A SATELLITE ACCOUNT FOR THE EUROPEAN UNION CREATIVE INDUSTRIES
EUIPO PROJECT TEAM

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ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2B</td>
<td>Business to business</td>
</tr>
<tr>
<td>B2C</td>
<td>Business to consumers</td>
</tr>
<tr>
<td>CFC</td>
<td>Consumption of fixed capital</td>
</tr>
<tr>
<td>CI</td>
<td>Creative industries</td>
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<tr>
<td>CISA</td>
<td>Creative industries satellite accounts</td>
</tr>
<tr>
<td>CISAC</td>
<td>Confédération International des Sociétés d’Auteurs et Compositeurs</td>
</tr>
<tr>
<td>CPM</td>
<td>Cost per mille</td>
</tr>
<tr>
<td>EPO</td>
<td>European Patent Office</td>
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<tr>
<td>ESA</td>
<td>European system of accounts</td>
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<tr>
<td>ESSnet-Culture</td>
<td>European Statistical System Network on Culture</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>EUIPO</td>
<td>European Union Intellectual Property Office</td>
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<tr>
<td>Eurostat</td>
<td>Statistical Office of the European Union</td>
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<tr>
<td>FC</td>
<td>Final consumption</td>
</tr>
<tr>
<td>FCS</td>
<td>Framework for cultural statistics</td>
</tr>
<tr>
<td>GFCF</td>
<td>Gross fixed capital formation</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>GVA</td>
<td>Gross value added</td>
</tr>
<tr>
<td>HH</td>
<td>Households</td>
</tr>
<tr>
<td>IARIW</td>
<td>International Association for Research on Income and Wealth</td>
</tr>
<tr>
<td>IC</td>
<td>Intermediate consumption</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and communications technology</td>
</tr>
<tr>
<td>IFPI</td>
<td>International Federation of Phonographic Industry</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organization</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>IP</td>
<td>Intellectual property</td>
</tr>
<tr>
<td>IPR</td>
<td>Intellectual property right(s)</td>
</tr>
<tr>
<td>NA</td>
<td>National accounts</td>
</tr>
<tr>
<td>NACE</td>
<td>Nomenclature statistique des activités économiques dans la Communauté Européenne</td>
</tr>
<tr>
<td>NPI</td>
<td>Non-profit institutions</td>
</tr>
<tr>
<td>NPISH</td>
<td>Non-profit institutions serving households</td>
</tr>
<tr>
<td>NSO</td>
<td>National statistical office</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and development</td>
</tr>
<tr>
<td>RoW</td>
<td>Rest of the world</td>
</tr>
<tr>
<td>SA</td>
<td>Satellite account</td>
</tr>
<tr>
<td>SILC</td>
<td>Statistics on income and living conditions</td>
</tr>
<tr>
<td>SNA</td>
<td>System of National Accounts</td>
</tr>
<tr>
<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>UNECE</td>
<td>United Nations Economic Commission for Europe</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>UNSC</td>
<td>United Nations Statistical Commission</td>
</tr>
<tr>
<td>VA</td>
<td>Value added</td>
</tr>
<tr>
<td>WIPO</td>
<td>World Intellectual Property Organization</td>
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</tbody>
</table>
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INTRODUCTION

Economic activity is quantified and measured in national accounts. The basic methodology is set out in the System of National Accounts (SNA), the internationally agreed set of recommendations on how to compile measures of economic activity. The SNA was first published by the United Nations in 1953 and is today maintained by the UN, the IMF, the World Bank, the OECD and Eurostat. The most recent update was published in 2008. In the European Union, the system for measuring economic activity is an adaptation of the SNA, called the European System of Accounts (ESA), and is maintained by Eurostat, with the most recent update having taken place in 2010.

The creation of the national accounts system was originally motivated by the need to measure industrial output, value added, employment and external trade in the various sectors and in the economy as a whole. To that end, economic activity is divided into primary, secondary and tertiary sectors. Primary sectors include agriculture and extractive industries; secondary sectors include mainly manufacturing, public utilities (supply of electricity, gas, water, etc.) and construction, and tertiary sectors include services. Each of these main groupings is further subdivided into successively more detailed sub-classifications. In the EU, this classification is called NACE (Nomenclature statistique des activités économiques dans la Communauté Européenne). At its most detailed level, NACE subdivides economic activity into approximately 700 industries.

However, in practice, some economic activities cannot be derived from the current system of national accounts. In particular, certain areas of activity in which policy makers and the general public have an interest are not directly retrievable from the published statistics, either because they transcend the standard classification, or because they involve goods or (more typically) services that are not bought and sold in the marketplace and therefore fall outside the scope of economic statistics. To address this, satellite accounts (SAs) provide a framework linked to the national accounts but focus on certain aspects of economic and social life that are not immediately reflected in the latter. Common examples are SAs for tourism, the environment or unpaid household or volunteer work. In some cases (e.g. tourism), the SA mainly provides alternative groupings for economic activities that are already included in the traditional national accounts, while in other cases (e.g. unpaid volunteer work) it may also expand the scope of the account (the production boundary).

This report examines the prospects for setting up such a satellite account for the creative industries (CISA), and possible methodologies to do so. Following this Introduction and the Executive Summary, the first chapter discusses the delineation and classification of cultural and creative activities. The second chapter is the heart of the report. It sets out possible methodologies for constructing a CISA and makes a specific proposal, grounded in recommendations by Eurostat, the OECD, the IMF, UNESCO and other European and international bodies. Finally, issues surrounding the collection of the data needed to construct a CISA are discussed in the third chapter.

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1 In economic parlance, such activities lie outside the production boundary of the national accounts.
EXECUTIVE SUMMARY

Satellite accounts provide a framework linked to the national accounts but focus on certain aspects of economic and social life that are not immediately reflected in the latter.

This report examines the prospects for setting up such a satellite account for the creative industries, and possible methodologies to do so. The creative industries are defined here as economic activities concerned with the generation and exploitation of knowledge, information and culture. Such activities are important in the modern economy but quantifying them is not an easy task, partly because of the classification issues and partly because such activities are often conducted outside the market economy, requiring their value to be estimated using other types of statistics from both public and private sector sources. Nevertheless, several countries have carried out work in this area that can serve as a starting point, and organisations such as the OECD, IMF or UNESCO have shown increasing interest in developing methods to measure the economic value of culture.

To assess the feasibility of an EU CISA the following aspects have been considered:

• classification of industries and products;
• treatment of ‘free’ or subsidised digital services;
• inclusion of IPR infringements in the current national accounts framework and in a CISA;
• sequence of accounts and institutional sectors accounts relevant for the CISA.

The industries suggested for inclusion in the creative industries can be grouped in the following domains:

• cultural heritage, archives and libraries;
• books and press;
• visual arts;
• performing arts;
• audiovisual and multimedia;
• architecture;
• advertising;
• software and web portals.

As usual, principal, secondary and ancillary activities carried out by these industries must be considered, but the production of creative products by non-creative industries should also be included. For instance, many firms in non-creative industries publish books, magazines or software, or engage in advertising as a secondary or ancillary activity. Therefore, a ninth domain should be added to consider ‘other non-creative industries producing creative products’. This domain would then include the parts of the other industries producing creative products as a secondary activity, and would require a re-allocation from the industries to which they are allocated in the standard classification.

One major area to consider is the digital economy which has changed not only the way in which firms in the creative industries operate but also the way in which consumers engage in these activities. Frequently, the connection between the benefit to consumers and the provision and funding of the service is not direct, making it difficult to reflect in national accounts the economic importance and the use of such services by the different economic actors. Nevertheless, given the importance of these activities, it is important to make it clearer who produces, pays and benefits from these ‘free’ services, and to quantify the value of
such services. The “free” digital services fall into three main categories:

- Services financed by advertising;
- Services financed via data;
- Services produced by volunteers.

All three categories of services are included in the proposed CISA, using standard methodologies to impute a value to the activities in question.

Finally, the report addresses the treatment of IPR-infringing activities in national accounts and contains a proposal to include them in the CISA. According to the latest revision of the international System of National Accounts (and ESA for the EU), illegal activities should be included in national accounts as long as the transaction between the two parties is by mutual agreement. In the context of CISA, this means in particular activities that infringe IP rights, such as illegal access to copyright-protected works.

Some of the proposals included in this report require statistical information that is not available in all EU countries. Nevertheless the proposed methodology tries to be as complete as possible and to foresee the consequences of different decisions for the CISA and its relationship with the central framework of national accounts. In many cases, the data has to be obtained by indirect methods and the corresponding economic value must be imputed.

The report concludes that while challenging, developing an SA for the creative and cultural industries is possible and desirable, as it will enable quantifying important aspects of the modern economy, not least in the digital sphere, that are currently not, or only implicitly captured in the economic statistics. Given the complexity of the task, the proposed next steps would involve carrying out a pilot project to set up a CISA in one or two EU Member States.
DELINEATION AND CLASSIFICATION OF CULTURAL AND CREATIVE ACTIVITIES

1.1 CREATIVE INDUSTRIES

The concept of creative and cultural industries is often used but is not standardised. It covers a core set of relatively basic cultural fields (heritage and fine arts in general) and can then broaden out to encompass wider activities (publishing, audiovisual, design, architecture) and peripheral fields (software, telecommunications, ICT).

International organisations such as UNESCO or WIPO have proposed frameworks for cultural industries or copyright-intensive industries, which are in fact quite similar.

The UNESCO Framework for Cultural Statistics (FCS) is a tool for organising cultural statistics so as to measure the economic and social dimensions of culture. UNESCO defines culture as

the set of distinctive spiritual, material, intellectual and emotional features of society or a social group, that encompasses, not only art and literature, but lifestyles, ways of living together, value systems, traditions and beliefs …. Whereas is not possible to measure associated behaviours and practices, it is possible to measure associated behaviours and practices. [UNESCO] defines culture through the identification and measurement of the behaviours and practices resulting from the beliefs and values of a society or a social group.

The 2009 UNESCO FCS takes into account ‘the effects of globalisation on the production and dissemination of cultural products and reflects current practices and intellectual property issues’.

As recognised in the 2009 UNESCO FCS, in the time since the first cultural framework was developed in 1986, there has been a transformation in the cultural sectors due to increased spending on cultural activities and products, the wider range of products, the conversion of many cultural industries to a digital format, the internationalisation of flows of goods and services, the global exchange of ideas, people and capital, and the creation of new products and practices based on multiculturalism and interculturalism.

The 2009 UNESCO FCS is represented in Figure 1 as a common set of cultural industries grouped in six domains and one transversal domain (intangible cultural heritage) which are considered as the minimum set of core cultural domains for which UNESCO would encourage countries to collect comparative data. In addition, three other transversal domains are included for their role in the culture cycle: education and training; archiving and preserving; and equipment and supporting materials. Related domains, such as tourism, sports and recreation, are not always considered because they may have a cultural character but their main component is not cultural.
Figure 1. 2009 UNESCO FCS domains.

