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# STATISTICS AND DATA DIRECTORATE COMMITTEE ON STATISTICS AND STATISTICAL POLICY

**Working Party on National Accounts** 

A Proposed framework for Digital Supply-Use Tables

Working paper for informal advisory group on Measuring GDP in a digitalised Economy 9 November, 2018, Paris.

This paper sets out a framework and definitions required to create digital supply-use tables. These tables could then be used by countries to create a digital satellite account.

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# Boxes

#### **1. Introduction**

This paper follows on from previous papers presented by the OECD<sup>1 2 3 4 5</sup>outlining the need for, and the possibilities of a framework for a digital satellite account. This paper leverages heavily on the work presented in those previous papers. The demand from users for information on where and how the economy has been most impacted by digitisation has increased, creating a more urgent need for consensus on classifications and definitions that would facilitate such a satellite account.

Feedback from various workshops has led to a better understanding about what is not only desired from a proposed account but also what may be possible for statistical compilers to achieve. This paper provides a final proposal on digital supply and use tables which will hopefully strike a balance between what is practically possible and statistically informative.

That is not to say that the proposal is final, the paper also includes several questions for the Advisory Group<sup>6</sup> to consider and provide feedback on. As noted in previous papers, the proposed level of detail described is deliberately ambitious, and whilst it tries to stay as close as possible to what is currently realistically measurable, this is often only theoretically possible, requiring in some cases changes to current conventional business and household surveys.

Rather than pre-empt and close-off discussions on potential improvements to information sources however, we have chosen to include items that may require additional information, noting that not all disaggregation's will be able to be completed immediately by statistical compilers. The proposed digital supply and use tables allows for completion at various levels of aggregation that can potentially be gradually expanded when practically possible, depending on internal resources available within National Statistical Offices (NSOs).

The overarching requirement of the digital satellite account is to provide scope for statistical agencies to respond to questions regarding the digital economy. It would provide a more definitive estimate to users regarding what is and isn't being measured in the digital economy, as well as provide the ability to have international comparisons of key lower level indicators of digital activity.

<sup>1</sup> OECD Statistics Working Papers, No. 2016/07, "Measuring GDP in a Digitalised Economy", OECD Publishing, Paris. Available at https://doi.org/10.1787/5jlwqd81d09r-en.

<sup>2</sup> OECD (2017b), Measuring Digital Trade: Towards a Conceptual Framework, STD/CSSP/WPTGS (2017)3. Available at

http://www.oecd.org/official documents/public display document pdf/?cote=STD/CSSP/WPTGS(2017) 3 & docLanguage=En

<sup>3</sup> OECD (2017c), Summary of Responses of the Advisory Group: Survey of on Digital Economy Typology, STD/CSSP/WPNA(2017)1. Available at

http://www.oecd.org/official documents/public display document pdf/?cote=STD/CSSP/WPNA(2017)1& docLanguage=En

<sup>4</sup> OECD (2017d), Issue Paper on a Proposed Framework for a Satellite Account for Measuring the Digital Economy, STD/CSSP/WPNA(2017)10. Available at

http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/CSSP/WPNA(2017)10&docLanguage=En

<sup>5</sup> Towards a Framework for Measuring the Digital Economy, paper presented at 35th IARIW General Conference, Copenhagen, Denmark, August 20-25, 2018 Available at

http://www.iariw.org/copenhagen/ribarsky.pdf

<sup>&</sup>lt;sup>6</sup> The term Advisory Group is used to represent the "informal advisory group on Measuring GDP in a digitalised Economy".

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As proposed in previous papers, this account also includes an avenue to estimate the value of services and data that is currently outside the SNA production boundary. This includes both services consumed for "free" from profit seeking organisations as well as the increased use of free assets. While this is likely to be one of the last cells completed in the digital S-U tables, it has been included due to the importance that these services play in the digital economy. The subject of data is not explored at length in this paper however, an issues paper<sup>7</sup> on the recording and measurement of data has been written to provide additional guidance on the many issues that relate to this subject.

More specifically the account when fully populated would be able to inform on the following:

- i. The total value of all transactions in goods and services that meet the digital transaction definition, both from a final demand and an output point of view.
- ii. The total output of the digitally enabling industries.
- iii. The level of investment in digitally related capital goods split by the various sub-groups undertaking production using digital means.
- iv. The total value of e-commerce (i.e. digitally ordered goods and services).
- v. The total value of services provided by intermediary platforms as a separate proportion of the overall value of the goods and services being provided by the producer.
- vi. The imputed value of free services provided and used by households and enterprises.
- vii. The digital margin that exists on top of the standard trade margin for digitally enabled retailers and other resellers.

The satellite account cannot be everything to everyone. The most significant area of balancing user demands and practical feasibility involves the level of disaggregation of relevant products and industries within the account. If classifications are too broad this will cause the outputs to lose statistical relevance, if classifications are too disaggregated, then the tables cannot be populated to a meaningful degree.

The tables must also consider the other statistical work being done to measure the digital economy, such as that for measuring digital trade. This proposal is broadly in line with this work utilising a similar framework and definitions for transaction types<sup>8</sup>. Due to the slightly different measurement questions, this proposal goes into different detail regarding the various digital industries and products.

The following is a quick summery of the paper including some of the relevant questions that will need to be considered for each section.

Section 2 outlines the proposed digital supply and use tables. It offers a description on how the new tables expand on the current "standard" supply and use tables that are provided to the OECD. It also identifies the various industries and product classifications that have been developed for use in the account. The group will need to provide advice on the

<sup>7</sup>Ahmad, N, and P. van de Ven (forthcoming), "Recording and measuring data in the System of National Accounts", Paper prepared for the Meeting of the OECD Advisory Group on Measuring GDP in a Digitalised Economy, to be held on November 9, 2018 in Paris, France.

<sup>8</sup> TFITS Handbook on Measuring Digital Trade, currently in draft stage.

appropriateness of the products chosen for further delineation as well as the need for any additional digital products and industries.

Section 3 provides succinct definitions on these classifications in an attempt to gain consistency in terminology. It also includes a draft decision tree that could be used to help identify which digital industry a unit should be classified too. Agreement is required on a number of questions including, whether "digital" industries should be restricted to exclusively digital, majority digital or all organisations that can transact digitally.

Section 4 goes into much more detail regarding some of the reasoning behind certain classification decisions, including a discussion on how transactions involving digital intermediary platforms should be treated. To assist with this, practical real world scenarios are illustrated in the proposed digital supply and use tables in Appendix 4. The Advisory Group's feedback will be required on issues such as whether or not free to the user platforms should be separated between market and non-market; whether to separate out E-tailers and E-Vendors; as well as the appropriate treatment for transactions involving digital intermediary platforms.

Section 5 discusses the various statistical outputs that can (not) be derived from the digital supply and use tables.

Section 6 discusses the next steps required in populating the tables including some options on what would be the realistic minimal requirements to make the tables usable.

### 2. Proposed outline of Digital Supply and Use tables

The first step in creating a digital satellite account is to create digital Supply and Use (S-U) tables. The current proposal is similar to that discussed in previous papers and an abridged version is shown in Appendix 1. As in previous papers, it contains both a supply side and a demand side as well as an additional table that will assist in answering relevant policy and measurement questions. In this paper there is more focus on the specific industries and products that will make up the digital S-U tables in order to gain some form of consensus across countries. Consistent digital S-U tables will then allow countries themselves to extend the tables into a satellite account appropriate to their needs, while also providing indicators that can be compared internationally.

All industries and products in the economy will be represented within the digital S-U tables in order to be consistent with the S-U tables that are already being supplied to the OECD. In order to provide the additional information required, the tables will disaggregate specific products and industries that are either important to the digital economy or that play an additional role in the production chain.

While the overall detail in the tables is ambitious, the make-up of the tables allows various outputs to be populated at a higher level of aggregation, if additional information is not available. For instance if NSOs are not able to provide information on intermediary platforms there is still a large number of cells that can be populated relating to ordering online compared to in-store purchases.

To facilitate easier compilation as well as maintain as much information as possible in the account, the starting point of the digital S-U tables will be the standard supply and use

tables already supplied to the OECD. These tables contain industries at the ISIC sub division level and products at the CPA division level.

From these standard tables certain product rows will be further delineated by type of transaction. This will be the fundamental determinant whether the value is included within the digital economy or not. As proposed in previous papers, for the purpose of the digital S-U tables, transactions will be considered in the "digital economy" if the good or service was either

- i. digitally ordered
- ii. digitally delivered
- iii. platform enabled

An additional row under each disaggregated product will also record transactions that were not digitally ordered. This will allow for the measurement of all goods and services in the economy bringing the totals recorded in the digital S-U tables in line with the totals in the standard supply and use tables. Products that are not a significant part of the digital economy or for which there is no data on the type of transaction will remain as they are in the standard supply use tables.

To assist with examples and guidance, this proposal has identified 10 products at the CPA division level that would be further disaggregated due to their prevalence within the digital economy. It is important to note that the make-up of the tables allows for NSOs to provide additional breakdown on any other product that they feel is important or that data exists for.

As well as the products already existing in the standard supply and use tables the proposed digital S-U tables will include five additional, separately identified product groupings. Two of these are aggregations of various products within other CPA classifications (total digital goods, total digital services), two of these are digital products that are identified at a lower level than the standard CPA division level (cloud computing services, digital intermediary service products) and one is a new product currently outside of the SNA production boundary (free digital services). Details on the definition and reasoning behind these additional classifications are included in sections 3 and 4 of the paper.

The specific products proposed here does not mean that additional products cannot be added in the future if they begin to play a larger role in the digital economy. Rather they are seen as a starting point that will allow for the potentially easier measurement of intermediary platforms, the firms that use them, and their respective impact on the production value chain.

The proposed digital S-U tables in this paper include the five digital products (i to v), and further breakdowns of products vi to xv:

- i. Digital goods
- ii. Digital services except cloud computing services and digital intermediary service products
- iii. Digital intermediary service products
- iv. Cloud computing services
- v. Free digital services
- vi. Accommodation services

- vii. Food and beverage service activities
- viii. Land transport services
- ix. Travel agent, tour operator, reservation services and related activities
- x. Advertising and market research services
- xi. Education services
- xii. Motion picture video and TV program production services
- xiii. Financial and insurance services
- xiv. Gambling and betting activities
- xv. Retail trade

While there is no set amount of products that need to be delineated further, the more information that can be provided the greater the knowledge for the user. The additional intermediary service products are highly desirable in order to show accurately the flows between producers and the intermediary platforms.

#### Questions for the Advisory Group.

- *a)* Should any other digital products be separately identified, apart from those already mentioned?
- b) Does the Advisory Group agree with the proposed delineation of non-digital products?

As noted before, the starting point for the industries will be the standard ISIC sub division breakdown already provided to the OECD. From this, certain units are classified into designated "digital industries" depending on the characteristics that they display. These digital industries have been created in order to provide information on the various production chains that are occurring in the digital economy. Units that are not reclassified will remain in their existing ISIC classification under the broad banner of "other industries" (broken down according to the standard supply and use tables).

The proposed disaggregation of the digital S-U tables from an industry viewpoint will be as follows:

- i. Digitally enabling industries
- ii. Digital intermediary platforms
- iii. Firms dependent on intermediary platforms (further separated into those that are incorporated and unincorporated)
- iv. E-Sellers (split into E-Tailers and E-Vendors)
- v. Digital only firms providing finance
- vi. Other digital businesses
- vii. Other industries (broken down according to the standard supply and use tables)

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Brief definitions for all these industries including a decision tree to assist in classifying units are included in section 3.

This proposal has taken a slightly different view on intermediary platforms than previous papers. It proposes to include any independent third party platform that creates production by performing an act of digitally matching a consumer to a producer. This means that auction sites, resource sharing platforms or any intermediary enterprise that charges an explicit fee to either the producer or consumer are included in this classification.

By aligning to this definition, we are able to place other types of platforms such as noncharging or free to the user type of platforms into a separate classification, which in this proposal would be "Other digital businesses". By definition these units will not be producing the specific (paid) digital intermediary service products identified earlier, rather they are likely to be producing free digital services used by households and enterprises.

In relation to the latter, output will relate to, for example, the purchasing by other industries of advertising space and data (analytics) from this digital industry. This "Other digital business" classification will likely include social media platforms, search engines; free community crowd sourcing sites as well as free applications accessed via phone<sup>9</sup>.

Firms that utilise digital platforms will include two types of producers, the first are producers who only use the intermediary platform to access consumers. The second type of producers will use these platforms as just one of many channels to transact in their goods and services.

This creates an issue, as a key question from users is how much value is being generated by firms that exist only due to these intermediary platforms. Because of this question, it is proposed that the classification of "firms dependent on intermediary platforms" be limited to (as the name suggests) just firms who are first and foremost dependent on an intermediary platform or at least predominantly access consumers through an intermediary platform.

The proposed digital S-U tables allow for firms that only use intermediary platforms as one of the distribution channels to still reflect this through their purchase and consumption of the intermediary service product. These payments are shown as intermediate consumption being paid by E-Sellers (if they are majority digital) or other industries (if they are majority non-digital).

In this proposal, E-Sellers will be units generating a majority of their transactions digitally. This will include producers from a variety of industries, not just resellers in the traditional retail sense. In the tables, it is proposed to split E-Sellers between E-Tailers and E-Vendors. E-Tailers would include units that are simply reselling a product online that they had previously purchased, in the same business model as the traditional retailer.

Units that are producing a good or service and only delivering it digitally, including firms providing content on a subscription basis, are classified as E-Vendors. They would cover the increasing activity by digital only units that are not retailers. It would not include units that receive orders online but deliver their goods or services non-digitally, such as airlines

<sup>&</sup>lt;sup>9</sup> The free phone applications within the category will not include those created by units to facilitate more use or more efficient use of their product, such as those for banking, retail shopping etc. What will be included is applications that are provided free of charge in order to provide entertainment or other useful services in exchange for being a space for advertising and an avenue to gather data.

and utility companies. While the split between ordered digitally and not is of interest, it does not fundamentally change the good or service being produced.

Having these digital classifications will hopefully show the different margins or intermediate consumption ratios that exist in these businesses compared to those that are non-digital only or majority non-digital. While the proposed digital S-U tables will not split E-Vendors further into the standard ISIC-groupings, an indication of the industry classification can be derived from the products they are producing<sup>10</sup>.

Units that are only providing goods and services in a physical store as well as those that are doing a majority of their business physically will therefore be classified under the industry of their primary activity. This is consistent with their placement in the standard supply and use tables currently being provided. This breakdown by ISIC will fall under the broad banner of "other industries" in the digital S-U tables<sup>11</sup>. The critical delineation for their digital involvement will be the breakdown by type of transaction in the classification of products. This will allow an opportunity for providers who are transacting on multiple channels to separate out the goods and services that were digitally ordered with those that were ordered in person.

