2 The concept of service(s) in recent European Union legal texts: the case of online digital content

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Abstract: This paper addresses adverse consequences of the European Union definition of a 'service', especially regarding the Digital Single Market Strategy. After an introduction, the second section analyses through legal texts, its somewhat outdated view, where a 'service' covers all intangible items. The third section depicts the new economic approach, based on ownership rights, almost adopted by, among others, the System of National Accounts, where intangible information products are goods. The fourth section studies typical problems, such as the tax discrimination between tangible goods and intangible information goods, mistakenly regarded as services (for example books compared with e-books). As to the provision of 'digital content', it results in a contorted contractual treatment of intangible goods. The new approach to a 'service' could solve these problems. Overall the paper advocates for more exchanges between economists and law experts.

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A tribute to T. P. Hill (1929-2017)

1. Introduction

In 2015, the European Commission (EC) launched *A Digital Single Market Strategy for Europe* (COM(2015) 192 final). It specifically concerns the production, development and sale of digital content, where digital content designates, the production, supply and processing of data (Annex B), in other words information ordered in a specialised way and supplied in digital form. Digital content refers to intangible entities, which, to paraphrase T. P. Hill, have come to play a major role in the functioning and growth of economies and need to be appropriately defined and classified (see also De Backer et al. (2015)), 'however, the concept of an intangible good has proved to be difficult and elusive, especially because of a long standing tendency to confuse intangibles with services' (Hill (2014), p. 60).

This article, starting with the case of e-books, provides an example of such confusions in the field of European Union (EU) law. It intends to demonstrate the need to clarify the EU's views on services (and services-producing activities), in accordance with the spirit of the System of National Accounts (SNA) methodology (UN (2009)). Moreover it advocates that national accountants should be aware of legal texts and debates which, to a certain degree, are addressing questions of common interest. The article shows how certain legal and economic concerns are interrelated and that each field might benefit from advances made in the other. This is all the more true since the view of services adopted since 1993 by the SNA focuses on the criterion of ownership rights, which inescapably involves legal concerns.

Obviously, information has not always been brought to users by electronic means. The coexistence of traditional and modern means of access to information that are regulated according to differing rules is nowadays inducing categorisation difficulties; the tax treatment of e-books is certainly the most visible example.

In a judgment issued on 5 March 2015, the Court of Justice of the European Union (the ECJ) reiterated the criteria defining a service and the VAT rate applicable to 'electronically supplied services' (CJEU (2015)). The Court confirmed that, under EU law digital books are indeed such a service and that, since these services may not benefit from a reduced VAT rate, they must be taxed at the standard rate. Many observers consider traditional paper and digital books as two forms of the same product, being tangible or intangible, which should not be discriminated for tax purposes (Linklater (2015)) ([2]). However, this common sense consideration comes up against several formal difficulties, including the prevailing definition of a service in EU legal texts.

This situation calls for an examination of the distinction currently made between goods and services by EU legal texts, the adverse consequences of this, and how they could be overcome. This topic is of major importance for more than just practical economic, law or tax

([2]) Germany, France, Italy and Poland asked the EC on 19 March 2015 to bring the existing situation to an end.

reasons. It illustrates similar methodological debates to those addressed in national accounts, especially how digital entities should be regarded. Many activities representative of the new economy are producing or processing information. It is quite common to regard digitalised or information products that such activities supply as services, as endorsed by the EU. However, following Hill's (1999, 2014) illuminating views, this article, advocates that they are not, and incidentally, that knowledge-capturing products should be regarded as information goods. Moreover, using the example of EU legal texts, it also explains that avoiding to recognise that these are information goods leads to an unduly complex regulatory framework, which in turn increases legal complexity and transactions costs. In so doing, the article intends to show on the one hand, that the proper characterisation of a service is not merely a vain methodological debate (Miroudot (2019)), and on the other hand, that national accountants should more often cooperate with legal experts, as both professions can benefit from exchanging views on intangibles to clarify their methodology.

The paper is organised as follows. Section 2 examines the definition of a 'service' in key EU legal texts. It points out that the EU view owes much to the traditional economic conception, but also that the wording of the seminal rules tends to lead to some confusion. The third section recalls the revised economic approach to a 'service' promoted by Hill (1999) and shows that this could help to solve the problems relating to the categorisation of digital content between goods and services. As an example, the fourth section focuses on legal difficulties introduced into the EU's digital strategy by the present EU view of a 'service', especially regarding the VAT rate and the Digital Content Directive.

2. Services in key EU official texts

EU directives and regulations frequently employ the term 'service(s)' without defining it, as if its meaning were obvious. This is not uncommon practice; for instance, the United Nations Convention on Contracts for the International Sale of Goods (Vienna, 1980) (CISG) does not actually define what constitutes a good or, conversely, a service (UN (2010)). EU legal texts do, however, provide some elements of a characterisation, generally referring to Article 60 of the Treaty of Rome (now TFEU Article 57). This states that 'Services shall be considered to be "services" (…), in so far as they are not governed by the provisions relating to freedom of movement for goods, capital and persons' (Box 1). Although it gives no clues as to what a service actually is, this sentence defines it by default, referring to a *residual* definition as Hill (2014) puts it.

2.1. A residual notion: a service is a non-good

The Treaty of Rome defines a service by what it is not: it is an economic transaction pertaining neither to goods, nor capital, nor persons. While it is easy to understand that a service is not capital or a person, the key difference between a good and a service remains implicit and unexplained. This most probably stems from the fact that the Treaty considers a service from an international trade perspective. Consequently, it is probably influenced by the balance of payments approach, in which current accounts are traditionally split between goods and a vast conglomerate of transactions, once associated with services (*invisible trade*). In this view,

services are a complementary set to goods. For instance, the VAT Directive (Council Directive 2006/112/EC) plainly illustrates this approach: 'Supply of "services" shall mean any transaction which does not constitute a supply of goods' (Article 24(1)).

Since a service is defined as being opposed to a good, it is necessary to explain the characteristics of goods. Here again, there is no definition as such in the Treaty. However, from a reading of other EU legal texts, it is fairly easy to see that they are characterised by their materiality, or tangibility (see also Snell (2002)). This view is, for instance, illustrated by the VAT Directive, Article 14(1), which states that '"Supply of goods" shall mean the transfer of the right to dispose of tangible property as owner'. A similar expression is employed in the proposal for a Common European Sales Law, which is detailed below (COM(2011) 635 final, Article 2(h)).

A side effect of this view is that it establishes a boundary between tangible and intangible goods, where only the former are deemed proper goods. In confirmation of this reasoning, the VAT Directive states that the supply of a service may consist in, among other things, 'the assignment of intangible property' (Article 25). This standpoint brings complexity and raises transactions costs.