Source: UNESCO FCS (2009)
The outputs of the cultural and creative industries have one thing in common: they embody ideas, values and creativity, which become concrete and tradable once protected by copyright.

WIPO published a first study on the economic contribution of the copyright-based industries in 2003 and an update in 2015. Based on this classification of industries which make intensive use of copyright, the EUIPO and the EPO have published two joint studies on the economic contribution of these industries to the EU economy. The main findings of these studies is that copyright-intensive industries generated more than 11 million direct jobs (5.4 % of all EU jobs) in 2011-2013 and an additional 4 million indirect jobs. These industries contributed almost one trillion euros to the EU economy in the same period, equivalent to 6.8 % of the EU’s total GDP.

Cultural statistics have been analysed in the EU by the European Commission and Eurostat, leading to the establishment of the Leadership Group Culture (LEG-Culture) in 1997 and the publication in 2007 of the first Cultural statistics in Europe Pocketbook. Subsequently, the Working Group European Statistical System Network on Culture (ESSnet-Culture), coordinated by the Luxembourgish Ministry of Culture, focused on updating ‘the [LEG-Culture] definition of the cultural field while reflecting on recent phenomena on creativity and the development of creative industries, on the measurement of new cultural habits and practices and on the transformation in the cultural economy due to digitalisation.” The final report by ESSnet-Culture describes the works, conclusions and recommendations that form an important part of the basis for the present report.

As a follow up of ESSnet-Culture work, Eurostat has built a dedicated section on its website on culture statistics and published a guide on culture statistics available in Member States and at EU level.

ESSnet-Culture defines cultural activities ‘as any activity based on cultural values and/or artistic expressions’, and stresses that they ‘include market or non-market oriented activities, with or without a commercial meaning and carried out by any kind of organisation (individuals, businesses, groups, institutions, amateurs or professionals).’

The criteria used to classify units producing cultural products in market and non-market sectors are based on the European System of Accounts (ESA). Many cultural and creative activities are produced by non-profit institutions, but households or volunteers’ activities may also be included under non-market production.

ESSnet-Culture classified the activities (defined in terms of NACE Rev.2) using a cultural ranking system, linked to their contents in terms of products. Activities were ranked as ‘totally’, ‘mainly’ or ‘partly’ cultural. Subsequently, Eurostat’s working group on culture statistics reclassified them as ‘fully’ and ‘partly’ at a meeting in 2016 and this last classification has been used in the present report. Table 1 shows all the activities that Eurostat considers to be fully or partly cultural, and is a good starting point to consider which activities should always be included in any study on creative industries, and which are optional. All the NACE classes included in Table 1 are also copyright intensive based on the WIPO methodology.

ESSnet-Culture’s main objective was the production of comparable data, so it does not prioritise any cultural domain, and adopts a minimal and realistic approach. ESSnet-Culture proposed limiting the scope to cultural activities and excluding some activities covered in the UNESCO report on cultural

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2 Eurostat (2012).

3 NACE (Nomenclature statistique des Activités économiques dans la Communauté Européenne) is the official classification of economic activities used by Eurostat, the statistical office of the EU. NACE Rev. 2 is the latest major revision to be used for statistics referring to economic activities performed as from 2008 onwards.

4 Eurostat (2018 b)
industries from the general framework: software, information, leisure (games, entertainment, gambling, etc.) and tourism activities, natural reserves and the manufacture of ornamental products. It should also be underlined that the scope of cultural statistics does not correspond to the cultural and creative sectors, which has not yet been defined at international level.

Figure 2. Comparison of cultural domains covered by European and UNESCO frameworks for cultural statistics.

Source: ESSnet-Culture final report (2012)
1.2 GROUPING CREATIVE INDUSTRIES BY DOMAINS

Broader groups of creative activities can be defined for the purposes of analysis and presentation of statistical results. Creative domains represent sets of industries, activities and practices that can be grouped based on their affinities.

To define the creative domains, the cultural domains proposed in the ESSnet-Culture final report were taken as a starting point:

- heritage;
- archives;
- libraries;
- books and press;
- visual arts;
- performing arts;
- audiovisual and multimedia (including web portals);
- architecture;
- advertising;
- art crafts.

After analysing the list of creative industries based on the NACE Rev 2 classes, as presented in Table 1, and the previous list of 10 creative domains, it is recommended to simplify by consolidating heritage, archives and libraries into a unique domain. As the domain art crafts is not assigned a specific NACE class, probably due to its modest economic importance, and as UNESCO lists it jointly with visual arts, the same grouping is used here.

Additionally, due to the special economic nature and treatment of web portals and software activities, which are considered as creative by UNESCO but not by ESSnet-Culture, any potential creative industries satellite account (CISA) should include a ‘software and web portals’ domain. Other domains considered creative by UNESCO could also be included if necessary, following the methodology described in Section 2.2 below.

Advertising activities are considered only partly cultural in ESSnet-Culture and are included in the 2009 UNESCO FCS as creative industries. Due to the broad range of activities encompassed in advertising, it is included in a separate domain.

In summary, the creative industries could be grouped into the following eight domains:

1. cultural heritage, archives and libraries;
2. books and press;
3. visual arts, including art crafts;
4. performing arts;
5. audiovisual and multimedia;
6. architecture;
7. advertising;
8. software and web portals.

Table 1 shows the link between the above domains and the industry classes according to NACE. The domain of each of the above creative industries is included in the first column, with some classes

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5 The NACE classes included in the domain ‘software’ are all core copyright-intensive industries and should include 5829 Other software publishing; 6201 Computer programming activities and 6312 Web portals.
belonging to more than one domain. The table has been adapted to include Eurostat's working group on culture statistics requalification of codes by scope (fully or partially) at its meeting in 2016 as explained in Eurostat (2018 b).

Table 1. Economic activities and their cultural rank based on NACE Rev 2 classes

<table>
<thead>
<tr>
<th>Domain</th>
<th>NACE class</th>
<th>NACE REV 2 DESCRIPTION</th>
<th>Fully cultural</th>
<th>Partly cultural</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1811</td>
<td>Printing of newspapers</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1812</td>
<td>Other printing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1820</td>
<td>Reproduction of recorded media</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3212</td>
<td>Manufacture of jewellery and related articles</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3220</td>
<td>Manufacture of musical instruments</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4761</td>
<td>Retail sale of books in specialised stores</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4762</td>
<td>Retail sale of newspapers and stationery in specialised stores</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>4763</td>
<td>Retail sale of music and video recording in specialised stores</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5811</td>
<td>Book publishing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5813</td>
<td>Publishing of newspapers</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5814</td>
<td>Publishing of journals and periodicals</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5821</td>
<td>Publishing of computer games</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5911</td>
<td>Motion picture, video and television programme production activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5912</td>
<td>Motion picture, video and television programme post-production activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5913</td>
<td>Motion picture, video and television programme distribution activities</td>
<td>X</td>
<td></td>
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<tr>
<td>5</td>
<td>5914</td>
<td>Motion picture projection activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>5920</td>
<td>Sound recording and music publishing activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6010</td>
<td>Radio broadcasting</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6020</td>
<td>Television programming and broadcasting activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2-5</td>
<td>6391</td>
<td>News agency activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>7111</td>
<td>Architectural activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>7311</td>
<td>Advertising agencies</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>7410</td>
<td>Specialised design activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>7420</td>
<td>Photographic activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>7430</td>
<td>Translation and interpretation activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>7722</td>
<td>Rental of video tapes and disks</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>8552</td>
<td>Cultural education</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9001</td>
<td>Performing arts</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9002</td>
<td>Support activities to performing arts</td>
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<td></td>
</tr>
<tr>
<td>3</td>
<td>9003</td>
<td>Artistic creation</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>9004</td>
<td>Operation of arts facilities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9101</td>
<td>Library and archives activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9102</td>
<td>Museums activities</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9103</td>
<td>Operation of historical sites and buildings and similar visitors attractions</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>
THE CREATIVE INDUSTRIES SATELLITE ACCOUNT

2.1 INTRODUCTION TO SATELLITE ACCOUNTS

National accounts provide information to analyse the structure of the economy covering a wide range of statistics from the well-known gross domestic product (GDP) and other aggregates such as gross fixed capital formation (GFCF), household consumption expenditure or employment, to institutional sectors accounts, supply and use tables, and much more.

National accounts are compiled in accordance with the European system of national and regional accounts 2010 (ESA 2010), which is fully consistent with worldwide guidelines on national accounts (System of National Accounts — SNA 2008). ESA 2010 is an EU Regulation (Nº 549/2013) that was implemented in September 2014 and comprises compulsory methodology and transmission programme of data by Member States. The ESA ensures that national accounts data is based on common concepts, definitions, classifications and accounting rules, in order to achieve a consistent, reliable and comparable quantitative description of an economy.

The former System of National Accounts (SNA 1993) already included the concept of satellite accounts (SAs), recognising the need for flexibility in the framework of national accounts. Since then, different SA have been employed and they are expected to continue to provide a useful way to cover policy makers’ analytical needs, ensuring comparability and consistency with the central framework of national accounts. Annex III summarises the current state of play of SAs based on an in-depth review presented in the 12th Meeting on the Advisory Expert Group on National Accounts.

Chapter 29 of SNA 2008 introduces the two types of SA and describes some examples of SA.

29.5 Broadly speaking, there are two types of satellite accounts. One type involves some rearrangement of central classifications and the possible introduction of complementary elements. Such satellite accounts mostly cover accounts specific to given fields such as education, tourism and environmental protection expenditures and may be seen as an extension of the key sector accounts just referred to. They may involve some differences from the central system, such as an alternative treatment of ancillary activities, but they do not change the underlying concepts of the SNA in a fundamental way. The main reason for developing such a satellite account is that to encompass all the detail for all sectors of interest as part of the standard system would simply overburden it and possibly distract attention from the main features of the accounts as a whole. Many elements shown in a satellite account are invisible in the central accounts. Either they are explicitly estimated in the making of the central accounts,
The first type is called internal satellite and takes the full set of accounting rules and conventions of the SNA but focuses on a particular aspect of interest by moving away from the standard classifications and hierarchies. Examples are tourism or environmental protection expenditure. The second type is called external satellite and may add non-economic data, vary some of the accounting conventions, or both. It is a particularly suitable way to explore new areas in a research context. Examples may include satellite accounts on the role of volunteer labour in the economy or on household production. Another example is the OECD’s proposed SA for measuring the digital economy that includes ‘adjustments to the GDP production boundary’ to include an imputed value for ‘free’ services and data. Many of the ‘free’ services considered here belong to industries considered as ‘creative’, so the possibility of an extended production boundary including ‘free’ digital services is at the core of the proposals put forward in this chapter.

The proposal for the creative industries satellite account (CISA) presented in the next section includes features of both internal and external satellites. It is an ambitious methodology including aspects of several previously developed SAs and following proposals and suggestions from the international organisations.

Possible sources of data to be used as the basis for compiling an EU CISA are listed in the following chapter.

