributed to realigning income from intangibles with value creation, notably by putting greater emphasis on real economic activities (e.g., Action 5, Actions 8-10), and by taking a more holistic approach to the review of cross-border transactions. Nonetheless, it may still often be very difficult to determine how to allocate income from intangible assets among different parts of an MNE group. In turn, this may increase the responsiveness of business decisions to tax competition between countries. For instance, the location of the ownership and management of some important intangibles for digitalised firms (e.g., various types of knowledge-based capital)[16] may not always be clearly discernible. In addition, intangible assets may easily be shifted around within an MNE group provided there is a correlation with a certain level of physical activity (e.g., functions that control risks, functions relating to the development, enhancement, maintenance, protection and exploitation of intangibles (DEMPE)). These concerns may potentially be exacerbated in markets of the MNE group where goods and services are being supplied, if an MNE is still able to secure a low tax base therein through a local reseller model (e.g., a distributor not performing DEMPE functions regarding intangibles who is entitled to no more than the "routine profit" otherwise expected to be earned from routine functions performed in third-party transactions).

386. Finally data and user participation, and, more generally, the ongoing and interactive relationships between digitalised businesses and their customers, may represent additional tax challenges, if and to the extent that they can be considered a source of a firm's value creation. This could be the case, for instance, if a large base of

active online users producing substantial amounts of content and data is considered a material contribution to the value creation of a business, distinct from the algorithms and other intangible assets used for analysing and processing this content and data. This may pose challenges to both the nexus and profit attribution rules, to the extent that value generated in this way by users in a particular jurisdiction is considered value created by the enterprise in the jurisdiction, as such a concept of value creation is currently not captured by the existing tax framework. In particular, it may pose challenges to existing nexus rules in situations where the highly digitalised business that exploits the data and user-generated content has little or no presence (in terms of personnel or tangible assets) in the jurisdiction where the active users generating the data are located. As indicated in Chapter 2, the impact of these challenges would depend on the degree to which those business models make intensive use of data and user participation. It should be recognised, however, that the range of businesses intensively benefitting from data and user participation is likely to increase as a result of the continued digitalisation of the economy.

5.4.2. Implications for the international tax system

387. These issues raise very complex technical questions, and there are also different views among the more than 110 members of the Inclusive Framework on the question of whether and to what extent these features of highly digitalised business models and digitalisation more generally should result in changes to the international tax rules. On the one hand, there is broad acknowledgement of the continuing evolution of digital technologies and the need for further consideration and monitoring of how these changes are impacting value creation across the economy. On the other hand, there is not yet agreement amongst countries over the tax implications of scale without mass and a greater reliance on intangibles. Further, while data and user participation are recognised as not being present in all highly digitalised business models, where they are present, there is currently no consensus on whether, and the extent to which, they should be considered as contributing to a firm's value creation, and therefore, there is no agreement as to whether they require changes to the international tax rules.

388. The positions held by members fall across a broad spectrum, although these positions can be generally described as falling within three groups.

389. The first group of countries share the view that, taken together, some characteristics frequently observed in certain highly digitalised business models – in particular, reliance on data and user participation – may lead to misalignments between the location in which profits are taxed and the location in which value is created. In their view, this misalignment is not produced by any specific BEPS arrangement or tax planning strategy but is the result of a new and unique feature observed in some highly digitalised business models that is not captured by the existing international tax framework: the active participation of users through an online platform, and the value that this participation creates for the business (i.e., user-generated value). The failure of the tax system to recognise this contribution to the value creation process of certain highly digitalised businesses means that the existing nexus and profit allocation rules are failing to create alignment between the location in which profits are taxed and the location in which value is created. According to these countries, these challenges are currently confined to certain business models and, subject to a refined analysis of the relevant business models, may be addressed through targeted changes to the existing tax rules, including a re-consideration of the rules relating to profit allocation and nexus.

390. Beyond the challenges created by user-created value, this group of countries is generally supportive of the broad principles underpinning the existing international tax framework. They do not believe that digitalisation, and its impact on how businesses operate cross-border, undermines those principles and do not see the case for wide-ranging change. In particular, most of the countries in this group reject the idea that a country that provides the market where a foreign enterprise's goods and services are supplied on its own provides a sufficient link to create a nexus for tax purposes, regardless of the scale of these supplies. Instead, they consider that profits should continue to be taxed exclusively where the factors that produce the income are located, in accordance with long-standing principles of the existing tax system (e.g., aligning profit with value creation).

391. There is a second group of countries that take a different view regarding the nature and scale of the challenges posed by digitalisation. This group of countries take the view that the ongoing digital transformation of the economy, and more generally trends associated with globalisation, present challenges to the continued effectiveness of the existing international tax framework for business profits. Importantly, for this group of countries, these challenges are not exclusive or specific to highly digitalised business models.

392. Some of these countries are generally concerned that a growing range of enterprises can now be heavily involved in the economic life of a market jurisdiction (e.g., through a large number of sales, market-specific investments) with a taxable presence that currently only attracts a minimal taxable base, or with no taxable presence at all. According to these countries, a changing global economy presents a challenge to the adequacy of the two basic concepts that underlie the current tax framework. First, it raises a profit allocation issue, as more and more profit is dependent on non-physical and mobile value drivers (e.g., various types of knowledge-based capital). Second, it raises a nexus issue, as the limited or lesser need for physical presence to carry on economic activities challenges the extent to which the existing PE definition (e.g., a "fixed place of business") is still a relevant nexus for determining the jurisdiction in which to tax business income.

393. Some, although not all of this second group of countries, also explicitly reject the suggestion that data and user participation should be considered value creation by the business in the user's jurisdiction. According to this view, user data and user contributions should be viewed in the same way as other business inputs sourced from an independent third party in the business' supply chain.

394. Finally, there is a third group of countries that consider that the BEPS package has largely addressed the concerns of double non-taxation, although these countries also highlight that it is still too early to fully assess the impact of all the BEPS measures. These countries are generally satisfied with the existing tax system and do not currently see the need for any significant reform of the international tax rules. Some countries in this group do not agree that data and user participation contribute to value creation in the user's jurisdiction, whereas some other countries in this group believe these issues require further consideration.

5.4.3. Reviewing two key concepts of the international tax system

395. While there is a clear divergence of views among members of the Inclusive Framework on BEPS over whether, and the extent to which, changes to the international tax principles are needed, a broad group of countries support further exploration of

potential changes to the nexus and profit allocation rules, that would consider the impacts of digitalisation on the economy.

396. In addition, members agree that they share a common interest in maintaining a relevant and coherent set of international rules to address the cross-border taxation of business profits in a way that improves, inter alia, economic efficiency and global welfare, particularly where the alternative is likely to be unilateral approaches with all of their associated adverse impacts. A multilateral approach is important to reduce the distortions to investment and growth, while reducing complexity, minimising double taxation, supporting innovation and achieving a fairer, more efficient and simpler tax system for firms operating across the globe.

397. With this in mind, the members of the Inclusive Framework have agreed to undertake a coherent and concurrent review of the two key aspects of the existing tax framework, namely the profit allocation and nexus rules that would consider the impacts of digitalisation on the economy, relating to the principle of aligning profits with underlying economic activities and value creation.[17]

5.5. Next stage of work

398. Taking forward this commitment will require refining the analysis of the value contribution of certain characteristics of highly digitalised business models as described in Chapter 2 as well as digitalisation more broadly, with a view to studying its impact on any revision of the nexus and profit allocation rules. In determining the parameters of any such revision, it would be important for the Inclusive Framework to assess whether the challenges described in this report, relating to the principle of aligning profits with underlying economic activities and value creation, would be best addressed by a consensus-based solution focused on certain highly digitalised business models, or whether such a solution should be applicable to the broader economy. Meanwhile, and to inform that debate, technical solutions would be explored to test the feasibility of different options. Relevant Working Parties, including Working Party 1, Working Party 6 and the TFDE, would support the work of the Inclusive Framework which gathers more than 110 members.

399. On the basis of this further analysis, it is anticipated that the Inclusive Framework will work towards a consensus-based solution by 2020. This is a challenging objective, given the complexity and still-evolving nature of the issues involved, and will require a phased programme of work, with an update to be provided in 2019. This process will provide an opportunity for detailed discussions between members, as well as to gather input from a broader group of stakeholders including business, civil society and academia. The particular constraints and environment faced by developing countries will be taken into account in this process, through their direct participation as members of the Inclusive Framework, as well as through liaison with regional tax administration bodies such as the African Tax Administration Forum and the Inter-American Centre for Tax Administration. In this way a fuller understanding of the issues as well as possible impacts of the options can be developed.

400. In due course, consideration should also be given to the development of appropriate legal instruments to support global implementation of any changes that may be required. Such legal instruments would facilitate and accelerate the adoption of measures which are agreed.

401. Throughout these stages of work, the TFDE will also have an important role to play in the ongoing monitoring of developments: from the evolution of new technologies and rapidly-evolving business models, to the adoption and impact of countries' legislative proposals that are potentially relevant to digitalisation.

Notes

[1] (OECD, 2015[1]) , Chapters 3 and 4.

[2] (OECD, 2015[1]), Chapter 7.

[3] (OECD, 2015[1]) , Chapters 3 and 4.

[4] (OECD, 2015[1]), Chapter 7.

[5] (OECD, 2015[1]), paragraph 28-40.

[6] The "origin of wealth" principle was enunciated by a group of economists in a 1923 report mandated by the League of Nations. The purpose of this report was to study the issue of double taxation from a theoretical and scientific perspective. It rejected the argument that income should generally be taxed exclusively in the state of residence, and posited that taxation should be based on a doctrine of economic allegiance: "whose purpose was to weigh the various contributions made by different states to the production and enjoyment of income" (Graetz and O'Hear, 1997[5]). In general, the economists concluded that the most important factors (in different proportions depending on the class of income at issue) were "the origin of the wealth and the residence or domicile of the owner who consumes the wealth". For business profits, they took the view that the place where income was produced is "of preponderant weight" and "in an ideal division a preponderant share should be assigned to the place of origin". The origin or production of wealth was defined for these purposes as all the stages involved in the creation of wealth: "the original physical appearance of the wealth, its subsequent physical adaptations, its transport, its direction and its sale". As noted by the economists, "these stages up to the point where wealth reaches fruition may be shared in by different territorial authorities". This "origin of wealth" principle has remained a primary basis for taxation of business profits until today.

[7] By virtue of separate distributive rules, some categories of business profits may be taxed in a source country notwithstanding the absence of nexus therein in the form of a PE. These rules include Articles 6 and 13 of the OECD Model Tax Convention regarding income derived from immovable property and capital gains derived from the sale of such properties. These Articles allow a country to tax the income or capital gain if the immovable property is located in that country. Additionally, business profits may include certain elements of income such as dividends, interest, or royalties (or technical fees in the context of tax treaties based on the UN Model) which, depending on the domestic law and the applicable tax treaty, may be subject to a limited withholding tax in the source country even in the absence of any physical presence of the enterprise.