Since a digital product is regarded as a service, an e-book is therefore treated differently from its paper counterpart. The March 2015 judgement of the ECJ (CJEU (2015)) thus duly recalls that an e-book is 'an electronically supplied *service*' (emphasis added). It is important to understand that this classification is not linked to the mode of supply required by digital products (commonly downloading). What determines the classification is the very fact that these products are intangible. Although the case of e-books has been much publicised, the reasoning applies to all digital products, including music, images, movies, and so on. Nevertheless, the economic literature usually regards these products as information goods (Shapiro and Varian (1998)). It should be recalled that, since digital products are encapsulating information, the System of National Accounts identifies them as *knowledge-capturing products* (UN (2009), paragraph 6.22) ([3]).

Despite its relevance being increasingly challenged, the tangibility criterion has remained established and has resisted change. A revision of the above-mentioned VAT Directive in 2009, aiming to take account of technical developments in book production, changed the expression 'supply (…) of books' to 'supply (…) of books on all physical means of support' (Council Directive 2009/47/EC amending Directive 2006/112/EC as regards reduced rates of VAT, Annex 1). Regardless of this change, the ECJ did not feel authorised, in its 2015 ruling to extend the notion of books to include digital books.

This kind of classification problem is not unique. It has appeared at least once previously, in a dispute regarding the taxation of printing activities, where the defendant argued that 'printing is a service activity'. The ECJ stated that 'printing works should not be characterised as services, since the direct output of a printer activity is a material entity (…)' (CJEU (1985)). As a matter of fact, from an economic point of view only the distribution part of the publishing activity is a true services-producing activity (see Annex C).

([3]) Hill (2014) convincingly suggests that information-capturing would have been a better label, since goods can only encapsulate information, while knowledge is held by human beings. However, the main issue is that these products are goods (see later).

In focusing on the distinction between materiality and immateriality, case and EU legal texts most probably draw their inspiration from the traditional economic view. Although the standard economic approach uses a number of criteria to differentiate a service from a good, including non-storability or the necessity for the service to be provided in the customer's presence, intangibility is certainly the most prominent one. The 2004 World Investment Report illustrates this approach: 'Services are usually perceived as intangible, invisible, perishable and requiring simultaneous production and consumption, while goods are tangible, visible and storable and do not require interaction between producers and consumers' (UNCTAD (2004), p. 145). By their nature, digital products such as e-books, when considered apart from the medium on which they are supplied (in other words pure information), are obviously intangible and invisible. These observations have notable consequences for the Sale of Goods and Digital Content Directives (see Section 4).

Box 1: service(s) as defined in European Treaties

Article 60 (Treaty of Rome) / Article 50 (Treaty establishing the European Community) / Article 57 (Treaty on the Functioning of the European Union)

Services shall be considered to be 'services' within the meaning of the Treaties where they are normally provided for remuneration, in so far as they are not governed by the provisions relating to freedom of movement for goods, capital and persons.

'Services' shall in particular include:

(a) activities of an industrial character;

(b) activities of a commercial character;

(c) activities of craftsmen;

(d) activities of the professions ([4]).

Without prejudice to the provisions of the Chapter relating to the right of establishment, the person providing a service may, in order to do so, temporarily pursue his activity in the Member State where the service is provided, under the same conditions as are imposed by that State on its own nationals.

([4]) This last word is most probably a poor translation of the French '*professions libérales*', which could have been better rendered as 'professionals'.

2.2. Service products or services-producing activities?

Article 60 of the Treaty of Rome raises another concern when it states that services include, among other things: 'activities of an industrial character; (…) activities of craftsmen (…)' (see Box 1).

The concern stems from the assimilation between the term service(s), which in the article primarily designates an output (in other words a type of product), and the expression *services activities*, which explicitly refers to activities. There is an implicit but unwarranted shift in the rationale here. While it is true that service products are typically provided by services-producing enterprises (in other words, enterprises classified to services-producing activities), they may also be provided by enterprises classified to other economic activities, for instance enterprises providing manufacturing services (Miroudot (2019)). A service may also be embedded in or combined with a manufactured good. Nevertheless, *activities of an industrial character* or *of craftsmen*, which the article lists, only produce a service when they typically carry out specific tasks. For instance, repairs or installation tasks fall under services provision (see Council Implementing Regulation (EU) No 282/2011, Article 8), whereas other craftsmen's works fall under goods production. Yet it should be obvious that craftsmen's activities as a whole and 'activities of an industrial character' are not usually services-producing activities.

Including activities (economic activity approach) in a characterisation of a service (product approach), unfortunately introduces a risk of confusion into the whole meaning of Article 60.

It is worth underlining that the two perspectives are, from a methodological point of view, clearly separate. On the one hand, there are classifications of activities, such as the United Nations Statistics Division's (UNSD) International Standard Industrial Classification (ISIC), and on the other hand, product classifications, for example the UNSD's Central Product Classification (CPC).

The wording of the Treaty of Rome was undoubtedly a simplification. Nevertheless, its inclusion in a seminal text which establishes binding obligations has produced unforeseen consequences. The intermingling between product and economic activity tends to run through most EU legal texts. The texts sometimes regard a 'service' as a provided product (for example the VAT Directives), sometimes as an activity (for example the Services Directive (Directive 2006/123/EC on services in the internal market), but they all refer to Article 60, without however making explicit which aspect is addressed. In fact, an economic activity perspective should be taken whenever establishment provisions are being considered; whereas cross-border provisions call for a perspective based on a service as a product.

To avoid the risk of confusion between a service as a product and a service as an activity, it is expedient to reserve the term 'service(s)' for the output (the product), and 'service activity(ies)' or 'services-producing activity(ies)' for activities. This mix-up of terms for products and activities might go some way to explaining the problem relating to e-books (or even to all digital products); they might possibly be included in the service category (of products) on the grounds that the enterprises providing them are allegedly in services-producing activities. Nevertheless this might also reveal that several activities are wrongly classified (see Annex C, information and communication).

Box 2: excerpt from the VAT Directive (Council Directive 2006/112/EC on the common system of value added)

Supply of services

Article 24

1. 'Supply of services' shall mean any transaction which does not constitute a supply of goods.

(…)

Article 25

A supply of services may consist, inter alia, in one of the following transactions:

(a) the assignment of intangible property, whether or not the subject of a document establishing title;

(…)

This section has underlined some issues related to the treatment of the term 'service' in EU legal texts, raised by their growing disharmony with the information-based economy. The following section will reveal that recent economic analysis offers a way to solve most of these issues.

3. The updated economic approach to a service

New information and communication technologies, especially digitisation and internet access, have tended to render obsolete the long-established views on the definition of a service. On the one hand, since certain services can be provided remotely, the proximity requirement between consumers and providers is weakened (Mishra et al. (2012)). On the other hand, several goods, especially those called knowledge-capturing in the SNA, can be dematerialised and provided instantly to the consumer, making them appear to be services. Several authors thus consider that the distinction between a good and a service has become blurred (Hojnik (2016)), or has even lost significance (Pilat and Wölfl (2005), Jansson (2009)). However, at least in tax or contractual terms, in other words considering practical market transactions, it remains fundamental. For instance, Dreier (2013, p. 139) writes 'What is needed is (…) a coherent theory of when to treat online offerings of copyrighted works as "services", and when to still treat them as "goods", in spite of their intangible and immaterial nature'. For matters concerning national accounts and (activity and product) classifications, this issue is also of significant relevance. Fortunately, there has been a revival of the economic concept of a service, based on the work of Hill (1977, 1999, 2014), which could help to eliminate the aforementioned ambiguities ([5]).

