Everything you always wanted to know about data for the Cultural and Creative Sector production system, but were afraid to ask: Part 1 – Problems of statistical description

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Abstract

This CICERONE paper (D4.2) addresses the problem of the lack of data available to describe the Cultural and Creative Sector (CCS) production system. It explains how and why the currently available data is insufficient in its depth, and breadth of coverage, leading to an appreciation of which activities are made visible, and which are obscured or hidden, by such measures. This paper is the first step in proposing what a sufficient taxonomy would look like: a suitable framework of new data collection related to the CCS production system, which we set out in more detail a following (and linked) paper (D4.3, entitled *Everything you always wanted to know about data for the Cultural and Creative Sector production system, but were afraid to ask: Part 2 – Assembling disparate data sources*). The purpose of this paper is hence to describe the intersection between definitions, and their operationalisation in taxonomies and actual data collection. It is split into two parts. The first articulates the implications of a 'Romantic' definition of culture that has been used previously with an industrial taxonomy: arguably both notions have been failed. We then describe various attempts to conceptualise and mobilise taxonomies that bridge this divide and, in so doing, articulate their limitations. Part two of the paper is more analytic, describing these limitations using the concept of a matrix. The paper advocates a new data matrix – a radical realignment of concepts and industry taxonomies – to be developed more fully in the following and linked paper (D4.3). This matrix is, in effect, the conceptual and practical foundation of a Cultural Economy Observatory that is built as part of the CICERONE project.

Key words

Cultural policy, cultural statistics, data governance, European Union, Eurostat, global production networks, institutional economics

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Work package	The CICERONE project consists of seven work packages (WPs). This report is part of WP4, which aims at building a Cultural Economy Observatory. With the observatory, the CICERONE project showcases the added value of studying the cultural and creative sectors (CCS) through the analytical lens of global production networks. From this perspective, the CICERONE project claims a lack of data, in both quantity, quality and detail, and a poor or outdated conception of how these sectors operate. The observatory will build a proof of concept for the field. Through its action, it will provide leadership and focus for debates, and a repository for both the finding of the project and a potential nexus of information going forward. The observatory is to be the major legacy of the CICERONE project. This report (D4.2) advocates a new data matrix, which constitutes a radical realignment of concepts and industry taxonomies. This new data matrix is further developed in a following paper (D4.3) and is a key conceptual and practical foundation upon which the Cultural Economy Observatory will be build. All papers of the CICERONE project are publicly disclosed on the project's website www.cicerone-project.eu and in its dedicated Zenodo community on https://zenodo.org/communities/cicerone-h2020.

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Introduction

This paper addresses the problem of the lack of data available to describe the Cultural and Creative Sector (CCS) production system. We explain how and why the currently available data is insufficient in its depth, and breadth of coverage, leading to an appreciation of which activities are made visible, and which are obscured or hidden, by such measures. This paper is the first step in proposing what a sufficient taxonomy would look like: a suitable framework of new data collection related to the CCS production system, which we set out in a following paper.

The history of data collection about the activities of the CCS has been dominated by pragmatism: the aggregation of data already collected but which does not 'fit' traditional definitions of industry, or services. The pragmatism is founded on not changing the taxonomy of industrial classification, nor significantly extending it, and is dominated by cost and time of devising and implementing new industrial classifications that would capture the CCS better. The lead-time for changing industrial classifications systems in one country, let alone coordinating with the EU or even international classifications, can take decades. Most debates about the CCS can be dated back to the 1990s, and have had continent-wide political and policy relevance since the early decade of the 2000s. Moreover, there is the dilemma of risk: if we don't know how big the CCS is, how do we justify the investment in new data collection and new classifications?

The definition of a taxonomy of the CCS is challenging for generic and specific reasons. This can be divided into two sets of issues. Empirical issues include: first, the temporal changes in overall industry composition (often related to scale and organisation); second, the specific evolution of particular industries or domains (often related to technologies and audiences/users/markets); third, to the spatial pattern of activities (local, global, or a mix). A second set of issues, cutting across such obvious empirical patterns, concern the effects of power and control (often referred to as where and by whom decisions are made: locally, nationally, in or across an organisation). Traditionally, data collection has been tied to particular firms and locations. Hence, intra-organisational flows are not counted, even when they cross international boundaries (as they do in the more obvious case of transnational organisations), or when they cross regions or networked urban centres. Clearly as part-finished products flow across borders, the 'point' data becomes less reliable; when we add to the

fact that many of these flows are immaterial goods and services (which are seldom captured in any statistics) it can been seen that the existing taxonomy and data sources merely scratch the surface of describing actually-existing activities.

This is why the CICERONE project faced no choice but to conduct new primary research: to begin filling these gaps. The CICERONE project cannot fill all the gaps, which would be prohibitively expensive. However, we are proposing a pilot project that will develop a taxonomy and (ordered) repository to fill some gaps, and critically, help politicians and policymakers to locate where the data is currently missing. Cutting this Gordian Knot of data availability, and conceptual visibilities, is a necessary task for the success of the CICERONE project: to describe and calibrate production systems in particular industries across space and time; and from creative ideas through making, distribution and exhibition and exchange to archiving and back again. The purpose of doing so is, first, to have a conceptual place to deposit our findings such that we can analyse production systems; and, second, so that we can encourage others to add their findings to the CCS Observatory that we seek to curate. Central to this plan is the development of an adequate taxonomy of the actually existing CCS production system as opposed to the elements of it that correspond to standard industrial taxonomies. Finally, the information contained in, and structure of, the observatory will create a necessary evidence for policymakers seeking to embrace, understand and transform CCS production chains.

The purpose of this paper is hence to describe the intersection between definitions, and their operationalisation in taxonomies and actual data collection. It is split into two parts. The first articulates the implications of a 'Romantic' definition of culture that has been used previously with an industrial taxonomy: arguably both notions have been failed. We then describe various attempts to conceptualise and mobilise taxonomies that bridge this divide and, in so doing, articulate their limitations. Part two of the paper is more analytic, describing these limitations using the concept of a matrix. Existing approaches are pragmatic, built on existing data availability and a predominantly neoclassical economic approach to counting inputs. We call this Matrix 1. Instead we ask, what should we be able to see, if we conceptualise the cultural and creative sector as an industry? This entails accounting for the organisational and spatial arrangements that make up the production of cultural and creative outputs. For this reason, the paper advocates a radical realignment of concepts and industry taxonomies – Matrix 2 – to be developed more fully in the following paper, D4.3: which is, in effect, the conceptual and practical foundation and the Observatory. Before doing so, it will be helpful to outline the core problem that this paper confronts in more detail.