The above transactional split is obviously dependent on producers being able and willing to provide this level of detail, this is why it is currently proposed for only 15 products, as listed above. The issue of data availability is discussed further in the paper but if this is a constraint NSOs may need to place all transactions for that product into the transaction type where the majority of transactions are occurring. Even if it is not possible to be completed immediately, due to the significant benefits this delineation would create, it is proposed to leave it in as aspirational if nothing else.

Until NSOs can reliably provide this transactional split, it will impact not only the product breakdown but subsequently the appropriate classification of units that are selling the goods and services using both digital and non-digital channels, this is further explored in section 3.

As proposed, E-Tailers would be units that simply gain a majority of sales digitally, while E-Vendors will be units that receive and deliver orders digitally. While it is preferable to not have this so-called "digital industry" artificially increased due to the inclusion of units that are selling 40% of their goods in a physical store, it would be equally undesirable to have a situation where a unit which can reasonably be expected to be classified as an E-Tailer not classified as such because of one physical store.

# 3. Definitions

This paper attempts to progress some defining characteristics of the categories outlined in the proposed digital S-U tables. While discussions may continue on certain characteristics

<sup>&</sup>lt;sup>10</sup> This would mean an assumption of no secondary production.

<sup>&</sup>lt;sup>11</sup> For simplicity not all ISIC industries and products are listed in the example in the appendix. The amounts in the ISIC industry underneath the "other industry" banner may not be exactly identical to those in the previously supplied S-U tables, the classification would not include units that may have been reallocated to one of the "digital industries".

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of what needs to be included, definitions may help to clarify what is to be included/excluded and to arrive at some form of international comparability.

This section will include a brief definition of the various transactions, products and industries. These definitions come with the very important caveat that they are for the sole purpose of creating digital S-U tables that can then be used to create a digital satellite account.

There is a vast amount of academic and policy work that has been published on the digital economy with a range of definitions and understandings. The definitions in this paper do not supersede any of those, rather these classification have been created purely with statistical measurement in mind. Section 4 will expand with more detail the rationale behind some of the classification decisions.

### **3.1.** Transactions

### 3.1.1. Digitally Ordered

Transactions that are digitally ordered, that is, transactions in goods and services that reflect e-commerce, are generally defined as follows:

"An e-commerce transaction is the sale or purchase of a good or service, conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders. The goods or services are ordered by those methods, but the payment and ultimate delivery of the goods or services do not have to be conducted online. An ecommerce transaction can be between enterprises, households, individuals, governments, and other public or private organizations. To be included are orders made over the web, extranet or Electronic data interchange. To be excluded are orders made by phone, fax or manually typed email."<sup>12</sup>

### 3.1.2. Digitally Delivered

Services and data flows that are delivered as digital downloads or web streaming products. Examples include software, e-books, data and database services. There are two key assumptions regarding services that are digitally delivered. The first is that goods cannot be digitally delivered<sup>13</sup>; the second is that digitally delivered services are always digitally ordered.

### 3.1.3. Platform Enabled

A good or service purchased through a digital intermediary platform<sup>14</sup>.

<sup>&</sup>lt;sup>12</sup>OECD, <u>Guide to Measuring the Information Society</u>, 2011. The OECD started to develop definitions and statistical guidelines for measuring ecommerce transactions in 1998. Those guidelines, as well as the OECD definition of the ICT sector and Content and Media sector, and model surveys of ICT use and ecommerce for the <u>business</u> and <u>household</u> sectors, are periodically reviewed and revised to reflect policy needs in this area. <sup>13</sup> 3D printing has been raised as a good that can be delivered digitally, this is discussed further down in the paper.

<sup>&</sup>lt;sup>14</sup> These platforms almost always include a digital ordering component, the platforms are also usually the only mechanism for the consumer to view the goods and services advertised products.

# 3.2. Products

Due to the starting point for the digital S-U tables being the currently provided supply and use tables, the initial breakdown of products is exactly the same, at CPA division level<sup>15</sup>. The definition of the various non-digital products suggested for further disaggregation due to their prevalence in the digital economy will thus be quite straight forward.

What is required is a clearer definition of the products that are either being aggregated or presented at a lower level than the CPA division classification.

# 3.2.1. Digital goods

Digital goods can be aligned with the existing ICT classifications within the CPC 2.1<sup>16</sup>, i.e. products that "must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display." From this perspective, within this proposal digital goods can be considered interchangeable with ICT goods.

# 3.2.2. Digital services – except digital intermediary service products and cloud computing service products

All digital services as aligned with the ICT classification in CPC 2.1<sup>17</sup>, excluding the digital intermediary service products and cloud computing service products defined below.

### 3.2.3. Digital intermediary service product, paid

The explicit service of providing information on and successfully matching two independent parties to a transaction, thus generating revenue from intermediation by using a digital platform.

### 3.2.4. Cloud computing service products

The OECD has previously published a definition of cloud computing as

"computing services based on a set of computing resources that can be accessed in a flexible, elastic, on-demand way with low management effort.<sup>18</sup>"

The purchase of the hardware to facilitate these services will be included in the digital goods product classification.

# 3.2.5. Digital services, free

This product category relates to the "free" services that households consume everyday and enables a greater level of utility. This can include, but is not limited to, the easy gathering of information, connecting with others via social media or being entertained for free by

<sup>15</sup> Most countries are familiar with the CPA classification as it is used currently in the standard supply – use tables supplied to the OECD, if required a concordance from CPC 2.1 to CPA is available.

<sup>16</sup> There are 52 ICT goods, grouped into 4 broad-level categories as shown below. These broad level categories include Computers and peripheral equipment, Communication equipment, Consumer electronic equipment, Miscellaneous ICT components and goods.

<sup>17</sup> There are 46 ICT services, grouped into 6 broad-level categories as shown below. These broad level categories include Manufacturing services for ICT equipment, Business and productivity software and licensing services, Information technology consultancy and services, Telecommunications services, Leasing or rental services for ICT equipment, Other ICT services.

<sup>18</sup> OECD, Cloud Computing: The Concept, Impacts and the Role of Government Policy, 2014.

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digital means. Due to the free nature of the transaction, this service is currently outside the SNA production boundary.

**3.2.6.** Accommodation services As represented by CPA division 55.

**3.2.7.** *Food services* As represented by CPA division 56.

3.2.8. Passenger transport services

As represented by CPA division 49.

**3.2.9.** *Travel agent, tour operator services* As represented by CPA division 79.

**3.2.10.** Advertising services As represented by CPA division 73.

3.2.11. Education services As represented by CPA division 85.

**3.2.12.** *Entertainment services* As represented by CPA division 59.

**3.2.13.** *Financial services* As represented by CPA division 64.

**3.2.14.** *Gambling services* As represented by CPA division 92.

**3.2.15.** *Retail trade* As represented by CPA division 47.

# 3.3. Industries

# 3.3.1. Digitally enabling industries

This includes units within various ISIC groupings that make up the ICT sector as defined in ISIC Rev 4:

*"The production (goods and services) of a candidate industry must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display."*<sup>19</sup>

# 3.3.2. Digital intermediary platforms

Units that facilitates intermediation against a fee (within the SNA boundary) between two or more distinct but interdependent sets of users (whether firms or individuals) who interact through the service via the internet<sup>20</sup>.

In addition to well-known platform examples such as Airbnb and Uber, this category also includes auction sites such as Ebay, third party sellers of second hand goods, resource sharing sites such as booking.com, and other online brokering services.

# 3.3.3. Firms dependent on intermediary platforms

Units whose predominant access to consumers to generate revenue from production is linked to one or more digital intermediary platforms. It excludes firms who generate a majority of their sales of goods and services with the consumer in a non-digital way.

# 3.3.4. E-Sellers

This group consists of E-Tailers and E-Vendors, defined as follows:

# **E-Tailers**

Traders engaged in purchasing and reselling goods or services who receive a majority of their orders digitally.

### E-Vendors,

Units who produce their own goods and services for sale, but operate exclusively digitally, that is they only receive orders and deliver services digitally. This would include firms providing digital content on a subscriptions basis such as Netflix, Spotify as well online gaming and streaming services such as twitch.

### 3.3.5. Digital only firms providing finance

Units that operate exclusively digitally with the predominant business function of providing financial services. This may concern financial intermediation, operating online payment systems, as well as other financial services.

# 3.3.6. Other digital businesses

All other units operating exclusively online which do not meet the criteria for one of the previous groups of enterprises. This is likely to include large social media platforms such

<sup>&</sup>lt;sup>19</sup> The ICT sector includes 261, 262, 263, 264, 268, 4651, 4652, 5820, 61, 62, 631, and 951.

<sup>&</sup>lt;sup>20</sup> This definition is slightly different but broadly similar to the current working definition for the OECD Committee for Digital Economy Policy (CDEP) which is "An online platform is a digital service that facilitates interactions between two or more distinct but interdependent sets of users (whether firms or individuals) who interact through the service via the Internet". The major difference is the reference to SNA production, which is a significant distinction for this account.

as Facebook and Instagram, search engines, free knowledge sharing platforms as well as

providers of free phone applications.

# 3.3.7. Other industries

All units not covered by one of the previous categories.

#### Box 3.1. Classification of units into various industries within the digital S-U tables

A decision tree has been constructed to assist NSOs in classifying the various units within the digital S-U tables. It is attached as appendix 2. Some digital units do fulfil multiple activities, i.e. a unit may be an intermediary platform for various items as well as selling its own stock.

A decision tree does not automatically make these problems disappear. Just like in any business register, NSOs will be faced with the issue of a unit that fits in multiple classifications. If the provider is unable to make a split of the various types of activity, then the unit should be placed into the group that is considered most relevant.

Units would begin in their current ISIC classification as part of other industries within the standard S-U tables. The decision tree then presents various characteristics as questions to assist in the possible categorisation of the units into one of the "digital industries".

A significant issue within this decision tree is the question of when a unit should be classified as digital? Is it considered as part of the digital economy, only if it produces output that is transacted 100% digitally, if a simple majority of revenues is generated via digital channels, or even if it only has a digital presence.

In the instances of units who transact on multiple channels, additional transaction breakdowns will be able to provide information on the distinction between digital and nondigital. These digital transactions by mixed businesses could then be added to those transactions by digital only businesses to get an estimate of e-commerce.

This may be feasible in the long term when more information becomes available but in the interim, it is proposed to apply the majority criterion when classifying a business to avoid a business which is 99% digital being placed in "Other industry".

The cost of this classification decision may be that one arrives at somewhat inflated estimates for output and intermediate consumption of certain digital groups, because they include firms that are only 55-60% digital or utilising a platform for only 55-60% of their sales.

An exception to this majority criterion exist for "E-Vendors and "digital firms providing finance" As stated in the definition and explained in more detail in Section 4, units will be classified to "E-Vendors" and "digital firms providing finance" only when they are operating exclusively digitally.

### 4. Operationalisation of the account

It is possible to split industries, products and transactions involved in the digital economy into many different groupings. This section of the paper discusses in greater detail the reasons why the various classification and typology decisions were made.

#### **4.1.** Nature of transactions

The governing principle of the digital S-U tables gravitates around the nature of transactions. Production in the economy is separately identified if the transaction related to the relevant output occurred in one (or more) of the following three ways. The good or service is either digitally ordered, digitally delivered or platform enabled.

This interpretation excludes various digital activities that obviously exist in the economy or an organisation, such as logistical co-ordination, automatic inventory control, or even the use of email for more efficient communication.

While some of this will be observed in the digital S-U tables through the increased purchase of digital goods and services, internal digitalisation won't be measured as such. Capturing this digitisation is not the explicit purpose of the satellite account. Efficiency gains due to technology have always existed. Rather these tables aim to record the impact that digitalisation has on the value chains linking the producer and the consumer.

A number of simplifying assumptions are proposed around the transactional definitions. The first is that goods cannot be delivered electronically<sup>21</sup>. The second is that, by definition, digital services can only be delivered electronically. The third assumes that services, which are delivered electronically, are also ordered digitally. In making these assumptions, the need to have a separate identification of services that are delivered digitally is removed. Instead, the digital S-U tables allow the nature of the intermediary (platform/non-platform) and the product (good/non-digital service/digital service) to proxy the mode of delivery.

Digitally ordered transactions are further broken down into how they are handled; i.e. purchased either directly from the producer's website or via an intermediary platform<sup>22</sup>. The treatment proposed in this framework is to record the flows associated with intermediary platforms on a "net" basis, and to record the output of intermediary digital platform as intermediate consumption by the producer of the goods or services intermediated. This intermediate consumption would reflect any intermediation payments made by either the consumer or the producer. There is more detail on this treatment as well as a practical example later in the section.

# **4.2.** Nature of products

# 4.2.1. Digital and non-digital products

Building on the framework of the existing supply and use tables, the proposed digital S-U tables include a further classification on whether or not specific goods or services are

<sup>&</sup>lt;sup>21</sup> This definition explicitly excludes 3D printing being a digital good. It could be reasonably argued that the printed good is actually home production of a non-digital good and that the digital product being supplied is one of design service. Regardless of the final treatment, for this paper, 3D printing is deemed immaterial for the proposed S-U tables.

<sup>&</sup>lt;sup>22</sup> Due to the nature of digital intermediary platforms, an additional split is also requested between resident and non-resident intermediary platforms.

digital. These two classifications (digital goods and digital services) will combine components of various CPA product groups, in order to provide a narrative on the proportion of digital products contributing to final demand.

Once completed, this delineation will assist in coming up with following information:

- i. Total purchases of digital goods (or ICT goods), by type of demand (intermediate/final demand);
- ii. Total purchases of digital services, by type of demand (intermediate/final demand);
- iii. Total value of goods and services (broken down by product) intermediated by digital platforms;
- iv. Total output of the associated "intermediation fees" (margins generated by digital intermediary platforms);
- v. Value of intermediate consumption purchased by the various digital activities from non-digital industries;
- vi. Imputed value of free digital services by households and industries.

The distinction between digital and non-digital products is a non-trivial task, not only for compilation purposes but also for disseminating and explaining the aggregate indicators coming from the digital S-U tables.

# 4.2.2. Digital goods

As a starting point, the account assumes that the distinction between goods and services follows that already in use in the SNA.<sup>23</sup> For the goods category, the scope for what is considered as a digital good could be narrow or broad.

In its most narrow sense, if the underlying definition required digital goods to be transferred in digitised form (i.e. as a series of zeros and ones), one could take the view that there are de facto no digital goods. However, the notion of "no digital goods" would also mean that goods such as solid media embodying software and other IPP originals are out of scope.