([5]) It would also help overcoming such considerations: 'it becomes almost impossible to draw a clear line between manufacturing and service activities (…)', (Miroudot (2019), p. 22).

3.1. The ownership criterion

The updated approach does not rely on tangibility to differentiate a good from a service, but on the dissimilarity between flows and stocks. As a flow or a change (Hill (1977)), a service cannot be seized, and is thus intangible. This aspect has often been likened to immateriality, giving rise to the idea that the distinction between a good and a service relies primarily on a physical criterion. However, it is too narrow a view and too misleading a simplification. On the one hand, goods are not only tangible items; on the other hand, as regards services, immateriality is an established fact, not a defining criterion. More crucially, a service cannot be isolated from either its provider or its recipient, in other words it is not intrinsically separable. Therefore, as Hill (1999) stresses, it is not an identifiable, distinct entity over which ownership rights could be established, unlike a good, which, whether tangible or not, clearly is. This way of thinking should drive economists to pay more interest to several legal discussions.

It is important to understand the reasoning here: although a service itself cannot give rise to ownership rights, it can be applied to an object over which they can be established. For instance, repair is a process which (when applied commercially) is applied to the property of a second party (the client), the output of which is not transferable separately from the means (human or technical) employed to perform it. Ownership rights can however, be established over the repaired object. A similar perspective applies to online delivery or access, where delivery is the true services-producing activity (commonly a distributive trade), whereas what is delivered is often a good, even an intangible one (see below concerning originals and copies). Likewise, information although immaterial, fulfils the updated service definition. Consequently, activities such as data production and processing may be viewed as goods-producing activities. The information and communication section of ISIC (Rev.4) includes 'the production and distribution of information and cultural products' (UN (2008), p. 205). Several of these cultural products are, in the terms of the SNA, knowledge-capturing products, and therefore may be viewed as information goods (Annex C provides a detailed discussion of this ISIC section). Only their delivery or the provision of temporary access to them is a services-producing activity, the latter being a rental activity. It should be noted that, while the updated economic approach has been mostly endorsed by the SNA (UN (2009), paragraph 6.17) and the balance of payments (BoP) (Broussolle (2015)), the categorisation problem of knowledge-capturing-products, which are not yet fully recognised as information goods, remains.

The updated approach preserves the distinction between a good and a service and grounds it on more enlightening and effective principles. One unexpected, but decisive, consequence is that a service cannot be stolen, at least in the traditional sense that applies to a good. This is consistent with the fact that a service cannot be subject to ownership rights. For instance, theft of a transport service supposes either stealing the means of transportation (whatever it may be) or the transportation voucher, or being a stowaway. In none of these circumstances is a service itself stolen, separately, in such a way that it could be eventually

used ([6]). Even the illegal taking of a transportation ticket is not stealing a service, but that of a purchase instrument. Another legal consequence is that a good may be replaced by another available good, or repaired, whereas a service has to be produced anew (see Morais Carvalho (2019)). This circumstance has obviously contractual consequences in the event of a lack of conformity, as for example the Sale of Goods Directive (Directive (EU) 2019/771 on certain aspects concerning contracts for the sale of goods) shows.

To a certain extent, EU legal texts already acknowledge that ownership rights typically relate to goods. The VAT Directive (Article 14(1)) reads '"Supply of goods" shall mean the *transfer of the right to dispose* of tangible property *as owner*' (emphasis added); and the Consumer Rights Directive (Directive 2011/83/EU on consumer rights, Article 2(5)) states: '"sales contract" means any contract under which the trader *transfers or undertakes to transfer the ownership* of goods to the consumer' (emphasis added). In both cases, goods are associated with ownership or the transfer of rights; conversely it indicates that this is not a characteristic of a service. In that sense, Recital 29 of Directive 2001/29/EC on the harmonisation of certain aspects of copyright and related rights in the information society is certainly right when asserting 'The question of exhaustion [in other words of ownership rights] does not arise in the case of services and online services in particular'. However, this critical point is not fully recognised, which has had adverse consequences.

3.2. The case for intangible information goods and originals

One adverse consequence of the EU's conformity to the traditional view of a service is that an intangible good is treated as a service. Whereas this approach may acknowledge a traditional separation in economic activities between manufacturers (producers of vinyl records) and what seemed to be services-producing activities (providers of music to be downloaded), it is less and less workable. The updated approach in contrast promotes an integrated and more consistent treatment of both material and immaterial goods, distinct from that of services. The 2011 ECJ C-128/11 UsedSoft case (CJEU (2012)), actually follows a comparable reasoning, when declaring: 'from an economic point of view, the sale of a computer program on CD-ROM or DVD, and the sale of a program by downloading from the internet are similar' (al. 61). As such, it allows goods to be treated independently of their physical aspect (for example downloaded, or in a supporting media, or else built-in software), which is a key issue. This subsection describes and explains the updated approach to intangible goods, which are composed of two classes of goods: originals and copies.

Creative immaterial goods such as patents, software source code, architectural plans, copyrights, and so on are called 'originals' in the updated economic approach. An original may be embedded in a physical (material) medium, but the original itself is immaterial,

([6]) A service incidental to the provision of certain goods (energy provision) or information goods, such as TV shows, movies, or databases, may be indirectly stolen or hacked. Nevertheless it should be recalled that what is stolen is a bundle of a service and a good. In that bundle, the value of the delivery service is low compared with that of the good (which is delivered or to which access is granted). Above all, the delivery service is not stolen as such; it is either latent (not yet produced) or, when produced, embedded in the good that is stolen. In any case, in the particular situation of temporary access, no ownership transfer is at stake. As such, hacking a provider of temporary access to digital goods might result in the theft of a pure service (see also Section 3.2, originals and copies). This circumstance is nevertheless dubious. On the one hand, it supposes that the information goods that were accessed, are, for one reason (limited life) or another (obsolescence), 'perishable', or are otherwise useless to the receiver. Instead, on the other hand, the temporary access theft actually consists in the stealing of an intangible good. There is no imaginable rationale in stealing only the right to access.

because it is the result of an intellectual creation. It is important to stress that the 'original' is not the first physical materialisation of a plan, book, patent, piece of music or movie; the 'original' is the corresponding intellectual production that may be stored on a physical medium (Hill (2003)). Thus, the original is pure information, but organised in a specific way that enhances knowledge. The term 'original' has been chosen to highlight that it is the output of a creative process and that its value stems from the (first) result of this process. An original is a good; it possesses the features of a commodity, except for the physical aspect (Hill (1999)). Let us notice that the way intangible goods are produced, in other words by duplication, entails an important characteristic. They are non-rival goods, because if an owner wants to share or sell an information good, he/she does not need to give away his/her own original or copy (Benabou (2017)), this circumstance has contractual consequences (see below).