The problem in focus

The challenge for the CICERONE project is that its focus of enquiry – the production system of each cultural industry (or domain), as well as the whole CCS system – does not exist in existing taxonomies; in addition, some relevant data does not fit into the taxonomies. The challenge is two-fold: to capture all activities in the production system (cutting across functions); and to develop a taxonomy that is not so rigid that it only applies to the situation today but is able to embrace the dynamism of change (especially given that this is an innovative and fast changing sector). Here we seek to achieve this though a review of the existing principles and practices of data collection and classification: demonstrating weaknesses and providing a pivot from the existing classification (which we term Matrix 1) to a production system-compliant classification (which is termed Matrix 2, and is the subject of a following paper).

Specifically, this paper establishes the justification and framework for a new cultural economy observatory (CEO), founded on global production network (GPN) principles. Systematic information collection and classification in this field has faced particular problems over and above any other. Simply, the main problem is twofold: the conceptual field of the creative industries is relatively new and evolving; existing formal statistical taxonomies are inadequate. Improving information collection, such that production networks and related flows can be mapped and compared across Cultural and Creative Sectors (CCS),[1] is a core objective of CICERONE.

Previously developed definitions of the CCS have tended to be finite in nature and have not been designed with sufficient flexibility to incorporate changes.[2] Most obviously, longstanding assumed divisions – between high culture and low culture, formal and informal culture, public and private participation – have been replicated or reinforced by systems that generally measure the former of these dyads and not the latter. In addition, the digitisation of creative products, services, and activities has escaped measurements. Such definitions are hostage to their period of creation and use, especially the domination of state funding of (high) culture, where consumption has often been

[1] We are using the EU terminology of the Cultural and Creative Sector (CCS) to refer to this 'field'. As will become obvious the very terminology, and its iterations and taxonomies, are fraught with difficulty and symbolic meaning. We use the CCS terminology as a label to refer to data that describes the 'sector'. It will be noted that we argue for a stricter conceptual alignment with institutional economics in our usage of the terms industry and sector. Simply, the current measures for the CCS miss out or exclude many parts of the actually-existing cultural and creative industries.

[2] This is an inherent problem with all classifications: the balance between finite and dynamic categories.

excluded.[3] Accordingly, such measures tend to describe public-financed activities, and relate to a 'Romantic' notion of culture rooted in individual genius.

Definitions are a non-trivial issue because statistical taxonomies are normalised across much information gathering, and 'make visible' only the activities with taxonomic cells. Those activities that fall outside of the taxonomies, or cut across them, are rendered 'invisible' to the statistical record. These taxonomies were primarily developed in the mid-20th century and were shaped by the structure of industries and occupations prevalent at that time. Some small modifications have been made, but statisticians, seeking a balance of cost and effectiveness tend to value a 'time period analysis' over detail. Providing more detail is a subject of extra cost and processing; adding more detail to an existing industry is easier than adding a new industry. Simply, whilst the making of cars or shoes is well represented, the creative economy is not. Given their rise to prominence in the mid-20th century, the relative visibility of film, radio and TV production are the 'exception that proves the rule'. Much of the CCS are invisible to the standard industrial taxonomies.

Moreover, taxonomies for the classification of industries specifically conform to a particular system: critically, this system more or less begins with a product and traces back to the industrial processes that were needed to produce it. This, in institutional economics, is what is termed an 'industry' (Hodgson 1993). This highlights a broader problem: orthodox/neoclassical economic approaches take the relevant analytical objects to be firms and markets (organisation is not relevant). Hence, 'industry' appears as a generic descriptive label for certain activities sold in a 'market' but not a relevant part of a taxonomic industry classification system that reflects process.[4] The approach to data collection proposed by CICERONE, built on the Global Production Network conception, seeks to remedy this lack of attention to process, and organisational or institutional factors and how they are subject to change.[5]

Policymaking is dependent on relevant evidence of processes and activities. Arguably, the field of the creative economy (or CCS) has had to rely on inadequate or partial evidence to inform policymaking. This paper will develop a logical foundation for policymaking in the era of Global

[3] As funding associated with allocation of government resources, the data deemed to be relevant was the size and number of artefacts or activities. Only from the 2000's onward have governments required arts organisation to collect data on audiences and visitors as a proxy for 'value for money'.

[4] Hence the confusion, from a market perspective, of how the *manufacture* of clothing, or computers, could be relevant or included in a taxonomy of (markets) of fashion and video games (see below).

[5] The ideas about the creative industries from the 2000s onward represent a somewhat unsuccessful 'blending' of these two logics of culture and industry, and some hybrid taxonomies and operationalisations (see below)

Production Networks; as implied above, this requires a revision and alignment of definitions and taxonomies. Recognising that we will never be in a situation of 'total information', we instead seek a 'route map' to 'better information' that can be strategized and rationally evaluated. Hence, setting out the revised field of the creative economy ecosystem GPN has a positive research action: it is able to identify where data is already available, and where it is not. This potentially puts policymakers in a strong position to advocate for the strategic value and priority of one new data source over another. Finally, this elaboration of a revised definition and taxonomy (Matrix 2) provides the appropriate foundation and structure for a robust and sustainable European creative economy observatory.