[8] The ALP requires that the price and other conditions in relation to controlled transactions between associated enterprises be consistent with those that would occur between unrelated enterprises for comparable transactions under comparable circumstances. Such prices are generally referred to as "arm's length prices".

[9] There are different approaches taken by countries with respect to the attribution of profits to permanent establishments. Two of the predominant approaches are reflected in the Commentary to Article 7 of the *OECD Model Tax Convention on Income and on Capital* (2017). One approach is set out in the pre-2010 version of Article 7 of the OECD Model Tax Convention (and is maintained in the UN Model Tax Convention), while the other approach is reflected in the OECD's *2010 Report on the Attribution of Profits to Permanent Establishments*, which was

incorporated in the 2010 revision of the Commentary on Article 7 of the *OECD Model Tax Convention on Income and on Capital*.

[10] (OECD, 2017[2]). It incorporates the substantial revisions made in 2016 to reflect the clarifications and revisions agreed in the 2015 BEPS Reports on Actions 8-10 "Aligning Transfer Pricing Outcomes with Value Creation" and on Action 13 "Transfer Pricing Documentation and Country-by-Country Reporting". It also includes the revised guidance on safe harbours approved in 2013, which recognises that properly designed safe harbours can help to relieve some compliance burdens and provide taxpayers with greater certainty. Finally, this edition also contains consistency changes that were made to the rest of the OECD Transfer Pricing Guidelines. The original version of the OECD Transfer Pricing Guidelines was approved by the OECD Council in 1995.

[11] (OECD, 2010[3]). It should be noted that regardless of whether a country adopts the approach described in this report, Article 7 of the OECD MTC has always provided for allocation of profits between a PE and the rest of the enterprise of which the PE forms a part on the basis of the hypothesis that the PE is a separate entity.

[12] (OECD, 2015[1]), see among others paragraphs 249 and 376.

[13] (OECD, 2015[1]), see among others paragraphs 253 to 261.

[14] (OECD, 2015[1]), see among others paragraphs 262 to 267.

[15] (OECD, 2015[1]), see among others paragraphs 268 to 272.

[16] Knowledge-based capital (KBC) comprises a variety of non-physical assets. One widely accepted classification groups KBC into three types: computerised information (software and databases); innovative property (patents, copyrights, designs, trademarks); and economic competencies (including brand equity, firm-specific human capital, networks of people and institutions, and organisational know-how that increases enterprise efficiency) (OECD, 2013[4]).

[17] The Inclusive Framework recognised that profit allocation rules and nexus rules are strongly interrelated, with the consequence that any change to existing profit allocation rules is likely to put more pressure on the nexus rules and is likely to require some consequential changes. Conversely, any change to existing nexus rules is likely to require a concurrent change to profit allocation rules (e.g., explore the extent to which profit can be allocated to a jurisdiction where an enterprise has little or no physical presence in terms of assets or employees).

References

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Chapter 6. Interim measures to address the tax challenges arising from digitalisation

This chapter notes that there is no consensus on either the merit or need for interim measures with a number of countries opposed to such measures on the basis that they give rise to risks and adverse consequences irrespective of their design. Other countries acknowledge these challenges, but consider that they do not outweigh the need to implement interim measures and consider that at least some of the possible adverse consequences can be mitigated through the design of the measure. Countries in favour of the introduction of interim measures have set out guidance on the design considerations that need to be taken into account when considering the introduction of such measures.

6.1. Overview

403. Working towards the delivery of a consensus-based solution to the tax challenges arising from digitalisation as described in Chapter 5 will take time. In the interim a number jurisdictions are considering the introduction of an interim measure.

404. There is no consensus on either the merit or need for interim measures and therefore this report does not make a recommendation for their introduction. A number of countries consider that an interim measure will give rise to risks and adverse consequences irrespective of any limits that may be imposed on the design of such a measure and therefore oppose any such measure. Other countries acknowledge these challenges, but consider that they do not outweigh the need to ensure that tax is paid in their jurisdictions on certain e-services supplied in their jurisdictions and consider that at least some of the possible adverse consequences can be mitigated through the design of the measure. This latter group is also of the view that a proliferation of different interim measures would be undesirable and that therefore it is preferable to set out guidance on the design considerations that need to be taken into account when considering the introduction of interim measures.

6.2. Introduction

405. As set out in detail in Chapter 2, a tax challenge raised by digitalisation relates to how some enterprises can now be extensively involved in the economic life of a jurisdiction with little or no taxable presence. An outline of the possible long-term approaches to address these issues, and the next steps in progressing that work, are described in Chapter 5 and Chapter 8 of this report.

406. Developing, agreeing and implementing a global solution will, however, take time, and, in some countries, there are pressing calls for governments to take more immediate action to address these challenges. The most immediate concern for these countries typically relates to those digitalised businesses that have a significant market presence, but have little physical presence, in the local jurisdiction and which have business models that rely heavily on intangible property, data, user-participation and network effects. A number of these jurisdictions are considering an interim measure in the form of an excise tax[1] on the supply of certain e-services within their jurisdiction that would apply to the gross consideration paid for the supply of such e-services by a registered e-services supplier. It is for this reason that this Section includes references to such an excise tax on e-services.

407. There is no consensus on the need for, or the merit of, interim measures with a number of countries being opposed to such measures irrespective of its design. These countries do not agree that features such as "scale without mass", a heavy reliance on intangible assets or "user contribution" provide a basis for imposing an interim measure and further consider that there are a number of risks and adverse consequences that would arise in respect of such a tax including:

- ***Impact on investment, innovation and growth***: As any tax on the supply of particular services, an interim measure will increase the cost of capital, reducing the incentive to invest with a resulting negative effect on growth. A measure only applicable to digitalised sectors risks slowing down investment in innovation for those businesses that are subject to the tax or indirectly affected by it. Although the effect will also depend on the financing of the investment, without proper

constraints, like an exemption for SMEs a gross basis tax could effectively penalize start-ups and other growing firms with losses or limited profitability and provide a competitive advantage to mature profitable incumbents, helping to create a barrier to entry that cements the dominance of established firms.

- ***Impact on welfare***: An additional hurdle with a tax on a gross basis is that it is equivalent to a tax on inputs. This implies that it is likely to distort firms' choices of inputs thus distorting production itself. In other words, when such a tax is introduced, either production could decline or more resources will need to be employed to reach the same level of production. Consequently, there is likely to be a negative impact on the overall welfare of an economy and on its output. The size of the effect will depend on elasticities of substitution and will be smaller the more targeted the measure is.
- ***Potential economic incidence of taxation on consumers and businesses***: Depending on the price sensitivities of the seller and customers, and the structure of the market, the incidence of taxation could be fully or partially passed on to local consumers in the form of higher prices for goods or services. The lower the customers' price sensitivity and the more competitive the market the more likely it is that the burden of tax will be passed to the customer. This implies that, the less prepared customers are to stop buying a specific service or to shift to another, less taxed service, the higher the incidence of the tax on them. If services provided in a B2B context are subject to the same price sensitivities, the tax will result in a higher cost of inputs for other, non-taxable producers. This may also affect small businesses as users of such services even if the digital services they provide are excluded from the tax.
- ***Possibility of over-taxation***: In order to comply with its international obligations, a country may be required to apply the tax to both residents and non-residents, and to limit any credit mechanism against other taxes. This may create issues of over-taxation, (for instance, payments for certain e-services may be subject to both an interim measure and corporate income tax) and run counter to the underlying narrative for the introduction of the tax, which is to target supplies of cross border digital services that are not subject to income taxation in the market jurisdiction under existing rules. Economic double taxation could also arise through cascading effects where a certain supply of e-services is made to a person that incorporates those services into an onward supply that is itself subject to the tax.
- ***Possible difficulties in implementing a tax as an interim measure***: Taxes, once introduced, are often difficult to repeal and given the time that may be needed to develop and implement any interim measure, this raises the question whether it is worth introducing a completely new set of rules and related administrative procedures which may apply only for a limited period of time.
- ***Compliance and administration costs:*** An interim measure may give rise to compliance and administration costs that could be substantial relative to the amount of tax raised under the measure, particularly given that the measure is only intended to be temporary in duration. These compliance costs will be even higher to the extent countries adopt divergent unilateral measures. The taxing jurisdiction may also encounter difficulties in auditing and verifying the accuracy of the returns filed and payments made by non-residents.

408. Countries that are in favour of the introduction of interim measures acknowledge that such challenges may arise but consider that there is a strong imperative to act to

ensure that the tax paid by certain businesses is commensurate with the value they consider is being generated in their jurisdictions also noting the time discussions have already taken. These countries commonly take the view that user participation is a key driver of value for certain digital businesses in terms of contributing to the content of a platform, building network effects and providing data through their activities and sustained engagement. They believe that the international tax rules need to be reformed to take account of those value drivers in how profits of those businesses are allocated between countries for tax purposes. And, in the absence of such reform, they believe that there is a mismatch between taxable profit and value creation that challenges the fairness, sustainability and public acceptability of the system. For that reason, and in their recognition of the length of time it will take to achieve and implement a consensus based solution, these countries believe that there is a need to consider more immediate action (e.g. through a tax on certain supplies of e-services) that would be designed to compensate jurisdictions for what they consider to be unrecognised value created in their jurisdiction, pending a global solution based on consensus. These countries acknowledge that there are challenges associated with taxes imposed on certain e-services, however they think that those challenges need to be weighed against the policy challenge of not acting, and consider that at least some of the possible adverse consequences can be mitigated through the design of the measure. For example, the extent of the risk of over-taxation under the measure may depend on a number of factors including the scope of the tax, the tax rate, registration threshold, whether the expenditure on e-services is likely to constitute a deductible business expense, and any tax and expenditure measures outside the scope of the tax. Equally compliance and administration costs can be minimised by aligning tax filing and collection mechanisms with other taxes (such as those for VAT purposes in to cross-border supply of services to consumers) and by ensuring alignment with similar measures introduced by other countries.

409. Recognising these challenges, and acknowledging the uncertainty, cost and inefficiency that could result from countries adopting a multitude of different unilateral measures, the countries that are considering the introduction an interim measure believe there is merit in setting out guidance on the design considerations that need to be taken into account to limit the possible adverse consequences associated with any interim measure. The discussion on interim measures in this Chapter is without prejudice to the future discussion and development of long term solutions to the tax challenges raised by digitalisation.

410. It is for this reason that countries that are considering the introduction of interim measures have identified a number of considerations that they believe need to be taken into account by jurisdictions that are considering the introduction of this type of interim measure in order to provide these jurisdictions with guidance on ways to limit the potential for divergence and the possible adverse side-effects of such measures.