2.2 PROPOSED METHODOLOGY FOR THE EU CREATIVE INDUSTRIES SATELLITE ACCOUNT

The purpose of this section is to present the main methodological aspects to be covered in an EU CISA such as the need to overcome the official classifications of industries and products, including when relevant the distinction between digital and non-digital products; to consider whether it is necessary to extend the production boundary to estimate the value of imputed ‘free’ digital services; and to assess the convenience of including separate measurements of IPR infringement in these industries. The implications of all these decisions in the macroeconomic aggregates and institutional sectors accounts will also be assessed.

ESA 2010 introduces the concept of SAs in Chapter 22, recognising that deviations from the central concepts of the national accounts serve specific data needs, and in that case the SA should contain a clear link between its aggregates and the central framework. Besides a brief description of nine examples of SAs, Table 22.1 (included in Annex I) includes an overview of their eight major characteristics and will

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7 See IMF and OECD references.
be considered as a guide in this proposal. For instance, the inclusion of non-monetary data is considered in eight out of nine of the SAs, with the agricultural SA being the only one that does not include it, so it seems reasonable to consider the option in the CISA even though the data requirements are very high.

The methodology proposed in this report has considered seven out of eight major characteristics of the SA mentioned in the ESA 2010 and presented in annex I: functional accounts; links to industries or products and institutional sectors and extra details such as breakdown of some economic indicators by types of users (see Section 2.2.4); non-monetary data, and experimental results and use of modelling to include IPR infringements (Section 2.2.3); and finally different basic concepts are suggested for the treatment of ancillary activities (Section 2.2.4); and including volunteer services within the SNA production boundary (in Section 2.2.2).

The current national accounts Research Agenda includes the ongoing problem of keeping up with the effects of rapidly changing technology (the digital economy or digitalisation) which is a problem common to the creative industries, specifically in relation to products delivered via downloads and ‘free’ services supported by advertising.

In order to better quantify the digital economy, the OECD has developed some SA concepts and created the Advisory Group on Measuring GDP in a Digitalised Economy, chaired by the United States Bureau of Economic Analysis and with the participation of several international organisations including the IMF. Proposals and best practices presented in several reports by these institutions will also be considered.

To assess the feasibility of an EU CISA the following aspects have been considered:

- classification of industries and products;
- treatment of ‘free’ or subsidised digital services;
- inclusion of IPR infringements in the current national accounts framework and in a CISA;
- sequence of accounts and institutional sectors accounts relevant for the CISA.

Some of the proposals included in this section require statistical information that is not available in all EU countries. Nevertheless the proposed methodology tries to be as complete as possible and to foresee the consequences of different decisions for the CISA and its relationship with the central framework of national accounts. The feasibility of such a complete SA could only be valued in the medium-to-long term but some of the aspects of this proposed framework could be applied in the short term.

### 2.2.1 CLASSIFICATION OF INDUSTRIES AND PRODUCTS

The industries suggested for inclusion in the creative industries are presented in the preceding chapter and can be grouped in the following domains:

- cultural heritage, archives and libraries;
- books and press;
- visual arts;
- performing arts;
- audiovisual and multimedia;
- architecture;
- advertising;
- software and web portals.

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As usual, principal, secondary and ancillary activities carried out by these industries must be considered, but the production of creative products by non-creative industries should also be included. For instance, many firms in non-creative industries publish books, magazines or software, or engage in advertising as a secondary or ancillary activity. Therefore, a ninth domain should be added to consider ‘other non-creative industries producing creative products’. This domain would then include the parts of the other industries producing creative products as a secondary activity, and would require a re-allocation from the industries to which they are allocated in the standard classification.

Information about secondary activities is included in the supply table, which aggregates data at the NACE division level (or even aggregates divisions) for the EU and shows the type of products produced by the various industries. As an example of the importance of secondary activities in the creative industries, even at this aggregated level, the EU supply table for 2015 reflects that only 78 % of the services included in division 58 ‘Publishing activities’ are performed by firms whose main activity is included in NACE code 58. At the same time, 83 % of the value of the output from firms classified under NACE code 58 comes from publishing activities, and half of the remaining 17 % comes from advertising. It is evident that more detailed data would confirm the value of secondary activities in publishing industries to be considerable. Some activities included in the creative industries are also spread across different industries — all of this is captured in the creative industries supply table.

Ancillary activities are those whose output is intended for use within a firm, such as advertising for own use. The output of these activities is consumed by the firm and does not generate revenue, while the inputs consumed to produce ancillary activities are treated as inputs into the principal or secondary activity which they support (both intermediate consumption and compensation of employees). This makes it clear that advertising activities outsourced by a company will appear as output by the creative industries and as input by the industry paying for the advertising, but that advertising activities produced by the company itself are not reflected as output nor as intermediate consumption of creative products, in this case advertising services, thus causing the economic importance of these products to be undervalued. The significance of these ancillary activities for the creative industries could be assessed based on the labour input of specialised workers or the cost of advertising departments in large companies.

Software activities are probably the most important activities firms engage in for their own use. These must be considered own account capital formation and can never be considered ancillary activities. Software developed in-house is an IP asset that should be valued at the estimated basic price or, if no basic price is available, at the cost of production.

Eurostat only publishes non-financial assets by industry, including computer software and databases classified under code AN1173, for some countries. For instance, in Finland only 12 % of these assets are produced by divisions 62-63 (computer programming, consultancy and information service activities) and in the UK it is only 5 %. Other industries producing these assets include public administration; wholesale services; manufacture of computer, electronic and optical products; and financial services; all non-creative industries. This is therefore another interesting case of creative industries output that should be explicitly included in the CISA. Not including this own-account production of software would lead to a serious under-estimation of creative activities if only creative industries are analysed.

Another important aspect is the breakdown of the output of the activities included in the CISA into digital and non-digital products. In addition, ‘free’ digital services should be considered separately as suggested in the OECD proposal for a digital economy SA (developed in Section 2.2.2).

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9 Not all classes of Division 58 are included in the creative industries but the ones excluded are relatively less important: 5812 ‘Directories and mailing lists’ and 5819 ‘Other publishing activities’.
The International Confederation of Societies of Authors and Composers (CISAC) has estimated the contribution of cultural and creative industries to the digital economy in 2013 at USD 200 billion. The shift from physical to digital sales in most advanced economies accounts for 45% of the market in recorded music (2013), 34% in games, and lower shares in films and books. However, digital technology has also facilitated illegal access to cultural contents. Although there is a lack of credible estimations of the amount of pirated content in any of the creative industries, it does not preclude considering the impact of IPR infringement in a theoretical framework for an SA that includes both physical and digital goods (see Section 2.2.3).

For the definition and description of digital goods and services the OECD proposal for an SA for measuring the digital economy could be used as a guide. In the specific context of the creative industries, the distinction between digital and non-digital (as well as paid and ‘free’ services) is important, at least in the following domains: books and press; audiovisual and multimedia; and software.

It must also be recognised that official classification systems do not distinguish between digital and non-digital products, so private sector sources of information are needed to complement official statistics, allowing for revenues from digital and non-digital services\(^\text{10}\) to be differentiated (more details are provided in the following chapter).

The following table provides an example of the minimum breakdown of output by domain and type of goods.

### Table 2. Cross-classification by domain and type of goods.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Type</th>
<th>Non-digital products</th>
<th>Digital paid services</th>
<th>Digital ‘free’ services</th>
<th>‘Free’ services provided by volunteers</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heritage, libraries …</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Books and press</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visual arts</td>
<td></td>
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<td></td>
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<tr>
<td>Performing arts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audiovisual …</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Architecture</td>
<td></td>
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<tr>
<td>Advertising</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software &amp; web portals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non creative</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^{10}\) For instance, IFPI publishes music sales data considering physical and digital formats. In 2017 and for the 23 EU countries considered, 33% of revenues are from physical sales and 42% from digital formats sales. Of the digital sales, 87% are directly paid via subscriptions or paid downloads, with the rest mainly financed via advertising — this last category has a much higher market share in some countries such as Spain.
2.2.2 TREATMENT OF "FREE" OR SUBSIDISED DIGITAL SERVICES

The presence of ‘free’ services in the creative industries is not a new phenomenon. There have always been television and radio services which are not directly paid by the final user but financed via advertising. Nevertheless, the scale of the digital economy has changed not only the way in which firms in the creative industries operate but also the way in which consumers engage in these activities. Frequently, the connection between the benefit to consumers and the provision and funding of the service is not direct, making it difficult to reflect in national accounts the economic importance and the use of such services by the different economic actors. The purpose of this section is to present some examples of services that are not paid for directly by final consumers and some proposals to make it clearer who produces, pays and benefits from these ‘free’ services.

Section D in Chapter 1 of SNA 2008 clarifies some aspects of the production boundaries and non-monetary transactions included in national accounts indicators that have to be considered for the treatment of ‘free’ or subsidised services (emphasis added).

1.36 When goods and services produced within the economy are sold in monetary transactions, their values are automatically included in the accounts of the SNA. Many goods or services are not actually sold but are nevertheless supplied to other units: for example, they may be bartered for other goods or services or provided free as transfers in kind. Such goods and services must be included in the accounts even though their values have to be estimated. The goods or services involved are produced by activities that are no different from those used to produce goods or services for sale. Moreover, the transactions in which the goods and services are supplied to other units are also proper transactions even though the producers do not receive money in exchange (or not from the real user of the service). It is misleading to describe such output as ‘imputed’. For example, the services of financial intermediaries which are measured indirectly in the SNA do actually take place; but their values have to be measured indirectly. It is the value, not the transaction that is 'imputed'.

1.37 Thus, estimates and imputations are needed in order to be able to record in the accounts productive activities whose outputs are not disposed of in monetary transactions with other units. Such estimates and imputations should not be interpreted as introducing hypothetical activities or flows of goods and services into the SNA. Their purpose is the opposite, namely, to capture in the accounts major flows of goods and services actually taking place in the economy that would otherwise be omitted. In order to obtain comprehensive measures, values have to be estimated for all outputs of goods and services that are not sold but disposed of in other ways.

Methods for accounting for ‘free media’ can be production oriented, considering the contribution or input into the specific content measured by the cost of providing the service, or consumer surplus oriented, considering the value of the service to the final consumer. The International Association for Research on Income and Wealth (IARIW)\(^\text{11}\) lists some examples of free media valuation in the US, all of which are included in the creative economy.

Several OECD and IMF papers on measuring the digital economy discuss the treatment of digital ‘free’ services financed via advertising or data, and the treatment of volunteer-produced ‘free’ digital services in the national accounts framework. Some examples of the former category of ‘free’ or subsidised services in the creative industries are web portals (such as Google), digital newspapers, music or audiovisual providers (Spotify or YouTube), free apps for smartphones (Google Play), while open source software (Linux, R) and Wikipedia are typical examples of the latter category. Consumers can access these

services for free, increasing their welfare, and such services could and should be developed in an SA extending the SNA production boundary.

Any proposal for a CISA should be consistent with the recommendations of the OECD Advisory Group on Measuring GDP in a Digitalised Economy.

Three different types of ‘free’ or subsidised services are mentioned below, but many such services combine aspects of all three.