Originals must be distinguished from their copies for at least two reasons.

- Firstly, compared with a transaction concerning an original, a transaction concerning a copy is linked to its mode of transfer, in other words to the medium through which it is sold. When a publisher buys an original novel, they may receive a paper manuscript or a digital file; the medium does not alter its value or price. When a customer buys a copy of a work of fiction, they may choose between a paper book and an e-book (purchase of a good), or they may prefer to borrow from a library or use a temporary online access (purchase of a service); the transaction and the price are linked to the mode of provision.
- Secondly, an original is an asset, whereas a copy is an ordinary good. In other words, originals come under the category of investment goods, because the expenses their creation has incurred are expected to generate future incomes (Corrado et al. (2017)). Copies are consumption goods, whether final or intermediary. This perspective was almost adopted in the most recent SNA and BoP revisions (Broussolle (2014, 2015)).

As will be noted in the next sections, the economic and legal approaches on this topic address similar issues and can benefit mutually from each other's perspective. An original may be duplicated as many times as necessary with no alteration of information. Copies of the original are ordinary goods, which, especially in the case of digital copies, may be viewed as equivalent to the original. However, the contract, rights and obligations relating to each of these are not alike. The type of contract determines within which category, in other words as a good or as a service, the provision of a specific good falls. When a good, whether tangible or not, is sold outright, or the right to use it sold for an unlimited period, the transaction involves a sales contract. As ECJ C-128/11 UsedSoft judgement recalls in paragraph 42 that 'According to a commonly accepted definition, a "sale" is an agreement by which a person, in return for payment, *transfers to another person his rights of ownership* in an item of *tangible or intangible property* belonging to him' (emphasis added). Let us here emphasise the critical link made between goods and the sales contract. When a good is made accessible by means of a contract or license (for a limited duration), or remote access (software or a file installed in the cloud), in other words when it is rented, it is a service transaction. In those circumstances the transaction falls under service or rental contracts. These considerations are essential for an accurate treatment of digital content, which an examination of the corresponding directive will illustrate (Directive (EU) 2019/770 on certain aspects concerning contracts for the supply of digital content and digital services) (see the next section).

4. Services and information goods in the EU's 2015 Digital Strategy

The traditional views regarding goods and services have unfortunate consequences on recent legal texts aiming to foster the digital economy. They create difficulties in the treatment of digital products, generating the need for special cases and legal contortions. Moreover they are of major interest for national accountants, as they provide valuable and fresh practical cases as to the underlying goods-services definition problem. Two major issues pertaining to the EU's 2015 Digital Strategy are examined below: VAT and the provision of digital content.

4.1. Adverse consequences of the current notion of a service for VAT

Under EU law, only goods and a few selected services may benefit from reduced VAT rates (Annex A). Consequently, to fulfil the aforementioned goals, a clear understanding and a precise delineation of the boundary between goods and services are needed. However, the traditional approach in the EU is becoming increasingly questionable.

A first issue relates to the categorisation of the output of utilities, such as electricity and gas. At least since the adoption of Directive 1999/44/EC on certain aspects of the sale of consumer goods and associated guarantees (Article 1(2) (b)), EU law has regarded these outputs as a service, because at first sight they appear to be intangible. It is worth observing that this apparent intangibility is not of the same nature as that of information goods, because it essentially concerns sight (invisibility), whereas the outputs of utilities are tangible by other senses, or physical dimensions, such as feeling, smell, or even hearing (see also Hill (2014)).

In any event, because several EU Member States wished to apply a reduced VAT rate to the output of utilities, an exception to EU principles was established. Hence the VAT Directive states 'Electricity, gas, heat, refrigeration and the like shall be treated as tangible property' (Article 15(1)). Similarly the Sale of Goods Directive reads 'water, gas and electricity are to be considered as goods within the meaning of this Directive where they are put up for sale in a limited volume or a set quantity' (Article 2. al. 5a.). Let us notice that the latter stipulation oddly means that the nature of those products depends on their size.

These special provisions could have been avoided. Given that these outputs can be isolated from their provider as well as their recipient, and that consequently ownership rights can be established over them, they are in fact goods. Moreover, since they are usually priced by volume, their sale should come under the sales contract (see next subsection). This would be much simpler and more effective.

The major adverse effect nevertheless stems from the dichotomous treatment of information goods, depending on whether or not information is incorporated in a medium. The fact that this view is somewhat in line with the BOP rules (IMF (2009), paragraphs 10.164 and 10.140 sq., Box 5), where information goods transactions are classified as a good or as a service depending on whether they are materially (CD, book, software …) or immaterially (downloaded) provided, is not a helpful justification, since it appears not entirely consistent with the SNA definition of a service (Broussolle (2015)).

This split induces tax distortions (Linklater (2015)) and a legal burden for enterprises. Yet, since the medium is not the actual source of the economic value, it should not be used as a decisive characteristic. The EC is somewhat aware of this problem and has proposed two ways to overcome it. Unfortunately, both necessitate legal contortions and are unsatisfactory because they do not address the underlying goods-services definition problem. This subject also concerns the knowledge-capturing products debate.

Firstly, concerning tax distortions, in the (paper) books compared with e-books problem, the EC finally agreed in December 2018 to equalise their VAT rate. However, it was done by generating an exception specifically for e-books to the general rule. It would have been much simpler and more consistent to regard all the pseudo 'e-services', as belonging to the broader set of intangible goods. This would have prevented distortions being created against other electronically provided intangible information goods, such as music or movies. Conversely, this also suggests that, in the SNA, knowledge-capturing goods might rather be called information goods and simply classified with goods.

Secondly, the Consumer Rights Directive (Directive 2011/83/EU on consumer rights) had initially and appropriately decided to include '*tangible*' digital content under the sale of goods contract, although separated from other '*intangible*' information goods which were seen as services (Annex B). The consequence of this choice is what was referred to as the dichotomous approach. In 2015, the EC undertook to eliminate this fragmented situation by launching two combined directives. The first one, Directive (EU) 2019/771 on certain aspects concerning contracts for the sales of goods, otherwise known as the Sale of Goods Directive, aims at offering a unified framework for goods sold in the EU. The second, Directive (EU) 2019/770 on certain aspects concerning contracts for the supply of digital content and digital services, also known as the Digital Content and Digital Services Directive, is devoted to all digital content (see the next subsection), but mainly to the sale of services (Manko (2016)).

The effort to eliminate the dichotomous view has nonetheless generated complexities because, although the EC decided to address all digital content in the same text, unfortunately the EC chose to favour the text that was principally devoted to services to implement this approach.