1. How did we get here? [1]

1.1 Art and commerce; high and low

It is common for accounts of the creative economy to begin with the notion of the 'culture industry', introduced by Adorno and Horkheimer (1997) in the 1940s to indicate and to criticise the effects of industrial standardisation on the production and reception of cultural forms. They noted how the production of mass market goods and knowledge (e.g. scientific research) associated with the technological progress of high modernity were amenable to reproducing and reinforcing old divisions between 'high' and 'low' culture, or 'serious art' and 'popular' entertainment.[6] Clearly Adorno's notion of cultural value was intrinsic and predominantly aesthetic, demanding finely developed craft skills and capacities for reflective attention, counterposed to both 'planned' mass production and market-led commerce. These terms themselves are also culturally specific, privileging Northern Hemisphere and Western traditions, and more generally denigrating 'folk' traditions and mass production. Benjamin, his contemporary, notably challenged this conception, seeing new social and aesthetic possibilities in the mass technological reproduction of art: mass production had created a potential permeability of extant boundaries separating art from commerce. This 'war of position' continues to be fought in cultural debates, and is reflected in cultural and creative policy discussions over the classification and democratic potential of culture, in the context of digital cultural artefacts that are infinitely reproducible without deterioration.[7] Insofar as they register a mutually-constitutive relationship between shifting classifications and models of industrial organisation at this time, such debates also set the terms for the present paper.

The world has changed, however, and cultural change has driven that transformation in the twentieth century in particular: in the transitions from mass production to digitization; from live to virtual, and everything between. Along the way we have moved from the terminology of 'culture industry', to 'the cultural industries', 'creative industries' and the 'creative economy'. Cultural policy has long been associated with conservation of particular forms of art and heritage – 'culture' – and not commerce. However, in recent years it has sought to navigate the complexities of popular

[6] Adorno had significant differences with normative idealistic definitions of culture at the time. So, it is clear why the term 'culture industry' was meant in a wholly negative way.
[7] The usage of 'cultural and creative sectors' in continental Europe is another signifier of the unease which this boundary generates.

culture, and global cultural forms. As this part of the paper highlights, the legacy of particular concepts and measures of creative activities has shaped our understanding of their impact and relevance for cities.

1.2 Culture and creativity: concentric circles (the artist and creator focus)

Early debates about culture and creativity focused on the subject of the artist or creator and their economic and social sustainability. This was rooted in debates about cultural value, and *pace* Adorno, the existence of the 'crafter's handprint' securing its unique status. A long-running tension has existed between those activities funded by the market and those funded by the state. This view constituted a consensus justification for the state supports of mid- and late-twentieth century, informing policy, which legitimated the social value of 'high' cultural forms deemed subject to market failure. This (high-low) division was commonly mapped onto cultural value: market forms of culture and creativity were accorded lower cultural status than those supported by the state: those goods in receipt of state support were 'good' and *vice versa* those that were dependent on market exchange were 'inferior'.

However, the transformations of culture and society that occurred from the 1960s challenged this model and its assumed value judgements. This transformation was driven by the dual emergence of commercial culture of the youth, and the challenge to paternalistic cultural values by democratic movements. This led to the emergence of debates between the value of 'high' and 'low culture': for example, popular music or classical music; the Beatles or Bach. These changes challenged the existing notions of where the 'boundaries' of culture were, and if popular cultural expression, and mass reproduced cultural forms, 'counted' as cultural value, or were intrinsically of lesser value (see Bell and Oakley 2014). Expressions of this 'new cultural settlement' fermenting since the 1960s included the recognition and naming of cultural' and later 'creative industries'. In the 1980s Jack Lang expanded the remit of the activity of the French Ministry of Culture to support the development of cultural industries. Building from developments such as this the UK expanded the 'boundaries' of what it termed the culture to that of the creative economy, which included (previously excluded) mass-produced and popular cultural forms (Howkins 2001), alongside cognate areas such as IT and sport, and updated the notion of the creative/artist to one who produced new intellectual property

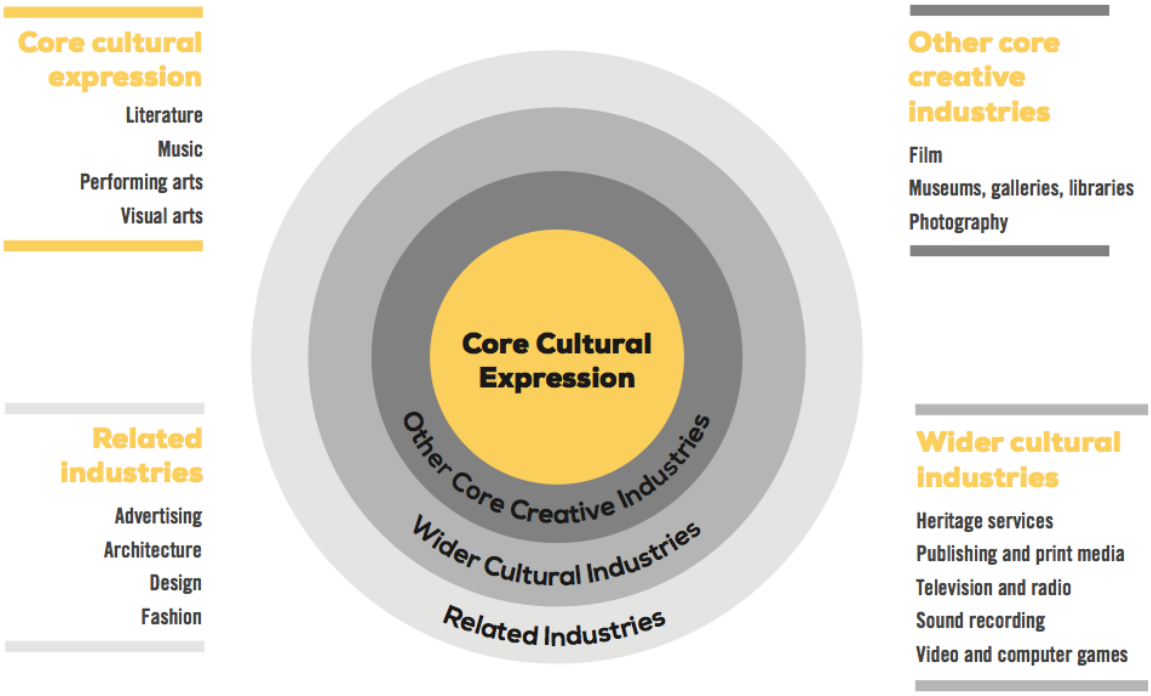
Up until this time there was little critical debate about measurement of 'culture': as a public good there was limited pressure on government budgets to 'cut' culture but rather to have more. The

social changes of the 1960s and the rapid growth of youth and commercial cultural forms, plus the decline in state spending from the 1970s onwards created massive tensions in the cultural funding systems across Europe (Schuster 1985). The austerity measures and neo-liberal budgeting techniques that became popular from the 1990s onward (Hood 1995) created the 'perfect storm' for culture whereby it was forced to 'prove its value' as a state expenditure compared to other areas of the economy (O'Brien 2013; Pratt 2012).