• ‘Free’ and subsidised services financed via advertising

Before the emergence of ‘free’ digital services, the traditional provision of services, for instance music, involved the provider of the service and the final consumer, as shown in Figure 3. National accounts reflected this as music services paid for by consumers (and household sector final consumption expenditure\(^\text{12}\)) and gross value added (GVA) for the creative industries included in Domain 5 (audiovisual). The economic transaction between corporations and households sectors was explicit.

The digital services provided for free and financed via advertising involve three actors: the service provider, the consumer and the advertising agency (or the producer of the advertised product directly) (see Figure 4). There is only one explicit economic transaction between the service provider and the advertising agency, reflected in national accounts as advertising services, not as music services provided to households. The consumer benefits from the music service without engaging in any market transaction with the service provider. It is generally accepted that consumers finally pay for these services through higher prices for the products advertised (not considering paid premium services). Therefore, one can see higher final consumption expenditure in the household sector in other products, but there is no expenditure in music services for these free services.

As explained in OECD (2017) these services are included in the GDP by the value of the advertising services received by the provider (market producer) and would be included in the CISA GVA. These advertising services are used as intermediate consumption (for the production of other goods or services) and do not appear in the final consumption expenditure of households as was the case in Figure 3 (in fact, only explicit payments made by households via subscriptions are included in households’ final consumption expenditure for music services). In an extreme case, national accounts indicators could fail to include the entirety of services provided for free to consumers under music services\(^\text{13}\).

So, even though providing ‘free’ music services financed via advertising appears in the CISA, it will be disguised as advertising services (B2B) and will be reflected under household expenditure only through the higher value of advertised goods (leading household consumption of music services to be undervalued).

A CISA allows assigning these services to the final consumer, roughly valued by the net advertising revenues\(^\text{14}\) received from the provider via social transfer in kind / current transfer to households\(^\text{15}\) and an

\(12\) Definitions of Final Consumption, both Final Consumption Expenditure (P3) and Actual Final Consumption (P4) can be found in ESA 2010 3.93 onwards.

\(13\) The same applies for traditional (non-digital) media provided for free and financed via advertising, which should be treated in a similar way.

\(14\) This valuation can be matter of debate as it is a producer valuation, and can differ from a consumer valuation. Nevertheless, a measure of shadow prices, based on what consumers are willing to pay, is much more difficult to determine, and considering that a measure of consumer welfare is out of scope here, we suggest using the producer valuation of net advertising expenditure. The valuation should be net of costs and margins.

\(15\) Following ESA 2010 (4.108 onwards) social transfers in kind (D63) are individual goods and services provided for free to individual households by government or NPISH units. As only non-markets units provide transfers in kind, we can either consider that corporations provide social transfer in kind to households as an exception or impute a current transfer (D75).
imputed payment of the same value to the music provider (green arrows in Figure 5). The imputation of a transfer in kind / current transfer\textsuperscript{16} to the final consumer for the estimated net cost of the music service does not require any major conceptual change to SNA — it is similar to the imputed rent services of owner-occupied housing, imputing a value for ‘free’ content based in this case on estimated costs. The households’ net saving and the net income received by the provider of the free service are not altered.

**Figure 3. Traditional provision of music services to consumers (B2C).**

**Figure 4. Free music services financed via advertising (B2B).**

**Figure 5. Free music services financed via advertising and imputed transfer to consumers.**

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\textsuperscript{16} Social transfers in kind are defined in ESA 2010 (4.110) as ‘… recreational, cultural or sport services for free or at prices which are not economically significant, these are treated as social transfers in kind - government and NPISH non-market production (D631)’. Miscellaneous current transfers (D75) do not cover the transfers to households but could be likened to the ‘current transfers to NPISHs’ (D751).
The consequences of the proposed change in the registration of ‘free’ services are:

- in the **production approach**, the creative industries output increases in Domain 5 (audiovisual and multimedia) by the value of the imputed services paid by households (equal to the net cost of advertising services);
- in the **expenditure approach** the increased output is reflected in the higher value of households’ actual final consumption / final consumption expenditure;
- in the **income approach**, the operating surplus of the corporations sector increases by the value of the imputed flow, as well as the value added of this sector;
- in the **institutional sectors accounts**, the higher output in the corporations sector (S.11) leads to a value added and operating surplus increase that cancels out the redistribution of income account with the imputed transfer in kind / current transfer from corporations to the household sector, so corporations’ disposable income and savings stay at the same level.

In the household sector accounts (S.14), there is higher adjusted disposable income (explained by the social transfer in kind received from corporations) and equal higher actual final consumption, so households’ saving is not altered.

The SNA Research Agenda proposes two additional options to estimate ‘free’ digital services. Advertising services produced by unincorporated household enterprises can be imputed in a similar way to owner-occupied dwelling services in national accounts. This also results in higher household consumption and GDP with no change in household savings but, as advertising services are provided by the household sector, corporations’ indicators are not affected.

Finally, a third option is to impute final consumption of corporations as explained in OECD (2016) so that this treatment could be extended to other non-digital creative services sponsored by private companies. ‘In the SNA, no final consumption is recorded for corporations because corporations are not considered to be final users of goods and services, except for capital products which, with the exception of valuables, are acquired for the purpose of production. However, large corporations often undertake sponsorship of cultural events. To date, the SNA regards the payments involved as a form of advertising but it could be argued that they are a form of individual consumption and could be treated as final consumption expenditure of corporations and social transfers in kind to households’.

This last approach implies a lower intermediate consumption (of advertising services) instead of a higher output, resulting in a higher GVA but different patterns of household consumption.

Finally, contrary to advertising services provided in physical media (newspapers, radio or TV) focused on national markets, in online advertising, imports and exports of services have to be considered. The provider of free services should identify the residence of their final users so that flows with the rest of the world (RoW) should be estimated.

- **‘Free’ services financed via data**

An alternative business model to finance ‘free’ digital services is based on collecting data from the users. In fact, it is not different from the advertising model: there is no explicit market/monetary transaction.

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17 If a current transfer is imputed instead of a social transfer in kind, the affected indicators in household sector accounts are Disposable Income and Final Consumption Expenditure.
18 Alternative treatments in national accounts of free media services are presented in Ravets (2017).
19 An example of a company that sponsors a wide range of events is Red Bull [https://www.redbull.com/int-en/events](https://www.redbull.com/int-en/events)
between the provider of the service and the final user, and therefore an imputed flow should be considered. In this case, the free service is financed with a digital asset (volumes of data).

Databases are considered gross fixed capital formation (GFCF) only for the value of digitalising the data, or creating the databases, not the value of the data itself (ESA 2010 3.132 (c)). But it does not mean that data has no value. As explained in OECD (2018) the underlying value associated with the data itself can be considered a non-produced asset and market transactions should be treated as goodwill.

Therefore, following SNA 2008 recommendations the value of data is only recognised in the accounts when a monetary transaction occurs and in practice it has only been considered with respect to large transactions and when data has a useful life of more than one year.

Nevertheless, data collected from users in return for ‘free’ services is in fact a barter transaction between firms and households. The absence of a monetary transaction between households and corporations in exchange for the ‘free’ digital services financed with data may lead to an under-representation of the digital economy in the GDP.

Not all kinds of data qualify as intangible assets. To be an asset, data should be used in the long term and much of the data compiled through ‘free’ digital services is used for advertising purposes and only in the short term. The OECD Statistics Working Paper (Ahmad et al. 2017) is a reference for the definitions of types of data. Digital identity data is the basic information on individuals that remains unchanged (name, gender, residence, language, education level, household composition, etc.) and is considered long-lived and therefore an investment. Some examples of companies that generate this type of data are Facebook or LinkedIn, web portals included in Domain 8 ‘Software and web portals’. Behavioural data refers to recording the online activities of users, and is collected by firms like YouTube, included in the audiovisual domain.

The proposal is to include in the CISA the non-monetary transaction occurring between households and corporations in a similar way to the ‘free’ digital services financed via advertising, following the schema of Figure 5 where the barter transaction is represented in green. However, the treatment of free services financed via data is more complex. First because data can be investment or intermediate consumption depending on the nature of the data whereas advertising services are always intermediate consumption and changing the assignment of a product from intermediate consumption to investment results in an additional increase of the GDP by its value as has been the case with R&D in SNA 2008. In addition, when data are collected in return for ‘free’ services the barter transaction (OECD 2018) is a non-monetary transaction involving different institutional units whose value has to be measured indirectly or estimated.

The consideration of these ‘free’ services as a barter transaction between households and corporations will result in a higher value of the output of creative industries by the value of the increased final consumption expenditure of these ‘free’ services. In the households accounts the higher output (the data provided to corporations) results in a higher disposable income equivalent to the value of the final consumption expenditure of the ‘free’ service so that saving is not altered. In the corporations accounts, the higher output (digital service bartered with households sector) compensates the higher intermediate consumption of data (or GFCF as explained before) so that finally the net lending/net borrowing balance of the capital account of corporations do not change. This treatment of the data provided in exchange of the ‘free’ service will also result in a higher value of the database containing the users’ data.

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20 Both firms receive additional revenues from other sources: Facebook from advertising and LinkedIn from premium fees. Double counting of free digital services financed via data and advertising should be avoided.

21 If information about the nature of the data is lacking, we propose including it as intermediate consumption, resulting in creative industries GVA being undervalued.
However, there is a practical difference with the previous example of advertising-supported media, because now there is no obvious proxy for the value of data financing ‘free’ digital services. In principle, and following SNA 2008 (10.146) goods acquired by barter are valued at their estimated purchasers’ prices which is the same as the basic price due to the absence of taxes and margins on bartered goods.

Where a third party is involved that pays for the data collected by the provider of the free service, this payment (net of costs) can be used as the value of the data provided by, and the ‘free’ services provided to the final user. Twitter is an example of a company that licenses access to their data to outside companies. Another way to monetise the data is to provide data targeting services to clients (Google Search) combining technical skills with data value, so measuring the value of data in this example is quite challenging.

Where there is no third party involved and the data is used internally by the company collecting it, it is much more difficult to impute a value for the data itself.

More generally, there are three alternatives for the valuation of data financing ‘free’ services (OECD, 2017). One option (close to consumers’ prices) is to consider the users’ willingness to pay for the privacy of their data. Another possibility (closer to producers’ prices) is the value that companies assign to users’ data, which seems to be almost negligible for digital identities and higher for consumers’ preferences and digital footprints. The third possibility is to consider the value of the stock of data at a given point in time, as represented by the value of a company when it is acquired, for example the value of WhatsApp or Instagram when they were acquired by Facebook. In this last case it is difficult to disentangle the value of the data from the value of the structure of the database or even the software itself, or from other intangible assets.

Other attempts to measure the value of data include the eight models of online platforms analysed in Li et al. (2018). The data value chains presented show how the value of data is created in each step. ‘Data can produce new values through data fusion, a unique feature that can create unprecedented challenges in measurement’ but ‘welfare analysis on digital goods and services without considering the value of data can mislead policy analysis.’