In its most broad sense, there is a school of thought that ICT goods – where definitions already  $exist^{24}$  - could also be brought into scope for digital goods. The overarching framework does not of course explicitly preclude this. However, implicit in the underlying framework provided in previous papers and broadly agreed to at the 2017 meeting<sup>25</sup> was that ICT products are more "enablers" rather than "digital goods".

The Advisory Group still recommended that, since ICT goods are the foundations of the digital economy, they should feature prominently in any satellite account. Therefore, the

<sup>23</sup> Goods are physical, produced objects for which a demand exists, over which ownership rights can be established and whose ownership can be transferred from one institutional unit to another by engaging in transactions on markets. (SNA paragraph 6.15) Services are the result of a production activity that changes the conditions of the consuming units or facilitates the exchange of products or financial assets. (SNA paragraph 6.17)

<sup>24</sup> The Central Product Classification, version 2.1 identifies ICT products based on the principle that these products "must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display."

<sup>25</sup> Minutes of advisory group on measuring GDP in a digitalised economy, 10th November 2017 available here https://community.oecd.org/docs/DOC-131448

digital S-U tables accommodate this perspective by aggregating up certain products from various CPA classifications into a digital goods classification, complete with a transaction breakdown of digitally and non-digitally ordered. Due to established classification of ICT products within the CPC 2.1, for the purpose of these digital S-U tables, digital goods can be considered interchangeable with ICT goods.

# 4.2.3. Paid digital services

In earlier consultations<sup>26</sup>, many of the Advisory Group responded that all products that are digitally delivered could be in scope for a "digital products" category. However, this was not a unanimous view. Others felt that, whilst the mode of delivery may indeed be digital, this should not be the determining factor, the delivery may be digital purely out of ease of doing business.

On the face of it, this issue is one and the same as the issue faced when something is truly digitally ordered. The choice to order and/or pay for something digitally may be done purely due to it being the most efficient method. A key example of this would be transport tickets, a large majority of plane and train tickets are ordered digitally with the ticket then sent to the consumer digitally. While this service is obviously digitally ordered, the service that one is paying for is not just the ticket, it is the ride itself, so while a small amount of the service is digital (providing the consumer with the ticket) the overriding service that one is purchasing (the actual trip) is non-digital.

Due to the nature of the transaction (being ordered digitally), this transport ticket would still be separately distinguished in the transaction breakdown within the digital S-U tables, however it would not be included as a digital service. Therefore, an additional caveat is added to the overall classification of products within these tables, i.e., if access to a nondigital good or service is granted via digital means, this does not automatically result in the overall good or service being treated as digital and included in the digital services row.

Two digital services products that will be separately identified are digital intermediary service products and cloud computing service products. In the former case it is critical that the intermediation service is separately identified to assist in properly measuring the output and value added of digital intermediary platforms. While no official definition exists for this intermediation service, the related output can be derived as the difference between the output of the producer of the service being intermediated and the final cost of this service to the consumer.

A slightly easier grouping proposed for inclusion in digital services is all ICT and media services delivered digitally, including telecommunication services. Total digital services would include this grouping, as well as the separately identified digital service products of cloud computing services and digital intermediary service.

# 4.2.4. Free digital services

The satellite account accommodates the recording of the implicit value of "free" services most likely provided by "other digital business". This product is outside the current SNA production boundary, however due to strong user interest in the subject there is a need to include it within the account.

<sup>26</sup> OECD (2017c), Summary of Responses of the Advisory Group: Survey of on Digital Economy Typology STD/CSSP/WPNA(2017)1

This subject warrants much further discussion on where this product should be classified and how it could be measured. For the purpose of the digital S-U tables, an amount could be imputed for the "free" service that has been provided to households. While it may be considered free in a monetised sense, the imputed amount could equal the monetised value of the revenues from advertising and other revenues generated from the collected data that the business providing the service has been able to realise.

# 4.2.5. Non-digital goods and services

The various products chosen for additional disaggregation are considered those most impacted by the increased digitalisation of the economy, especially the rise of intermediary platforms. The nature of the tables allows for an NSO which is not able to distinguish all of the products requested to still include them in its standard classification according to standard supply and use tables.

Alternatively, if an NSO has additional services that are deemed relevant for that country, they are able to provide a transactional breakdown for any product in the supply and use tables, thus not limited to the ones proposed in this paper.

# 4.3. Nature of digital industries/activities

In the paper that was presented to the Advisory Group in 2017, the proposed satellite account framework listed three types of digital industries; enabler industries, digital platforms, and an industry that uses the latter platforms. The framework was broadly supported, however there were several comments discussing the need for more disaggregation of the industries as well as a clearer definition of what was included in each industry classification.

In the subsequent paper in early 2018, the digitally enabling industries were retained, while the other two were refined, as the digital intermediary platforms and the firms dependent on these platforms (broken into incorporated and unincorporated). In addition to these industries, E-Tailers were included, as well as "other digital businesses", a large catch-all classification of various digital activities.

The change was important, as it allowed for a better identification of the various digital businesses. While some digital enterprises exist for the specific purpose of matching producer and consumer, other digital units operate directly to the consumer. Some exist for information sharing purposes, both for profit and altruistic purposes, while other are created purely for the entertainment of the user. These different digital business models had different value chains that need to be reflected in any satellite account of the digital economy.

By separating out the different types of digital industries, a more detailed representation of the value chain from producers to consumers can be represented. While a product breakdown in the supply and use tables may record if the amount of intermediary service product being produced is increasing, the additional categories proposed in the industry breakdown will make it possible to monitor whether demand for a certain product is coming from small units who only trade through intermediary platforms, or from large producers who have begun to access these platforms to supplement their existing business.

# 4.3.1. Digital intermediary platforms

Probably the largest question regarding the industry dimension within the digital S-U tables is about the definition of a digital platform, and how to show the flows to and from them. The next section will cover both of these questions.

# Classification of intermediary platforms transactions

In previous papers four options for the recording of transactions involving intermediary platforms were outlined. These will be explained again in this paper, but for ease of reference, a visual representation with a dollar example has also been added. This will show that, while gross value added remains the same regardless of the method, the options have different impacts on the output values of the units involved, and also on the allocation of products.

In the example, the consumer (Mr Jones) pays a total of \$40 for an Uber ride provided by the producer (Mr Smith). The intermediary (Uber) is taking \$8, so of the original \$40 from Mr Jones, Mr Smith will receive \$32. In this example the \$8 is paid evenly by both Mr Jones and Mr Smith in exchange for the service being provided by Uber. For convenience, all players in this example are residents of the same country.

- <u>Option 1</u> is for Uber to "purchase" the service from Mr Smith for \$32, and then sell it on to Mr Jones for \$40 (final consumption expenditure) representing the output of Uber. This is referred to as the gross approach as, while total gross value added is \$40, total output adds up to \$72, higher than the output recorded in the other options. This approach would also have the most significant ramifications regarding trade statistics.
- <u>Option 2</u> is for Mr Jones to pay Mr Smith \$40 (final consumption expenditure); Mr Smith then pays \$8 of intermediation fees to Uber (to be recorded as intermediate consumption). The latter \$8 also represents the level of output produced by Uber. This option results in explicitly removing any direct interaction between Mr Jones and Uber.
- <u>Option 3</u> is similar to Option 2 but would involve some of the \$8 that was paid as intermediate consumption to be reallocated to reflect an element of a trade margin being paid by the consumer, even if such a margin is not explicitly paid. This makes the supply at basic price of Uber slightly less than that recorded in Option 2, although the supply at purchaser's price is the same.
- <u>Option 4</u> is also an extension of Option 2 but rather than Uber receiving all \$8 from the Mr Smith (the producer) as intermediate consumption, a certain amount of this \$8 is reallocated as final consumption expenditure directly from Mr Jones (the consumer). For the purpose of this example only, we will say that it is 50%, however this amount could be any percentage of the \$8. This in itself demonstrates the difficulty of this option, as while this option maintains the connection between the consumer and the intermediary platform, a payment (which could be zero) would need to be replicated for each intermediary platform transaction.

How these four transactions would be replicated numerically in the digital S-U tables is shown in appendix 3. All arrive at the same amount of GVA (\$40), but total output and the industries and/or products to which they are allocated vary depending on the options.

Option 2 and 4 are viewed as the most accurate reflection of the actual transactions taking place, as well as being consistent with various national accounts principles as they stand

right now. The most significant difference between the two is that option 2 allows for the entirety of the final consumption expenditure to be placed in one product (in this instance transport services), while Option 4 moves some of the final consumption expenditure to an explicit payment for the intermediation service provided by Uber. This latter difference throws up a few problems.

By forcing some of the final consumption to be recorded as an intermediation service and removing some of the amount from transport services creates a divergence from the standard recording of similar transactions in supply and use tables. In the use table, final consumption usually reflects only the final product delivered with the value including any trade margins that has been created during the production process.

The second issue concerns the fact that in the real world the explicit payment to the intermediary platform can come from just the producer, just the consumer, or both (as it did in this example). By recording a portion of it as intermediate consumption and another portion as final consumption would create a need for estimating additional details for which data may not be available, thus creating an additional burden on the compiler.

A final important point concerns the impact of the various options on trade flows. While in this example all three players, consumer, producer and intermediary platform are treated as being residents of the same country, in reality we know that this is not normally the case. Option 1 would have the most significant ramification regarding trade statistics, as we would see both exports (the platform buying the product from the producer) and imports (the platform selling the product back to the consumer) reflected in the external account.

Option 2 on the other hand results in the removal of these gross flows as the only cross border flow would be the intermediation fee to the platform (assuming that the producer and consumer are both residents.)

Due to these reasons, option 2 has been viewed as not only the most practical and sensible from a measurement point of view, but also providing a more realistic view on the flow of imports and exports. For the same reason this option was also supported by a recent Eurostat task force.

The main negative with implementing option 2 is that at an aggregated level it effectively masks the interaction between the consumers and the digital intermediaries. While the digital S-U tables, when fully populated, will be able to distinguish between purchases made directly and those made via platforms, this delineation may not be able to be made immediately.

### Question for the Advisory Group:

c) Does the Advisory Group agree with the proposal to use option 2 as the basis for recording transactions involving an intermediary platform?

# Delineation and classification of intermediary platforms

If we assume that option 2 is agreed upon as being the preferred recording, then the next question is what units should be considered an intermediary platform for the purpose of this satellite account. A definition with a brief reasoning has already been given, however it is worth exploring the various options a little further including the proposal to create a

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definition with an emphasis on whether the intermediary service is provided for free or for a fee.

In a world with perfect source data, the satellite account would aim to include as much granularity as possible in the delineation of intermediary platforms. Digital platforms can be split based on a variety of characteristics to improve the information being presented to users.

At a workshop in early September<sup>27</sup>, a number of presenters provided a variety of typologies of digital platforms, reflecting the many different ways in which it can be done. The BEA in fact was able to split intermediary platforms based on their characteristics into at least eight separate groups<sup>28</sup>, as follows (with real world examples):

- i. E-commerce online platform (Amazon)
- ii. Online resource sharing platform (booking.com)
- iii. E-financial service online platform (Ant Finance)
- iv. Online social network service platform (Linkedin)
- v. Online auction/matching platform (Ebay)
- vi. Online competitive crowdsourcing platform (Topcoder)
- vii. Online non-competitive crowdsourcing platform (Waze)
- viii. Online search platform (Google)

These identified platforms all meet some established characteristics such as "enabling direct interactions between two or more distinct sides" and having "each side being affiliated with the platform"<sup>29</sup>. However, if we were to add these classifications to those that have been put forward earlier in this paper, it would be very easy to generate at least 15 separate digital industries. Due to the constraints that NSOs face in relation to business registers and limitation of source data, it is unrealistic to expect that statistical compilers will be able to regularly produce statistics at this level<sup>30</sup>.

The broader definition of intermediary platforms used earlier in the paper defined them as follows:

"Units that facilitate direct production (within the SNA boundary) between two or more distinct but interdependent sets of users (whether firms or individuals) who interact through the service via the internet."

<sup>&</sup>lt;sup>27</sup> OECD workshop on online platforms, cloud computing and related products, September 6-7, 2018, OECD, Paris.

<sup>&</sup>lt;sup>28</sup>Li, Wendy C. Y. (2018), Typology of online platforms for future measurement of the value of data, presented at the 2018 OECD Workshop on Online Platforms, Cloud Computing, and Related Products, September 6<sup>th</sup>, OECD, Paris.

<sup>&</sup>lt;sup>29</sup> Hagiu, A. and Wright, J. (2015) 'Multi-Sided Platforms', *International Journal of Industrial Organization*, Vol. 43, These two criteria were put forward as the overriding characteristics of "multi-sided platforms" by Haigu and Wright. While called a "multi-sided platform", the starting characteristics were the same as digital intermediary platforms in this paper.

<sup>&</sup>lt;sup>30</sup> This paper does not go into any recommendation about any expectation by countries to complete this table on any regular basis. This table would however, like all economic statistics, benefit from being completed on a somewhat regular basis in order to create some form of time series.

This definition is used in an attempt to assist in measurement as well as to provide meaningful information to users. NSOs could still separately distinguish various types of platforms, if they have the data and the resources. However for the purposes of the digital S-U tables and in an attempt to create a definition that can be used consistently by many countries it is proposed to aggregate these different types of platforms and group them together, based on whether or not they charge an explicit fee for their service.

One of the main goals of the satellite account is to measure the value of the services provided by the intermediary platforms in matching producers/sellers and users/purchasers of certain products. While almost all digital platforms can facilitate additional economic transactions in some form, there are those for which they are an integral part of the transaction, and in fact, the economic transactions rely on them. While some platforms merely assist in transactions, usually by providing information, various social media platforms may alert users to goods and services in their area, and search engines may provide targeted information based on algorithms and learned knowledge, any economic transaction involving the matching of producers and users is still one more step away.

The intermediary platforms that explicitly provide the opportunity to purchase goods and services usually gain some form of payment if and when this occurs. In many cases, their existence relies on it, and advertising revenues usually make up only a small amount of their overall revenues<sup>31</sup>, unlike social media or free to use platforms.

The additional difference is that when goods and services are purchased through these fee charging intermediary platforms, the consumption that accompanies it is typically within the current SNA production boundary, unlike the services consumed by the "free to use" digital platforms.

With all of this in mind, it is proposed that different intermediary platforms are separated based on whether they will be charging either the producer or the consumer for the intermediary service they offer, therefore producing the intermediary service product. This separation may not always be straightforward, but taking the BEA list as an example the fee charging platforms would include groups 1, 2, 3, 5, and 6. All these types of sites fit some clear characteristics:

- The platform is independent of the producer they are selling on behalf of.
- They all charge some form of explicit fee to either the consumer/purchaser or more likely the producer/seller.
- They are the starting point for a further digital transactions (likely to be digitally ordered goods and services) that fall within the current SNA production boundary.