411. Jurisdictions and regional groupings considering the introduction of interim measures should carefully weigh the pros and cons of such a measure in light of their particular circumstances.

6.3. Considerations for the design of interim measures

412. Countries that are in favour of the introduction of interim measures recognise the need to take the following considerations into account: (i) be compliant with a country's international obligations; (ii) be temporary; (iii) be targeted; (iv) minimise over-taxation; (v) minimise impact on start-ups, business creation and small businesses more generally,

and (vi) minimise cost and complexity. Each of these considerations is considered in further detail below.

6.3.1. Compliant with international obligations

413. Any new tax that a country introduces must be in compliance with its existing international obligations. Countries will need to consider the wording of all their existing treaties and determine to what extent they would impact any interim measure. These obligations include those imposed by bilateral tax treaties as well as a country's obligations under trade agreements, including membership of the World Trade Organization (WTO) and obligations that flow from regional political and economic groupings such as the European Union (EU) and European Economic Area (EEA).

414. These constraints may place significant restrictions on the design options for any interim measure. In particular, a country's bilateral tax treaties may prevent the taxing jurisdiction from imposing a tax on income or any element of income, while a country's trade and other international obligations may impose further limitations, for example by requiring the tax to be applied to both residents and non-residents. These constraints and their potential impact on the design of any interim measure are described in further detail below.

Interim measure must not come into conflict with tax treaties

415. As set out in Chapter 5, under most tax treaties, business profits derived by an enterprise resident in one contracting state are, with some exceptions, taxable exclusively by that state unless the enterprise carries on business in the other state through a permanent establishment.[2] Tax treaties that are in line with the OECD Model Tax Convention on Income and on Capital (OECD, 2017[1]) will, therefore, generally prevent countries from imposing a tax on the income derived by a non-resident on the supply of digital services if it is in the form of a tax that is covered by that tax treaty.

416. Article 2 (Taxes Covered) of the OECD Model Tax Convention provides that the Convention applies to "taxes on income" or on "elements of income", "irrespective of the manner in which they are levied". Additionally, Article 2 provides that the Convention will also apply to all new taxes that are identical or "substantially similar" to the taxes listed. The Commentary on Article 2 of the OECD Model Tax Convention provides that the objective of Article 2 is "to widen as much as possible the field of application of the Convention by including, as far as possible, and in harmony with the domestic laws of the contracting States, the taxes imposed by their political subdivisions or local authorities, to avoid the necessity of concluding a new convention whenever the Contracting States' domestic laws are modified, and to ensure for each Contracting State notification of significant changes in the taxation laws of the other State."[3]

417. Given this wide application, in this context it may not always be clear whether a tax is covered by tax treaties or not. What may help distinguish taxes on income, or on elements of income, from other taxes is that, on a conceptual level at least, taxes on income focus on the recipient of the income rather than on the consumer of a supply of specific goods or services. Indeed, an income tax is usually explicitly imposed on the recipient of the income, and looks at the characteristics and the economic situation of the recipient of a payment.

418. While the tax base of an income tax is generally the net income of a taxpayer, the lines can be blurred in practice in case of a tax on a gross amount of income. For

example, a withholding tax on a gross payment of royalties charged in the country of the payer would generally be deducted by the payer from the consideration paid for the use of intellectual property and would be creditable against the recipient's income tax liability in the recipient's own country.

419. While an income tax is generally perceived as imposing the burden on the recipient in respect of its income, in determining whether a tax is a covered tax under Article 2, it makes no difference whether taxes are levied by way of withholding at source, or whether the tax is on a net or a gross amount. Nor does the method of its assessment or the manner of collection under domestic law matter.

420. Article 2 applies not only to taxes on income, but also to taxes on elements of income. An interim measure that taxes an element of income and that is linked to the characteristics or economic situation of the recipient, for example, the profitability of the supplier, runs the risk of being a covered tax within the purview of Article 2. Conversely, an interim measure would more likely not be considered a covered tax where it is imposed on the supply itself, rather than the supplier, and where it focuses exclusively on the expenditure side of the payment - that is to say, the nature and value of the supply. The mere fact that the tax may be collected from the supplier and that there is a threshold that must be met before a person is required to register and account for the tax will not generally be sufficient to bring the tax within the scope of the Convention.

421. As stated above, a tax that is covered by tax treaties is generally one that is focusing on the supplier, rather than on the supply. Further, the case that an excise tax on e-services is not a tax on income that tax treaties intend to cover would be stronger where it is:
(i) levied on the supply of a certain defined category or categories of e-services and imposed on the parties to the supply without reference to the particular economic or tax position of the supplier; (ii) charged at a fixed rate, calculated by reference to the consideration paid for those services (without reference to the net income of the supplier or the income from the supply); and (iii) not creditable or eligible for any other type of relief against income tax imposed on the same payment.

422. An excise tax will not be expected to be covered by the OECD Model Tax Convention (with the exception of some articles such as those on the exchange of information, assistance in the collection of taxes, or non-discrimination) provided the tax is not (either as matter of form or substance) a tax on income or any element of income. The name of the tax is not determinative, and Article 2 of the OECD Model Tax Convention could cover taxes that are badged as excise taxes but which are, in substance, income taxes. An excise tax on a particular type of payment may not be very different from a tax on the gross payment of royalties or fees for services under the domestic law of some states. Also, many bilateral treaties deviate from the definition in the OECD Model Tax Convention and it is therefore difficult to state in the abstract when a tax is within the scope of a particular tax treaty. While most tax treaties follow Article 2 of the OECD Model Tax Convention, a good number deviate from it, most commonly by omitting the first two paragraphs. That means that the scope of Article 2 is defined by taxes listed in paragraph 3 and by the extension to new taxes under paragraph 4.

423. Whether an interim measure falls within the scope of a particular tax treaty is a determination that must be made by each country based on the precise features of the interim measure and wording in the relevant tax treaty. Countries will need to consider the wording of all their bilateral treaties to determine whether, and to what extent, this might impact on the design of any interim measure.

424. A tax that does not come within the scope of tax treaties would not be expected to be creditable against income tax imposed by the jurisdiction of residence of the taxpayer and would not be required to be credited under any tax treaty with that jurisdiction.

(a) Applying the interim measure to non-residents will not generally give rise to discrimination under bilateral tax treaties

425. Although tax treaties generally apply only to taxes on income (or on an element of income), some provisions also apply to other types of taxes, such as the non-discrimination article. A measure which applies only to non-residents should not, however, give rise to issues under the non-discrimination provisions that are equivalent to those found in Article 24 of the OECD Model Tax Convention, except as discussed below.

426. Article 24 of the OECD Model Tax Convention deals with the elimination of tax discrimination in precise circumstances. The Article and the Commentary recognise that the distinction between residents and non-residents is a normal and common feature of income tax systems and should be respected. It is normal, for example, to impose withholding taxes on gross payments of interest or dividends made to non-residents, while residents are not subject to such tax; residents, however, are typically subject to net basis taxation on such income. In particular, Article 24(1), which prohibits discrimination on the grounds of nationality (e.g., citizenship or incorporation), provides that nationals of one state may not be treated less favourably than nationals of that other state "in the same circumstances, in particular with respect to residence". This makes it clear that the residence of the taxpayer is one of the factors that is relevant in determining whether taxpayers are placed in similar circumstances. A taxpayer who is not a resident of a Contracting State is not considered to be the same circumstances as a person who is a resident of that State and therefore taxation outcomes may be different. Tax measures that limit the deductibility of certain payments made to non-residents are, however, subject to the non-discrimination provision under Article 24(4) of the OECD Model Tax Convention, but this provision does not apply in the case of an interim measure which does not restrict the deductibility of interest, royalties or other disbursements (or the deduction of debts for capital taxes).

(b) Membership of EU and EEA

427. For Member States of the European Union and parties to the Agreement on the European Economic Area (EEA Agreement), an interim measure must be in compliance with EU law including the fundamental freedoms set out in the EU treaties and the prohibition on State aid.

428. In order to ensure that the measure does not restrict the freedom of establishment, or the freedom to provide services, it should therefore apply equally to both resident and non-resident taxpayers. Any design element that had the effect of discriminating between residents and non-residents would only be compliant with these freedoms if it were justified by and proportionate to one of the few justifications recognised by the European Court of Justice in the context of direct and indirect taxation.

429. In order to ensure that the measure is not impermissible State aid when applied by individual jurisdictions, the measure would need to be designed not to provide a selective advantage to any group of taxpayers. In other words, an interim measure would need to avoid different treatment of undertakings that are in a legally and factually comparable position.

430. For countries that are EU members, the interim measure should also be designed such that it is not a value added tax that would be inconsistent with the EU Directive on the Common System of Value Added Tax.

(c) Membership of WTO

431. Any interim measure should also take into account other existing international obligations, including those relating to membership of the WTO. These obligations include non-discrimination requirements relating to national treatment and most-favoured nation provisions.

Temporary

432. Any interim measure should be introduced recognising the policy intent of it being temporary; ceasing to apply once a global response to the tax challenges raised by digitalisation has been agreed and is implemented. This follows from the very policy rationale that justifies the introduction of an interim measure. It also reflects the consensus among all Inclusive Framework members that a comprehensive global solution is to be preferred over the adoption of unilateral measures whether implemented individually, or collectively at the regional level, for example in the EU context.

433. It is essential that countries maintain a commitment to achieve a broader global consensus and ensure that, once a global solution is found, it can be implemented in a swift and coordinated manner and that the interim measure remains purely that, without undermining or jeopardising global action. Where a country has already adopted an interim measure, such measure should operate on a similar understanding.

Targeted

434. Given the potential adverse consequences of introducing an interim measure, it is important that the measure is as targeted as possible at those businesses that are perceived to constitute the highest risk, which for a number of countries are those businesses that combine high levels of scale without mass, and have business models that rely heavily on user participation and network effects. As the interim measure is not intended to provide a comprehensive solution, it should not seek to cover any and all transactions where the increase in digitalisation poses some risk or could be seen to pose some risk.

435. The scope of the measure should be well-defined and targeted so to improve compliance and administration, and to minimise the collateral impact of the measure on other elements of the domestic and international tax system.

436. The interim measure should not apply to supplies of physical goods where the supplier is simply the owner of the goods transferring title in those goods to the seller under a contract that is concluded online. The online sale of goods can be contrasted with intermediation services, discussed in further detail below, where an online intermediation platform facilitates the exchange of physical goods between third parties. Given the importance of physical infrastructure to the sale of physical goods (including inventory management, warehousing and logistics) and the recent work under Actions 7 to 10 of the BEPS Project, this business model is not one that presents the sort of risks that should lead to the introduction of an interim measure. Also, the implications of imposing an interim measure on supply of goods would be extremely far-reaching and certainly beyond what should be the subject of an interim measure as it would, for instance, cover the online sale of groceries from the local supermarket.