The development of feasible methodologies to measure the value of data, an increasingly important asset that could also affect the calculation of GDP and productivity growth, is still a pending matter. In the meantime, it is suggested that only the value of data provided to third parties be considered, recognising then that ‘free’ services are undervalued. If the provider of the ‘free’ service combines different sources of revenues, double counting should be avoided.

**Free services produced by volunteers**

Consumers enjoy free services financed via advertising and/or data, as well as ‘public goods’ created using donations of labour or funds. IMF (2018) Measuring the Digital Economy mentions various examples of goods produced for free and included in the public domain (free assets produced by households): the creation of ‘public goods’ using labour provided for free, and where financing is typically only provided through donations (as opposed to paid services for the use of the goods, whether directly via fees or indirectly via other forms of financing e.g. advertising). Wikipedia is the best-known model, but open source software such as Linux could also be included in this group.

How is the value of Wikipedia currently reflected in the central framework of national accounts?
Wikipedia is a free online encyclopedia created by volunteers and hosted by the Wikimedia Foundation. It belongs to the non-profit institutions serving households (NPISH) sector as a non-market producer\(^{22}\) whose production is estimated based on costs: intermediate consumption + compensation of employees + consumption of fixed capital (CFC) + other taxes on production net of subsidies. The Wikimedia Foundation\(^{23}\) relies on public contributions and grants that are considered a current transfer to NPISH (D751) and are included as a resource in the secondary distribution of income account.

However, the work carried out by volunteers to write more than 40 million articles in 301 languages\(^{24}\) is not included in the value of the output, because volunteers do not receive any income in exchange for their work. Volunteer work resulting in services is valued in national accounts at zero, thus resulting in a large wedge between measures of production value in the SNA framework and the value of services consumed by households (and other institutional sectors)\(^{25}\). As indicated at the beginning of this chapter, SAs can be used to extend the SNA production boundary to include household production in the case of volunteers producing services and this is the proposal of OECD (2016) paper on measuring digitalised economy to better understand the economic benefits (and impact) to households and businesses.

The general production boundary (SNA 2008, 6.24) includes all activities carried out under the control and responsibility of an institutional unit that uses inputs of labour, capital and goods and services to produce outputs of goods and services. However, the production boundary in the SNA is more restricted\(^{26}\) and includes market production estimated in general based on sales, non-market production by government and NPISH based on costs, own-account production of goods for own final use (for instance production of agricultural products or construction) and volunteer work resulting in goods. In general, household production for own final use is excluded, with two exceptions: paid domestic services and own-account production of housing services by owner-occupiers.

The SNA production boundary thus excludes production of domestic and personal services produced and consumed in the same household as well as volunteer work when resulting in services. Nevertheless, household production SAs extend the SNA production boundary to include these services, and the definitions and methods applied for the valuation of household services and volunteer activities in SAs for unpaid household activities, as well as in the UN Handbook on NPIs in the national accounts, can be applied in the CISA for activities of a similar nature.

Therefore, and following responses to the consultation to the Advisory Group on Measuring GDP in a Digitalised Economy (OECD 2017) it is proposed to extend the SNA production boundary to include free services provided by households to other households (non-monetary flows) in a similar way as has been considered in the SA for unpaid household activities.

Ahmad et al. (2017) OECD’s working paper presents two different approaches to measure the output of Wikipedia: based on the advertising revenue that it could generate if it allowed advertising on its pages and based on the revenue that could obtain by charging its users subscription fees. Both estimations are based on the market value of similar market services. Nevertheless, the distinction between market and non-market output is fundamental, as it affects the valuation of the output. Non-market output is provided to other units for free, or at prices that are not economically significant and estimated based on costs.

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\(^{22}\) For the difference between market and non-market producers see ESA 2010 Paragraphs 3.27 onwards.

\(^{23}\) [https://en.wikipedia.org/wiki/Wikimedia_Foundation#Finances](https://en.wikipedia.org/wiki/Wikimedia_Foundation#Finances)


\(^{25}\) There are almost 15 billion monthly views of Wikipedia in any language in the world and almost 4 billion monthly views in EU countries: [https://stats.wikimedia.org/wikimedia/animations/wivivi/wivivi.html](https://stats.wikimedia.org/wikimedia/animations/wivivi/wivivi.html)

\(^{26}\) ESA 2010 details the activities to be included and excluded in Paragraphs 3.07 to 3.09.
This is precisely the case of Wikipedia so that other alternatives of valuation based on costs should be explored.

The proposal in this report is to add the estimated value of volunteers’ work to the current costs paid by Wikimedia Foundation. The methodology applied in ‘Household Production Satellite Accounts, ILO Manual on the Measurement of Volunteer Work’ and the ‘UNECE Guide on Valuing Unpaid Household Work’ recommends the use of a ‘replacement cost’ approach which imputes the cost to hire someone to perform the work that the volunteer is doing for free. This approach requires measuring the duration (number of hours) of the volunteer work and applying an appropriate wage received by employees performing comparable work. Additionally, intermediate consumption and consumption of fixed capital should be added, although it will probably be negligible in comparison with labour costs.

Without question, these services provide significant benefits and value for consumers all over the world. The time spent by volunteers on these activities includes an element of production even though the current accounting framework does not include these services in GDP, resulting in the value of Wikipedia being based on paid costs and thus underestimated from a welfare perspective.

Considering the extended SNA production boundary to include volunteer work producing services, the non-market output of the creative industries will be increased by the imputed value of volunteers’ work. In accordance with this flow of imputed wages, the household sector ‘donates’ the value of its work to the NPISH sector. In Figure 6 the imputed flows between the household and NPISH sectors (additional compensation of employees (D1) and current transfer to NPISH (D759)) are represented in green.

The value of free services produced by volunteers (as a higher value of Wikipedia output) will be used by households (final consumption) and by enterprises and government units (intermediate consumption or GFCF) (in red in Figure 6 below). There will then be an equivalent transfer in kind increasing the income of the user (in blue in Figure 6).

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27 Volunteer work is a type of activity carried out for a social or public purpose rather than to benefit the person who performs the work, and as defined by ILO is ‘non-compulsory work performed without pay for others’ outside one’s household or family.

28 The usual source of information for time expended by households in different activities is time use surveys but in specific case of Wikipedia a volume measure of the content (number of pages) included each year in the encyclopedia could be used, with a top-down method subsequently being applied to assign the output to each country/region. See the following chapter for more details on possible sources of information.

29 For more details on the valuation of work done by volunteers see UN (2018) ‘Satellite Account on Non-profit and Related Institutions and Volunteer Work’ Paragraphs 4.38 onwards.

30 Expenditure on software is included in GFCF in the case of Linux or similar free open source software.
The impact of extending the SNA production boundary is twofold: the creation of a new transaction for the imputed compensation of employees and a higher non-market output value once volunteer work is included. As a consequence several national accounts aggregates are affected:

- In the **production approach**, the creative industries non-market output increases by the value of the volunteers’ work: for instance, the increased value of Wikipedia would be included in Domain 2 and the increased value of Linux’s output in Domain 8.
- In the **expenditure approach** increased output is reflected in a higher value of actual final consumption and intermediate consumption (or GFCF) for the sectors using these services as input for the production of their goods and services.
- In the **income approach**, the gross operating surplus of the NPISH sector increases only by the value of the CFC (net operating surplus is not affected) and the imputed compensation of employees flow from the NPISH sector increases by the value of the volunteers’ work.
- In the **institutional sectors accounts**, the higher value of the services carried out by volunteers leads to higher value added in the NPISH sector (S15) production account. This increased value added cancels out the compensation of employees in the generation of income account, so net operating surplus stays at the same level. There is a higher current transfer from households to NPISH in the secondary distribution of income account (D751) and a transfer in kind (D631) to the final user of the service so the adjusted disposable income and saving do not change.
- In the **household sector (S14) accounts**, the higher balance of primary incomes (by the imputed compensation of employees received from NPISH) is compensated by a transfer to NPISH (D751) of the same value so that disposable income remains steady. Finally, the social transfer in kind (D631) received from NPISH due to the higher value of the free service received implies a higher adjusted disposable income and a higher actual final consumption in the redistribution of income in kind account, so savings do not change. There are similar impacts in

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31 The use of the free service by households will be reflected in the actual final consumption of this sector but the use of the services by firms and government will be intermediate consumption or GFCF (Software).
the government and corporation sectors due to the higher value of the service provided for free by the NPISH sector.\footnote{Considering that social transfers in kind are provided only to households in the current national accounts framework, for other sectors we could either consider final consumption in corporations or a current transfer (D75) to corporations and government sectors instead of social transfer in kind (D631) to balance the higher IC (or GCFC) so that their disposable income remains unchanged.}

In summary, the imputed compensation of employees will be reflected in the higher value of the creative industries non-market output, household final consumption and intermediate consumption in the corporations or government sectors and the corresponding transfers between the producer sector (NPISH), the household sector (receiving compensation from employees and donating the same amount to NPISH) and the user sectors (households, firms or government).

There are also exchanges with the RoW sector. The services can be provided by volunteers resident in one country and consumed elsewhere. As it is almost impossible to differentiate flows, a top-down approach quantifying the difference between production (participation of volunteers) and consumption (use of the portal) could be used to estimate the net balance flow by country/region.

Wikipedia and Linux are well known examples and operate on a worldwide scale, but the provision of free services by volunteers on a much smaller scale has always been a distinctive characteristic of creative industries. As recognised in ‘Culture Satellite Accounts, Final report of a pilot project’ Finland (2007) there is a huge number of voluntary activities in the field of culture, such as choirs, orchestras, bands or sports clubs. Even though the methods and data to estimate these services are complex and difficult to apply with accuracy, these services should be included and valued in a CISA in a similar way to other, larger scale units such as Wikipedia and Linux.

The OECD paper acknowledges that there is a lack of official and complete data to make such estimates and that it will take some time to develop new sources of data by statistical offices. Nevertheless, a CISA theoretical framework which did not address the problems of measuring the digital economy would be incomplete and obsolete. The recognition of non-market flows between consumers and providers of ‘free’ services financed via advertising or data, separately including services produced with volunteer work are crucial in a CISA.

The Advisory Expert Group on National Accounts does not support the imputation of additional consumption of free media services in GDP estimations, but rather proposes further research on how to estimate these free services. Therefore, an SA is the proper way to consider free services in the creative industries; otherwise these services would be underrepresented, with output and use not reflecting the ‘real’ services provided by the creative industries to the consumers.

### 2.2.3 Including IPR Infringements in the National Account Framework and the CISA

Even though there is not a unique definition for creative industries, there is a common presumption that these industries rely on IP rights to protect their creations from unauthorised use (UNCTAD, UNDP 2010).

This section addresses the treatment of IPR infringements in the current national accounts framework and proposals to include them in a CISA. The main illicit activities related to IPR infringement are counterfeiting (when affecting trade marks, design and patents), and piracy (when affecting copyright). To simplify matters, since the creative industries are all copyright intensive, in what follows, illicit content affecting the creative industries is referred to as pirated goods or activities, even though other IPR may also be infringed.
The SNA (and ESA for the EU countries) provides the basic principles clarifying which illegal activities are included in the SNA production boundary.