The political and economic consequences of such changes were first felt by cities, which recognised that they were commonly magnets for such activities and, moreover, that culture may generate economic value. Economic analyses sought to register the 'impact' of culture on the city in two ways. First, multipliers of economic activities associated with cultural institutions commonly measured the expenditure of visitors. Second, there was a desire to account for artists supported by public policy; in this case, populations censuses were used to count those who had the occupation as artist. More generally, state spending on the arts, whether direct or via the arm's length principle, came to be supplemented, and in some cases substituted, by what might be described as more neo-liberal US practices of sponsorship and endowment.

Clearly, a 'creative economy' implied more activities than those simply of artists, but extant concepts did not suggest an easy solution. A popular model was developed, referred to as the 'concentric circles' (KEA 2006; Throsby 2008) wherein (pure) artists stood at the centre and various applied forms and support activities, such as manufacturing, and marketing, were in the outer rings, including economic activities relying on creation, design or cultural heritage such as ICT (streaming services, recording hardware devices) , tourism or car manufacturing thus showing the wide impact of creation. This led to the (for some, uncomfortable) hybrid form of 'cultural and creative sectors' – an expression used at EU level in the first European Commission Cultural Agenda in 2007, which sought to reconcile the British and French approaches, while reluctant to give culture a too strong economic dimension (see Kern 2020: 26). A leaf was taken out of the book of innovation theory to propose a parallel between artists, creators and innovators, that justified the continuation of public policy focus on the artist as the locus of greatest 'creative intensity'. Accordingly, intellectual property was the primary indicator of the creative economy, commonly indexed to the number of creatives (Bakhshi et al. 2012). This will be further discussed below when the topic of taxonomies is elaborated.

Figure 1. Modelling the cultural and creative industries: The concentric circles model



1.3 Cultural industries: a production system

A parallel approach to that described above has also been taken, in order to understand and measure the industrial organisation of cultural and creative outputs. This approach began by questioning the sole attribution of value associated with craft or the manufacture of culture, arguing that cultural values could be produced using industrial means by consumers and audiences: so-called prosumption (see e.g. Ritzer and Jurgenson 2010). There were two important points here: first, that the process of value-creation differed across various branches of cultural production (e.g. publishing, live performance, audio-visual); second, that the organisation of the processes of production was important in itself. Like the 'concentric circles' model, a wider system of cultural production was envisaged; unlike that model, however, these activities were not 'peripheral' but integral to cultural production and cultural products. The iterative and heuristic learning (i.e. process that were subject to intervention) that happened across what was referred to as the 'production chain' was substituted for the concentric circle (Pratt 1997). The result was a definition of the creative industries by 'output', not input (artist): as noted below, the taxonomies and measures that were necessary to reflect the collective actions required to produce the 'end product', and feed it back into the system via archive or inspiration, exceeded those of simply counting artists (the implication

of the concentric circles model). This version of the cultural industries is 'industrial' in the sense that it is the integration of multiple steps and tasks to produce a finished object: critically, without one of the steps the final product would not be possible. Hence, the 'chain' of cultural production was divided up into a number of phases: creativity/ideation, making, reproducing, distributing, exchange and archiving. It was envisaged that every cultural product would go through this process; each step co-dependent on the other: in practice each activity interacting with the other (what has been labelled 'co-production'). The far closer attention given to organisational factors in this cultural industries/production system approach aligns it with institutional approaches to economics, in which the **industry** comprises the activities that constitute all of the processes required to make an object (product) from making to consuming. The **sector** is the collection of related industries. So, we should speak of the cultural or creative industries that constitute the cultural and creative sector.[8]

An important implication of this approach is that *measures* of the cultural industries need to be based on 'industries'[9] not occupations. However, there is a major problem here. National industrial and population census taxonomies were created in the mid-twentieth century, remaining more or less static, and failed to reflect the 'new industries' of culture: strikingly, for example, computer games. Consequently, the growth of the cultural industries has been 'invisible' as it has not registered in census returns. Technical exercises have been developed to 'reallocate' certain taxonomies to culture as a way of filling some gaps; however, the refined taxonomy remains deficient, leading to undercounting. This challenge has compounded the problem of getting political support to re-focus on the creative economy. However, despite the limitations, the data that has become available (via various mapping documents and the partial repurposing of international data sets) has shocked the political community by demonstrating that the cultural industries are now major employers (exceeding those of traditional areas like chemicals or car making) (European Commission 1998; KEA 2006).

The vision of a creative economy outlined in the concentric circles model aligns relatively comfortably with neo-classical economics orthodoxy: an individualistic focus, with the artist echoing the position of the firm. In neo-classical economics there are **individuals** and **markets**; organisational

[8] Hence, the EU terminology of the Creative and Cultural Sectors is not technically correct: it should be the Creative and Cultural Sector. The notion of the Creative Economy is a portmanteau term that seeks to avoid such distinctions (industry, sector; and creative and cultural). However, it simply displaces the debate: what is an economy, arguably excluding 'non-economic' activities!