437. The interim measure should also be restricted to certain specified e-services and not apply to all services simply on the basis that they are provided over the internet. Such a broad definition of e-services would capture businesses, where, as set out in Chapter 2, the intensity of user participation is relatively low. An excise tax that applied to a wide range of businesses with significant variation in profitability and different degrees of digitalisation may well have a more disruptive and unpredictable impact on the domestic economy, which may undermine innovation and growth in the supply of digital services and solutions.

438. A broad interim tax on all e-services may also give rise to ambiguities and anomalies which could give rise to unanticipated compliance and administration costs as well as planning opportunities. For example, it may be difficult to determine whether a particular service has been provided through the internet in those cases where the e-services provider has other ways of communicating with its customer. A broad tax on all e-services may also result in different tax treatment depending on whether the underlying supply is made in physical or digital form. For example, a tax that applied to all online services, but not to the online sale of goods, would tax the online delivery of music, software, films and other copyrighted material, but would not apply to the delivery of the same products in tangible form (i.e. CD's, Disks or DVDs). Finally, a broader scope could also exacerbate cascading and over-taxation problems.

439. A number of countries maintain that a targeted interim measure could focus on internet advertising and digital intermediation services because they perceive that these categories of e-services businesses typically operate remotely and rely heavily on intangible property, data, user-participation and network effects and believe that therefore value is being created in their jurisdiction.

(a) Internet Advertising

440. Internet advertising is a well-recognised and ubiquitous service that has expanded rapidly as a consequence of digitalisation. It is a service that can be provided remotely, without the service provider needing to establish a taxable presence in the jurisdiction to which the advertising is targeted. As discussed in Chapter 2, internet advertising is characterised by strong network effects and is typically reliant on exploiting data that is collected through user participation.

441. A tax on internet advertising would apply to the service of delivering a specific advertising or promotional communication through the internet to an end-user. The tax would only apply to paid advertising or promotion. The tax would apply, for example, to a website provider that charges other websites for promoting links to their site or where a product manufacturer pays an advertising agency or social media platform for placing an advertisement for that product on the platform. It would not apply, however, to a user of a social media platform who uploads a photo or video of promotional material unless the platform actually charges the user for posting that content.

442. An issue that may arise in the scoping of an excise tax for online advertising is determining the extent to which the consideration paid for a composite supply is attributable to an online advertising component. For example, tax administrations would need to clarify whether advertising in a printed publication should be treated as the supply (or part supply) of an e-service, when the publication was also made available to readers online. Jurisdictions may further need to consider anti-avoidance rules to prevent companies re-characterising their services in order to avoid the tax, for example by

changing the legal characterisation of the services supplied without affecting the substance of the services performed.

(b) Intermediation services

443. Digital intermediation services (also referred to as platforms) are websites and mobile applications that facilitate the exchange of goods or services between third parties. Intermediation service providers typically depend on active user participation and indirect network effects to create a virtual market place. The definition of e-services would include any type of virtual market place that permits third parties to trade or exchange goods or services. It could include, for example, multi-player online games to the extent they facilitate the exchange of services within the game. Countries may consider excluding from this definition platforms that facilitate the provision of financial services (such as lending, insurance or trading in securities or commodities) as the regulatory environment and the related tax implications for providing such services may justify taking such services outside the scope of an interim measure. Also, specific financial transaction taxes (such as stamp duty) may already apply to these kinds of services.

444. This category of e-service would only include the intermediation of transactions between third parties in return for consideration and would not include direct online sales of services made directly to customers through the vendor's own website. For example, a website that allows travellers to make online bookings of flights and accommodation with third party airlines and hotels could be treated as providing intermediation services and the excise tax could apply to any commission paid by the airline or hotel in respect of each booking made through the site. If, however, the flight or accommodation is booked directly with the airline or hotel through its own website, then there would be no supply of intermediation services and the excise tax would not apply.[4] Apportionment between taxable and non-taxable supplies may be required where only part of the service is intermediation services.

445. Like advertising services, online intermediation services are a well-recognised and ubiquitous service that is generally provided remotely, without the service provider needing to establish a physical presence in the jurisdiction where the services are sold or performed. Also, if only internet advertising was covered, there may be some businesses that could reconfigure their business model into an intermediation service. However, some intermediation services involve lower levels of user participation than others (for example where the product or service is generic and fungible and there are a limited number of potential customers and/or suppliers). Compared to internet advertising business models, intermediation services business models vary more widely in terms of their reliance on direct and indirect network effects. Some intermediation platforms would appear to rely primarily on indirect network effects, with little role for direct network effects, and with user contributions less 'active' and less critical to the functioning of the business model. An excise tax could create a tax preference for vertically integrated businesses compared to online platforms and it might encourage intermediation service providers to change their business model and terms of service in order to escape the tax. A tax on intermediation services may also have an impact on those smaller businesses that rely on intermediation services as a way of getting their goods and services to market. Countries should therefore carefully weigh the pros and cons of extending the scope of any interim measure to intermediation services.

Minimises over-taxation

446. A key objective of an interim measure should be to balance the underlying policy objective of trying to address the rapidly emerging challenges raised by the digitalisation of the economy while avoiding the risk of over-taxation on taxpayers caught by the measure. Both the rate of tax and the scope of the measure will be important factors in achieving this balance. In particular, the broader the scope of the measure the more likely it would be to result in over-taxation of certain taxpayers, thereby undermining the original rationale for the measure. The rate should be set at a low rate that is proportionate to the profit margins of the businesses that it is to apply to. Setting the tax at an appropriate rate is more challenging if the tax is applied on gross payment basis and, in practice, it will be even more difficult if the measure applies to a wide range of services and service providers. E-services businesses will have different profit margins, cash-flow and credit costs which, depending on the rules that govern the accounting of payments and filing of returns, may result in the tax having an unpredictable and disproportionate impact on certain e-services businesses.

447. Where an interim measure takes the form of an excise tax on the gross amount for the supply it has the potential to result in economic double taxation. As noted above economic double taxation may arise due to the fact that the excise tax is applied to both residents and non-residents with no ability to credit the tax against corporate income tax levied on the same payment. This outcome may appear counter-intuitive given that a key driver for an interim measure is the ease with which a non-resident can supply e-services in the taxing jurisdiction without having any taxable presence.

448. Another type of double taxation can arise in those cases where a supply of e-services is made to a person that incorporates those services into an onward supply that is subject to the excise tax under domestic or foreign law. The extent of this cascading problem will depend on the design of the tax, including scope of the tax, the tax rate, registration threshold. It may be difficult to address any cascading effects without making changes to the design of the tax or affecting the way the e-services provider supplies those services in the taxing jurisdiction resulting in additional administration and compliance costs.

449. One mechanism for addressing this cascading effect would be to provide an exemption from the excise tax where the supplier can prove (certify) that the e-service will be used in an onward taxable supply. Countries' experience, however, with this type of mechanism (e.g. in a retail sales tax context) shows that it can be difficult to apply in practice, creates considerable opportunities for fraud and may not address all the double taxation effects from cascading. Equally the alternative of allowing the recipient of the supply to claim a credit for the excise tax paid by the supplier would have the effect of bringing the interim measure closer to a VAT and is likely to result in further and undue complication to the design of the tax, particularly given the temporary nature of the measure.

Minimises impact on start-ups, business creation, and small businesses more generally

450. The design of an interim measure will also need to be calibrated to limit any undue impact on business creation arising from digitalisation, noting the positive impacts that digitalisation has had on economic growth and productivity (described in Chapter 2 on business models and value creation). The concern that an interim measure may make certain businesses economically unviable will be particularly relevant in the case of start-

ups (and small businesses more generally) where financial constraints are likely to be tighter than for larger and more mature businesses. Small businesses may also indirectly be affected as they might be significant users of digital services. This risk will be further exacerbated where the tax is imposed on a gross payment basis.

451. Related to this consideration is recognition that an interim measure will also create compliance obligations that will place an indirect economic burden on business. At the early stages of business creation, such costs may be large and the revenue generated from the tax may be small. Further, this may be true notwithstanding best efforts to ensure the design of an interim measure that is simple to implement and administer, and as such, highlights the importance of not inhibiting start-ups, business creation and small business more generally.

452. Thus, an interim tax measure would need to have a threshold. The threshold needs to be designed and set such that it does not inhibit start-ups, business creation and small business more generally but it should not otherwise provide benefits for or discriminate against particular groups of taxpayers. It also needs to recognise that smaller firms are less able to shoulder compliance costs and that profitability levels better able to support an excise tax in both the internet advertising and intermediation market will typically only come with larger revenues. Cost and compliance considerations for tax administrations further support the case for a meaningful threshold. Any threshold should be set by reference to the results of the previous accounting period in order to promote certainty in the application of the threshold.

453. One approach that may meet these principles would be to apply a gross revenue threshold for the group as a whole combined with a local country sales threshold. Only digital service providers that exceed both thresholds would be required to register for the tax. An alternative approach that may meet these principles could be to only apply a local country sales threshold.

454. The gross revenue threshold provides a bright-line test for businesses that do not have a significant global presence. It would mean that smaller businesses entering the domestic market would not need to track their level of sales in each taxing jurisdiction in order to determine whether they were subject to the interim measure. Equally, it would make the administration of the tax easier for tax authorities. Countries could look to well-established international standards for setting the revenue threshold such as the threshold for Country by Country (CbC) reporting. While the CbC group revenue threshold of EUR 750 million was not designed for this purpose, it would have the advantage of being a known standard that is administratively simple for tax administration and taxpayers to apply. A gross revenue threshold would also provide certainty to those businesses whose operations fall below such a threshold that they will not be subject to such measures.

455. The gross revenue threshold would be combined with a local sales threshold which would exclude those e-service suppliers with a low level of supplies of e-services in a particular jurisdiction or geographic market, where the costs of administration and compliance are likely to be too great to justify the imposition and collection of a tax. A low level of sales would also be indicative of only small or negligible user participation and related network effects inside the sales jurisdiction.

456. For the purposes of determining whether the sales threshold has been met, the e-service providers would be required to aggregate their sales in scope of the interim measure with those made by other members of the consolidated group and anti-avoidance

rules may be required to address artificial or resale arrangements with non-group members designed to avoid any local sales threshold.

Minimises cost and complexity

457. Compliance cost for taxpayers and tax administrations should always be a key consideration in tax policy design. This is especially true for interim measures which will by definition be temporary and where administrative cost and complexity should be kept to a minimum. Aspects relating to administrability should be included in the design phase and given an important weighting in the scoring process for any measure under consideration. Administrability may argue, for instance, for relying in substantial part on existing tax collection mechanisms and procedures such as those developed for value added or sales taxes. It would further argue for a limited and targeted scope as well as meaningful threshold levels at which the measure applies.