Since the EU has still not changed its 'materialist' principles, the implicit reasoning is that, despite the fact that information embedded in a medium/carrier ('tangible' digital content) is a good and intangible digital content (e-publications …) is deemed a service, they will be treated in the same directive as true e-services. This results in greater complexity because the two first entities (tangible and intangible digital content) are not actually services. Consequently not all the properties of these information goods may be covered by the Digital Content and Digital Services Directive. Several have to remain covered by the Consumer Rights Directive that is dedicated to goods, especially considering copyright matters (see Recital 20). Once more it can be observed that in the Digital Content and Digital Services Directive those provisions are not needed, which confirms that services are not subject to property rights. Indeed, when ownership rights are at stake concerning a services-producing activity (for instance a services-providing process, a license or a franchise), it is not intrinsically the service as such which is involved, but its design or a business model. The service itself has yet to be produced. In any case, the sale and use of CDs and DVDs therefore legally come under the remit of two Directives, whereas one sufficed before.

Both observed solutions add complexity. It would be simpler and more effective to regard all these products as information goods, and treat them as such.

At the beginning of the legislative process, in the very first place, to fulfil its all-encompassing goal the EC had extended the notion of digital content to cover not only intangible and tangible information *goods*, but also information *services* (Annex B — excerpts from a proposal for a Directive on certain aspects concerning contracts for the supply of digital content (COM(2015) 634 final). Thankfully the adopted Digital Content and Digital Services Directive did not follow this all-embracing path: rather, digital content is instead more tightly delimited (Annex B — excerpts from Directive (EU) 2019/770). Nonetheless several legal and categorisation problems related to contractual matters remain, which are addressed in the next subsection.

4.2. A non-sale, non-service contract for information goods?

One of the three main objectives of the EU's Digital Single Market Strategy is to ensure 'better access for consumers and businesses to online goods and services across Europe', through the adaptation of the legal framework established by the Consumer Rights Directive to rapid economic developments in online markets. It is based on the two 2019 directives — the Sale of Goods Directive and the Digital Content and Digital Services Directive — mentioned in the previous subsection. This new strategy aims at creating a harmonised EU legal framework for all types of digital content supply.

However, in doing so it comes up against the conception of the boundary between a service and a good. This makes it impracticable to give a clear answer to the key question: to what type(s) of contract(s) should the supply of digital content belong? This also hinders the understanding that, if the true nature of the goods-services distinction were recognised, it would be much easy to relate each type of digital content to the appropriate type of contract and thus the strategy would become more effective.

4.2.1. THE PARTICULAR APPROACH OF THE CONSUMER RIGHTS DIRECTIVE

Usually, depending on the economic nature of the supplied entity, the supplier–customer relationship comes under a sale, a service, or a rental contract. However, the Consumer Rights Directive decided that, following a debatable decision on supply by utilities, intangible information goods would not come under these established types of contracts (Annex B — excerpts from Directive 2011/83/EU).

Unsurprisingly, the dissimilarities in the supply of a good and a service result in significant contractual divergences (see Mak (2016); Wendehorst (2016) and following paragraphs). The Consumer Rights Directive depicts one example, in Recital 40: 'In the case of service contracts, the withdrawal period should expire after 14 days *from the conclusion of the contract*. In the case of sales contracts, the withdrawal period should expire after 14 days from the day on which the consumer or a third party other than the carrier and indicated by the consumer, *acquires physical possession of the goods*' (emphasis added). In any event, EU law could not, on the one hand, because of its principles, recognise supply by utilities or of 'immaterial'

information goods as a supply of goods; nor could it, on the other hand, because of practical incompatibilities, associate them with service contracts. Consequently, it created a particular (*sui generis*) contract, which relates neither to that of a sale, nor to that of a service. Incidentally, it can be suggested that this choice is similar in essence to that of the 2008 SNA when it was decided to label information goods with the idiosyncratic name of 'knowledge-capturing products'. Nevertheless, Recital 19 of the Consumer Rights Directive, states '(…) Similarly to contracts for the supply of water, gas or electricity (…), contracts for digital content which is not supplied on a tangible medium should be classified, for the purpose of this Directive, neither as sales contracts nor as service contracts'.

This is somewhat unexpected and rather unjustifiable. Why does the sale of the outputs of utilities, usually done by volume and which has the key characteristics of goods, not come under the sale contract? Likewise, why are intangible information goods, which are sold outright, not associated with the sale contract? This would have met the suggestion of Wendehorst (2016, p. 11) calling for: '(…) a cautious **"digitalisation" of general sales law**, i.e. in making the law on sale of goods fit for the challenges of the digital age' (emphasis already in the original text). On the other hand, why are genuine information services not linked to the appropriate rental or service contract?

Unfortunately, the EU's Digital Strategy perpetuates the same approach.

4.2.2. THE EU'S DIGITAL STRATEGY PERPETUATES THE CONTRACTUAL SINGULARITY

The Digital Content and Digital Services Directive deliberately adopts a very broad approach encompassing all information goods and e-service products ([7]), and leaves it to EU Member States to decide whether the supply of digital content should come under sale, service, rental or particular contracts (see Recital 12). Nevertheless, according to Mak (2016) the consistent and desired solution appears to be the particular regime. While this solution formally prevents legal fragmentation among Member States, it does not overcome the doctrinal problem.

As Sénéchal (2015) has remarked about the discarded proposal for a Regulation on a Common European Sales Law (COM(2011) 635 final), the growth of digital supply does not eliminate the 'logic of possession'. Thus, it is crucial to remember that — for good reasons — digital supply may still fall within the scope of the sale framework (see also CJEU (2012)). She therefore stresses that it would be more consistent to separate the contractual treatment of the supply of 'digital content', into two different categories, depending on this 'logic of possession'. On the one hand, the sale contract would be appropriate for possession-compliant digital content (in other words, according to this paper, information goods). On the other hand, service or rental contracts would apply to digital content which lacks the 'logic of possession' (in other words, according to this paper, e-services).

This weakness is also illustrated by the points made by Mak (2016, p. 13) (see also Wenderhost (2016)): 'Whereas certain types of digital content could be treated as goods – e.g. software, e-books, content delivered on a tangible medium – other types do not fit well in this framework. Services through which digital content provided by the consumer is stored or

([7]) Excepting digital elements included in goods, such as smart TVs.

processed (e.g. cloud services or social media platforms) are not so much similar to contracts for the sale or supply of goods, as they are to services'. According to this paper, the latter refers to e-service products or e-services-producing activities.

The source of the legal difficulties concerning the supply of digital content does not primarily stem from the digital nature of this content. If all information goods, whether of 'physical' appearance or otherwise, were regarded as goods, contractual exceptions would no longer be needed, and the categorisation of the supply of digital content between sales or service contracts would be simplified.

5. Conclusions

Undeniably, the progresses of the information-based economy have brought into question customary economic views and the content of legal texts. However, contrary to some opinions, the ongoing dematerialisation of goods does not primarily obliterate the dissimilarities between a good and a service, but encourages efforts to provide a better delineation of the boundary between them. It has been explained in this article that EU legal texts still rely on a traditional conception of this boundary, based on tangibility. This view, widespread in the economic literature of the 1960s and 1970s, was successfully challenged by an updated perspective, increasingly endorsed by the SNA since 1993 and the BoP in 2008. This revised approach is mainly based on the capacity to establish (or not) ownership rights on products. It is better suited to the information-based economy where intangibles and information are crucial for economic growth.