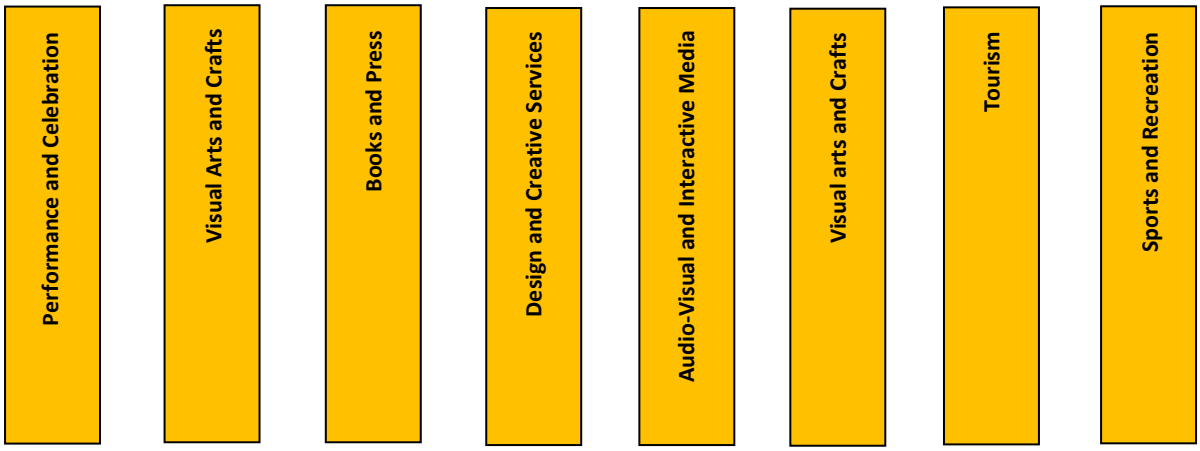
[9] In these terms the art forms (or domains) of cultural activity are properly defined as 'industries'; obviously this terminology offends many who still align to a broadly Adornian position where culture is always disenchanted by, or opposed to, the economic. Hopefully, the debates illustrated here demonstrate the need for subtlety in the use and communication of such terminology. The very tension underlines how the task of cultural governance has changed dramatically in the last 25 years, and how the boundaries between commercial and non-commercial have become more complex and are, to an extent, inter-dependent. A result has been a debate about 'values' not singular value (monetary or artistic). Again, this is a challenge to any cultural taxonomic schema.

forms such as the firm are often elided with the individual, but 'act' as an individual would. From this position, the term industry is simply a descriptor, not an analytical term. Accordingly, the neoclassical terminology of markets and industries has been elided in common usage. Despite the neoclassical assumptions of much creative economy policy, however, early experiments with urban cultural industry policies in the late twentieth century were underpinned by organisational and institutional assumptions (Pratt 2010); the emphasis here is on the strengths and weakness of cultural production chains (in social, cultural and economic terms) and the role of proximity, and/or institutions and networks, in facilitating such connections. Analyses have shown that the majority of cultural employment is concentrated in cities; however, the integrity and sustainability of production chains has become a concern (Unctad 2008). The concentric circles model does not emphasise these issues, nor the role of proximity or organisation. It had sought to accommodate a wider 'breadth' to the cultural sphere to include both popular and digital culture (via intellectual property rights), however, the creator was still positioned as the source of innovation and creativity. By contrast, the production system model stresses the 'depth' of linkages between producers, consumers and audiences; as well as the lateral linkages between art forms in 'convergence' culture: something that we can see very clearly today in relation to 'platform economies' (such as Google, Amazon, Facebook, Microsoft and Apple).

1.4 Cultural and Creative Sectors: A hybrid consensus

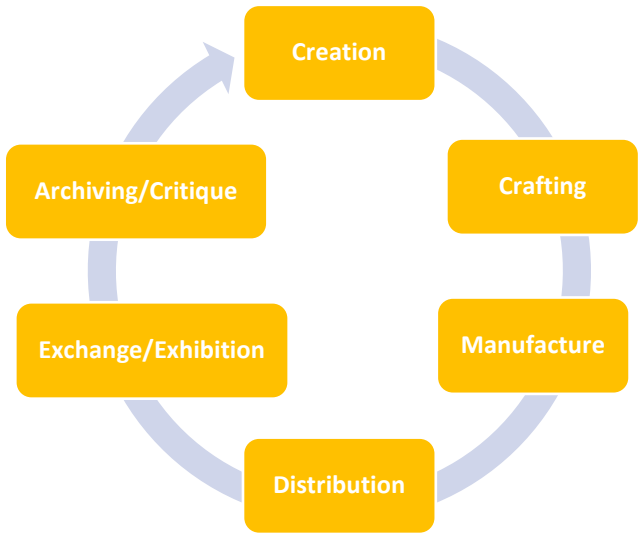
Hybrid approaches developed by merging the models outlined above, to achieve a two-dimensional matrix: a horizontal or breadth dimension, referring to different cultural domains (or cultural forms) (Figure 1); and a vertical dimension, including the steps of the production chain, or cycle, as applied to all domains (Figure 2). It is recognised that the Domains are subject to change: both (a) the outer limits and (b) the relationship between the domains are shaped by i. technologies and ii. cultural viewpoints. The model represents an ecosystem in the sense that there is an interdependency between each of the parts that constitute the whole: this has spatial, temporal and organisational dimensions. As an approach that seeks to be inclusive of current and future cultural forms, the model is expansive and extensible. Moreover, it represents a research and governance programme, implicitly demonstrating many empty cells where we lack data points. So, it is a tool that encourages local policymakers to 'fill the gaps' that are locally relevant when resources allow; and for strategic decisions to be made about how to do so.

Figure 2. Building blocks of the UNESCO (2009) system: Domains of cultural and creative production



The EU statistics framework (KEA 2015: 37)[10] takes the definition of Cultural and Creative Sectors established by ESSnet-Culture (2012) and later used to define eligible sectors in the Creative Europe programme. CCS statistics are approached by ESSnet 'domains', namely: heritage (including museums, historical places, archaeological sites and intangible heritage), archives, libraries, books and press, visual arts (including plastic arts, photography and design), performing arts (including music, dance, drama, combined arts and other live show), audiovisual and multimedia (including film, radio, television, video, sound recordings, multimedia works and videogames), architecture, advertising and arts crafts.