The other online platforms mentioned in the BEA outline (categories 4, 7, and 8) will still need to be included in the satellite account, as they are large players in the economy. These platforms will not however be producing the digital intermediary service product previously mentioned. Revenues from these sites will usually consist of payments from other producers for advertising or for (analytics of) data, and they provide "free-to-the-user" type of services, which do not meet the production boundary of the 2008 SNA.

<sup>&</sup>lt;sup>31</sup> 2017 advertising revenue for Booking.com made up less than 7% of total revenue, implying that people were booking through these sites as opposed to just using them for information gathering.

A follow-on impact from using this definition of intermediary platforms is that it will bring in large producers that are likely to also have their own online channel. The Ritz Paris, for example, charges well over 1,000 euro a night for a room, this price is available directly with the hotel as well as with various hotel booking sites. The good or service produced is the same, but the producers must make themselves available on multiple channels to maximise their exposure. This may come at a price to the producer in the form of a reduced margin (a cost that this satellite account is trying to measure), but as the popularity of resource sharing sites shows, it is still good business sense to do this.

# 4.3.2. Firms dependent on intermediary platforms

As proposed earlier in the paper, a unit should be classified based on where they are transacting a majority of their sales. For this classification, this would result in the removal of large producers who are also utilising intermediary platforms to generate additional output unless they are generating a majority of their output from the platform. This underlines the need to split this category into incorporated and unincorporated.

The digital S-U tables are set up to show the intermediate consumption payment coming from these larger providers to the intermediary platform regardless of the industry in which the producer is classified. The split in type of transaction between digitally ordered, platform enabled and not digitally ordered allows for the units transacting via multiple channels to separate out which channel they are using. Because of this alternative to capture their digital involvement, it is considered preferable to leave these mixed firms in either E-Sellers or other (non-digital) industries, depending on whether they are predominantly digital or not.

The advantage of this classification is that the output from this sub-industry, firms dependent on intermediary platforms, exclusively consists of firms that exist, at least in part, due to the lower market entrance barriers as a consequence of digital platform technology. The latter is a key area of interest, as the reasons for using intermediary platforms are quite different from firms who are simply changing their delivery channel in response to the digitalisation of the economy. The latter is in itself also an important piece of information to users, but would still be separately identifiable thanks to the transactional breakdown.

# 4.3.3. Other (non-digital) industries versus E-Sellers

A significant issue is where to allocate firms that are changing their business models, from traditional sales channels to selling via the internet. Currently the choice would be between "E-Sellers" and "other industries". Almost all retail stores have some form of online presence, so placing every enterprise with a digital channel into the group of E-Sellers would make results not that meaningful. The issue of the retail and wholesale industry also brings into consideration the differences in trade margins between sales via traditional channels and sales via digital channels.

The split that exists in transaction types between ordered online or not, means that for enterprises using multiple channels NSOs could in fact place the online transactions in one row and the physical transactions in another. If this data is available, then one could consider classifying all mixed businesses in "other industries" with the transactions separated. However, such a split may not be (fully) attainable.

Until this data is available, this leads to the question of where the enterprises using multiple channels, but unable to provide an accurate split, should be classified. The proposed digital

S-U tables suggest to classify units based on whichever channel is providing them a majority of their sales, in line with the advice given in section 3.

Enterprises that are predominantly operating digitally, but not being dependent on intermediary platforms would thus be classified into the group of E-Sellers. This group would then consist of E-Tailers, units that are fitting the traditional retail model, i.e. purchasing goods for resale. Moreover, it is proposed to allocate E-Vendors to the group of E-Sellers, but only in the case that the units are producing goods or services which are exclusively ordered and delivered digitally.

These two types of enterprises have quite different business models (also in comparison to the enterprises classified to "other digital businesses"). It is therefore proposed to have them broken down into the two categories mentioned. E-Tailers are limited to the traditional trade activities purchasing and selling goods at own account. At such, they do not include sites that are facilitating transactions between two independent parties, such as eBay or amazon marketplace. As mentioned in the above, if these sites are charging an explicit fee, they are classified under intermediary platforms.

E-Vendors would consist of units that are only producing goods and services that are ordered and delivered digitally. This would bring in various streaming services into this classification as well as other producers who sell and deliver their services digitally. In these cases, the product classification makes clear which industries are most affected by this trend.

If E-Sellers would be limited to just E-Tailers, the alternative would be to classify them separately. Pairing them with "other digital business" is not advisable. The basic characteristics of the latter "free to the user" businesses are very different from online only producers of goods and service for sale.

This additional delineation within the broader category is obviously contingent on NSOs being able to provide this level of data.

#### Questions for the Advisory Group:

- *d)* Does the Advisory Group agree with the classification of traders to the group of *E*-Sellers based on the criterion of having a majority of sales via on-line channels?
- e) Does the advisory group agree with the proposed classification of E-tailers and E-Vendors, and do countries think it is feasible to separate out the two groups?

#### 4.3.4. Other digital business

As noted, if the definition of E-Sellers is expanded as proposed in the above, this allows for a more homogeneous classification of "other digital business". The latter would then predominantly consist of units that provide information, goods and services "free" to users. Either this is done for purely altruistic purposes, or more often, in order to gain revenue from data, either directly by selling data (analytics), or indirectly, by providing more targeted advertising channels. Either way the business model is clearly different to those producing and then selling goods and services online. The valuation of the free digital services is another key output of the satellite accounts. While the advertising revenues and the revenues from data (analytics) are within the production boundary, the consumption of the product that is driving the traffic (social media sites, search engines leisure application) are not being recorded within the current SNA.

Another form of free services is related to the free use of assets that are being created by communities of people providing free labour input. Well-known examples are Wikipedia, and free software such as R and Linux. Accounting for creation, the capital stock value, the ownership and the use of these free assets is quite complicated, both from a conceptual point of view and from a measurement perspective<sup>32</sup>. Similar to the measurement of other free digital service previously mentioned, this issue is not explicitly explored in this paper except for allowing it to be recorded and where the units producing this free product may be classified.

With this in mind, one additional consideration would be whether or not to separately distinguish market and non-market units within this classification. While the latter may be relatively minor<sup>33</sup>, there are clear examples, such as the ones mentioned in the above, which operate for altruistic purposes, without the objective of generating profits.

### Question for the Advisory Group:

f) Does the Advisory Group consider it useful to separately distinguish market and nonmarket units within the group "other digital business"?

### 4.3.5. Digitally enabling industries

While it has already been discussed and agreed upon that ICT goods and services were more enablers of digitisation rather than being an explicit part of the digital economy, it was agreed at previous meetings that digitally enabling industries should be separately identified.

One area that has come up for additional consideration is related to cloud computing. These provision of these services has grown significantly. It's also of quite some interest to users, because of the concomitant shift from investments in ICT-infrastructure to purchasing services which provide the same set of capital services, but would typically be recorded as intermediate consumption. However, rather than distinguishing cloud computing providers as a separate industry, the proposed digital S-U tables include cloud computing services as a separate product. This would allow for units within the digitally enabling industries to separately identify the output connected to cloud computing. The same holds for the users of such services.

32 This issue including a numerical example is further discussed in, Van de Ven. P (forthcoming) "Measuring Economic Welfare: A Practical Agenda for the Present and the Future". Paper prepared for the 6th IMF Statistical Forum on "Measuring Economic Welfare in the Digital Age: What and How?"

<sup>33</sup> At the time of writing, only 1 (Wikipedia) of the top 50 most accessed sites as ranked by Alexa would be considered non-profit.

# 4.3.6. Digital only firms providing finance

The last digital industry to be discussed here is the digital only firms providing finance. While so far there has not been any significant user demand for digital finance providers to be separately identified, probably due to its relativity small presence at the moment, there is an inherent difference in activity of these enterprises compared to those in other industries.

"Financial intermediation is the activity of matching the needs of borrowers with the desires of lenders"<sup>34</sup>. This in itself sounds very much like the definition of (digital) intermediary, however digital only firms providing financial intermediation are producing services that are quite different from other types of platforms. The alternative to considering them as part of intermediary platforms is to separately identify them as an industry, and also include producers of a range of other financial services, including online payment services such as Paypal or Transferwise. This is what is proposed for the digital S-U tables.

More generally, it is clear that the financial industry has arguably leveraged on digitalisation more than any other industry, so that despite having many physical locations, most consumers now-a-days very rarely interact with financial service providers in a nondigital way. Because of this, it is not inconceivable to look upon financial corporations as delivering services of which the majority is digitally ordered and delivered. Notwithstanding these points, it is proposed to limit the "digital only platforms providing finance" to units that operate exclusively digital rather than majority digital.

#### Questions for the Advisory Group:

- g) Does the Advisory Group agree with separately classifying "digital only units providing finance"?
- *h)* Does the Advisory Group agree with the proposal to limit this group to units that operate exclusively digital rather than majority digital?

### 5. Outputs derived from the Supply and Use tables.

This section shortly discusses what information the proposed digital S-U tables would and would not be capable of providing. Of the key deliverables mentioned at the top of the paper the most obvious omission from the list is an aggregate such as "Digital GDP" or "total Gross Value Added (GVA) of the digital economy".

It is simply not feasible to produce a single GVA estimate based on the ordered, delivered, enabled definition. The most important hurdle that is faced is the mixing in the production chains of digital and non-digital activities. The real world does not produce a digital output number using only digital means and even if they did, it would be extremely difficult to get this information from providers.

<sup>&</sup>lt;sup>34</sup> SNA 2008, paragraph 17.227

For example, a restaurant meal that is ordered digitally using an intermediary platform would certainly meet the criteria of being a digital transaction. Therefore the value of the output could be classified as digital, but what about the related intermediate consumption and by extension the related value added. If the restaurant uses both digital and non-digital channels of supplying their goods and services, how to delineate the intermediate consumption needed to produce the various parts of output. One could apply, for example, fixed ratios of intermediate consumption (or value added) to output, but this would still remain a modelling assumption, not necessarily substantiated by real data.

A more realistic option is to not try and measure the GVA of the digital economy, but instead to focus on estimating the value added generated by the first six industries listed in the proposed digital S-U tables. This would be similar to the BEA's attempt to measure the digital economy, where they define various industries (ICT sector, e-commerce and digital media) and calculate the combined GVA for these industries as a pseudo digital economy.

While this may disappoint some users, it is the responsibility of all countries to continually reinforce that any digital economy satellite account is not intended to provide the basis for a unique definition of the digital economy per se. It is designed to serve as the basis for comparable measurement of certain phenomena and to provide a means for NSOs and users to arrive at tailored definitions that relate to these phenomena. This in itself is still extremely useful, not only for compilation purposes but also for clearly articulating what is being measured within the digital S-U tables.

#### Question for the Advisory Group

*i)* Does the Advisory Group generally agree with the proposed digital S-U tables, and the information that can be derived from them?

# 6. Proposed way forward and summary of questions.

This paper makes no recommendations regarding how much of the tables a country should be expected to complete or how soon it should be done. As mentioned the proposed tables are quite ambitious. While some cells may be able to be populated now, it is not expected that many countries will be able to complete all requested information immediately.

The tables have been structured to allow for completion of those parts that may be considered "low hanging fruit". These parts represent variables that may already be available. These include amongst others the following:

i. Separation of digital and non-digital purchases of various products for household final consumption expenditure.

ii. Output and intermediate consumption (and by extension gross value added) of all or some of the "digital industries". The digitally enabling industries, intermediary platforms, firms dependent on intermediary platforms, other digital business, digital only firms providing finance and E-Sellers

Some of the most challenging cells to populate include the breakdown of intermediate consumption into digitally ordered and non-digitally ordered, as well as getting a statistically sound estimate from the enterprises that rely on intermediary platforms.

It is hoped that much like the standard supply and use tables, once some cells can be populated and relied on, then other cells can be calculated using various assumptions and additional estimation techniques.

This paper wants to encourage all countries to aim to complete as much as possible, so that comparisons based on a similar set of definitions can be undertaken as soon as possible. This would then allow for countries to share information, results, as well as best practices on the various measurement issues that will no doubt arise when completing the tables.

Several issues are either not discussed or discussed only lightly in this paper. The two largest issues include:

- The compilation of volume and price measures;
- The compilation of monetary estimates for the production and use of free services;
- The accounting for the role of data in the current and future economy.

Neither one of these issues is easy to solve, yet they are both important and warrant further discussion. Papers have been presented on the first two issues at both this forum and others, so while not addressed in this paper the subject is being explored. The third issue is being discussed in two papers, also to be presented at the meeting of the Advisory Group on November 9, 2018.

The proposal in this paper does not pretend to solve all issues associated with the measuring of GDP in a digitalised economy. It does however try to provide a practical framework that could be utilised by countries to create indicators for use in the policy and research debate surrounding the digital economy. Additional discussion is needed to confirm various definitions and assumptions in this proposal as well as continue to develop solutions for the other aspects of measuring and monitoring the digital economy.

### 6.1. Summary of questions for the Advisory Group

- *a)* Should any other digital products be separately identified, apart from those already mentioned (Cloud computing service and digital intermediary service product)?
- b) Does the Advisory Group agree with the proposed delineation of non-digital products outlined in Section 2 (page 6)?
- c) Does the Advisory Group agree with the proposal to use option 2 as the basis for recording transactions involving an intermediary platform? (outlined on page 19)
- *d)* Does the Advisory Group agree with the classification of traders to the group of *E*-Sellers based on the criterion of having a majority of sales via on-line channels?
- *e)* Does the Advisory Group agree with the proposed classification of E-tailers and E-Vendors, and do countries think it is feasible to separate out the two groups?
- f) Does the Advisory Group consider it useful to separately distinguish market and nonmarket units within the group "other digital business"?
- g) Does the Advisory Group agree with separately classifying "digital only units providing finance"?

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- *h)* Does the Advisory Group agree with the proposal to limit "digital only units providing finance" to units that operate exclusively digitally?
- *i)* Does the Advisory Group generally agree with the proposed digital S-U tables, and the information that can be derived from them?

# 7. Bibliography

- Barefoot, K., D. Curtis, W. Jolliff, J. Nicholson, and R. Omonhundro "Defining and Measuring the Digital Economy". Available at https://www.bea.gov/digital-economy/\_pdf/defining-and-measuring-the-digital-economy.pdf .
- Central Product Classification (CPC), Version 2.1. Available at https://unstats.un.org/unsd/classifications/unsdclassifications/cpcv21.pdf
- Hagiu, A. and Wright, J. (2015) 'Multi-Sided Platforms', International Journal of Industrial Organization, Vol. 43, Haigu and Wright. Available at http://www.hbs.edu/faculty/Publication%20Files/15-037\_cb5afe51-6150-4be9-ace2-39c6a8ace6d4.pdf
- Li, Wendy C. Y. (2018), "Typology of online platforms for future measurement of the value of data", presented at the 2018 OECD Workshop on Online Platforms, Cloud Computing, and Related Products, September 6th, OECD, Paris.
- OECD Guide to Measuring the Information Society 2011, Available at http://www.oecd.org/sti/ieconomy/oecdguidetomeasuringtheinformationsociety2011.htm
- OECD Statistics Working Papers, No. 2016/07, "Measuring GDP in a Digitalised Economy", OECD Publishing, Paris. Available at https://doi.org/10.1787/5jlwqd81d09r-en.