In 2015, the EC launched *A Digital Single Market Strategy for Europe* aimed at fostering economic growth in the digital and internet fields. However, this strategy faced several difficulties regarding the VAT rate and the legal framework to be set for the supply of digital content, which is basically concerned with the production and processing of information. In these areas, the present definition of a 'service' creates tax distortions, leads to legal contortions (unnecessary exceptions), and results in the invention of an idiosyncratic type of contract (a 'neither sale, nor service' contract). Many of these problems could be solved by adopting the updated approach to a service and by recognising that all digital products, even intangible ones, are information goods. Several legal exceptions would disappear as a result and the contractual relationship between sellers and customers, applicable to digital content, would fit more easily into the usual categories of sale, service or rent.

This article uses EU legal texts as examples of the goods-services border issue. Arguably, it quite often discusses legal considerations, which may be disturbing to economists or statisticians who are unfamiliar with this literature or approach. Firstly, this comes from the fact that the updated view of a service focuses on ownership rights. As such, it necessarily leads to reflections on principles of law. This also means that a convenient way to classify complex situations, regarding a good or a service, might be to look at the contractual links that bind suppliers and customers. Secondly, the idea behind the paper stems from the opinion that the perspective of EU legal texts on goods and services had not previously been studied, at least from an economic point of view. It appears that their principles, set out in 1958, are less and less relevant for the information-based economy and begin to produce adverse

consequences. Thirdly, another goal of the article is to illustrate the need for economists and legal experts to talk together more often. This would be beneficial for both fields. The circumstances under scrutiny provide valuable practical situations, which might help adapting the views of the SNA or that of ISIC (see Annex C).

Incidentally and finally, the updated perspective of a service would shed a more positive light on the deindustrialisation debate (Miroudot (2019), De Backer et al. (2015)). Indeed, this might reduce the measure of the services-producing part of modern economies, since 'the rapid growth of intangibles is often viewed as contributing to the growth in service production, whereas it actually contributes to the growth of goods production' (Hill (2014), p. 62) (see Annex C).

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Annex A: excerpts from Council Directives 2006/112/EC and 2009/47/EC on the common system of value added tax and as regards reduced rates of value added tax

Article 14

1. 'Supply of goods' shall mean the transfer of the right to dispose of tangible property as owner.

Article 15

1. Electricity, gas, heat, refrigeration and the like shall be treated as tangible property.

(…)

Article 24

1. 'Supply of services' shall mean any transaction which does not constitute a supply of goods.

(…)

Article 25

A supply of services may consist, inter alia, in one of the following transactions:

(a) the assignment of intangible property, whether or not the subject of a document establishing title;

(…)

SUBSECTION 5

Supply of miscellaneous supply services

Article 56

(…)

(a) transfers and assignments of copyrights, patents, licences, trade marks and similar rights;

(…)

(k) electronically supplied services, such as those referred to in Annex II;

SECTION 2

Reduced rates

Article 98

(…)

2. The reduced rates shall apply only to supplies of goods or services in the categories set out in Annex III.

of which (as modified by the Council Directive 2009/47/EC)

(6) supply, including on loan by libraries, of books on all physical means of support (including brochures, leaflets and similar printed matter, children's picture, drawing or colouring books, music printed or in manuscript form, maps and hydrographic or similar charts), newspapers and periodicals, other than material wholly or predominantly devoted to advertising; (emphasis added)

Annex B: definitions of services, goods and digital content — excerpts from Directive 2011/83/EU, a proposal for a Directive (COM(2015) 634 final) and Directive (EU) 2019/770

A) FROM THE CONSUMER RIGHTS DIRECTIVE (DIRECTIVE 2011/83/EU ON CONSUMER RIGHTS)

(5) (…) in particular in the services sector, for instance utilities, (…)

(19) Digital content means data which are produced and supplied in digital form, such as computer programs, applications, games, music, videos or texts, irrespective of whether they are accessed through downloading or streaming, from a tangible medium or through any other means. Contracts for the supply of digital content should fall within the scope of this Directive. If digital content is supplied on a tangible medium, such as a CD or a DVD, it should be considered as goods within the meaning of this Directive. Similarly to contracts for the supply of water, gas or electricity, where they are not put up for sale in a limited volume or set quantity, or of district heating, contracts for digital content which is not supplied on a tangible medium should be classified, for the purpose of this Directive, neither as sales contracts nor as service contracts. (…)

Article 2

(3) 'goods' means any tangible movable items (…)

(5) 'sales contract' means any contract under which the trader transfers or undertakes to transfer the ownership of goods to the consumer and the consumer pays or undertakes to pay the price thereof, including any contract having as its object both goods and services;

(6) 'service contract' means any contract other than a sales contract under which the trader supplies or undertakes to supply a service to the consumer and the consumer pays or undertakes to pay the price thereof;

(...)

(11) 'digital content' means data which are produced and supplied in digital form;

B) FROM A PROPOSAL FOR A DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL ON CERTAIN ASPECTS CONCERNING CONTRACTS FOR THE SUPPLY OF DIGITAL SERVICES (COM(2015) 634 FINAL): THE BROAD VIEW OF DIGITAL CONTENT

Article 2

1. 'digital content' means

(a) data which is produced and supplied in digital form, for example video, audio, applications, digital games and any other software,

(b) a service allowing the creation, processing or storage of data in digital form, where such data is provided by the consumer, and

(c) a service allowing sharing of and any other interaction with data in digital form provided by other users of the service;

(...)

11. 'durable medium' means any instrument which enables the consumer or the supplier to store information addressed personally to that person in a way accessible for future reference for a period of time adequate for the purposes of the information and which allows the unchanged reproduction of the information stored.

C) FROM THE DIGITAL CONTENT AND DIGITAL SERVICES DIRECTIVE (DIRECTIVE (EU) 2019/770 ON CERTAIN ASPECTS CONCERNING CONTRACTS FOR THE SUPPLY OF DIGITAL CONTENT AND DIGITAL SERVICES): THE NARROW VIEW OF DIGITAL CONTENT

(19) The Directive should address problems across different categories of digital content, digital services, and their supply. (…) this Directive should cover, inter alia, computer programmes, applications, video files, audio files, music files, digital games, e-books or other e-publications, and also digital services which allow the creation of, processing of, accessing or storage of data in digital form, including software-as-a-service, such as video and audio sharing and other file hosting, word processing or games offered in the cloud computing environment and social media. As there are numerous ways for digital content or digital services to be supplied, such as transmission on a tangible medium, downloading by consumers on their devices, web-streaming, allowing access to storage capabilities of digital content or access to the use of social media, this Directive should apply independently of the medium used for the transmission of, or for giving access to, the digital content or digital service. However, this Directive should not apply to internet access services.