According to ESA 2010 1.79 ‘Illegal economic actions shall be considered as transactions when all units involved enter the actions by mutual agreement. Therefore, purchases, sales or barters of illegal drugs or stolen property are transactions, while theft is not.’

Therefore, economic transactions are included as production irrespective of whether they are illegal or unregistered.

ESA 2010 ‘The non-observed economy’ 11.26(a) clarifies that illegal activities are in principle included within the national accounts production boundary if the parties are willing partners in an economic transaction.

More details about types of illegal activities can be found in SNA 2008 6.43 onwards.

In addition to the general definition of illegal activities included in SNA and ESA, two handbooks are used as guides to measure IPR infringement in the creative industries: OECD (2002) and Eurostat (2018). Both manuals analyse the wider phenomena of non-observed and illegal activities, of which IPR infringement is only a very small part. However, the suggested methods for dealing with illegal activities in the national accounts can be adapted to the specific cases of counterfeiting and piracy of content included in the creative industries.

The Eurostat handbook on the compilation of illegal economic activities discusses IPR infringement in Section 4.5: counterfeit goods and piracy. Their recommendations on counterfeit goods and piracy recognise that:

229 Not all illegal copies of counterfeit goods and piracy contribute to the national income. Only those that are sold for money do. […]

230 The ‘value’ of copies for people’s own use, for friends, or for exchanges through the internet that are not paid for, does not contribute to national income. […]

The OECD manual remarks that ‘from a conceptual point of view, recording illegal production within the national accounts framework does not pose special problems if the production process resembles the production process for legal activities. This is the case for the production and distribution of illegal goods, services and counterfeit products, for productive activities carried out by unauthorised producers, and for smuggling.’

Therefore, the valuation principles applied for illegal copies of counterfeit goods and piracy are the same as those applied for legal copies following SNA 3.96: ‘Illegal actions that fit the characteristics of transactions (notably the characteristic that there is mutual agreement between the parties) are treated the same way as legal actions.’

One can classify creative industries output infringing IPR based on the type of goods (digital or physical) and the source of financing to clarify how they should be valued:

1. Physical pirated goods paid for directly by the final user. There is a monetary transaction that should be valued at market prices: Eurostat (2018) 39 ‘Transactions are valued at the actual price agreed by the transactors.’ It can be assumed that both parties are willing partners even though there can be a certain level of deception regarding the illicit nature of the product.

2. Digital pirated goods paid for by the final user (downloaded paid content or via subscriptions). When there is an explicit monetary transaction for the infringing product the output should be
valued at market price.

3. Digital pirated goods provided for ‘free’ and financed via advertising or data\(^{33}\). There is no explicit monetary transaction between the illegal provider and the user of the infringing product but, as was the case with legal ‘free’ services, there is a monetary transaction and consent between partners, and therefore these activities should be treated equally\(^{34}\). Imputed transactions should be estimated similarly to legitimate digital services provided for ‘free’, based on the value of the advertising service or the estimated value of the data (see Section 2.2.2). This will be reflected in a higher market output of the creative industries and higher actual final consumption/final consumption expenditure and (adjusted) disposable income so that saving is not altered.

4. Digital pirated goods provided for free by volunteers. If volunteer work producing services is included in the CISA production boundary as suggested in Section 2.2.2, then the value of unpaid work should be estimated regardless of the legality of the service provided. Imputing the value of the illegal content (only if it is non-market production from NPISH) will include the value of the labour input as compensation of employees and consequent as a donation from the household sector for the same value. This is a non-market (illegal) output valued at cost.

Illegal goods bought by the final user should be valued by the effective price paid for the product, not by the value of the legitimate product\(^{35}\). In the same way, the illegal services provided for ‘free’ should follow the same methods presented in Section 2.2.2 for the valuation of ‘free’ digital services. Even though there is no explicit monetary flow between the final consumer of the pirated content and the illegal provider, if the service is financed via advertising, data, donations or subscriptions, a payment from the user of the service and a correspondent transfer in kind/barter transaction from the provider to the final consumer should be imputed.

However, if the users’ data is captured by infringers without consent, this transaction should not be included in the production boundary, as it involves theft of data. Finally, work carried out by volunteers resulting in illegal non-market services should be valued based on costs regardless of the legality of the service provided.

File exchanges between households, without any monetary benefit to the provider of the illegal content, and negligible labour input, are a separate issue. Following paragraph 230 of the Eurostat manual, shown above, this would have zero value.

The internet has changed the economy and society, and measuring the internet economy presents many problems, one of these being the difficulty of measuring consumer surplus beyond monetary flows. Regardless of the legitimacy of some activities such as sharing music or films, their impact on consumer surplus cannot be denied. Therefore, there is a recognised need to measure the importance of the digital economy with regards to legitimate services provided for free.

The theoretical framework presented to estimate illegal services in the creative industries requires knowledge of the market value of the infringing goods, the source of financing and the labour input required for the provision of non-market illegal content. Obtaining this data directly from the illegal producer of the product is usually impossible, so different imputations have to be made for each of the four categories of infringing goods presented, probably based on volume indicators such as number of visitors

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\(^{33}\) This was the case of The Pirate Bay, which was financed via advertising and malware capturing users’ data. Some references to financing models of infringing websites can be found in EUIPO (2016).

\(^{34}\) Eurostat (2019), Section 2 ‘Expanding the coverage of illegal economic activities in national accounts’ includes this specific case of copyright infringement.

\(^{35}\) The European Commission (DG TAXUD) recommends valuation of seized counterfeit and pirated goods reflecting the replacement value (the retail price the goods would have had if they had been genuine) which can be higher than the effective price finally paid.
or downloads, or cost of advertising charged to brands, usually based on numbers of views (CPM)\(^\text{36}\). If it is not possible to obtain a reliable estimation for different illegal activities, a table showing the illegal services identified could help reflect the absence of these services in the CISA output and household final consumption.

Infringing activities can be captured in official estimates when they are carried out and declared by legal enterprises, but not if the producer/distributor of the illegal product is an illegal enterprise or household. In the latter case, these activities should be captured through indirect estimations of illegal activities, applying methods similar to those used for legal activities.

2.2.4 SEQUENCE OF ACCOUNTS AND INSTITUTIONAL SECTOR ACCOUNTS RELEVANT FOR CISA

Based on the discussion above of the main methodological aspects of the CISA, this section presents the required accounts, tables and indicators that can show supplementary information for the creative industries beyond the national accounts central framework linked with the current framework.

ESA 2010 Chapter 22 and SNA 2008 Chapter 29 provide a good summary of extensions and additional information that can be applied in an EU CISA. Here some of the SAs developed in both manuals, in particular with a view to present the results of the aspects of the proposed methodology developed in Sections 2.2.1 to 2.2.3, will be referred to.

SNA 2008 29.34 states the following: ‘When examining certain kinds of activity and products, it may be useful not only to separate secondary from principal activity, but also to identify and recognize the ancillary activities in order to obtain a full picture of the inputs corresponding to the activity being examined.’

The supply table reflects the principal and secondary activities by industry so that creative products can be produced by creative or non-creative industries. The use table includes the uses (intermediate and final) of products by industry. As explained in Section 2.2.1, some of the activities considered as creative are ancillary activities produced by the firms themselves, so their inputs are not identified separately from secondary and principal activities.

Ancillary activities outputs and inputs in SNA 29.65 can be applied for some activities such as advertising or publishing activities. In these cases, the output of relevant ancillary activities should be identified separately, and added to total output, which is subsequently recorded as intra-establishment deliveries, or internal intermediate consumption, in addition to actual intermediate consumption.

As suggested in ESA 2010 22.22, a functional SA is useful for fields such as culture to show details not visible in the central framework. Tables 22.3 and 22.4 in ESA 2010 (see Annex I) present supply and use tables including output by industry, broken down by principal, secondary and ancillary products. In the supply table, the ancillary production column includes the total value of this output for own final use by product (rows), reflecting for instance the importance of advertising activities carried out in-house. In the use table, details of production costs of secondary and ancillary activities include not only intermediate consumption by product, but also compensation of employees as well as complementary data of labour inputs. These tables clearly reflect some activities in the creative industries that are produced as a secondary activity or for own final use: which industries produce each product and the costs of the inputs and labour involved.

36 CPM stands for Cost Per Mille and it is a marketing term used to denote the price of 1,000 advertising impressions on a webpage.
If possible, the supply table could disaggregate IPR infringing output for some of the creative industries. As recognised in ESA 2010 22.45 the SA can include some experimental results based on econometric models, so the value of pirated output could be a good example, as well as the imputed value of free services.

Another aspect that could be analysed in the CISA is the identification of households or individuals that are the most important types of users and beneficiaries, considering criteria such as age, gender, income, location, etc. Knowledge of the number of people concerned in each category by different domains of the creative industries could be useful for policy analysis as a first step to calculate average consumption patterns. It could be especially interesting to know the social transfers in kind (D63) and therefore not only the final consumption expenditure (P3) but also the actual final consumption (P4) by product and category of user.

The producers of the different creative activities can be classified as market and non-market, private and public producers, and depending on that, will be included in different institutional sectors: corporations (financial or non-financial), general government, NPISHs or households.

The NPISH sector includes private producers of non-market goods and services sold at not economically significant prices, meaning that sales revenue covers less than half their costs. The involvement of NPISHs is expected to be quite significant in some of the creative industries. NPISHs’ output is subsequently transferred in the redistribution of income account to households via transfers in kind and then included in actual final consumption.

The institutional sectors accounts will reflect the decision taken about measuring ‘free’ digital services financed via advertising or data and services provided by volunteers. Every indicator affected by the extension of the SNA production boundary should include a clear indication of the SNA and non-SNA values, following the example of the household production satellite account in ESA 2010 Table 22.16.

Table 3 below shows, for each institutional sector, the items required for the estimation of production and generation of income accounts by domain (industries) and the total of creative industries. This table can be presented for each of the institutional sectors:

- S11: non-financial corporations;
- S12: financial corporations;
- S13: general government;
- S14: households;
- S15: non-profit institutions serving households (NPISH).

### Table 3. Production and generation of income accounts indicators by institutional sector and domain.

<table>
<thead>
<tr>
<th>INSTITUTIONAL SECTOR (S)</th>
<th>Domain 1</th>
<th>Domain 2</th>
<th>Domain 3</th>
<th>Total CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-digital goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital, paid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital, free (financed via ad or data)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital, free (volunteers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

37 See Table 3.1 in ESA 2010 for the classification of institutional units in sectors.
A SATELLITE ACCOUNT FOR THE EU CREATIVE INDUSTRIES

<table>
<thead>
<tr>
<th>Total output (P1)</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Market output (P11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output for own final use (P12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-market output (P13)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermediate consumption (P2)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Gross Value Added (GVA) (B1g)

- Compensation of employees (D1)
- Other taxes on production (D29)
- Other subsidies on production (D39)
- Gross operating surplus/mixed income (B2g/B3g)

Additional information on labour input should be included by domain, and may be broken down by paid employees and volunteers (SNA and non-SNA), and expressed in jobs and total hours worked, or full time equivalence. Besides, due to special characteristics of employment in the creative industries such as a significant number of self-employed, part-time jobs, employed people with more than one job or with a job and pension at the same time, it is recommended to present a system of labour accounts as shown in chapter 22 of ESA 2010.