OECD (2017b), Measuring Digital Trade: Towards a Conceptual Framework, <u>STD/CSSP/WPTGS(2017)3</u>. Available at http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/CSSP/WPTGS(2017) 3&docLanguage=En

- OECD (2017c), Summary of Responses of the Advisory Group: Survey of on Digital Economy Typology, <u>STD/CSSP/WPNA(2017)1</u>. Available at http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/CSSP/WPNA(2017)1 &docLanguage=En
- OECD (2017d), Issue Paper on a Proposed Framework for a Satellite Account for Measuring the Digital Economy, <u>STD/CSSP/WPNA(2017)10</u>. Available at http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/CSSP/WPNA(2017)1 0&docLanguage=En
- OECD (2017), Final Minutes advisory group on GDP in a digitalised economy, Paris, 10 November 2017. Available at https://community.oecd.org/docs/DOC-131448
- Ahmad, N. and Ribarsky, J. "Towards a Framework for Measuring the Digital Economy". Available at http://www.iariw.org/copenhagen/ribarsky.pdf
- 2008 System of National Accounts. Available at https://unstats.un.org/unsd/nationalaccount/docs/sna2008.pdf

8. Appendix

**Appendix 1: Prototype Digital Supply-Use tables** 

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Su	ipply	Industry 1	Industry 2		Industry 3		industry 4		Industry 5	Industry 6		Industry 7						
	"Digital Industry"	Digitally enabling industries	Digital Int	termediary forms	Firms depende	ent on intermdiary tforms	E-S	ellers	firms providing finance	Other Digital Businesses		Other Industries		ALL OTHER STANDARD INDUSTRIES AS	Subtotal: Sum of enabler		Totel eu	Ten
Producte	Eurther deliniation if possible				Incorporated	Unincorporated	Etailoro	E Vondoro			ISIC division 01 Crop and animal production	ISIC division 02 Forestry and logging	ISIC division	PER EXISTING SURVEY	producing industries and digital	Output at basic	ply at basi	noort Mergi
Digital Products	Futurel definitation in possible				incorporateu	Onneorporated	L-tailers	L-Venuors							DUSTRESS	pines		-
(Digital good) Aggregate of digital products																		_
	Digitally ordered																	
	Directly from counterparty																	
	Via a resident digital intermediary platforms																	
	Via a non-resident digital intermediary platforms																	
	Not Digitally ordered																	
(Digital services - except digital intermediary products and cloud computing service products pair()																		
	Digitally ordered		<u> </u>															-
	Directly from counterparty																	
	Via a resident digital intermediary platforms																	
	Via a non-resident digital intermediary platforms																	
(Digital intermediary service products), paid																		
	Intermediation fee resident platform (both implicit and explicit)																	
	Intermediation fee non-resident platform (both implicit and explic																	
(Digital services - Cloud computing service products),	0. X II. I. I.																$\rightarrow$	_
	Digitally ordered																$\rightarrow$	-
	Via a regident digital intermediany platforms													-				-
	Via a resident digital intermediany platforms																-	—
(Digital service, free) - Outside of SNA framework	via a non resident algitar internediary platornis																	
	Digital data services																	
	of which intra-firm provision of data and/or use of databases																	
	Other Digital Services (e.g free search engines, social media																	
Non digital products																		
(Accommodation services) CPA 55																		
	Digitally ordered																	
	Directly from counterparty																	
	Via a resident digital intermediary platforms																$\rightarrow$	—
	Via a non-resident digital intermediary platforms																	_
(East conicae) CDA 66	Not Digitally ordered																	+
In one services) or 14 an	Digitally ordered																	-
	Directly from counterparty																	+
			<u> </u>															
(Products of agriculture, hunting and related services)	no deliniation																	
(Products of forestry, logging and related services) CPA																		+
02	no deliniation			_														+
********** ALL OTHED STANDARD DOOL			1		1	1	1			1	11			1	1			1

# Figure 8.1. Supply Table

#### A PROPOSED FRAMEWORK FOR DIGITAL SUPPLY-USE TABLES

IN	A	В	<u> </u>	E F	G	н		J	к	L	м	N	0	P	к	R	S T	r I
		USE	Industry 1	Industry 2	In	dustry 3	Indu	ıstıy 4	Industry 5	Industry 6		industry 7					F	1
		"Digital Industry"	Digitally enabling	Digital Intermediary	Firms depen	dent on intermdiary	ES	allore	Digital only firms	Other Digital		Other Industria		ALL OTHER STANDARD				
		Digital industry	industries	plationna					providing infance	Duantesses	ISIC division 01 Crop and animal	ISIC division 02 Forestry	ISIC division	INDUSTRIES AS PER EXISTING SURVEY	Total	Tatal	Ŧ	2
P	roducts	Further deliniation if possible			Incorporated	Unincorporated	E-tailers	E-Vendors			production	and logging			Consumption	Demand	ĥ	
-	Digital Products																4-	+
լը	Digital good) Aggregate of digital products	Digitally and and															4-	+
H		Directly from counterparty															+	+
		Via a resident digital intermediary platforms															t	+
		Via a non-resident digital intermediary platforms															t i	
		Not Digitally ordered																
(D an	ligital services - except digital intermediary products ad cloud computing service products, paid)																Γ	
		Digitally ordered															4	
		Directly from counterparty																T
		Via a resident digital intermediary platforms															4	T
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e	Nigital intermediary service products), paid																4-	+
$\vdash$		Intermediation fee resident platform (both implicit and explicit)															4-	+
$\vdash$		intermediation ree non-resident platform (both implicit and explicit)															4	+
æ	igital services - Cloud computing service products),	Disitelly address															4	_
$\vdash$		Diractly from counterparty															£	+
		Via a resident digital intermediary platforms																+
		Via a non-resident digital intermediary platforms															t	+
(D	ligital service, free) - Outside of SNA framework																t i	
		Digital data services																1
		of which intra-firm provision of data and/or use of databases																
		Other Digital Services (e.g free search engines, social media etc.)															4	
-	Non digital products																4-	+
10	ccommodation services) CPA 55	Distantia di second															4-	+
+		Directly from counterparty															+	+
		Via a resident digital intermediary platforms															t	+
		Via a non-resident digital intermediary platforms																+
		Not Digitally ordered																
Œ	ood services) CPA 56																	
		Digitally ordered															4	
$\vdash$		Directly from counterparty															4-	+
$\vdash$																	4	+
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$\vdash$																	1	+
																	1	+
-																	Æ	
	ALL OTHER DELINIAT	ED PRODUCTS AS PER PROPOSAL			1												1	
(P Cl	Products of agriculture, hunting and related services) PA 01	no deliniation																
(P CF	Products of forestry, logging and related services) PA 02	no deliniation																
																	4	
							I										11	1
	ALL OTHER STANDARD	PRODUCTS AS PER EXISTING SURVEY					-										4	
	igtal (majority digital)	Croce Volue Added																
Р	igiai ( majority digitai)	Gross value Added					-									1		
	na Distal (sectority see distal)	or which														1		
N	on Digital (majority non digital)	Compensation of employees														-		
		Mixed Income		-		1			1							4		
F	ree Digital Service (putside of production				1			1										
ь	oundary)	Other taxes less subsidies on production																
		Gross Operating Surplus																
		Total Output																

#### Figure 8.2. Use table

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			Distant					only firme				
		D-3-8.	Utypean					ony mins	Other Distant	Other	Total	Total
Additional Outpations		Digitally enabling	memory	Firms depend	ent on Intermitary		_	providing	ouia vigiai	Oulea		TUE
Additional Questions	"Digital Industry"	industnes	plationns	pta	ationns	E-S	elers	Inance	Dusinesses	Industries	Corporations	Households
	Further deliniation if possible			Incorporated	Unincorporated	E-Tailers	E-Vendors					
TRANSACTIONS												
Investment - Purchase												
	Software											
	Purchase of proprietary databases											
	Artistic Originals											
	R&D											
	ICT Goods											
	Other Digital enabling infrastructure											
	Vehicles (only required for certain industries)											
	Dwellings (only remined for certain industries)											
	Change (any require in commit measure)				-							
Investment - Own Account												
	Salwara											
	Survivance Durchana of nonvintany databases											
	Adiatia Originala											
	K&D											
	Other Digital enabling infrastructure											
	Accumulation of Data (outside of SNA asset boundary)											
	Vehicles (only required for certain industries)											
	Dwellings (only required for certain industries)											
Supplementery information												
	Sales via own site to residents											
	Sales via own site to non residents											
	Sales via platforms site to residents											
	Sales via platforms site to non residents											
	Digital platform charges to resident producers											
	Digital platform charges to non resident producers											
	Digital platform receits to resident producers											
	Digital platform receits to non resident producers											
	Digital platform advertising revenue from resident producers											
	Digital platform advertising revenue from non resident producers											
STOCKS												
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	Software											
	Dumbaco of representations databacon											
	Artistis Originals											
	K & D KT Canda											
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	Unter Digital enabling initiastructure											
	Accumulation of Data (outside of SNA asset boundary)											
	Vehicles (only required for certain industries)											
	Dweilings (only required for certain industries)											
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# Figure 8.3. Supplementary information table

A PROPOSED FRAMEWORK FOR DIGITAL SUPPLY-USE TABLES





Figure 8.4. Digital Decision Tree

# Appendix 3: Representations of transaction flows for intermediary platforms (Uber example).

# Figure 8.5. Option 1: Supply table

1N	A	В	E	F	G	н	м	0	P	к	R	s	Т	<u>u v</u>	w	x	Y
1	S	upply	Industry 2		Industry 3		Industr	w 7									
2	Option 1	"Digital Industry"	Digital Inte platfo	ermediary orms	Firms depende	nt on intermdiary forms	Other Ind	ustries	ALL OTHER STANDARD INDUSTRIES AS	Subtotal: Sum of enabler			Total eu	The			purch
	·						ISIC division 01 Crop and animal production	ISIC division	PER EXISTING SURVEY	producing industries and digital	Output at basic	Impor	pply of bee price	aigiter marg	Digital Marg	on product	
3 Prod	ucts	Further deliniation if possible			Incorporated	Unincorporated			-	Dusiless	plices	-	• •	<u> </u>	7 3		
4 Dig	ital Products													$\rightarrow$		-	—
	tal good) Aggregate of digital products													_	_		+
2		Digitally ordered														-	+
J (D)		Not Digitally ordered												_	_	-	4-
1 and d	ai services - except orginal intermediary products loud computing service products, paid)																
2		Digitally ordered															-
3		Directly from counterparty															+
		Via a resident digital intermediary platforms															
i		Via a non-resident digital intermediary platforms															+
Digit	al intermediary service products), paid																
	· · · ·	Intermediation fee resident platform (both implicit and explicit)	8	3							8		8				1
3		Intermediation fee non-resident platform (both implicit and expli	ic														
(Digita	al service, free) - Outside of SNA framework																
i T	, , ,	Digital data services															
i		of which intra-firm provision of data and/or use of databases															
		Other Digital Services (e.g free search engines, social media	1														
No	n digital products																T
(pass	enger transport services) CPA 55																
1		Digitally ordered															
1		Directly from counterparty															
1		Via a resident digital intermediary platforms	3	2		32					64		64				6
		Via a non-resident digital intermediary platforms															
Ļ		Not Digitally ordered															
6 (Food	services) CPA 56																
5		Digitally ordered															
3										-							
4	ALL OTHER DELINIATED	PRODUCTS AS PER PROPOSAL															_
(Prod	ucts of agriculture, hunting and related services) 01	no deliniation															
(Prod	ucts of forestry, logging and related services) CPA																+
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3		· · · · · · · · · · · · · · · · · · ·															
9	********** ALL OTHER STANDARD PRO	DUCTS AS PER EXISTING SURVEY *********															
0 Total			4	0		32					72		72				7
							7										
Digta	al ( majority digital)	Non Digital (majority non digital)	Free Di	igital Ser	vice (putside	of production											
							1										

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#### ROW/COLUMN в G н м 0 Р к R S T U V X Y Α USE Industry 2 Industry 3 Industry 7 FINAL USE 1 Digital Intermediary Firms dependent on intermdiary ALL OTHER platforms platforms **Option 1** Other Industries STANDARD 2 "Digital Industry" INDUSTRIES AS ISIC division PER EXISTING 01 Crop and ISIC division Total Exporte SURVEY GFCE INV animal intermediate Total ΗFCE production Consumption Demand 3 Products Further deliniation if possible Incorporated Unincorporated 4 Digital Products 5 (Digital good) Aggregate of digital products 6 Digitally ordered 10 Not Digitally ordered (Digital services - except digital intermediary products 11 and cloud computing service products, paid) 12 13 14 15 Digitally ordered Directly from counterparty Via a resident digital intermediary platforms Via a non-resident digital intermediary platforms 16 17 (Digital intermediary service products), paid ntermediation fee resident platform (both implicit and explicit) 18 ntermediation fee non-resident platform (both implicit and explicit) 24 25 26 27 (Digital service, free) - Outside of SNA framework Digital data services of which intra-firm provision of data and/or use of databases Other Digital Services (e.g free search engines, social media etc.) 28 29 30 31 32 33 34 35 Non digital products (passenger transport services) CPA 49 igitally ordered Directly from counterparty 32 32 72 40 Via a resident digital intermediary platforms Via a non-resident digital intermediary platforms Not Digitally ordered (Food services) CPA 56 36 Digitally ordered 41 42 \*\*\*\*\*\*\*\*\*\* ALL OTHER DELINIATED PRODUCTS AS PER PROPOSAL \*\*\*\*\*\*\*\*\*\* (Products of agriculture, hunting and related services) 43 CPA 01 no deliniation (Products of forestry, logging and related services) 44 CPA 02 no deliniation 45 46 47 \*\*\*\*\*\*\*\*\*\* ALL OTHER STANDARD PRODUCTS AS PER EXISTING SURVEY \*\*\*\*\*\*\* 48 Total intermediate consumption 32 0 32 49 Digtal (majority digital) Gross Value Added 32 40 8 50 of which 51 Non Digital (majority non digital) Compensation of employees 3 3 52 Mixed Income 32 32 Free Digital Service (putside of production 53 boundary) Other taxes less subsidies on production 54 55 Gross Operating Surplus Total Output 5 -5 32 40 72