458. In particular, an interim measure in the form of an excise tax on e-services would require a common place of supply rule that determines whether the supply of e-services has been made within the taxing jurisdiction. A consistent approach to determining the place of supply for e-services is important for reducing uncertainty, cost and inefficiency that would otherwise result from countries adopting these types of interim measures with different place of supply rules. The most appropriate rule for determining the place of supply in respect of such an interim measure will depend on the type of e-services covered by the measure.

a) Advertising services supplied in the jurisdiction where the advertising is targeted

459. In the case of advertising services, there are a number of reasons for treating the supply as made in the jurisdiction where the advertising communication is targeted:

i. As a matter of substance, the advertising content is provided in the jurisdiction where the person accessing or viewing it (the end user) is located (rather than the jurisdiction of the purchaser of the advertising services).

ii. Treating the place of supply as where the content is delivered will also mean that the excise tax cannot be avoided simply by acquiring the advertising services through an entity in a jurisdiction that does not impose an excise tax on e-services.

460. In addition it could be expected that on-line advertisers will usually have the mechanisms in place to collect and report information on the number and location of views of a particular advertising communication, and in many cases they may use this information for billing purposes. The fact that many online advertisers can be expected to already have these information collection mechanisms in place should make it easier for online advertises to comply with, and tax authorities to administer, the interim measure.

461. Countries seeking to implement an interim measures on advertising services may look to some of the elements in the key principles set out in the International VAT/GST Guidelines which describe the kinds of information a supplier may rely on in order to determine the place of taxation for B2C supplies. These principles encourage jurisdictions to permit suppliers to rely, as much as possible, on information they routinely collect in the course of their normal business activity, as long as such information provides reasonably reliable evidence of the customer's location.

462. While not all online advertisers will hold information on the location of the end users as described above, they will generally know the IP address that was used to view the advertising content and may have other information on the end user (which could, for example, include information on the preferred language of the end user and the predominant place of access/viewing) which could assist in determining the end user's location.

b) Intermediation services treated as supplied in jurisdiction where the customer of the intermediation service is located

463. Although the virtual market place created by intermediation services has no physical presence, one approach would be to tax the commission earned from sales that take place in the market where the underlying sale occurs. While it may be difficult, in certain cases, for an intermediary to determine where the underlying supply of goods or services took place, a reliable proxy can be found by looking to the location of the customer. In the case of intermediation services, the customer would then be treated as the person that contracted for the supply of the intermediation services. Thus in the case of hotel booking websites, where the commission for the intermediation service is generally paid by the hotel, the supply would then be treated as made to the hotel. Similarly, in respect of the sale of goods where the seller pays a commission to the e-service provider in respect of every sale, the intermediation service would then be treated as supplied to the seller of the goods (and, in this case, the country of residence of the goods supplier would impose the tax, and not the country of residence of the goods buyer). In those cases where the service provider charges separate fees to different parties with respect to different sides of the same transaction (e.g. in the case of an intermediation service, both the seller and the purchaser of the intermediate goods or services) then the supply would be treated as made in proportion to the consideration provided.[5]

Notes

[1] Some countries refer to this as an equalisation tax or levy.

[2] As noted in Chapter 5, the OECD Model Tax Convention provides specific rules for certain types of income such as income from immovable property, interest, dividends, or royalties. However, none of these categories would be applicable in the case of tax on e-services.

[3] For more background on the scope of Article 2 see (Working Party No. 3 of the Fiscal Committee, 1957[2])

[4] The question of whether a person is selling goods or services directly or providing intermediation services would need to be determined by looking to the substance of the arrangement as reflected in the agreements between the relevant parties to that supply. A web-based re-seller of third party goods may be treated as providing third party vendors with an online sales platform (i.e. an e-service) if the contractual arrangements between the parties indicate that the re-seller takes no inventory risk on the ownership of the goods sold through the website. Similarly an online content provider could be treated as providing an online sales platform for copyright holders to sell or license their content direct to users if, in practice, the provider has only a limited involvement in determining or controlling the content that will be made available through the platform and the licensing arrangements with copyright holders are substantially the same as a fixed commission arrangement.

[5] In determining whether intermediation services have been supplied in a particular jurisdiction, particularly those cases where a customer may be established in more than one jurisdiction, countries may consider adapting the approach set out in the International VAT / GST Guidelines for B2B supplies and treating the supply as made in the jurisdiction where the establishment using the service or intangible is located.

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Chapter 7. Special feature - Beyond the international tax rules: The impact of digitalisation on other aspects of the tax system

This chapter considers how digitalisation is affecting the tax system beyond the international tax rules. It identifies opportunities and risks for tax policymakers and tax administrations, and sets out areas where further work will assist governments, including in developing countries, to leverage the latest technological developments.

7.1. Overview

465. Chapters 1 and 2 of this report describe the far reaching implications of digitalisation. Beyond the international tax rules, other elements of the modern tax system are shaped by its disruptive effects which bring both opportunities and challenges. From the design of the tax system through to tax administration, relevant developments include the rise of business models facilitating the growth of the gig and sharing economies[1] as well as an increase in other peer-to-peer (P2P) transactions, the development of technologies such as blockchain, and growing data collection and matching capacities. This chapter explores some of these changes, looking at areas where further work in the coming years will provide the tools for governments to better understand and harness the opportunities these changes bring, while ensuring the ongoing effectiveness of the tax system. It will also be important to consider how some of the advances being made in this area can be effectively implemented in developing countries to take into account their particular constraints and environments.

7.2. Online platforms and their impact on the formal and informal economy

466. One of the major changes to the economy facilitated by digitalisation is the rapid growth in multi-sided online platforms. Online multi-sided platforms often facilitate transactions between individual sellers of goods and services to individual consumers, peer-to-peer (P2P) transactions, which occur outside of traditional business structures (e.g., the case of marketplaces). In particular, online platforms facilitate the growth and proliferation of the "sharing" and "gig" economies. Familiar examples are the temporary rental of a spare bedroom, unused apartment or parking space; or the provision of a service such as delivery of goods, occasional household services or the provision of transport or taxi services.

467. Some of the transactions facilitated by online platforms, including P2P transactions have long been carried out through other mechanisms such as for example by word of mouth, physical marketplaces or through community advertising and networking. In this context, it has traditionally been difficult for the tax authority to monitor and assess the amount and value of such transactions and as a result such activity has often taken place in the informal economy. As described in Chapter 2, digitalisation, however, has facilitated the emergence of multi-sided platforms as the global reach of the Internet enables digital businesses to quickly and relatively cheaply increase their customer bases and develop large networks across different sides of the markets, including across jurisdictions. As previously informal transactions, including between peers are now channelled and recorded through online platforms, there exists a new potential for tax authorities to monitor and assess previously unreported tax bases.

468. The size of the gig and sharing economy activity is not yet well measured. Although it has been growing rapidly, it remains relatively small on most estimates (see Box 7.1 below). Taken together the features of this business model suggest, though, that its share may continue to grow strongly given the scale of partially utilised assets in private hands, the likely unmet demand for different working patterns and the convenience of use for both buyers and sellers, including strong trust-enhancing mechanisms. This can have positive impacts on the economy and welfare through facilitating additional economic activity and individual choices, as well as potentially shifting some activity from the informal to the formal economy. These effects are likely to positively impact tax revenue. However, these types of business models also raise a

number of public policy issues as regards fair competition with other providers, as well as the impacts on social protections, pensions, consumer protection and government revenues; in particular taxation and social security contributions. For example, across OECD countries, a growing number of workers earn income outside of traditional employee-employer relationships. While this trend has been in place for some time in various OECD countries, it has met with renewed focus recently due to continued developments in the digital economy, which have ushered in an increased provision of services by self-employed workers through multi-sided platforms.

Box 7.1. Understanding the size of the gig and sharing economy

There is a lack of reliable data on the size of the gig and sharing economy, including as a result of different definitions. Vaughan and Hawksworth (2014) calculate that on a global basis the collaborative economy was worth USD 15 billion in 2014 and could reach USD 335 billion by 2025. Within the European Union (EU), Vaughan and Daverio (2016) estimated that the five main sectors of the sharing economy generated nearly EUR 4 billion in revenues and facilitated EUR 28 billion in transactions in 2015, exceeding earlier expectations of growth. Goudin (2016) estimated that the potential gains from removing barriers to bring underutilised assets into use could be of the order of USD 572 billion annually within the EU. Survey data also indicates a growing number of people who have engaged in P2P transactions. A Pew Research Centre Survey (2016) of 4 787 adults in the United States estimated that around 72% of US adults had used one of 11 different shared and on-demand services. Stokes et al. (2014) estimated that in 2014, 25% of the adult population in the United Kingdom had used P2P platforms to share assets or resources.

469. The opportunities presented by multi-sided platforms as regards taxation are two-fold:

i. **Facilitate integration into the formal economy**. Where previously unreported transactions (in particular in the cash economy) are now carried out through multi-sided online platforms and there is greater or full reporting of income as a result, more taxpayers and economic activity will be integrated into the formal economy. Conversely if the expected increase in transactions via multi-sided platforms is not accompanied by an increase in reporting, then it would lead to growth of the informal economy.

ii. **Drive growth and increase revenues.** Multi-sided platforms often provide new opportunities for economic activity as well as encouraging movement into the formal economy. This may help to drive growth and have some positive impacts on government revenue. The growth impacts can take place directly through enhanced economic activity as well as indirectly through positive spillover effects on other parts of the economy. This can arise, for example, through increased tourism or greater demand for services as a result of increased transport opportunities etc. The impact on growth and revenues will also depend to an extent on whether the economic activity taking place through multi-sided platforms is at the expense of existing, direct competitors. While important in all countries, the positive growth and revenue impacts are likely to be particularly significant for developing countries with large informal economies.

470. In order to realise these benefits, as well as to address some of the challenges arising from the operation of online platforms, there are a number of issues that must be addressed.

7.2.1. Understanding the tax implications of the changing nature of work

471. With the rise of the gig and sharing economies, changes in the mix of taxable status in the economy – for example from employee to self-employed or incorporated – can have important consequences. When changes in taxable status occur, different rules may apply for example on deductions and thresholds for income tax purposes and social security contributions. When these changes occur across significant proportions of the working population, this will have implications for government revenues as well generate other public policy concerns, including from loss of certain employment rights. These changes may either arise from individuals voluntarily choosing different work patterns or as a result of changing preferences of employers, at least in some areas of their business, or both. The growth in the use of platforms in certain sectors may already be acting to reduce the relative number of standard employment contracts.