A system of labour accounts provides a complete and reliable picture of the labour market coherent with national account indicators by linking labour market data (from surveys and registers) with economic statistics. A simple system of labour accounts presents a breakdown of labour input by socio-economic characteristics and a more detailed Social Accounting Matrix (SAM) can be thought as an expanded system of labour accounts in a matrix format including also compensation of employees and mixed income by type of person employed.

GDP for the creative industries can be calculated by adding taxes less subsidies on products (D21-D31) to the total GVA of the creative industries.

Finally, the sequence of accounts by institutional sector can be summarised in the following main aggregates considering the methodological changes affecting household consumption, social transfers in kind and GFCC as explained in Section 2.2.2. For all concepts the distinction between SNA and non-SNA should be included:

- final consumption expenditure (P3); actual final consumption (P4) and social transfers in kind (D63) by products;
- current transfers (D75);
- disposable income (B6g) and adjusted disposable income (B7g);
- gross fixed capital formation (P51g);
- saving (B8g);
- imports (P7) and exports (P6) both intra-EU and outside the EU.

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38 Labour Force Survey (LFS) provides employment data by gender, age, professional status, education, occupation and working time. The 2017 LFS ad-hoc module provides details for self-employment and Time Use Survey shows volunteers' activities.

39 Import and Exports are estimated in the Goods and Services Account and Supply and Use Table, not in the institutional sectors accounts.
Among these indicators, the most important types of information provided by a CISA are related to final consumption expenditure, actual final consumption and transfers in kind for which the detail by institutional sector, domain and type of beneficiary can be useful for policy making. For these indicators the distinction between SNA and non-SNA is essential, and that between legal and illegal content highly desirable. In addition, the complete sequence of accounts for the NPISH sector will provide interesting details of the provision of ‘free’ or subsidised creative services to the household sector.

In summary, the CISA should include at least the following tables and accounts:

- supply and use tables with details on: principal, secondary and ancillary activities; SNA and non-SNA output as well as legitimate versus IPR infringing goods;
- production and generation of income accounts by institutional sectors and domain as shown in Table 3;
- main indicators resulting from the institutional sectors sequence of accounts considering the SNA and non-SNA estimations.
SPECIFIC SOURCES OF INFORMATION FOR AN EU CREATIVE INDUSTRIES SATELLITE ACCOUNT

Satellite accounts (SAs) present tables and accounts consistent with the national accounts central framework but more detailed or modified so that they can serve specific data needs. This is why the creative industries satellite account (CISA) requires all the statistical information used in national accounts (such as structural business survey, labour force survey, government accounts, international trade data, household budget survey, R&D and administrative data or detailed data on production and intermediate consumption by product specifically compiled for the input-output tables) and much more.

Eurostat (2012) presents the results of the ESSnet-Culture (European Statistical System network on Culture) project on data and methodology for cultural statistics. The heterogeneity of the data collected at the national level is one of the main obstacles identified, so it is likely that complete data needed for a CISA at EU level will not be available in the short term. As a follow up of ESSnet-Culture works, Eurostat has built a dedicated section on its website on culture statistics and published a guide on culture statistics availability.

Complementary information important for the estimation of CISA indicators could include:

- Government subsidies to creative and cultural services included in administrative data and necessary for the estimation of NPISH sector accounts. Inventories have been collected by the ESSnet-Culture project, which could be a good starting point.
- Data from NPIs providing creative and cultural services including different sources of financing as well as work carried out by volunteers. Nowadays much data can be found in the official websites of the institutions.
- For Wikipedia, as the most known example of free services produced by volunteers (as explained in Section 2.2.2), there is a huge amount of data available. The number of articles written by volunteers, images, different languages and so on could be used to estimate time spent. Based on that, the value of the unpaid work carried out by volunteers can be estimated by applying wages and costs. Similar data should be available for other large institutions (such as the Linux Foundation).
- The EU time use survey is the traditional source of data used to estimate hours devoted to different activities, and is frequently used in the SA for unpaid household activities.
- The EU SILC (statistics on income and living conditions) ad hoc modules on social and cultural participation (2015) and the Eurobarometer on cultural access and participation (2013 and 2007) provide homogeneous information about consumer habits (including the role of the internet) to complement estimates of final consumption expenditure / actual final consumption.

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• Data about ancillary activities should be included as extra details of business surveys carried out, amongst others, for the compilation of supply and use tables, to identify inputs and labour used in the production of creative products consumed internally by firms (mainly large companies).
• Revenue data and input requirements broken down by digital and non-digital goods are necessary for several creative industries and could be obtained from industry associations or other private sources. This is probably the most important data lacking in official economic statistics.
• An inventory of providers of legal digital services by domain could be used to analyse the sources of income of each one (advertising, donations, subscriptions).
• An inventory of providers of illegal content including the same information as the legal services should be developed by experts in each country. The value of illegal services could be based on econometric models and/or volume indicators in comparison with legal services.

An example of the basic data required for the inventory of providers of digital content (both legal and illegal) is presented in Annex II.

The ESSnet-Culture project conducted inventories of the cultural public expenditure and concluded that the availability of data differs across the Member States, and that the data is heterogeneous and unconsolidated. Many of the data sources mentioned above will thus only be available in some EU countries, limiting the possibility of developing a common CISA for all EU countries at this time. The recommended approach is therefore to begin with one or more pilot implementations in Member States which do have adequate data available.

41 An example is Agorateka, the European online content portal (for music, TV & films, e-books, video games and sports events) available in almost 20 EU countries.
CONCLUSIONS

This report has described a possible approach to developing a creative industries satellite account (CISA). The concept of satellite accounts (SAs) is not new. Such accounts have been used in other contexts (for example, tourism) to better capture and delineate certain types of economic activity in the national accounting framework.

SAs for the creative industries are of particular interest to policy makers in many countries. This interest is motivated by the intrinsic importance of cultural activities to human well-being, by the recognition that such services form an increasingly important part of the typical citizen’s consumption pattern, and by the radical changes in the way such services are delivered and financed brought about by technological change during the past decades.

The emergence of ‘free’ digital services financed via advertising or by monetising user data has completely changed the way in which consumers benefit from many of the services provided by creative industries. International proposals for measuring these services in a digital economy should be considered with the purpose of having a clearer view of who produces, who consumes and who pays these free digital services.

The definition of the term ‘creative industries’ is still an open issue but it would be reasonable to follow ESSnet-Culture or UNESCO frameworks for cultural statistics and to group industries by domains in a comparable way, as outlined in the first chapter of this report.

The institutional sectors’ perspective is an important issue. The lack of data makes it difficult to estimate a complete sequence of accounts for the NPISH sector. An estimation of transfers in kind by domain could make visible the real magnitude of services consumed by individuals, regardless of how the producers of such services are remunerated and by whom.

The household sector consists of individuals who can act as consumers but also as producers of goods and services, some of which are outside the SNA production boundary and thus not included in economic measures such as GDP, as defined in the international standards for compiling national accounts. SAs allow extending the production boundary to include services produced by volunteers. These services are considered non-market production and can be estimated following international recommendations about measurement of volunteer work based on costs. The valuation of free non-market services produced by volunteers could complement the ‘free’ market services financed via advertising or data and provide a more complete estimation of such output and its use by households, enterprises and government.

As recommended by Eurostat and other statistical offices, illicit activities should also be included in measures of the economy as long as the exchange between the provider and consumer is of a voluntary nature. Therefore, pirated goods and (mostly) services should be treated the same way as legal activities in national accounts. The main problem is the lack of credible data for pirated content, but an SA allows including indirect estimations for such content, clearly distinguished from the legal activities.

42 ‘Free’ means that the user of the service does not pay any fee. Therefore, the provider must extract value from the service in other ways.
Finally, an SA also allows integrating social and economic statistics. For example, actual final consumption and transfers in kind could be broken down by domain and by type of households (by composition, level of income or location).

As shown in Annex III, SAs for the creative/cultural industries are of great interest in many countries around the world. What has so far held back development of such accounts are the methodological and data issues described in this report. It is therefore proposed to study the possible implementation of such accounts in the EU by embarking on a pilot project with one or two Member States that have the willingness, the capacity and the data necessary to accomplish this.
REFERENCES


- The digital revolution new challenges for National Accounting.

- CISAC The first global map of cultural and creative industries.


A SATELLITE ACCOUNT FOR THE EU CREATIVE INDUSTRIES


### Table 22.1 — Overview of satellite accounts and their major characteristics

<table>
<thead>
<tr>
<th>Special sector accounts</th>
<th>Eight characteristics of satellite accounts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Functional accounts</td>
</tr>
<tr>
<td>1. Satellite accounts described in this Chapter</td>
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</tr>
<tr>
<td>Agricultural</td>
<td>X</td>
</tr>
<tr>
<td>Environmental</td>
<td>X</td>
</tr>
<tr>
<td>Health</td>
<td>X</td>
</tr>
<tr>
<td>Household production</td>
<td>X</td>
</tr>
<tr>
<td>Labour and SAM</td>
<td>X</td>
</tr>
<tr>
<td>Productivity and growth</td>
<td>X</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>X</td>
</tr>
<tr>
<td>Social protection</td>
<td>X</td>
</tr>
<tr>
<td>Tourism</td>
<td>X</td>
</tr>
<tr>
<td>2. Satellite accounts described in other chapters</td>
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</tr>
<tr>
<td>Balance of payments</td>
<td>X</td>
</tr>
<tr>
<td>Government finance</td>
<td>X</td>
</tr>
<tr>
<td>Monetary and financial statistics, and flow of funds</td>
<td>X</td>
</tr>
<tr>
<td>Supplementary pension table</td>
<td>X</td>
</tr>
<tr>
<td>3. Examples of other satellite accounts with international guidelines, or in the EU data transmission programme</td>
<td></td>
</tr>
<tr>
<td>Corporate activity</td>
<td>X</td>
</tr>
<tr>
<td>Informal sector</td>
<td>X</td>
</tr>
<tr>
<td>Non-profit institutions</td>
<td>X</td>
</tr>
<tr>
<td>Public sector</td>
<td>X</td>
</tr>
<tr>
<td>Tax revenue tables</td>
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</table>
### Table 22.3 — The supply of characteristic and connected products

<table>
<thead>
<tr>
<th>Output by industry</th>
<th>Characteristic producers</th>
<th>Other producers</th>
<th>Total imports</th>
<th>Total supply at basic prices</th>
<th>Trade and transport margins</th>
<th>Taxes on products</th>
<th>Subsidies on products</th>
<th>Total supply at purchasers’ prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary product</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ancillary product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 22.4 — The use of characteristic and connected products

<table>
<thead>
<tr>
<th>Context production by industry</th>
<th>Characteristic producers</th>
<th>Other producers</th>
<th>Total imports</th>
<th>Final consumption</th>
<th>Total gross capital formation</th>
<th>Total use at purchasers’ prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary product</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ancillary product</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compensation of employees</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other net taxes on production</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumption of fixed capital</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific products</td>
<td>Characteristic or connected</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating surplus, net</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
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<td></td>
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Source: Eurostat (2013)
## ANNEX II: SOURCES OF FINANCE FOR DIGITAL PROVIDERS (EXAMPLE)

<table>
<thead>
<tr>
<th>Funds</th>
<th>Paid</th>
<th>Free services</th>
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<tr>
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<td>Subscriptions</td>
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<td>Data</td>
<td>Volunteers</td>
<td>Donations</td>
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<td>✓</td>
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</table>

Note: Main sources of finance for digital providers in April 2019 as reflected in public sources of information. Data sources of finance are considered only when data are provided to a third party, not when data are used internally.
ANNEX III: IN-DEPTH REVIEW OF SATELLITE ACCOUNTS

The results of the in-depth review of satellite accounting led by Statistics Canada in collaboration with UNECE, Eurostat, OECD, UNSD and IMF was presented in the 12th meeting of the Advisory Expert Group on National Accounts and it is available in the Intersecretariat Working Group on National Accounts (ISWGNA) website. The preliminary results include responses of 82 countries and data for 241 satellite accounts (SAs).