Article 2

(1) 'digital content' means data which are produced and supplied in digital form;

(2) 'digital service' means:

(a) a service that allows the consumer to create, process, store or access data in digital form; or

(b) a service that allows the sharing of or any other interaction with data in digital form uploaded or created by the consumer or other users of that service;

Annex C: information and communication (ISIC Section J) — an updated view of service activities and their outputs

In accordance with the views presented in this paper, any activity, the output of which is, on a main and usual basis, neither separable from the provider nor from the recipient, is classified within the services-producing economic sector. This especially concerns manufacturing type activities, which are carried out on a subcontracted basis for third parties on not owned (or more commonly described as not self-produced) materials. Conversely, any activity which has output over which, on a main and usual basis, ownership rights may be established (in other words output which is separable either from the producer or the consumer (or both)), is classified within the goods-producing economic sector (as for example standard manufacturing), whether traditionally regarded as providing services or not. This especially concerns information activities, which are usually classified within the services-producing economic sector.

The information and communication section, which was created with ISIC Rev.4, is the principal section to be impacted by this updated definition of services and service activities. Its foreword stresses that it includes 'the production and distribution of information and cultural products' (UN (2009), p. 205). Several of these cultural products are, in SNA's terms, knowledge-capturing products, over which ownership rights may be established; therefore they are considered to be information goods, and it is only their delivery that is a service activity.

The cases of *printing and reproduction of recorded media* (ISIC Division 18) and *publishing* (ISIC Division 58) are especially interesting. Although the former activity is traditionally viewed as belonging to manufacturing, with a few exceptions ([8]), and the latter to service activities, the updated perspective tends to revisit this disconnection.

Indeed printing results in a separable entity and thus belongs to goods-producing, but publishing may also be categorised this way. As the ISIC Rev.4 manual states 'Publishing includes the acquisition of copyrights to content (information products) and making this content available to the general public by engaging in (or arranging for) the reproduction and distribution of this content in various forms' (UN (2008), p. 206). While the distributive part of the activity definitely belongs to services-producing, it is shared with various stores and retailers (included in the distributive trades section) and amounts to a small fraction of the turnover. The other foremost components of the activity therefore concern production and reproduction. The product (asset if an original) under exchange is prone to ownership rights, and thus the activity falls within the goods-producing activities. Let us emphasise that this rationale is applicable to all activities which deal with the production of information goods, such as software, directory or mailing lists, newspapers, motion pictures (see Table 1).

([8]) Division 18 printing and reproduction of recorded media, is included in manufacturing in ISIC Rev.4, of which Class 1812 is service activities related to printing.

These principles applied to the two divisions *motion picture, video and television programme production, sound recording and music publishing activities and programming and broadcasting activities* (ISIC Divisions 59 and 60), lead to separate programming or production (in other words the activity of making a motion picture, a video or a TV programme, or else making a master recording ([9])) and broadcasting or distribution. Programming and production fall within goods-producing activities, since they result in information goods, whereas broadcasting and distribution fall within services-producing activities. However, these two differing economic functions (programming and production on one hand and broadcasting and distribution on the other) are not always distinguished. Whenever mixed, their ensuing subheadings may generally be considered as goods-producing activities because the main share of their value added is external to the broadcasting activity. Nonetheless three classes (5912, 5913 and 5914) are indeed exclusively services-producing activities (see Table 1).

Table 1: Information and communication (ISIC Divisions 58-63)

Division	Group	Class	Description	Output
Division 58			Publishing activities	
	581		Publishing of books, periodicals and other publishing activities	goods
	582		Software publishing	
Division 59			Motion picture, video and television programme production, sound recording and music publishing activities	
	591		Motion picture, video and television programme activities	goods
		5911	Motion picture, video and television programme production activities	goods
		5912	Motion picture, video and television programme post-production activities	services
		5913	Motion picture, video and television programme distribution activities	services
		5914	Motion picture projection activities	services
	592		Sound recording and music publishing activities	mainly goods
Division 60			Programming and broadcasting activities	
	601		Radio broadcasting	mainly services
	602		Television programming and broadcasting activities	mainly goods
Division 61			Telecommunications	services
Division 62			Computer programming, consultancy and related activities	
		6201	Computer programming activities	goods
		6202	Computer consultancy and computer facilities management activities	services
		6209	Other information technology and computer service activities	services
Division 63			Information service activities	
	631		Data processing, hosting and related activities; web portals	
		6311	Data processing, hosting and related activities	services: not owned or self-produced data
		6312	Web portals	goods
	639		Other information service activities	
		6391	News agency activities	see text
		6399	Other information service activities n.e.c.	see text

([9]) Music and sound recording may either result in a service or in an information good depending on the commercial contract. However since it is mixed with publishing it is categorised in goods-producing.

Computer programming, consultancy and related activities (Division 62) includes programming activities that result in information goods, such as software.

Information service activities (Division 63) includes data processing and web portals activities, of which several headings may be considered to be goods-producing activities, when they produce and sell information. Most frequently, data processing operates on data belonging to a client (or a third party) (see ISIC Rev. 3.1 accompanying comments), whereas web portals activities provide data or information they have mostly produced or gathered. When the provision of information is organised through a long-term access license, it is worth recalling that the SNA considers that transaction similar to an outright sale.

Other information service activities (Group 639) is quite ambiguously labelled. This class includes activities such as news agencies, which mainly sell information, which is obviously separable from its provider or receiver, and therefore belongs to information goods.

References

Benabou, V-L. (2017), «Entrée par effraction d'une notion juridique nouvelle et polymorphe : le contenu numérique », *Dalloz IP/IT : droit de la propriété intellectuelle et du numérique*, IPIT no 1. 2017, pp. 7-14.

Broussolle, D. (2014), 'Service, Trade in Services and Trade of Services Industries', *Journal of World Trade*, Volume 48, Issue 1, pp. 31-58.

Broussolle, D. (2015), 'The Emerging New Concept of Services in the System of National Accounts and the Balance of Payments', *Review of Income and Wealth*, Volume 61, Issue 3, pp. 573-586.

Corrado, C., J. Haskel, M. Iommi, C. Jona-Lasinio, M. Mas and M. O'Mahony (2017), 'Advancements in measuring intangibles for European economies', *EURONA — Eurostat Review on National Accounts and Macroeconomic Indicators*, Issue 2/2017, pp. 89-106, Publications Office of the European Union, Luxembourg.

Council of the European Union (2006), *Council Directive 2006/112/EC on the common system of value added tax*, Official Journal of the European Union, L 347, pp. 1-118.

Council of the European Union (2009), *Council Directive 2009/47/EC of 5 May 2009 amending Directive 2006/112/EC as regards reduced rates of value added tax*, Official Journal of the European Union, L 116, pp. 18-20.