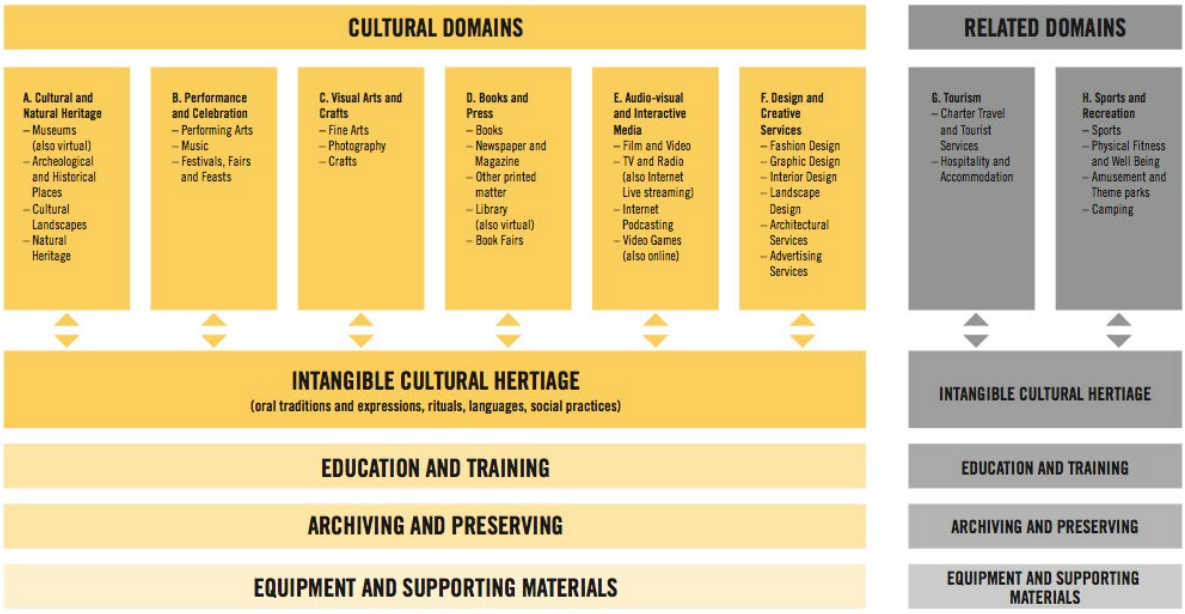
Figure 3. Building blocks of the UNESCO (2009) system: Functions of the cultural and creative cycle of production



[10] https://keanet.eu/wp-content/uploads/2019/08/CCS-Stats-Study_final-30092015.pdf

Similarly, the UNESCO Framework for Cultural Statistics (FCS) is a source for calculations based on occupation, employment and trade. The FCS was used as the basis for the first measure of cultural trade published by UNCTAD in the Creative Economy Report (UNCTAD 2008). A key finding here was that much of the growth in the creative economy globally was in the Global South, and the predominance of creative economy activity was in cities (UNESCO 2013; 2017). The key point of contention is that of which domains are included. As noted above the EU definition is a regulatory one (eligibility for funding); the UNESCO definition was based on a notion of the inclusivity and diversity of cultural expression across different territories, and to allow for change though time. However, both broadly have adopted the 'phases' (or functions) of cultural production, and the notion of domains (which, as noted above, is consistent with an institutional economic model of industries and sectors of the economy).

Figure 4. UNESCO Framework for cultural statistics domains



1.5 Conclusions

The contemporary iteration of the debate about what are now termed in Europe as the cultural and creative sectors has come about in the early twentieth century though a series of institutional changes, alongside increasing awareness of the (initially surprising) growth rates of cultural and creative economic activity. There has been a semantic debate over what to call this new field. On one hand, those that want to retain a degree of separation between the two approaches use the term 'culture and the creative industries'; and on the other hand, those what want to stress the

industrial (but not exclusively economic) characteristics favour 'the cultural industries'. UN bodies generally refer to the 'creative economy' (UNCTAD 2008; UNESCO 2013) while in Europe, the phrase 'Cultural and Creative Sectors' signals a need to reconcile profit and not-for-profit activities (KEA 2006).[11] Other approaches aim to promote legitimacy rhetorically, as in the 'orange economy', preferred in South American countries (Buitrago Restrepo and Duque Márquez 2013), by way of analogy with the 'blue' (maritime) economy. It is important to note that changing terminologies reflect political and statistical developments: labels and definitions are not merely descriptive; they codify the field, shaping its capacity to represent itself and for appropriate interventions to be designed and implemented.

The production system model has evolved to compare domains across the production cycle. This has enabled an operationalisation using existing industrial taxonomies (for employment) and for a (minor selection) of trade data. However, the current challenge is that the existing taxonomies that are used by national census collectors are – for culture – still mainly fit for counting cultural activities, just as they were 50 years ago. Whilst the revised production system displays a wider and more nuanced definition, based on an institutional logic, the simple fact is that the majority of the cells identified are empty of data, as this data is not available from national census returns. This is due to the taxonomy either being too coarse, or simply not distinguishing between cultural activities (many of which post-date the classification). The data also suffers another category of problem: namely, the assumption of a hierarchical organisational form, where most activities and value-added activities happen both within the company and at the headquarters location. In a networked global economy, multiple sections of the production chain may be carried out by various companies, none of whom is classified as responsible for the 'final product'. In service intensive, so called 'weightless economy goods' it can be difficult to establish where they are produced. This definitional loop hole is exploited by many corporations, who take advantage of this ambiguity by registering their accounting departments in low, or no, tax zones.

Faced with such problems, the only way to develop an analysis that is consistent with an institutional and GPN framework is to carry out primary research. The challenge presented by the mapping and data collection of all of the activities is set out in the diagram below, which articulates the processes and activities implied in just one domain of cultural production. Accordingly, the deployment of a framework taxonomy that is consistent is critical. The following section discusses the technical challenges of taxonomy and operationalisation of measures for the creative economy.

[11] Unctad (2010). The creative economy report. Creative economy, a feasible development option. Geneva/New York, UNCTAD/UNDP; Unctad (2018). "Creative Economy Outlook Trends in International trade in Creative Industries 2002-2015: Country Profiles 2005-2014."

2. Limitations, reform and revisions of existing taxonomies

The problem of definition in the cultural and creative sectors is unusual and difficult. Unusual, in that almost every other industry seems to be more or less clearly classified and with an explicit taxonomy (with apparently little dispute over whether it is an industry or what activities constitute it). This is an important point to understand as it puts these industries in a difficult position regarding visibility and reporting, particularly to policymakers and politicians (and the wider public). It is common that individuals or activities do not consider themselves part of the 'cultural' or 'creative industries'; this matters for political representation such as trade bodies and lobbying, solidarity across the sector, and engagement with politics. The fragmentation, rapid transformation and development of the cultural and creative sectors (CCS) has led to it quickly outgrowing the assumed policy competencies of 'cultural policy', alongside uncertainty as to how 'creative industries' are similar, or different to, generic industrial policy. The additional insight of the CICERONE project, based on a GPN perspective on CCS, should be illustrative of the value added.