- The thematic or activity accounts are more prevalent than well-being and sustainability type accounts with tourism, health and culture the three most repeated types of thematic SAs.

- Most SAs were initiated and funded by the national statistical office (NSO).

Most statistical organisations have established specialised groups to develop and compile SA with international guidance readily available. The input received from outside organisations was related to definitions and classifications and also to concepts and statistical methods. NSOs also received data to help compile the SA.

There is significant unmet demand of SA, in total 130 SA are demanded but not produced, evenly split between thematic SA and extensions. Most demanded thematic SA are: tourism, natural resources and culture and most demanded extensions are: environmental-economic accounts and non-profit institutions and volunteering. Requirement for guidance from the international community aligns with priority areas of development.
ANNEX IV: STAKEHOLDER CONSULTATION

In order to complement the methodological considerations described in this report, a consultation was carried out in order to discuss with key stakeholders the feasibility, relevance and capacity for establishing a creative industries satellite account (CISA) at the EU level. The consultation was carried out during March-April 2018 through two complementary means: online consultation and video-conference meetings / interviews with key stakeholders.

This annex presents the results of the stakeholder consultation.

1 Results of the online consultation

The online consultation targeted data producers (NSOs, ministries, IP agencies) and users (industry associations, researchers, IP agencies). The questionnaire was structured in order to gather qualitative information on:

- awareness and access to information on the economic impact of IP;
- rating and assessment of the importance and impact of possible benefits that would derive from a CISA implementation;
- possible uses of the information provided by CISA;
- capacity for production of CISA (section targeting exclusively the possible producers of such statistics).

The online consultation was carried out using the EU-Survey platform. The online consultation remained opened between 14 March 2018 and 11 April 2018. A total of 25 responses were received out of approximately 180 institutions and experts to which a link was sent.

1.1 Profile of respondents

Seventeen EU countries were represented in the 25 answers. The sample of survey respondents is characterised by a significant heterogeneity with. Nearly 30% of respondents are National Intellectual Property offices.

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44 The consultation was carried out by an external provider, Devstat (Valencia, Spain), as part of a contract to provide services to the EUIPO related to the present project.

45 The questionnaire is accessible on-line through the following link https://ec.europa.eu/eusurvey/runner/IPRsurvey2018.
Regarding the role of respondents with respect to economic information on creative industries and/or IP, most of them (63%, i.e. 15) declared to be both user and producer. Eight are data users and only two respondents are data producers.

The stakeholders' knowledge on the subject is good with respect to the topic of 'cultural and creative industries' (see figure below). As a matter of fact, 19 out of 25 respondents declared that they are aware of the definition of creative industries.
Figure A3. Awareness and access to information related to cultural and creative industries.

Instead, less than half of the panel of respondents have knowledge of studies on the economic impact of intellectual property rights on creative industries (see figure below).

Figure A4. Awareness and access to information related to IPR.

1.2 Assessment of importance and impact that a CISA would have on their activity

The importance of CISA with respect to a number of items reported in the figure below is assessed as extremely important or important by most respondents. In particular, CISA is viewed particularly important to provide details on the production of IP by business and individuals (60% of respondents assessed this item as extremely important or important) and details on the use/consumption of IP by businesses and individuals (56% of respondents assessed this item as extremely important or important).
Figure A5. Assessment of CISA’s importance.

The impact of CISA on the respondents’ activity with respect to a number of items illustrated in the figure below is assessed as positive by most respondents.

Figure A6. Assessment of CISA impact on respondents’ activity.

1.3 Possible uses of the information provided by a CISA

The different possible uses of information provided by satellite accounts (SAs) are on average considered relevant by respondents (see figure below). In particular, 14 respondents out of 25 consider extremely relevant or relevant the use of information for economic research as well as for advocating an increased protection of IP and an improvement of other statistical information areas.
Figure A7. Relevance of the possible uses of the information provided by CISA.

Against the above assessment of relevance of the possible uses of the information provided by CISA, most respondents (64%) declared to have the capacity to make effective use of it (see figure below).

Figure A8. Assessment of the capacity for making effective use of CISA.

One of the respondents who declared not having the capacity provided this justification:

We currently produce estimates for Creative Industries and Cultural Sector, but these are not a satellite account approach. My concern with satellite accounts is twofold:

1. the available data - data are required to be robust at a low level and this is often not possible, especially on an annual basis.

2. how satellite accounts are viewed by ministers and senior policy colleagues - Ministers previously expressed how they see satellite accounts as ‘nice to have’ but essentially they wouldn’t be standing up in Parliament making decisions based on them, they would use national accounts, and therefore I am hesitant on whether the resource required to establish a satellite account would be worth the benefits.
1.4 Capacity for the production of SA

The graph below reveals that the assessment of costs related to i) the adjustment of the legal and institutional framework; ii) the data collection to produce an SA, and iii) the process of data so as to meet the international standards requirements, is difficult to provide. Indeed, most respondents did not answer these questions. At the same time, it worth noting that no respondents declared that such costs are affordable.

**Figure A9. Assessment of the costs related to …**

On the possibility to secure the required resources (both financial and human) to produce a CISA, the situation is similar: most respondents did not answer.

**Figure A10. Assessment of resources to produce CISA.**

2 Results from detailed discussions with selected stakeholders

As a complement to online consultations, detailed information was also collected from selected stakeholders, through video-conference discussions, including two official data producers, one user from
the public sector and one user from the private sector:

- Statistics Finland;
- Czech Statistical Office (CZSO);
- Department of Culture, Media and Sports (DCMS) in the United Kingdom;
- International Confederation of Societies of Authors and Composers (CISAC).

An overview of the discussions held with these stakeholders is provided under this section. Out of the four detailed interviews carried out, three of the interviewers were held with culture statistics producers which have under regular production an SA for culture or for creative industries (Finland, Czech Republic), or which have piloted such an exercise (UK). The fourth interviewee is a representative at international level of potential users of the data.

2.1 Motivations to produce the CISA and methodology for its production

The two producers of SAs for culture (Statistics Finland and the Czech Statistical Office) interviewed mentioned that the regular production of these statistics by the national institute comes as a reply to the requests formulated by the corresponding ministries for culture in these countries, which design and shape the cultural related policies based on these statistics.

In both countries before the regular production of the SA for culture pilot projects were carried out. The methodology for the production of the SA for culture by Statistics Finland has been maintained since the pilot project, except for the updating of the statistical classifications. In the case of the Czech Statistical Office (CZSO), the methodology for the SA for culture has been improved in 2015 by introducing the non-creative jobs in the culture sector.

It is highlighted that both producers of SA for culture do not make reference to creative industries, but to the cultural sector. The CZSO follows the ESSnet-Culture classification of cultural industries, while Statistics Finland departs from the UNESCO FCS. The difficulties for a delimitation of the cultural and creative industries have been acknowledged by both producers.

The third producer interviewed, the Department of Culture, Media and Sports (DCMS) in the UK does not produce a CISA, although a pilot project was carried out in 2014. The DCMS only produces economic estimates for the creative industries. A specific demand to produce a CISA has not been expressed not even after the publishing of the economic estimates.

2.2 Data sources and access to data

Regarding the access to the data needed for the production of the SA for culture: the data (including at municipality level) is accessed by Statistics Finland based on the Statistical Law.

The CZSO uses as main source of information the data and national surveys like the labour force survey, the structural business survey (for market-oriented industries), household budget survey (for consumption of cultural goods), but also data from specific cultural surveys developed by the National Information and Consulting Centre for Culture (NIPOS).

For the production of the economic estimates for creative industries, the DCMS does not collect additional sources, using only national statistics, exclusively from the Office for National Statistics (ONS).
2.3 Resources needed

In the case of Statistics Finland, the costs for the regular production of the SA for culture by Statistics Finland are estimated at one person/month per year. The data processing and validation is carried out as part of the production of the national accounts, while only the additional calculations needed for the production of the SA are considered in the costs estimated.

The Finnish Ministry of Education and Culture is the main user of the SA for culture, which uses these statistics to decide on their policies. The Ministry finances about 80% of the costs for producing the SA for culture. Most likely, if the Ministry of Education and Culture ceased funding the production of the SA for culture, Statistics Finland would not produce (or continue to produce) these statistics.

In the case of the CZSO, the resources needed to regularly produce the SA for culture are estimated at less than one person/month per year.

At the DCMS in the UK, two FTEs are working on producing the economic estimates for creative industries.

2.4 Awareness and access to information on the economic impact of IPR on creative industries

The producers (of a CISA or economic estimates of for creative industries) do not carry out, commission or collaborate in research studies on the economic impact of IPR. There is no reference to IPR in the actual methodologies applied by the producers. Nevertheless, one producer institution mentioned that if a sound methodology that included information on IPR impact was proposed, it would be likely to be used by the institution.

2.5 Views expressed from the user side

The views expressed by the International Confederation of Societies of Authors and Composers (CISAC) are considered in light of its role as potential user of a CISA that would also target the measurement of the economic impact of IPR infringements.

Although CISAC has not formulated a specific request for that statistical product, the study contracted a private consultant and published in December 2014 by GESAC (European Grouping of Societies of Authors and Composers) on ‘Creating Growth: Measuring cultural and creative markets in the EU’. The purpose of the study was to get the evidence for a request to the European Parliament for a legislative act on copyrights. Subsequently, CISAC commissioned another study at global level on ‘Cultural Times: the first global map of cultural and creative industries’.

There is a demand as well for these types of statistics from the associations belonging to CISAC.