472. For example, the legislation of some countries provides for lower levels of social security contributions for non-standard labour contracts. In other countries, the tax system provides incentives to offer labour services as a closely-held corporation instead of as employees subject to a higher rate of personal income tax. These features of the tax system could lead to revenue losses if there are large shifts in working patterns and taxable status. If governments wish to maintain today's expenditure levels, losses will have to be compensated by a higher tax burden on less elastic tax bases, such as for example property and consumption. The need for a shift towards other, less variable sources of taxation could also be exacerbated by the difficulties of raising corporate income tax from digitalised business, as highlighted in other chapters of this report. From a broader tax policy perspective, the impact of such changes on both revenue and the tax mix will need to be considered as part of a global and inclusive assessment on whether such a shift is welfare improving for the overall population.

473. Many governments and courts are already considering these issues. The evolution of such platforms and the nature of the contracts between the platforms and their users may, for example, provide greater opportunities for activities to be structured in ways that minimise tax liabilities and reduce the tax base.

474. The impact of platforms on the changing taxable status of economic actors across different forms of employment merits further examination. The OECD stands ready to deliver further work on this topic. Initial steps have already been taken to analyse tax incentives for platforms and more generally employers, to hire labour through non-standard labour contracts, and for employees to offer labour services either as a self-employed person or through a closely-held corporation.

7.2.2. Fostering innovation and ensuring equivalent tax treatment with similar, existing activity

475. Fostering nascent economic activity and ensuring appropriate tax treatment requires that governments take into account the impact of administrative burdens on users of online platforms. This issue is not new and is already recognised in many countries through simplified tax regimes for micro-businesses and small and medium sized enterprises, and for activity not primarily carried on as a business.

Box 7.2. Tax policy measures targeted at the sharing economy

In Denmark, the Ministers of Industry, Business and Financial Affairs, Transport, Building and Housing, and Taxation recently presented the Danish Government's strategy on growth through the sharing economy. The strategy contains 22 initiatives including higher basic allowances on renting out property, cars and boats if a third party (e.g., a platform) declares all income to the tax authorities. The strategy also includes an initiative on developing a digital solution for declaring income arising from the sharing economy.

In Italy an optional taxation regime for short-term rental income has been introduced allowing the taxpayer to opt for a substitute tax (in lieu of personal income tax) in the form of a 21% flat rate tax on gross income from the rental. The new law applies to rental contracts not exceeding 30 days, on contracts defined online as well as contracts defined in traditional ways.

The United Kingdom has introduced two separate annual tax allowances for individuals, each of GBP 1 000, for income from a trade or property with the objective of simplifying the tax system and supporting the development of the digital and sharing economy. Where the allowances cover all of an individual's relevant income (before expenses) then they will no longer have to declare or pay tax on this income. Those with higher amounts of income will have the choice, when calculating their taxable profits, of deducting the allowance from their receipts, instead of deducting the actual allowable expenses.

476. Going beyond this, for example, by introducing special tax regimes for activities facilitated through the use of platforms may not be optimal: such activity will be in direct competition with existing activity (e.g., taxi services). This may result in different tax outcomes for substantially similar activities. On the other hand, there may be a case for considering simplified transitional measures to encourage existing and new activities into the formal economy, and for also taking into account the likely lack of experience with tax matters of some platform users. Further work could be undertaken to analyse options for achieving a balance between reducing the compliance burden for some players and preserving the level playing field. This is particularly important in light of the spread of the gig and sharing economies highlighted in Box 7.1.

7.2.3. Improving the effective taxation of activities facilitated by online platforms

477. Where a transaction involves payment from one individual to another, rather than being based on altruism or a cost sharing arrangement (for example contributing to petrol costs in a shared ride), then there can be taxable consequences for the parties involved. Platforms may create certain tax challenges for their users, including uncertainty amongst users about their tax liabilities. This is likely to be the case particularly where P2P transactions are involved.

478. For tax administrations, the challenges raised by online platforms, particularly in the case of P2P transactions, include a lack of information about the identity of users and the amount of payments made for the activities facilitated by the platform. Difficulties with access to that information will be exacerbated where the platform is not located in

the same jurisdiction as the person receiving payment for the transaction and where the tax liability is due.

479. There are a number of options to address this challenge, including targeted taxpayer education campaigns and gathering information from the platforms themselves. Both of these approaches are discussed further below.

Improving taxpayer education and self-reporting

480. Depending on the contractual arrangements between the platforms and their users, a traditional employment or other business relationship may not exist. As a result, payments may not generally be visible to the tax administrations in the way that they are, for example, for salaried employees in many countries, where withholding will typically also be a feature. Taxation of such income may therefore depend on self-reporting by the taxpayer in the absence of wider cooperation between platforms and tax administrations, and between tax administrations. Self-reporting tends to be most complete when an individual knows that the tax administration can obtain the data themselves or, more powerfully, if it is reported directly to the tax administration.

481. Lack of self-reporting can be exacerbated by uncertainty among platform users about their tax liabilities, including whether the activity is taxable. This can be a difficult area, with particular challenges arising over determining the correct employment status, any relevant income thresholds, and whether an activity is carried on as a business. Some platform users may see their activity as akin to a hobby or pastime rather than a business, and some will not be registered for tax in any capacity. As a result many appear not to report this source of income. In this regard, issuance of timely guidance by tax authorities on the appropriate tax treatment and reporting obligations in relation to emerging business models can be extremely useful. Even where they are aware, the lack of publicly available material as well as any complexity inherent in reporting of such income may lead some to take no action, believing the risks and potential penalties to be low.

482. Improving taxpayer education aimed at providers of goods and services through P2P platforms in particular, could make an important impact to ensure effective taxation of activities facilitated by online platforms. Consideration of these issues could build on previous work which gathered global best practice in taxpayer education, such as the 2015 report on *Building Tax Culture, Compliance and Citizenship,*[2] to look specifically at taxpayer outreach in the online platform environment where cross-border considerations also play a role. Combined with improving access to information by tax administrations, which is discussed further below, it is likely that significant progress can be made to improve effective self-reporting of tax obligations in respect of these types of activities.

Box 7.3. Educating taxpayers about tax obligations arising from the platform economy

The Canada Revenue Agency (CRA) has added new pages to its website, providing information on income tax and goods and services tax (GST)/ harmonised sales tax (HST) obligations for registering, collecting, remitting and reporting income derived from the sharing economy. These webpages include information specifically intended to assist taxpayers who may not have reported income in previous years and now want to correct their tax affairs. The CRA has also collaborated with one large accommodation sharing platform, using the platform's own communication tool, to provide its users with information concerning their tax obligations, and is planning to offer similar collaboration with smaller platforms

In France a requirement was placed on P2P platforms to provide information on the tax and social security obligations of the users of these platforms. This requirement is deemed to have been complied with if the message sent by the platform to its users following each transaction provides accurate, unambiguous and transparent information concerning these obligations and includes, "in a clear manner", hypertext links to the websites of the tax authorities and social security organisations. In addition, the platforms must send their users an annual statement (prior to 31 January) of the gross amount received from transactions carried out via the platforms.

Obtaining tax data about transactions facilitated through platforms

483. Addressing the lack of information available to tax administrations about the identity of taxpayers using platforms, particularly in the case of P2P transactions, would be an important step forward in improving tax compliance in this sector. As discussed in Chapter 2, some multi-sided platforms often act as payment intermediaries. Others may facilitate a transaction with the payment being made directly between the parties. In both cases, the platform will typically retain at least some relevant information, for example about the identity of the parties to, and the amount of, the transaction. Other third parties may also hold relevant information about transactions facilitated by platforms, for example, payment service providers that are linked to the platform.

484. Where such powers are not already available, introducing legislative measures which require platforms or other third parties to report payment and identification data of P2P users and/or which allow tax administrations to request group information, could provide tax administrations with information needed to improve compliance or to enhance selection of cases for audit. The fact that data is reported would also be likely in itself to encourage greater self-reporting. As tax administrations continue to improve data use, increasingly it will be possible to join up this information with other income data, opening up options for pre-filling of tax returns or automatic checking of tax returns. Requiring withholding is also a possible tool, although in some contexts this may involve greater administrative difficulty for the tax administration, platform or taxpayer depending on the design of the withholding measure.

485. However, domestic legislative requirements may not be directly effective where the data is located in a jurisdiction other than the jurisdiction of the platform seller. In

such cases, it may be possible to obtain agreement from the platform to supply information directly to the tax administration, although in some jurisdictions this could breach data protection requirements unless the consent of the platform user is obtained. Information can also be obtained from platforms located in other jurisdictions through individual requests for information to the relevant tax administration. However, in order to be accepted as a legitimate request, information would need to be sufficient to identify the individual taxpayer concerned or meet the criteria for group requests where applicable under international agreements. This approach will often not be very cost-effective or timely. Some tax administrations have attempted to increase the number of requests for information through web scraping techniques (i.e., techniques used to automatically extract data or collect information from the web), although this is not straightforward and the effectiveness of this approach may depend on the systems employed by the platforms.

Box 7.4. Obtaining tax information directly from platforms

The Estonian Tax and Customs Board (ETCB) has entered a cooperative agreement with two well-known ride-sharing platforms for information sharing. The platforms first ask consent from the drivers for income information to be shared with the ETCB. Where consent is given, the platforms compile the relevant data into a single file with names, personal codes and income amounts, and send this file to the ETCB before the beginning of income tax return submitting period. The ETCB prefills the natural persons' income tax returns using all relevant data. The natural person has to check the prefilled data, amend if necessary and submit the income tax return. The process is entirely electronic.

The Finnish Tax Administration (FTA) has focused efforts on sharing economy platforms related to the accommodation industry, P2P lending and crowd funding activities. While domestic legislation has been effective at collecting third party data from P2P and crowd funding platforms within Finland, it cannot be applied where the platform only has a presence in a third country. The FTA has also used website scraping techniques and international administrative cooperation, including receiving data through spontaneous exchange. However, data obtained in this way has often not been complete and has faced administrative obstacles.

In Mexico, the Mexican Tax Administration (SAT) has worked with a ride-for-hire service in order to help their drivers to comply with tax regulations, including sending electronic invoices to all their customers. As part of this, the ride-for-hire service requires that a driver obtains the electronic certificate required to digitally sign invoices before registering with the platform. Drivers are able to use the platform's own systems to file and send invoices to the customers and to SAT, as well as to download them for record keeping purposes.

In Ecuador, the Ecuadorian Tax Administration has worked with a taxi company in such a way that the company will prepare, file and send each month an electronic invoice to each passenger for their usage of the platform (their rides). In addition, each driver will prepare an electronic invoice relating to the commission they would receive from the taxi company. The Tax Administration will receive all of these invoices electronically.