The CICERONE project is creating an archive of research based on this improved data framework within which to place our findings, as well as within which to locate subsequent research output (the cultural observatory). We recognise that the cost of filling all the gaps is prohibitive. A pragmatic solution is to use the framework as a basis of strategic decision making of investment in specific data to fill critical knowledge gaps. Our overall aim here is to adapt the existing taxonomies used for measurement of all industrial activities, to better capture the actually existing practices in the CCS. We therefore intend that the legacy of the Cultural Observatory will act as the longer-term foundation of a data resource for the sector and policymakers.

2.1 Moving beyond Matrix 1.0

As noted above, cultural activities have been classified variously by state funding, participation, and technology and are not easily 'added' into existing industrial taxonomies. The existing taxonomy only partially represents CCS – but it is the only systematic data we have. We term this Matrix 1. The CICERONE project offers an overview of what Matrix 1 looks like for each of our case study industries in WP2.1, where we have sought to populate that matrix with publicly available (Eurostat and some trade) data. However, this exercise shows a number of gaps in our knowledge and understanding (as

represented by systematic statistical collection) of CCS, as a production network.[12] We illustrate these gaps below. Our aim with the CICERONE research is to fill some of these gaps, and to identify how this partial knowledge of CCS weakens and undermines policymaking. In doing so, we draw on a competing approach, based on the model of the production system, which is closely compatible with the GPN model of industrial operation. This approach, which we term Matrix 2, is what we explore and recommend for this report. Simply, Matrix 1 is a pragmatic definition and measure based on available data on CCS. Matrix 2 operates in reverse: it is a model of the actual CCS, illustrating how much has been overlooked in the existing Matrix 1 (and concentric circle model). We will show below how Matrix 1 leaves many cells unfilled when mapped onto Matrix 2.

Matrix 2 follows the lead of the hybrid approach outlined at the end of the previous chapter of the paper by seeking a taxonomy that is industrial in character and logic but which represents cultural activities (previously underrepresented). A key to this is to use the lens of the production network as a guide to the activities we should *expect* to find and be able to count. This leads us to create a coherent industrial grouping for CCS, that uses the phases of the production process as its taxonomic logic. Matrix 2 opens up the possibility of a strategic evaluation of future data gathering that is still compatible with the core model. Given that this project is focused on the collection of evidence about the GPN of the CCS, Matrix 1 is clearly insufficient to record all of the data, and much of that data could have to be allocated to the NEC category. Using Matrix 2 we can locate the new information in its logical place, and further identify the strategic gaps in our knowledge.

Finally, as Matrix 2 is merely a first iteration of evidence collection for GPN of CCS, it offers a sustainable method of information collection and storage. It is this matrix that we propose as the foundation of the Cultural Observatory: an institution that acts as archive of this project and provides space to allocate other knowledge and data (quantitative and qualitative) about CCS. Moreover, it is possible to locate data that may not fulfil the highest level of statistical validity, but is nonetheless indicative. This is particularly the case for proprietary and industry source data.

2.2 Matrix 1.0: illustrating the gaps

A fundamental issue facing the CCS is that the data and evidence base is so poor. This is not a fault of the industries, or a result of their 'character', but simply the failure of the statistical taxonomies that we use for public data collection and classification being out of date. Here we make some brief

[12] A production network is – in institutional economic terminology – an industry. As noted above the term industry has been devalued and confused by neo-classical economics. Hence, the technically superfluous 'network' label. An industry comprises the processes and the links between them across space and time.

illustrations of problems in clothes manufacture and video games. Indeed, recognising the economic and political importance of the audio-visual industries, the EU (with industry support) has long supported a dedicated agency, the European Audio-Visual Observatory (EAO), to collect as much data as possible. In one sense, this shows what is needed for the whole CCS. However, as Annex 1 shows, despite its huge value and coverage, the EAO is an inadequate foundation for a CCS Observatory due to its weakness in mapping production chains. The following paper, D4.3, will provide a detailed evaluation of three case studies, using both formal secondary data and informal sources, to illustrate a best-case scenario with current data and taxonomies. This will provide a conceptual proto-Observatory for CCS, on parallel lines to the EAO, but founded on GPN principles.

Clothing and textile manufacture

The table below (fig. 5, extracted from NACE Rev. 2) shows that clothing and textiles production have a variety of codes, depending on the textile, its mode of weaving. Final products are represented by the 2-digit code categories 13 and 14, and the numerous 3- and 4-digit code sub-divisions (18). To this we can add codes 46.41 and 46.42 (wholesale of textiles and clothing and footwear), 47.71 and 41.72 (retail sale of the same) and 95.3 (repair of footwear and leather goods). There are twenty-three 4-digit codes in all. Clearly, there are still many gaps but this provides a degree of detail not possible in other industries. Missing is a critical division between mass production of textiles and clothes and high fashion or crafted couture. Clearly most of these categories provide for mass produced clothing: the precise proportion allocated to high fashion has traditionally been based on a coefficient based on other research to estimate this.

Another factor concerning the elusive classification of the CCS is technology and organisation. Clearly, in the early and mid-C20th textiles production was a significant employer in many European countries, however over the last fifty years we have seen both the technological reduction of labour requirements, and the outsourcing of labour in international production networks to locations at the periphery or outside Europe, increasingly SE Asia. Accordingly, we have a well-populated taxonomy for textiles, but relatively few people in the category. The opposite is the case with new technologies and industries associated with them. Industrial taxonomies – like all statistical artefacts – are meant to be inclusive and enduring so that time series data can be amassed.

Audio-visual industries

By contrast the video games industry, one of the largest and most successful industries in the cultural and creative sectors, on a par with some of the largest industries in the world, currently

does not have a taxonomic category at all.[13] A statistician would classify such a company as 'Not Elsewhere Classified (NEC)', alongside all others that don't fit into specific taxonomies. To all intents and purposes, the video games industry does not exist statistically. Clearly, the video games industry dates from the mid-1980s and post-dates significant revisions of taxonomies (which themselves, as a result of international cooperation, take years or commonly decades to agree changes). Less extreme is the film industry. Due to its age, it does have representation in the NACE taxonomy but, unlike the clothing industry, it is relatively poorly sub-divided. This lack of detail of the various aspects of the production chain, and their overlap with other industries such as TV, radio, computer animation and games has led to a radical under-representation of the numbers of people employed in industries like film.