Council of the European Union (2011), *Council Implementing Regulation (EU) No 282/2011 of 15 March 2011 laying down implementing measures for Directive 2006/112/EC on the common system of value added tax*, Official Journal of the European Union, L 77, pp. 1-22.

Court of Justice of the European Union (1985), *Tax advantages for newspaper publishers*, Case C-18/84, Judgement of the Court of 7 May 1985.

Court of Justice of the European Union (2012), *Legal protection of computer programs — Marketing of used licences for computer programs downloaded from the internet*, Case C-128/11, Judgement of the Court (Grand Chamber) of 3 July 2012.

Court of Justice of the European Union (2015), *Failure of a Member State to fulfil obligations — Taxation — VAT — Application of a reduced rate — Supply of digital books or electronic books*, Case C-479/13, Judgement of the Court (Fourth Chamber) of 5 March 2015.

De Backer, K., I. Desnoyers-James and L. Moussiegt (2015), '"Manufacturing or Services - That is (not) the Question": The Role of Manufacturing and Services in OECD Economies', *OECD Science, Technology and Industry Policy Papers*, No. 19, OECD Publishing, Paris.

Dreier, T. (2013), 'Online and Its Effect on the "Goods" Versus "Services" Distinction', *International Review of Intellectual Property and Competition Law*, Volume 44, Issue 2, pp. 137-139.

European Commission (2011), *Proposal for a regulation of the European Parliament and of the Council on a Common European Sales Law*, COM(2011) 635 final.

European Commission (2015a), *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Digital Single Market Strategy for Europe*, COM(2015) 192 final.

European Commission (2015b), *Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee: Digital contracts for Europe — Unleashing the potential of e-commerce*, COM(2015) 633 final.

European Commission (2015c), *Proposal for a directive of the European Parliament and of the Council on certain aspects concerning contracts for the supply of digital content*, COM(2015) 634 final.

European Commission (2015d), *Proposal for a directive of the European Parliament and of the Council on certain aspects concerning contracts for the online and other distance sales of goods*, COM(2015) 635 final.

European Commission (2017a), *Communication from the Commission to the European Parliament and the Council: A Fair and Efficient Tax System in the European Union for the Digital Single Market*, COM(2017) 547 final.

European Commission (2017b), *Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on the follow-up to the Action Plan on VAT: Towards a single EU VAT area — Time to act*, COM(2017) 566 final.

European institutions (2001), *Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society*, Official Journal of the European Union, L 167, pp. 10-19.

European institutions (2006), *Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market*, Official Journal of the European Union, L 376, pp. 36-68.

European institutions (2011), *Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council*, Official Journal of the European Union, L 304, pp. 64-88.

European institutions (2019a), *Directive (EU) 2019/770 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services*, Official Journal of the European Union, L 136, pp. 1-27.

European institutions (2019b), *Directive (EU) 2019/771 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the sale of goods, amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC*, Official Journal of the European Union, L 136, pp. 28-50.

Hill, T. P. (1977), 'On Goods and Services', *The Review of Income and Wealth*, Volume 23, Issue 4, pp. 315-338.

Hill, T. P. (1999), 'Tangibles, intangibles and services: a new taxonomy for the classification of output', *Canadian Journal or Economics*, Volume 32, Issue 2, pp. 426-446.

Hill, T. P. (2003), 'Intangible assets in the SNA: originals, innovation and human capital formation', Working Papers, CASS Business School, London.

Hill, T. P. (2014), 'Intangibles and services in economic accounts', *EURONA — Eurostat Review on National Accounts and Macroeconomic Indicators*, Issue 1/2014, pp. 59-72, Publications Office of the European Union, Luxembourg.

Hojnik, J. (2016), 'The servitization of industry: EU law implications and challenges', *Common Market Law Review*, Volume 53, Issue 6, pp. 1 575-1 623.

IMF (2009), Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6), International Monetary Fund, Washington D.C.

Jansson, J. O. (2009), 'The myth of the service economy — An update', *Futures*, Volume 41, Issue 3, pp. 182-189.

Linklater, E. (2015), 'The end of the story for reduced VAT rates for E-books? Commission v. France, Commission v. Luxembourg', *Common Market Law Review*, Volume 52, Issue 6, pp. 1 679-1 690.

Mak, V. (2016), *The new proposal for harmonised rules on certain aspects concerning contracts for the supply of digital content: In-depth analysis*, Workshop for the JURI Committee, Policy Department C: Citizens' Rights and Constitutional Affairs, Directorate-General for Internal Policies, European Parliament.

Manko, R. (2016), *Contracts for supply of digital content: A legal analysis of the Commission's proposal for a new directive*, EPRS — European Parliamentary Research Service, PE 582.048, Directorate-General for Parliamentary Research Services, European Parliament.

Miroudot, S. (2019), *Services and Manufacturing in Global Value Chains: Is the Distinction Obsolete?*, ADBI Working Paper Series, No. 927, Asian Development Bank Institute, Tokyo.

Mishra, S., S. Lundstromm Gable and R. Arnand (2012), 'Service export sophistication and economic growth', *VoxEU*, Centre for Economic Policy Research.

Morais Carvalho, J. (2019), 'Sale of goods and supply of digital content and digital services – overview of directives 2019/770 and 2019/771', *Journal of European Consumer and Market Law*, Volume 8, Issue 5, pp. 194-201.

OECD (2000), *The service economy*, Business and Industry Policy Forum Series, Organisation for Economic Co-operation and Development, OECD Publications, Paris.

Pilat, D. and A. Wölfl (2005), *Measuring the Interaction between Manufacturing and Services*, OECD STI Working Paper 2005/5, OECD Directorate for Science, Technology and Innovation (STI), Paris.

Sénéchal, J. (2015), « Le contrat de fourniture de contenu numérique en droit européen et français : une notion unitaire ou duale », *Revue de l'Union européenne*, Numéro 590, pp. 442-454.

Shapiro, C. and R. Varian Hal (1998), *Information Rules: A Strategic Guide to the Network Economy*, Harvard Business School Press, Boston, Massachusetts.

Snell, J. (2002), *Goods and Services in EC Law: A Study of the Relationship Between the Freedoms*, Oxford University Press, Oxford.

UN (2008), *International Standard Industrial Classification of All Economic Activities, (ISIC), Rev.4.*, Statistical Papers, Series M, No. 4/Rev.4, Department of Economic and Social Affairs, Statistics Division, United Nations, New York.

UN (2009), *System of National Accounts 2008*, European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank, United Nations, New York.

UN (2010), *United Nations Convention on Contracts for the International Sale of Goods*, United Nations Commission on International Trade Law, United Nations, New York.

UNCTAD (2004), *World Investment Report 2004: The Shift Towards Services*, United Nations Conference on Trade and Development, United Nations, New York and Geneva.

Wendehorst, C. (2016), *Sale of goods and supply of digital content — two worlds apart? Why the law on sale of goods needs to respond better to the challenges of the digital age*, Study for the JURI Committee, Policy Department C: Citizens' Rights and Constitutional Affairs, Directorate-General for Internal Policies, European Parliament.