Adopting a collaborative approach

486. In that context, there is a strong case for collective discussions between tax administrations and platforms about possibilities for obtaining access to transaction and identification data held by multi-sided platforms, particularly where they involve P2P transactions. Through the OECD's Forum on Tax Administration, 50 tax administrations have recently agreed to collaborate on such a project to be completed in 2018 which will have four components:

1. To develop a common understanding of the various types of platforms, the scale of the challenges and opportunities, and the location and accessibility of platform data.
2. Understand the approaches already applied by different tax administrations in order to increase tax compliance amongst platform users, including through education, legislative changes, and collaboration with the platforms.

3. Consider the scope of information that tax administrations would require in order to match income received from activities facilitated by the platform with the users who are tax resident in their jurisdictions. This is likely to be similar in many respects to the information required under the Common Reporting Standard where information is sent annually on financial accounts held in other jurisdictions with information allowing for the identification of the beneficial account holder in the receiving jurisdiction. Even in cases where the platform is not the payment intermediary and payments are made by another third party or between the parties to the transaction, relevant information may still be held by the platform itself.
4. Consult with some of the larger platforms with cross-border operations with a view to agreeing a common set of information which, with appropriate legal arrangements in place, could be provided by those platforms to all tax administrations in the jurisdictions in which their users are located. Such a common solution, which would likely depend on a combination of domestic legislation for the provision of data and agreements between tax authorities for spontaneous exchange, would reduce the burdens on these platforms and tax administrations which would otherwise arise should information be requested by a large number of individual tax administrations in different formats and with different periodicity. The issues to be considered would be the common set of information, a common format and transmission mechanism, a common timetable and any necessary domestic legislation.

Possible multilateral agreements for data exchange

487. As well as considering the range of solutions for accessing income and identification information through cooperation between tax administrations and platforms, and based on the outcome of that work, it may be appropriate to explore further the possibility of a possible multilateral agreement between countries. Such an agreement, along the lines of the Common Reporting Standard, might require all platforms carrying out particular types of activity to provide information in a standardised format on platform users, transactions and income to the tax authority in their jurisdiction of residence for exchange, through appropriate legal gateways, to the jurisdiction of tax residency of the user. This set of information, as well as the underpinning legislation and international agreements, is likely to be broadly similar to that required under the CRS.

7.3. Digitalisation and tax compliance

488. As noted above, online platforms facilitate the recording of P2P transactions that may have previously been very difficult to trace. If this information can be made available to tax authorities, it can be integrated into data matching analysis to enhance tax compliance. Technology is in fact expanding the capabilities of tax administrations in a wide range of ways, to enhance the effectiveness of compliance activities, improve taxpayer services, and reduce compliance burdens. Some of the latest developments in this regard are described below, as well as some of the potential risks arising from digitalisation.

7.3.1. Enhancing the effectiveness of tax compliance activities

489. Recent years have seen a large increase in the amount of third party data available to tax authorities coupled with lower storage costs and advances in analytics techniques.

These data include transaction and income data, behavioural data generated from taxpayers' interactions with the tax administration, operational data on ownership, identity and location, and open source data such as social media and advertising. This data can be used as individual sources or in combination to enable partial or full reporting of taxable income and to uncover under-reporting, evasion or fraud. It can also be used to understand better taxpayer behaviour, to measure the impact of activities and to identify the most effective interventions, both proactive and reactive.

490. A growing number of tax administrations are increasingly using algorithms to review the broad range of data to which they now have access in order to more effectively define risks. These new processes are replacing some audit actions, including audit selection, and other verification checks previously performed by people. These developments are allowing tax administrations to increase the number of such verification checks which can be performed, shifting from a small percentage of returns to cover much larger proportions, in turn increasing the amount of tax revenue which is appropriately raised.

491. New technology is also being used to tackle the under-reporting of sales or the over-reporting of deductions through false invoicing, forms of tax evasion which have themselves been made easier through the use of technologies such as sales suppression software and more sophisticated tools that create forgeries. A number of tax administrations have introduced requirements for data recording software which records and secures sales data immediately at the time of a transaction, and in some cases transmits it in real time to the tax authorities. The introduction of a requirement to use such electronic data recording technology has seen VAT revenues increase by up to 20% in certain countries,[3] and has also led to criminal charges for tax evasion. These tools have also proven useful for business owners in providing protection from theft by employees as well as facilitating a more efficient process to meet their tax obligations.

492. Technology has also allowed for significant advances in tax transparency internationally as well as domestically, in particular through enhanced information exchange between tax administrations. The OECD's Common Reporting Standard (CRS) for the automatic exchange of financial account information (AEOI) has made available to tax authorities information on offshore transfers and accounts which was previously unknown and unknowable. Using technology available through the OECD-developed Common Transmission System, as the platform for secure bilateral exchanges of information between participating tax administrations, these exchanges now occur automatically on a periodic basis. With the large amounts of AEOI data, tax authorities must ensure it is effectively deployed, matching it with existing information sources relating to the taxpayers concerned.

Box 7.5. Impact of data recording technology and electronic invoicing on the fight against tax evasion and fraud

- In Hungary, requirements to introduce electronic cash registers saw VAT revenue increase by 15% in the targeted sectors, exceeding the cost of introducing the new system.
- In Quebec alone, more than CAD 1.2 billion has been recovered following the introduction of data recording technology in the restaurant industry. By 2018-19, this is expected to reach a total of CAD 2.1 billion.
- In Rwanda, in the two years since the introduction of electronic cash registers in March 2013, VAT collected on sales increased by 20%.
- Over EUR 500 million in risky VAT was identified over a 2 year period in the Slovak Republic following the introduction of electronic invoice data matching processes
- An additional 4.2 million micro-businesses were brought into the formal economy after Mexico introduced mandatory electronic invoicing.
- In Russia the Federal Tax Service has implemented a system that allows it to monitor VAT compliance on a nationwide basis mostly in real time, drastically reducing opportunities for fraud. The approach is based on automatic cross-matching of all VAT paid with all VAT claimed across all transacting parties. 2016 results show an increase in VAT collection over 2015 of 8.5%, while in 2014 the increase amounted to 12.2% and 16.8% respectively.

493. Taking this a step further, work is now being launched by the OECD's Forum on Tax Administration to investigate innovative approaches to the analysis of the data now available under the CRS. This includes tax authorities working together to develop a more systematic analysis of behavioural patterns relating to both onshore and offshore non-compliance/evasion, including with respect to different taxpayer segments such as individuals, small traders, and micro businesses. In time, such approaches will be able to not only detect existing tax evasion, but also pre-empt and deter these behaviours through the use of targeted tools.

7.3.2. Improving taxpayer services

494. The increase in data availability and advancements in analytics are also leading to improvements in taxpayer services. This includes identifying ways to make it easier to understand and report tax obligations, for example by use of analytics on large data sets to identify areas of uncertainty or errors in reporting, as well as to understand where guidance and communication needs to be clearer for taxpayers, or where tax administration processes may need to be redesigned. The use of such techniques can also inform behavioural insights, allowing tax administrations to more effectively use "nudge" techniques designed to alter taxpayer behaviour, to prevent for example the accumulation of tax debt by upstream engagement or to prompt taxpayers to review potential errors in tax returns by automatically drawing attention to taxpayers in comparable situations or previously received information concerning the particular taxpayer.

495. Many tax administrations are now providing self-service options for taxpayers through the introduction of mobile and web-based applications, seeking to use channels

of communications that are easiest for taxpayers. Such applications can allow taxpayers to update their personal data, register for tax purposes (and other services provided by tax administrations), upload tax returns electronically and receive electronic notifications. This has been accompanied by a shift towards user-centric design in most tax administrations, which can also be integrated into broader e-government initiatives subject to data protection limitations.

496. The increase in the availability of online services for taxpayers is aimed at maintaining and building voluntary compliance against a background of heightened expectations on the part of many taxpayers in respect of the level of services and access to the tax administration. Increased self-service also requires enhanced security to protect confidential information and to minimise fraud. In this regard, a number of tax administrations are now using enhanced authentication techniques, such as multi-step verification and unique identifiers such as biometric information.

497. Given their ability to facilitate taxpayer interaction with the tax system, the piloting and roll-out of new technologies to support the delivery of more effective taxpayer services should continue to be monitored. Current efforts to compile best practice and facilitate peer-to-peer knowledge sharing between tax administrations to lift standards in taxpayer service across the globe should be reinforced, including ensuring that developing country tax administrations can both contribute to and benefit from these developments.

Box 7.6. Improving taxpayer services through the use of technology

In India, the government has built a nationwide biometric database based on fingerprints and iris scans from more than a billion residents. Those residents are issued with a 12 digit identity number which is used for security purposes in many government and private sector applications, including income tax returns.

Peru's tax administration, SUNAT, launched its first mobile app in February 2015. This provides constant tablet and cell phone access to a range of services including tax registration, invoice issuing, access to a virtual tax guide and the ability to report tax evaders.

The Danish Tax Administration (SKAT) is collaborating with software developers to embed tax-related guidance and functionality in third party accounting software solutions targeting small businesses. The long-term ambition is that transaction data flowing from banks to accounting systems should form the basis for a semi-automated process that integrates with SKAT's business processes.

7.3.3. Reducing tax compliance burdens

498. A number of tax administrations have long had processes in place to minimise the tax compliance burden for salaried employees and wage earners, including automated reporting of earnings or even withholding tax from salary and wages in regular instalments. Such approaches, which rely upon information being obtained from third-parties, have also been seen to improve compliance levels. These automated compliance processes are now being further enhanced as a result of the increasing availability of data on other sources of income, which in some countries allows the comprehensive pre-filling

of tax returns. Tax administrations are increasingly looking at how such "compliance by design" approaches can be used for businesses as well as individuals.

499. In this regard, the availability of digital information and the use of technology by taxpayers is increasingly allowing tax administrations to embed tax requirements and reporting within taxpayers' existing systems (such as accounting software and record-keeping tools, online banking, electronic cash registers and mobile applications). Tax administrations are increasingly working with third party software providers and tax service providers as well as developing in-house solutions such as applications supporting the recording, calculation, reporting and payment of tax. Embedding compliance, including upfront verification, in the design of tax administration systems offers the opportunity to substantially reduce administrative burdens, freeing up taxpayer and tax administration resources while also improving overall compliance.

500. Burdens on taxpayers can also be reduced through increasing the efficiency and security of income and transaction reporting, and a number of tax administrations are also exploring the use of blockchain for this purpose. Blockchain is a distributed ledger technology that can be used to store any type of data, including financial transactions. By recording when a transaction occurs, the details of the transactions (e.g., transfers of the ownership of assets), and providing assurance that the relevant business rules have been met without the necessity of a centralised verification authority, blockchain offers some useful applications for tax authorities. For example, a secure method for the registration and authentication of taxpayers, or the recording of transactions (e.g., land title registers).