#### Figure 8.6. Option 1 : Use table

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# Figure 8.7. Option 2: Supply table

JMN	А	В	E F	G	н	м	0	Р	R	s	Т	U	v I	w x	Y	
1	S	upply	industry 2	industry 3		industr	v7									
2	Option 2	"Digital Industry"	Digital Intermediary platforms	Firms depende pla	ent on intermdiary tforms	Other Indu	stries	ALL OTHER Standard Industries as			Total eu	Tren	Non-o		Texes I	Tog
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3 Pro	oducts	Further deliniation if possible		incorporated	Unincorporated			-	pinces	-	• •	3	3	3 •		-
4 0	Digital Products														_	-
	ngital good) Agglegate of orgital products	Digitally ordered														-
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s –		Via a non-resident digital intermediary platforms														
i mi	inital intermediary service products) paid	the a new restaurt angles internet and platforms														
7		Intermediation fee resident platform (both implicit and explicit)	8						8		8				8	
8		Intermediation fee non-resident platform (both implicit and explicit							-		-					-
4 (Di	igital service, free) - Outside of SNA framework															
	<u> </u>	Digital data services														
5		of which intra-firm provision of data and/or use of databases														
		Other Digital Services (e.g free search engines, social media														
3	Non digital products															
9 (pa	assenger transport services) CPA 55															
0		Digitally ordered														
1		Directly from counterparty														
2		Via a resident digital intermediary platforms			40				40		40				40	<u>آ</u>
3		Via a non-resident digital intermediary platforms														_
4		Not Digitally ordered														
5 (Fo	ood services) CPA 56															
6		Digitally ordered														
2																
3												T				
.4	********** ALL OTHER DELINIATED	PRODUCTS AS PER PROPOSAL *********														
(Pr 5 CP	roducts of agriculture, hunting and related services) A 01	no deliniation														
47																
48																
19	*********** ALL OTHER STANDARD PRO	DUCTS AS PER EXISTING SURVEY *********														
50 To	tal		8		40				48		48				48	۲
Di	gtal ( majority digital)	Non Digital (majority non digital)	Free Digital Ser	vice (putside	of production											
						1										

LUMN	А	В	E F	G	н	M	0	P	ĸ	R	S		υν	<i>(</i> )	Х	Y
		USE	industry 2	in in	dustry 3	Indu	stry 7					R	NAL	USE		
	Option 2	"Digital Industry"	Digital Intermediary platforms	Firms depend	dent on intermdiary latforms	Other I	ndustries	ALL OTHER STANDARD								
	- p a			Incorporated	Unincorporated	ISIC division 01 Crop and animal production	ISIC division	INDUSTRIES AS PER EXISTING SURVEY	Total intermediate Consumption	Total Demand	HFQ	NPISH	GFC S	GFC	3	Export
- F	Digital Products	r under demnadon in possible		Incorporated	onneorporated						<u> </u>				-	-
h	(Digital good) Aggregate of digital products															
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		Not Digitally ordered														
( a	Digital services - except digital intermediary products and cloud computing service products, paid)															
F		Digitally ordered														_
		Directly from counterparty														
		Via a resident digital intermediary platforms														
L		Via a non-resident digital intermediary platforms										$\square$				
Q	Digital intermediary service products), paid											$\square$				
┝		Intermediation fee resident platform (both implicit and explicit)			8				8	8	<u> </u>	$\mapsto$	_		_	
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$\vdash$		of which intra firm provision of data and/or use of databases									<u> </u>	$\vdash$	-		-	_
H		Other Digital Services (e.g. free search engines, social media etc.)									<u> </u>	$\vdash$	-		-	_
F	Non digital products	Other Digital Services (e.g liee search engines, social media etc.)										$\vdash$				_
1	passenger transport services) CPA 49											$\vdash$				
۲	r====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,====;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;,===;;,===;;,===;;,===;;,===;;,===;;,===;;,===;;,===;;,===;;;e==;;;e==;;;e==;;;e==;;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e==;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;;e=;	Digitally ordered														
F		Directly from counterparty														
Γ		Via a resident digital intermediary platforms								40	40					
		Via a non-resident digital intermediary platforms														
		Not Digitally ordered														
Q	Food services) CPA 56										4	$\square$				
L		Digitally ordered										$\square$				
L												$\mapsto$			_	
1	ALL OTHER DELINIAT	ED PRODUCTS AS PER PROPOSAL									<u> </u>	$\vdash$				_
	Products of agriculture, numbing and related services)	no deliniation														
F		no deliniation									<u> </u>	$\vdash$	-		-	
-																
	********* ALL OTHER STANDARD	PRODUCTS AS PER EXISTING SURVEY *********														
Г		Total intermediate consumption	0		8				8		·					
I	Digtal ( majority digital)	Gross Value Added	8		32				40							
		of which														
	Non Digital (majority non digital)	Compensation of employees	3						3							
Ē		Mixed Income		1	32				32							
	Free Digital Service (outside of production					1										
	vendare)	Other taxes less subsidies on renduction														
F		Gines Operation Surplus	5	-			1		5							
		Total Output	8		40				48							
			-													

# Figure 8.8. Option 2: Use table

SDD/CSSP/WPNA(2018)3 **41** 

MN	А	В	E	F	G	н	м	0	Р	к	R	s	тц	J V	W	х	Y
	S	upply						-									
1			Industry 2		Industry 3		Industr	y /						_			
2	Option 3	"Digital Industry"	Digital Int platf	termediary forms	Firms depende plat	ent on intermdiary tforms	Other Indu	stries	ALL OTHER STANDARD INDUSTRIES AS	Subtotal: Sum of enabler			Total aup	Non-d	0	Taxee let	Durcha
							ISIC division 01 Crop and animal production	ISIC division	PER EXISTING SURVEY	producing industries and digital	Output at basic	Impor	alua ya yaqe	igitel merg	igital Marg	on produc	i Supply :
3 P	roducts	Further deliniation if possible			Incorporated	Unincorporated				business	pnces	=		5 3	3		5 2
4	Digital Products													_			
5	Digital good) Aggregate of digital products																
6		Digitally ordered															
10 (1  1 a	Digital services - except digital intermediary products nd cloud computing service products, paid)	Not Digitally ordered															
2	• • • • •	Digitally ordered															
3		Directly from counterparty															
4		Via a resident digital intermediary platforms															
5		Via a non-resident digital intermediary platforms															
<b>آ</b> ي 6	Digital intermediary service products), paid																
7		Intermediation fee resident platform (both implicit and explicit)		5							5		5		3		8
8		Intermediation fee non-resident platform (both implicit and explicit	¢														
4 ([	Digital service, free) - Outside of SNA framework																
5		Digital data services												_			
_ ز		of which intra-firm provision of data and/or use of databases												_			
		Other Digital Services (e.g free search engines, social media															
	Non digital products													_			
<u>u</u>	assenger transport services) CPA 55	Disitelly and and											_	_			
1		Digitally ordered												_			
÷		Via a resident digital intermediany platforms				37					37		37				37
÷		Via a non-resident digital intermediary platforms				51					51		51	_			51
í		Not Digitally ordered															_
n a	Food services) CPA 56	Hor Digitally ondered															
F		Digitally ordered															
3																	
4	********** ALL OTHER DELINIATED	PRODUCTS AS PER PROPOSAL *********								1							
.5 C	Products of agriculture, hunting and related services) PA 01	no deliniation															
7																	
8 9	********* ALL OTHER STANDARD PRO	DDUCTS AS PER EXISTING SURVEY *********															
.0 T	otal		1	5		37					42		42		3		45
C	Digtal ( majority digital)	Non Digital (majority non digital)	Free D	igital Ser	vice (putside	of production	]				I						

# Figure 8.9. Option 3: Supply table

#### 42 | SDD/CSSP/WPNA(2018)3

JMN	А	В	E F	G	Н	м	0	P	К	R	S	Т	Y
		USE	Industry 2	In	dustry 3	Inde	istry 7				F	IAL I	USE
	Option 3	"Digital Industry"	Digital Intermediary platforms	Firms depend	dent on intermdiary atforms	Other I	ndustries	ALL OTHER STANDARD					
Pr	oducts	Further deliniation if possible		Incorporated	Unincorporated	ISIC division 01 Crop and animal production	ISIC division	INDUSTRIES AS PER EXISTING SURVEY	Total intermediate Consumption	Total Demand	HFCE	NPISH	Expoin
- Hi	Digital Products			incorporated	Onneorporated						L		<b>—</b>
0	igital good) Aggregate of digital products											$\square$	
		Digitally ordered											
		Not Digitally ordered											
(Di an	igital services - except digital intermediary products d cloud computing service products, paid)												
		Digitally ordered											
		Directly from counterparty											
		Via a resident digital intermediary platforms											
		Via a non-resident digital intermediary platforms											
D	igital intermediary service products), paid												-
		Intermediation fee resident platform (both implicit and explicit)			5				8	8			-
		Intermediation fee non-resident platform (both implicit and explicit)											<u> </u>
(DI	igital service, free) - Outside of SNA framework	Disited data associate								L		$\vdash$	←
		Digital data services								<u> </u>		$\vdash$	⊢
-		Other Digital Services (e.g. free search engines, social media etc.)									$\vdash$	$\vdash$	<u> </u>
	Non digital products	Other Digital Devices (e.g nee search engines, social media etc.)											
ÍDé	assencer transport services) CPA 49											+	
		Digitally ordered											
_		Directly from counterparty											
_		Via a resident digital intermediary platforms								40	40		
_		Via a non-resident digital intermediary platforms											
		Not Digitally ordered											<u> </u>
(Fe	ood services) CPA 56											$\square$	<u> </u>
		Digitally ordered										$\vdash$	-
										L	$\vdash$	$\vdash$	┝──
											1 '		1
(PI	roducts of agriculture, hunting and related services) 2A 01	no deliniation											
_	********** ALL OTHER STANDARD I	PRODUCTS AS PER EXISTING SURVEY *********											<u> </u>
-		Total intermediate consumption	0		5				5	4			
DI	gtal ( majority digital)	Gross Value Added	8		32				40	-			
	Divital (maiorita non divital)	OF WINCH							-	1			
	on Digital (majority non digital)	Lompensation or employees	د		<b>n</b>				<u> </u>	1			
	Dinited Service (autoide all as-dusti				<u>×</u>				<u>×</u>	1			
bc	ee oignal service (puiside of production xundary)	Other taxes less subsidies on production											
		Gross Operating Surplus	5						5	_			
		Total Output	8		37				45				

# Figure 8.10. Option 3: Use table

SDD/CSSP/WPNA(2018)3 **43** 

MN	А	В	E	F	G	н	м	0	Р	R	s	Т	υν	v	v x	Y
1	Si	upply	Industry 2		Industry 3		industr	7								
2	Option 4	"Digital Industry"	Digital Int platf	ermediary orms	Firms depende pla	ent on intermdiary tforms	Other Indu	stries	ALL OTHER STANDARD INDUSTRIES AS			Total au	Tren	Non-d		purcha
2	Des duste	Funda de linitation i francis la			Incomparison	Uningenerated	ISIC division 01 Crop and animal production	ISIC division	PER EXISTING SURVEY	Output at basic	Import	eolid beg te Aldo	eport Mergi	igital margi	on product	subbit a
1	Digital Products	Further definitation if possible			incorporated	Onincorporated			-	PIRCES	•	• •	3 :	3 3		
- 4	Digital Products Digital anoth Acampasta of digital producte														-	-
6	(Digital good) Aggregate of digital products	Digitally ordered														
10		Not Digitally ordered														
11	Digital services - except digital intermediary products and cloud computing service products, paid)															
12		Digitally ordered														
13		Directly from counterparty														
14		Via a resident digital intermediary platforms														
15		Via a non-resident digital intermediary platforms														
16	Digital intermediary service products), paid			•												
1/		Intermediation fee resident platform (both implicit and explicit)		8						8		8			_	8
18		Intermediation fee non-resident platform (both implicit and explicit											_		_	
24	Digital service, free) - Outside of SNA framework	Disitel determinen											_		_	_
25		Digital data services												_	_	_
20		Other Digital Services (or a free search engines, secial media											_		_	_
28	Non digital products	Other Digital Services (e.g nee search engines, social media														
29	nacconner trancnart conicoe) CPA 55															
30	развада шарит запазу от 1135	Digitally ordered														
31		Directly from counterparty														
32		Via a resident digital intermediary platforms				36				36		36				36
33		Via a non-resident digital intermediary platforms														
34		Not Digitally ordered														
35	(Food services) CPA 56															
36		Digitally ordered														
42																
43 44	********* ALL OTHER DELINIATED	PRODUCTS AS PER PROPOSAL **********														
45	(Products of agriculture, hunting and related services) CPA 01	no deliniation														
47																
48 49	********** ALL OTHER STANDARD PRO	DUCTS AS PER EXISTING SURVEY *********														
50	Total			8		36				44		44				44
	Digtal ( majority digital)	Non Digital (majority non digital)	Free D	igital Ser	vice (putside	of production	]			l						
							1									

# Figure 8.11. Option 4: Supply table

#### 44 | SDD/CSSP/WPNA(2018)3

N	A	В	E	F G	н	М	0	P	ĸ	R	S	Т	
		USE	Industry 2		Industry 3	inde	ustry 7				в	NAL	US
	Option 4	"Digital Industry"	Digital Intermedia platforms	ary Firms de	pendent on intermdiary platforms	Other	Industries	ALL OTHER STANDARD					ĺ
Product	s	Further deliniation if possible		Incorporat	ed Unincorporated	ISIC division 01 Crop and animal production	ISIC division	INDUSTRIES AS PER EXISTING SURVEY	Total intermediate Consumption	Total Demand	HFCE	NPISH	
Digita	I Products			moorporat	on on one of portated				-		<u> </u>	-	Г
(Digital o	good) Aggregate of digital products												Г
		Digitally ordered											Γ
		Not Digitally ordered											
(Digital s and cloue	ervices - except digital intermediary products d computing service products, paid)												
		Digitally ordered											Г
		Directly from counterparty											
		Via a resident digital intermediary platforms											Ē
		Via a non-resident digital intermediary platforms											F
(Digital in	ntermediary service products), paid									<b></b>	4		F
		Intermediation fee resident platform (both implicit and explicit)			4				4	8	4		1
(D): 10-1		Intermediation fee non-resident platform (both implicit and explicit)									<u> </u>		1
Digital s	ervice, free) - Outside of SNA framework	Di bi la construcción de la constru							<u> </u>	<u> </u>	<b>-</b>	_	+
		Digital data services				-			<b></b>	L	<b>_</b>	-	⊢
<u> </u>		Other Digital Services (a g free exercise angines, essial media etc.)							<u> </u>	<u> </u>	<u> </u>	-	$\vdash$
Non di	inital products	Other Digital Services (e.g liee search engines, social media etc.)									-		⊢
(naccond	nor transmort services) CPA 49												F
		Digitally ordered											
		Directly from counterparty											
		Via a resident digital intermediary platforms								36	36		Г
		Via a non-resident digital intermediary platforms											Γ
		Not Digitally ordered											
(Food se	rvices) CPA 56												Ē
		Digitally ordered											ſ
													Ĺ
									1			1	1
(Dec.du. 1	ALL OTHER DELINIAT	ED PRODUCTS AS PER PROPOSAL							<b></b>		<b></b>		H
CRA 01	s or agriculture, nunting and related services)	no deliniation											
CPAUL		no deimiation											F
													F
	********** ALL OTHER STANDARD	PRODUCTS AS PER EXISTING SURVEY **********							1			1	1
		Total intermediate consumption	0		4				4			-	-
Digtal (	maiority digital)	Gross Value Added	8		32				40	1			
	. ,,	of which	-						1	1			
Non Die	gital (majority non digital)	Compensation of employees	3			1			3	1			
	gian (majority non algital)	hived beams			72				10	1			
Eme Di	isital Service (autride of production	magu BRUNIRC			34					1			
bounda	ignal service (purside of production iry)	Other taxes less subsidies on production											
		Gross Operating Surplus	5						5				
		Total Output	8		36				44	4			

# Figure 8.12. Option 4: Use

# Appendix 4: Real world examples demonstrated in S-U tables.

To better demonstrate how various transactions will be represented in the digital S-U tables, the following section outlines five examples of digital transactions that may be included in the satellite account for the digital economy. While these are simpler than those found in real life, they cover a wide variety of digital activities. The tables for each example are included in Appendix 4. For simplicity, some of the other products not impacted by the hypothetical example have been removed from the tables in the appendix.

#### Example 1(Accommodation via online platform)

A consumer rents holiday accommodation in the same country for \$150 using an online booking platform located in another country. The online platform charges 10% of the sales price for facilitating the transaction. The owner of the house (an unincorporated entity who only rents out his/her own house occasionally using the platform) has also spent \$10 on internet access to allow them to connect to the booking platform.

# Example 2 (Purchase of online advertising)

The government pays a social media business \$70 to advertise its new healthy living campaign. The government also pays \$20 to provide internet access for its government department. The social media business pays a cloud-computing provider \$10 to provide an online server for its business.

#### **Example 3** (E-tailer vs high street retailer)

Two travel agents (one online only, one on the high street) each sell the same travel package to two consumers for \$100. While the cost of the goods they are selling are the same (\$60), the online travel agent is able to maintain lower overheads (\$5) compared to the high street retailer (\$20) due to its online nature.

#### **Example 4** (Restaurant providing meals through three different channels)

The same restaurant sells three different meals to three different households. Each meal attracts a 20% VAT. One meal is ordered online and delivered by the restaurant (\$30), one is ordered and delivered through a digital platform (\$60) and one is ordered and eaten in the physical restaurant (\$72). The digital platform is in the same country as the consumer and producer, and charges 10% of the purchase price as an intermediary fee. The cyclist connected to the platform, actually delivering the meal ordered via it, gets paid \$1 from the platform per delivery. It costs the restaurant \$50 to purchase the ingredients for the three meals.

# Example 5(Online game purchasing in game purchases)

An overseas consumer enjoys a downloaded computer game so much that he/she pays \$70 for in game purchases. The online game creator pays \$10 for internet access to develop the game and \$15 in electricity for the business.

What these examples do show are the very useful outputs that are potentially available. The ability to give an estimate to the amount of value added being generated by intermediary platforms. The ability to provide an estimate of the amount of final demand that is being digitally ordered as a proportion of total final demand will provide strong evidence that facets of the digital economy that make up so much of the economy are being correctly measured.

The restaurant example also demonstrates the additional transaction that come from some intermediary platforms regarding the use of contractors to complete tasks. If the people are treated as employees (as is the case with Uber drivers in the UK) then this payment will be reflected as compensation of employees from the platform. If they are treated as an independent contractor then a small amount of intermediate consumption will be observed with a complimentary mixed income amount also being registered.

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N	А	В	с	D	E	F	G	Н	L	М	P	К	R	s	т	υv	w.	x	Y
4	Su	pply	laduata: 4		Industry 3		Industry 2		Industry C	Industry 7									
1			nuusuy i	1.0			muusuy J	1	and suy o	noosuy 1		SUDIOI(al)							
2	Example 1	"Disital Industry"	Digitally	enabling	Digital Inte	ermediary	Firms depende	forms	Other Digital	Other Industries	STANDARD	Sum of						5	7
<u></u>		Digital Industry	induc	50165	plan	01113	piac		Dusinesses	Other industries	INDUSTRIES AS	enabler			- <u>-</u>		문문		ŝ
										ISIC division 01	PER EXISTING	producing inductries and	Output at			3			S
										Crop and animal	SURVEY	dinital	basic	표	흑흉	≤ ∃	≤ 8	-	흉
Broducte		Eurther deliniation if possible					Incorporated	Unincorporated		production		business	prices	<u>ă</u>		a a		= -	ž
Digital	Products	Further definitation in possible					incorporated	Onneorporateu					•	-	• •	3 3			-
(Digital or	ood) Accrecate of dicital products				-														_
		Digitally ordered																	
		Not Digitally ordered																	
(Digital se	rvices - except digital intermediary products and																		
i cloud com	puting service products, paid)																		
2		Digitally ordered	1	0									10		10			1	0
		Directly from counterparty	1	10									10		10			1	10
		Via a resident digital intermediary platforms																	
-		Via a non-resident digital intermediary platforms																	_
(Digital int	ermediary service products), paid																		_
		Intermediation fee resident platform (both implicit and explicit)												45	46			-	15
(Diaital an	ninge (land computing contine anduste)	intermediation ree non-resident platform (both implicit and explicit												15	10			1	0
i (Uniginali se	wces - cioua companity service products),	Digitally ordered			+											_	+		-
		Directly from counterparty														_	++	_	-
		Via a resident digital intermediary platforms			<u> </u>														_
		Via a non-resident digital intermediary platforms																	_
(Digital ser	rvice, free) - Outside of SNA framework																		
		Digital data services																	
		of which intra-firm provision of data and/or use of databases																	
		Other Digital Services (e.g free search engines, social media																	
Non dig	pital products																		
(Accommo	odation services) CPA 55																		
		Digitally ordered						150					150		150			1	50
		Directly from counterparty												+ +					_
		Via a resident digital intermediary platforms						150					100		100				50
		Not Digitally ordered						150					150		150	_		1	50
																			_
í	********** ALL OTHER DELINIATED PL	RODUCTS AS PER PROPOSAL **********																	
(Products	of agriculture, hunting and related services) CPA																		
01		no deliniation																	
(Products	of forestry, logging and related services) CPA 02	no deliniation																	
		······																	
3																			
) (T-t-1	ALL OTHER STANDARD PROD	UCTS AS PER EXISTING SURVEY *********		0		_		450					400	45	475				75
Total			1	0				150					160	15	1/5			1	15
Distal ( a		Non Divital (majority non divital)	E	احتاد	Samian (s		f manakanti an k		1										
Digtai ( I		Non Digital (majority non digital)	гпе	re Ungral	Service (	pursicle o	· broancaou c	e an	-										

# Figure 8.13 Example 1: Supply

#### 48 | SDD/CSSP/WPNA(2018)3

#### ROW/COLUMN в STY Α G н 0 Р к R D L USE FINAL USE Industry 2 Industry 3 Industry 6 Industry 7 1 Industry 1 Digitally enabling Digital Intermediary Firms dependent on intermdiary Other Digital Example 1 ALL OTHER "Digital Industry" Other industries platforms platforms Businesses STANDARD 2 Industries INDUSTRIES AS PER EXISTING ISIC division Exporte SURVEY Total NPISH HEOE Total intermediate Further deliniation if possible Incorporated Unincorporated Consumption Demand Products Digital Products 4 5 (Digital good) Aggregate of digital products 6 Digitally ordered 10 Not Digitally ordered (Digital services - except digital intermediary products and cloud computing service products, paid) 11 12 13 14 10 Digitally ordered 10 10 Directly from counterparty 10 10 10 Via a resident digital intermediary platforms 15 16 Via a non-resident digital intermediary platforms (Digital intermediary service products), paid 17 Intermediation fee resident platform (both implicit and explicit) 18 Intermediation fee non-resident platform (both implicit and explicit) 15 15 15 19 (Digital services - Cloud computing service products), 20 21 22 23 24 Digitally ordered Directly from counterparty Via a resident digital intermediary platforms Via a non-resident digital intermediary platforms (Digital service, free) - Outside of SNA framework 25 26 27 Digital data services of which intra-firm provision of data and/or use of databases Other Digital Services (e.g free search engines, social media etc.) 28 Non digital products 29 30 31 32 33 (Accommo dation services) CPA 55 Digitally ordered Directly from counterparty Via a resident digital intermediary platforms 150 150 Via a non-resident digital intermediary platforms 34 Not Digitally ordered (Food services) CPA 56 35 41 42 \*\*\*\*\*\*\*\*\*\* ALL OTHER DELINIATED PRODUCTS AS PER PROPOSAL \*\*\*\*\*\*\*\*\* (Products of agriculture, hunting and related services) 43 CPA 01 no deliniation 45 46 47 \*\*\*\*\*\*\*\*\*\* ALL OTHER STANDARD PRODUCTS AS PER EXISTING SURVEY \*\*\*\*\*\*\*\*\*\* 48 Total intermediate consumption 0 25 25 Digtal (majority digital) Gross Value Added 10 125 135 49 50 of which Compensation of employees 51 Non Digital (majority non digital) 2 2 52 Mixed Income 125 125 Free Digital Service (putside of production boundary) 53 Other taxes less subsidies on production 54 **Gross Operating Surplus** 8 8 55 150 160 Total Output 10

#### Figure 8.14. Example 1: Use

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# Figure 8.15. Example 2: Supply table

OLUMN	A	В	С	D	1	J	к	L	м	Р	к	R	S	Т	U	v v	v x	Y	_
		Supply																	
1		cappij	Industry 1		Industry 4		Industry 5	Industry 6	Industry 7		Summer								4
2	Example 2	"Digital Industry"	Digitally en industri	nabling ies	E-S	ellers	Digital only firms providing finance	Other Digital Businesses	Other Industries	ALL OTHER STANDARD	Sum of enabler			긓	₫			purcha	1
ſ									ISIC division 01	PER EXISTING	producing	0			B		6		i
									Crop and animal	SURVEY	nuusuies anu dinital	hasic	표	율뮽	Ξ	3 3	= E	물물	.
2	Broducts	Eurther deliniation if persible			Etailora	E Vandara			production		business	prices	ă	ō-		ā   5			
3	Digital Products	Further delimation if possible			E-tailers	E-vendors						F	•	• =	3	3 3			+
5	(Dinital nond) Annenate of dinital podu	ds																-	1
6	Colum Scort a Science of adding locate	Digitally ordered																	1
10		Not Digitally ordered																	T
11	(Digital services - except digital intermediary products and cloud																		
12		Digitally ordered	20									20		20				20	
13		Directly from counterparty	20									20		20				20	
14		Via a resident digital intermediary platforms																	
15		Via a non-resident digital intermediary platforms																	4
16	(Digital intermediary service products), p	aid															_	_	4
1/		Intermediation fee resident platform (both implicit and explicit)														_	_	_	4
18		Intermediation fee non-resident platform (both implicit and explicit														_	_	_	4
19	(Digital services - Cloud computing	Disite the endered	40									10		40	+ +	_		10	-
20		Digitally ordered	10									10		10		_	_	10	-
21		Via a resident digital intermediany platforms	10									10		10	+ +		-	10	-
22		Via a resident digital intermediary platforms													+ +				-
24	(Digital service, free) - Outside of SNA fr	amework																	1
25	(Digital service, nee) - Outside of Orev in	Digital data services																-	đ
26		of which intra-firm provision of data and/or use of databases																	Ċ.
27		Other Digital Services (e.g free search engines, social media																	1
28	Non digital products																		1
29	(Advertising and market research service	s) CPA 73																	1
30		Digitally ordered						70				70		70				70	1
31		Directly from counterparty						70				70		70				70	
32		Via a resident digital intermediary platforms																	1
33		Via a non-resident digital intermediary platforms																	4
34		Not Digitally ordered																	4
35	(Food services) CPA 56																_	_	4
43 44	********* ALL OTHER DELI	NIATED PRODUCTS AS PER PROPOSAL **********																	
	(Products of agriculture, hunting and																		
45	related services) CPA 01	no deliniation																	4
47																			4
48 49	********** ALL OTHER STANDA	ARD PRODUCTS AS PER EXISTING SURVEY																	
50	Total		30					70				100		100				100	1
ŀ	Digtal ( majority digital)	Non Digital (majority non digital)	Free Dig	gital	_							I							

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#### ROW/COLUMN в R Τ <u>U V X Y</u> Α М Р ĸ s USE Industry 1 Industry 4 Industry 5 Industry 6 Industry 7 FINAL USE 1 Digitally enabling Digital only firms Other Digital Example 2 "Digital Industry" E-Sellers ALL OTHER Other industries providing finance Businesses STANDARD 2 Industries INDUSTRIES AS ISIC division PER EXISTING 01 Crop and SURVEY Exporte Total NPISH animal 투입 GFCE 우 우 · · · · · intermediate Total production З Further deliniation if possible E-tailers E-Vendors Demand Products Consumption 4 Digital Products 5 (Digital good) Aggregate of digital products Digitally ordered 6 10 Not Digitally ordered (Digital services - except digital intermediary products and cloud 11 computing service products, paid) 12 13 20 20 Digitally ordered **20** 20 Directly from counterparty 14 Via a resident digital intermediary platforms 15 Via a non-resident digital intermediary platforms 16 (Digital intermediary service products), paid 17 Intermediation fee resident platform (both implicit and explicit) 18 Intermediation fee non-resident platform (both implicit and explicit) (Digital services - Cloud computing 19 20 21 22 23 service products), 10 10 Digitally ordered 10 Directly from counterparty 10 10 10 Via a resident digital intermediary platforms Via a non-resident digital intermediary platforms (Digital service, free) - Outside of SNA framework 24 25 26 27 28 29 30 31 Digital data services of which intra-firm provision of data and/or use of databases Other Digital Services (e.g free search engines, social media etc.) Non digital products (Adventising nd market research services) CPA 73 Digitally ordered 70 70 70 Directly from counterparty 70 32 33 Via a resident digital intermediary platforms Via a non-resident digital intermediary platforms 34 Not Digitally ordered 35 41 42 (Food services) CPA 56 \*\*\*\*\*\*\*\*\*\* ALL OTHER DELINIATED PRODUCTS AS PER PROPOSAL (Products of agriculture, hunting and related services) CPA 01 43 no deliniation 45 46 \*\*\*\*\*\*\*\*\*\* ALL OTHER STANDARD PRODUCTS AS PER EXISTING SURVEY \*\*\*\*\*\*\*\*\*\* 47 48 Total intermediate consumption 0 10 10 49 Digtal (majority digital) Gross Value Added 30 60 90 50 of which 51 Non Digital (majority non digital) 0 sation of employees 10 40 50 52 Mixed Income Free Digital Service (putside of 53 production boundary) Other taxes less subsidies on production 54 55 20 **Gross Operating Surplus** 40 Total Output