501. As with other types of technology, blockchain also presents some risks particularly as a result of the absence of a central rule-setting governance mechanism. Some of its applied uses, such as crypto-currencies,[4] may also offer a new avenue for masking the identity of those sending and receiving payments. As such, it could present new transparency risks which if unchecked may undermine progress over the last decade to tackle offshore tax evasion. More broadly, the implications of crypto-currencies for tax crime and other financial crime may be an area where further study is warranted.

502. Greater integration of government and third-party information systems, as well as more effective process design offers opportunities to reduce the compliance burden for taxpayers. As with all new technologies, it will be important to ensure that the risks, as well as the benefits are fully understood and mitigated to the extent possible. Given that many of these technologies are being deployed globally, future work that allowed tax administrations to work together to explore these issues would be a cost-efficient use of resources that would also disseminate its benefits effectively.

Box 7.7. Use of electronic data to enhance compliance

A large number of tax administrations have already adopted pre-filled returns for some or all sources of personal income. Some jurisdictions, including Belgium, Denmark, Finland, Hungary, Iceland, Lithuania, Malaysia, Malta, Norway, Singapore and Slovenia, have adopted a "deemed acceptance" approach of pre-filled returns after the expiry of a notice period. In their most advanced form, complete pre-filled tax returns cover close to 100% of personal income taxpayers in a number of jurisdictions.

The Australian Tax Office has incorporated a tool in its mobile app which allows users to record tax deductions on the go. Using the camera on their device, taxpayers can capture receipts and use location services to record work-related car trips for vehicle deductions, eliminating the need for paper records.

The Kenya Revenue Authority introduced the iTax system in 2013. This is a web-enabled tax collection system that provides a fully integrated and automated solution for the administration of income taxes, including pay as you earn, VAT and withholding taxes. It allows taxpayers to simply update their tax registration details, file tax returns, register all tax payments and make status enquiries with real-time monitoring of their account.

7.4. Emerging frontiers for tax and digitalisation

503. The examples cited in this chapter reflect only a small sample when considering the far-reaching implications that new technologies, driven by digitalisation, could have for the whole tax system. These range from the impact of automation and artificial intelligence on the workforce, the changes that the growth of 3-D printing and augmented reality could bring to value chains, to the ability of big data and analytics to radically transform tax policy-making and compliance activities in a way that enables real-time, bespoke measures to be developed.

504. In light of the opportunities to improve taxpayer services, enhance compliance and tackle tax fraud and evasion, further work on the issues highlighted in this chapter is warranted, including on how best to assist less developed countries to realise these benefits. Initial steps have already been taken to progress some of these issues, including with respect to:

- The impact of online platforms on the changing taxable status of economic actors across different forms of employment. Namely, the shift from standard labour contracts to non-standard labour contracts, which may include the offering of labour services either as a self-employed or through a closely-held corporation. This work will be delivered in 2019.
- Options for tax authorities to access information held by online platforms regarding the income-generating activities facilitated by such platforms. This work will be completed in 2018. Based on its outcomes, further work could also be considered in putting in place a multilateral data exchange mechanism for information held by platforms, to be shared with tax authorities automatically on a periodic basis.
- Analysing the financial account data now available to tax authorities as a result of the CRS, to identify behavioural patterns with respect to both onshore and

offshore non-compliance/evasion with a view to improving detection and deterrence tools for such activities. This work will be delivered in 2019.

- Developing options for measures which strike a balance between reducing the compliance burden for innovative entrants to the market, while preserving a level playing field for similar, existing activities.

505. In addition, further areas of work which could be explored as highlighted in this chapter include:

- Further develop tax policy work currently underway to assess the impact of the shift from standard to non-standard labour contracts on both revenue and the tax mix. Specifically, a global and inclusive assessment on whether such a shift is welfare improving for the overall population will be needed.
- Build on existing best practice with respect to taxpayer education to focus on situations involving online, cross-border activities to improve understanding of tax obligations and promote self-reporting for voluntary compliance.
- Peer-to-peer knowledge sharing between tax administrations to build a database of best practice and monitor new developments in the use of new technologies to improve taxpayer services.
- Analysis of how and the extent to which the integration of government and third party information systems offers opportunities but also some risks in terms of reducing the tax compliance burden on taxpayers, and consider options to mitigate the risks while effectively disseminating the benefits.
- Analysis of the risks of tax evasion posed by crypto-currency and blockchain technology more generally, and the possible solutions, such as legislative measures which require digital asset exchange platforms or other third parties to report, and/or which allow tax administrations to request information on transactions regarding digital assets such as crypto-currency as well as targeted exchange of information.

506. In each of these areas of ongoing and proposed work, it will be important to ensure that developing countries, as equal-footing members of the Inclusive Framework on BEPS, can both contribute to and benefit from these developments, in a way that takes into account their specific constraints and environment. As appropriate, this may include working with the regional tax administration bodies, as well as the Platform for Collaboration on Tax.

507. More generally, the TFDE should continue to monitor new developments, including digital innovations, which may have implications for the effectiveness of tax systems, from policy matters through to administration, in view of the rapid degree of transformation resulting from digitalisation. An update on progress on each of these topics will also form part of the Inclusive Framework's 2020 report on tax and digitalisation.

Notes

[1] The term 'gig economy' indicates a labour market characterised by the prevalence of short-term and often non-standard contracts or freelance work as opposed to permanent jobs and standard labour contracts. The term 'sharing economy' refers to a market in which assets or services are shared between private individuals, either for free or for a fee. Both the gig economy and the sharing economy have become increasingly prominent as a result of digitalisation, and in

particular, the use of the Internet, which has allowed a rapid expansion of such activities on a global scale.

[2] More information on the OECD's previous work on this topic can be found in the 2015 Report on (OECD/FIIAPP, 2015[1])

[3] (OECD, 2017[2])

[4] A crypto-currency is a digital asset used as a medium of exchange and which relies on cryptography to secure its transactions, to control the creation of additional units, and to verify the transfer of assets. It is a type of virtual currency, meaning a digital unit of exchange that are not backed by government-issued legal tender

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Chapter 8. Conclusion to the Interim Report on the Tax Challenges Arising from Digitalisation

This chapter describes the areas of further work that have been described in the Interim Report, and how this work will be taken forward by the Inclusive Framework on BEPS. It notes that an update on progress will be provided in 2019, with a final report in 2020.

509. The 2015 BEPS Action 1 Report identified a number of tax challenges relating to digitalisation that go beyond BEPS - namely nexus, data and characterisation - and considered options that could address some of these broader challenges. However, no agreement was reached in 2015 on whether any of these options should be adopted. In the absence of consensus, a number of countries have subsequently begun to explore and implement a range of uncoordinated and unilateral actions (see Chapter 4).

510. Following the delivery of the BEPS package, it was agreed that the Task Force on the Digital Economy would continue its work within the Inclusive Framework delivering an interim report in 2018 and a final report in 2020. Since then, important advances have been made in our understanding of how business models and value creation are being affected by the process of digitalisation. With a focus on highly digitalised business models, Chapter 2 describes new processes of value creation and a number of salient characteristics that are frequently observed in these businesses; namely scale without mass, heavy reliance on intangible assets and the importance of data and user participation. The transformative changes associated with digitalisation are quickly reaching across a growing number of businesses and as the BEPS Action 1 Report concluded, it would be difficult, if not impossible, to ring-fence the digital economy from the rest of the economy.

511. The more than 110 members of the Inclusive Framework, representing a diverse range of economies at varying levels of development, recognise their common interest in maintaining a relevant and coherent set of international tax rules. The proliferation of unilateral approaches is likely to have adverse impacts on investment and growth, and risks increasing double taxation and complexity for taxpayers and tax authorities alike.

512. However, the tax issues raised by digitalisation are technically complex, and this interim report identifies the different views among countries on whether and to what extent the features of highly digitalised business models and digitalisation more generally should result in changes to the international tax rules. Overall, there is support for undertaking a coherent and concurrent review of two key aspects of the existing tax framework, nexus and profit allocation rules that would consider the impacts of digitalisation.

513. The work required to further progress discussions on these complex issues is identified in Chapter 5. In addition to refining the understanding of the value contribution of certain aspects of digitalisation, technical solutions will also be explored to test the feasibility of different options. In addition to ongoing dialogue between Inclusive Framework members, this process will also involve ongoing engagement with different stakeholder groups, including business, civil society and academia. Following an update on progress in 2019, the Inclusive Framework will work towards a consensus-based solution by 2020.

514. There is no consensus on the merits of, or need for, interim measures, and therefore this report does not make a recommendation for their introduction. Chapter 6 recognises that a number of countries do not agree that features such as “scale without mass”, a heavy reliance on intangible assets or “user contribution” provide a basis for imposing an interim measure and consider that an interim measure will give rise to risks and adverse consequences irrespective of any limits on the design of such a measure, including as a result of uncertainty and double taxation. Countries that are in favour of the introduction of interim measures acknowledge that such challenges may arise but consider that at least some of the possible adverse consequences can be mitigated through the design of the measure and that, pending a consensus-based global solution, there is a

strong imperative to act to ensure that the tax paid by certain businesses in their jurisdiction is commensurate with the value that they consider is being generated in their jurisdictions. Where jurisdictions wish to proceed with consideration of interim measures, they have identified a number of considerations that they believe need to be taken into account as guidance to limit the potential for divergence and possible adverse side-effects.

515. Separately from the broader tax challenges, and considering more specifically the BEPS issues that may be exacerbated by digitalisation, there is preliminary evidence already available suggesting that implementation of the OECD/G20 BEPS package is having an impact. Adopted in October 2015, the BEPS package, and in particular, those measures most relevant to digitalisation (Actions 3, 5, 6, 7, and 8-10), has already begun to take effect as described in Chapter 3. The early response of some highly digitalised MNEs also suggests that they have begun making changes to their business structures to improve alignment with their real economic activity. Continuing to monitor the impact of the BEPS package, in particular after the 2017 US tax reform, will be an important part of the work of the TFDE going forward.

516. In addition to its impact on the international tax rules, the digital transformation is also having an important influence on other aspects of the tax system. As described in Chapter 7, these range from the implications of changes to the taxable status of economic actors arising as a result of a shift from standard to non-standard work, to new tools available to tax administrations that deliver improved taxpayer services, more effective data matching, and greater capabilities to detect and investigate tax evasion and fraud.

517. While some work on these topics related to the impact of digitalisation on other aspects of the tax system is already underway, a number of additional areas have been identified in Chapter 7 to ensure that the tax system, from policy through to administration, remains able to respond to and make use of the latest developments in digital technology.

518. Ensuring that our tax systems are ready to meet the changes brought by digitalisation, as well as to leverage from its opportunities and provide protection from its potential risks, is a critical challenge. Political support will be required to undertake the detailed, often complex work, needed to deliver on these objectives, noting that the tax system remains a foundation stone in the relationship between States and their citizens.

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Tax Challenges Arising from Digitalisation – Interim Report 2018

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