#### Figure 8.16. Example 2: Use table

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Figure 8.17. Example	3:	Supply	table
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IN	A	в	C D	1	J	L	М	N	0	Р	к	R	s	т	<u>u</u> v		w	х	Y
1		Supply	industry 1	industry 4		Industry 6		industry 7											I
			Digitally enabling	E-S	ellers	Other Digital				ALL OTHER	Subrocar: Sum of					z			ξ.,
2	Example 3	"Digital Industry"	industries			Businesses		Other Industries		STANDARD INDUSTRIES AS	enabler					3	Ð		음 음
							1010 11 1 17	1010 11 1 70	ISIC	PER EXISTING	producing	<b></b>		<u> </u>	- P	8		ub e	
							ISIC division 47	ISIC division 79	division D	SURVEY	nousues anu dioital	hasic	풀	99	ĭ. ĭ	3	M	a î	육필
	odusta	Eurther deliniation if possible		Etailara	E Vandara		retail trade	rour operator	electricity	•	business	prices	j ž	ġ.	2	2	a		<u>s</u>
	Digital Products	Further definitation if possible		E-tallers	E-vendors					-			-	• =	3	3	3		• •
Π	inital coord: Accremate of digital conducts				1														
P.	. <u></u>	Digitally ordered																	(
		Directly from counterparty																	
		Via a resident digital intermediary platforms																	· · · · · ·
		Via a non-resident digital intermediary platforms																	
		Not Digitally ordered																	
Ø	igital services - except digital intermediary																		
Par	nuces and chood company service	Digitally ordered																	
$\vdash$		Directly from counterparty																	
$\vdash$		Via a resident digital intermediary platforms																	
$\vdash$		Via a non-resident digital intermediary platforms																	
D	igital service, free) - Outside of SNA framev	work																	
<u> </u>	<b>y</b> , ,	Digital data services																	
		of which intra-firm provision of data and/or use of databases																	
		Other Digital Services (e.g free search engines, social media																	(
	Non digital products																		
Œ	avel agent, tour operator services) CPA 79																		
		Digitally ordered						60				60		60			40		100
		Directly from counterparty						60				60		60			40		100
-		Via a resident digital intermediary platforms																	
⊢		Net Digitally ordered						60				60		60		40			100
æ	ntail trado comicoe) CDA 47	Not Digitally ordered						00				00		00		40			100
<u>6.</u>	cual name services) or 144	Digitally ordered		40								40		40			-40		0
$\vdash$		Directly from counterparty		40								40		40			-40		0
		Via a resident digital intermediary platforms																	
		Via a non-resident digital intermediary platforms																	
		Not Digitally ordered					40					40		40		-40			0
3																			1
P	roducts of agriculture, bunting and related	ATED FRODUCTS AS FER FROPUSAL																	
se	rvices) CPA 01	no deliniation																	1
(E	lectricity, gas, and air-conditioning) CPA																		
39		no deliniation							25			25		25					25
																			I.
T	ALL OTHER STANDARD	J PRODUCTS AS PER EXISTING SURVEY		40			40	120	26			225		225		0	0		225
10	tai			40			40	120	25			225		225		U	U		225
	atal (majority digital)	Non Digital (majority non digital)	Erron Dimit-1	-								I							
	gtar ( majority digital)	Non Digital (majority non digital)	rree vigital																

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JMN	A	В	G	н		J	L	м	N	0	P	к	R	S T	Y
		USE	in	dustry 3	inde	ıstıy 4	Industry 6		industry 7					FINAL	JSE
	Example 3	"Digital Industry"	Firms depend pl	dent on intermdiary atforms	E-S	Sellers	Other Digital Businesses		Other Industrie	es	ALL OTHER STANDARD				
								ISIC division 47 retail trade	ISIC division 79 Tour operator	ISIC division D electricity	INDUSTRIES AS PER EXISTING SURVEY	Total intermediate	Total	HFO NFG	Expor
P	Products	Further deliniation if possible	Incorporated	Unincorporated	E-tailers	E-Vendors					-	Consumption	Demand	m ŝ	-
h	Digital Products														-
- 14	cognal good reggiegate of digital products	Digitally ordered													
		Not Digitally ordered													
(L C	Digital services - except digital intermediary products and loud computing service products, paid)														
		Digitally ordered													
		Directly from counterparty													
L		Via a resident digital intermediary platforms													
		Via a non-resident digital intermediary platforms													
([	Digital service, free) - Outside of SNA framework														
		Digital data services													_
		of which intra-firm provision of data and/or use of databases													_
-		Other Digital Services (e.g free search engines, social media etc.)													
	Non digital products														-
μ	ITavel agent, tour operator services) CPA 79	Distantia and an al											400	400	_
⊢		Digitally ordered											100	100	-
⊢		Via a resident digital intermediany platforms											100	100	-
⊢		Via a non-resident digital intermediany platforms													-
		Not Digitally ordered											100	100	
æ	Retail trade service) CPA //7	Not Digitally oracica											100	100	
٣		Digitally ordered													
-		Directly from counterparty													
		Via a resident digital intermediary platforms													
		Via a non-resident digital intermediary platforms													
		Not Digitally ordered													
	ALL OTHER DELINIATE	D PRODUCTS AS PER PROPOSAL													
(E (F	Electricity, gas, and air-conditioning) CPA 39 Products of forestry, logging and related services) CPA 12	no delimitation			5			20				25	25		
	-														
		ł													
	********* ALL OTHER STANDARD PE	RODUCTS AS PER EXISTING SURVEY *********													
		Total intermediate consumption			5			20	0	0		25			
D	Digtal ( majority digital)	Gross Value Added			35			20	120	25		200			
		of which													
N	Non Digital (majority non digital)	Compensation of employees			10			15	50	15		90			
F		Mived Income					1								
F	ree Digital Service (putside of production	Other taxes less subsidies on production													
F		Gross Operating Surplus			25			5	70	10		110			
		Total Output			40			40	120	25		225			

# Figure 8.18. Example 3:Use table

ROW/COLUMN	A	В	E	F	G	н	1	J	м	N	P	R	s	Т	υv	v	x x	Y
1		Supply	Industry 2		Industry 3		industry 4		inte	strv 7								
2	Example 4 "Digital Industry"		Digital Intermediary platforms		Firms dependent on intermdiary platforms		E-Se	ellers	Other I	ndustries	ALL OTHER STANDARD			٦.			,	purcha
3									ISIC division 56 food and beverage	ISIC sub-division 11 Manufacture of food products	PER EXISTING SURVEY	Output at basic	Impor	tel eupply beelc price	eport Merg	laitei mera	Taxee let	neus bulca
	Products	Further deliniation if possible			Incorporated	Unincorporated	E-tailers	E-Vendors	service			pnces	:	12	3	3 3	33	3 3
4	Digital Products																_	
5	(Digital good) Aggregate of digital products																_	
6		Digitally ordered														_		
10	<b>ANTALIA IN ANTALIA</b>	Not Digitally ordered														_		
16	(Digital intermediary service products), paid	Internet disting for an eighter all affered (beak involution and evenlight)										<u> </u>		<u> </u>		_	_	6
17		Intermediation fee resident platform (both implicit and explicit)	0									0		0			_	0
10	(Disited assists free) Outside of CNIA framework	Intermediation ree non-resident platform (both implicit and expli-													_		_	
24	(Digital service, free) - Outside of SNA framewo	IK Disital data conjecto														_	_	
25		of which intra firm provision of data and/or use of databases															_	
20		Other Digital Services (e.g. free search engines, social media																
28	Non-diaital products	Other Digital Services (e.g nee search engines, social media																
20	(Dactal and counter conicoe) CDA 53														-	-		
30		Digitally ordered				1						1		1				1
31		Directly from counterparty													-	-		· ·
32		Via a resident digital intermediary platforms				1						1		1	-	-		1
33		Via a non-resident digital intermediary platforms														-	-	<u> </u>
34		Not Digitally ordered																
35	(Food and beverage serving services) CPA 56																	
36		Digitally ordered							75			75		75			15	90
37		Directly from counterparty							25			25		25			5	30
38		Via a resident digital intermediary platforms							50			50		50			10	60
39		Via a non-resident digital intermediary platforms																
40		Not Digitally ordered							60			60		60			12	72
41																		
42																		
43																		
44	********* ALL OTHER DELINIAT	ED PRODUCTS AS PER PROPOSAL **********																
45	(Products of agriculture, hunting and related services) CPA 01	no deliniation																
46	(Food products) CPA 10	no deliniation								50		50		50				50
47																		
48 49	********** ALL OTHER STANDARD	PRODUCTS AS PER EXISTING SURVEY																
50	Total		6			1			135	50		192		192			27	219
	Digtal ( majority digital)	Non Digital (majority non digital)	Free Di	gital Serv	vice (putside	of production												

# Figure 8.19. Example 4: Supply table.



#### Figure 8.20. Example 4: Use table

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IN	А	В	С	D	1	J	M	N	Р	R	S	т	U	v ۱	w x	Y
	Supply															
1		· · ·	industry 1		industry 4		industry /								_	-
2 Example 5		"Digital Industry"		nabling ries	E-Sellers		Other Industries		ALL UTHER STANDARD			_ 급	T	Non-d	▫ .	Tota
							ISIC division 01 Crop and animal	ISIC division D electricity	PER EXISTING SURVEY	Output at basic	Impo	tel eupply beelc pric	eport Merg	igital marg	ubeidiee : altei Merc	l Supply
3 Pro	oducts	Further deliniation if possible			E-tailers	E-Vendors	production			pnces	3	8 8	=	<u> </u>	<u>3</u> 33	: 8 2
4 C	Digital Products															
5 <b>D</b>	ligital good) Aggregate of digital products														_	$\square$
6		Digitally ordered													_	4
0		Not Digitally ordered														4
(Di) 1 clo	igital services - except digital intermediary products and ud computing service products, paid)															
2		Digitally ordered	10							10		10				10
3		Directly from counterparty	10							10		10				10
i 📃		Via a resident digital intermediary platforms														
ز		Via a non-resident digital intermediary platforms														
(Di	igital service, free) - Outside of SNA framework															
/		Digital data services														
í		of which intra-firm provision of data and/or use of databases														
′		Other Digital Services (e.g free search engines, social media														
8	Non digital products															
Թ	ublishing services) CPA 58															
/		Digitally ordered				60				60		60				60
		Directly from counterparty				60				60		60				60
2		Via a resident digital intermediary platforms													_	4
4		Via a non-resident digital intermediary platforms													_	4
<u> </u>		Not Digitally ordered														4
<u>(Fa</u>	ood services) CPA 56															
<u> </u>		Digitally ordered				-									_	4
<u> </u>		Directly from counterparty													_	4
<u> </u>															_	4
'⊢														_	_	+
'⊢																—
															-	+
<u>_</u>																
3 4	********* ALL OTHER DELINIATED P	RODUCTS AS PER PROPOSAL *********														
(Pr 5 01	roducts of agriculture, hunting and related services) CPA	no deliniation														
δ (El	lectricity, gas, and air-conditioning) CPA 39	no deliniation						15		15		15				15
/																
8 9	****** ALL OTHER STANDARD PROF	DUCTS AS PER EXISTING SURVEY *********														
0 To	tal		10			60		15		85		85				85
Die	gtal (majority digital)	Non Digital (majority non digital)	Free D	icital	-											
				- <b>-</b>	T											

# Figure 8.21. Example 5: Supply table

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#### ROW/COLUMN А в м N Р к R S V X Y C D .1 1 USE Industry 4 Industry 6 FINAL USE 1 Industry 1 Industry 7 Digitally enabling Other Digital Example 5 "Digital Industry" E-Sellers ALL OTHER industries Businesses STANDARD INDUSTRIES AS 2 Other Industries ISIC division ISIC division PER EXISTING 01 Crop and D SURVEY Total Exporte GFCF animal electricity. H Total intermediate production Further deliniation if possible E-tailers E-Vendors 3 Products Consumption Demand Digital Products 4 (Digital good) Aggregate of digital products 5 Digitally ordered 6 7 Directly from counterparty 8 Via a resident digital intermediary platforms 9 Via a non-resident digital intermediary platforms 10 Not Digitally ordered (Digital services - except digital intermediary products and cloud computing service products, paid) 11 12 Digitally ordered 10 10 10 13 Directly from counterparty 10 10 10 14 Via a resident digital intermediary platforms 15 Via a non-resident digital intermediary platforms 24 25 26 27 (Digital service, free) - Outside of SNA framework Digital data services of which intra-firm provision of data and/or use of databases Other Digital Services (e.g free search engines, social media etc.) 28 Non digital products 29 (Publishing services) CPA 58 30 Digitally ordered 60 60 31 Directly from counterparty 60 60 32 Via a resident digital intermediary platforms 33 Via a non-resident digital intermediary platforms 34 Not Digitally ordered 35 (Food services) CPA 56 41 \*\*\*\*\*\*\*\*\*\* ALL OTHER DELINIATED PRODUCTS AS PER PROPOSAL 42 (Products of agriculture, hunting and related services) 43 **CPA 01** no deliniation 44 (Electricity, gas, and air-conditioning) CPA 39 15 15 no deliniation 15 45 46 47 \*\*\*\*\*\*\*\*\*\* ALL OTHER STANDARD PRODUCTS AS PER EXISTING SURVEY \*\*\*\*\*\*\*\*\* 48 Total intermediate consumption 0 25 0 25 49 Digtal (majority digital) Gross Value Added 10 35 60 50 of which 51 Non Digital (majority non digital) **Compensation of employees** 3 15 5 23 52 Mixed Income Free Digital Service (putside of production boundary) Other taxes less subsidies on production 53 54 10 **Gross Operating Surplus** 7 20 37 55 Total Outpu 10 60 15 85

### Figure 8.22. Example 5: Use table

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