Figure 5. NACE Rev. 2: Statistical classification of economic activities in the EC: Manufacture of textiles

n.e.c. : not elsewhere classified * part of

Division	Group	Class		ISIC Rev. 4
13			Manufacture of textiles	
	13.1		Preparation and spinning of textile fibres	
		13.10	Preparation and spinning of textile fibres	1311
	13.2		Weaving of textiles	
		13.20	Weaving of textiles	1312
	13.3		Finishing of textiles	
		13.30	Finishing of textiles	1313
	13.9		Manufacture of other textiles	
		13.91	Manufacture of knitted and crocheted fabrics	1391
		13.92	Manufacture of made-up textile articles, except apparel	1392
		13.93	Manufacture of carpets and rugs	1393
		13.94	Manufacture of cordage, rope, twine and netting	1394
		13.95	Manufacture of non-wovens and articles made from non-wovens, except apparel	1399*
		13.96	Manufacture of other technical and industrial textiles	1399*
		13.99	Manufacture of other textiles n.e.c.	1399*
14			Manufacture of wearing apparel	
	14.1		Manufacture of wearing apparel, except fur apparel	
		14.11	Manufacture of leather clothes	1410*
		14.12	Manufacture of workwear	1410*
		14.13	Manufacture of other outerwear	1410*
		14.14	Manufacture of underwear	1410*
		14.19	Manufacture of other wearing apparel and accessories	1410*
	14.2		Manufacture of articles of fur	
		14.20	Manufacture of articles of fur	1420
	14.3		Manufacture of knitted and crocheted apparel	
		14.31	Manufacture of knitted and crocheted hosiery	1430*
		14.39	Manufacture of other knitted and crocheted apparel	1430*
15			Manufacture of leather and related products	
	15.1		Tanning and dressing of leather; manufacture of luggage, handbags, saddlery and harness; dressing and dyeing of fur	
		15.11	Tanning and dressing of leather; dressing and dyeing of fur	1511
		15.12	Manufacture of luggage, handbags and the like, saddlery and harness	1512
	15.2		Manufacture of footwear	
		15.20	Manufacture of footwear	1520

[13] European Computer games turnover of €21.6bn, a 3% year-on-year growth from 2018 , Source: IFSE https://www.isfe.eu/wp-content/uploads/2020/08/ISFE-final-1.pdf

Under-counting and over-counting

Attempts have been made by data analysts to compensate for this miscounting. The challenge is which NACE codes to add. Simply, the challenge is under-counting or over-counting. Under-counting's aim is correctness: only those activities that can be guaranteed to be *only* in industry X are included. Overcounting is where a whole taxonomy is included in a subset (e.g. high fashion is only represented in the clothing manufacture categories to a small extent). Two (temporary) solutions have been applied. The first has been to calculate a coefficient to estimate that y% of the goods are for the cultural industries. The second is to include sub-industries that are 'wrongly classified' as general manufacturing. Both cases are open – one way and another – to approximations. Of course, there is nothing in principle wrong with using such methods. However, as a 'newcomer', the CCS is viewed with some suspicion of 'special pleading' or advocacy; hence, efforts have been made to be as strict and transparent as possible in this period of evidence-based policymaking. Another aspect of 'validity' is that CCS measures rely upon national statistical agencies for the data. Again, as well will see below, this leads to further limitations in relation to scale and disaggregation over and above taxonomy.

2.3 From Matrix 1.0 to Matrix 1.5: An EU work in progress

A hybrid approach to the taxonomy classification of the CCS has been widely used to derive the so-called 'mapping documents' that both regional and national agencies have developed in the early 2000s. Moreover, it is the approach that has been used for EC reporting. Critically, one legacy of cultural policy and planning is that the concentric circle model has been used as the foundation of taxonomic re-classification.[14] Whilst this EU-wide study of the CCS is difficult, even more problematic is to explore such information at a regional and sub-regional scale. With any other industry it is this data that is the primary source of evidence and debate about regional regeneration, industrial strategy and recovery. It is more or less lacking for Europe (due to some of the disaggregation issues and the level of taxonomic breakdown) (see below). This is why the CICERONE project faces, on one hand, such a challenge to provide what would normally be basic contextual information on the regional performance of local industries; on the other hand, a lack of 'flow data' showing goods moving across regional borders. This lack of reporting commonly leads to the assumption that no flows occur and industries, especially the CCS are autonomous to a locale or region. Extant research suggests that this is a false expectation, but our research will be the first to prove it.

[14] KEA's reporting for the EU uses the concentric circles approach, and the taxonomy based upon this, supplemented by additional industry data in the Amadeus data base, a private subscription service published by Bureau van Dijk and Moody's Analytics. It comprises a database of comparable financial information for public and private companies in Europe, covering 21 million companies drawn from 35 information providers and classified NACE taxonomies

Much of the previous discussion has related to the relatively 'low-hanging fruit' of data collection, namely employment. Data on turnover and added value is harder, but there is some evidence in National Accounts data. The more difficult areas to engage with are to untangle the complex supply chains and power relationships within them, and within and across companies. The associated information of flows of (cultural) goods and services is even more difficult. Certainly, the issue of scale, this data is not available to the subnational level; moreover, its availability of a national and international level is sketchy at best. This is – like employment – a result of classification systems. Another system, CPC, covers this and has similar drawbacks to the NACE system. UNESCO has proposed a taxonomy to capture cultural trade, as used by UNCTAD, but it is skewed to manufacturing goods, and service and intellectual properties are almost absent. In the wider scope of this research – a GPN analysis of the CCS – this is a critical problem. Simply, there is no data: hence our need to carry out primary research.

A hybrid approach: ESSNET

The European LEGG and the ESSnet reports have created a framework with some considerable communality with the UNESCO creative economy framework (see fig.6 and 7 below). Critically, it adopts the production system model, albeit slightly different to that used in both the UNESCO/UNCTAD case and CICERONE.

Figure 6. Cultural domains and sub-domains: the LEG-Culture framework compared to the 2009 FCS

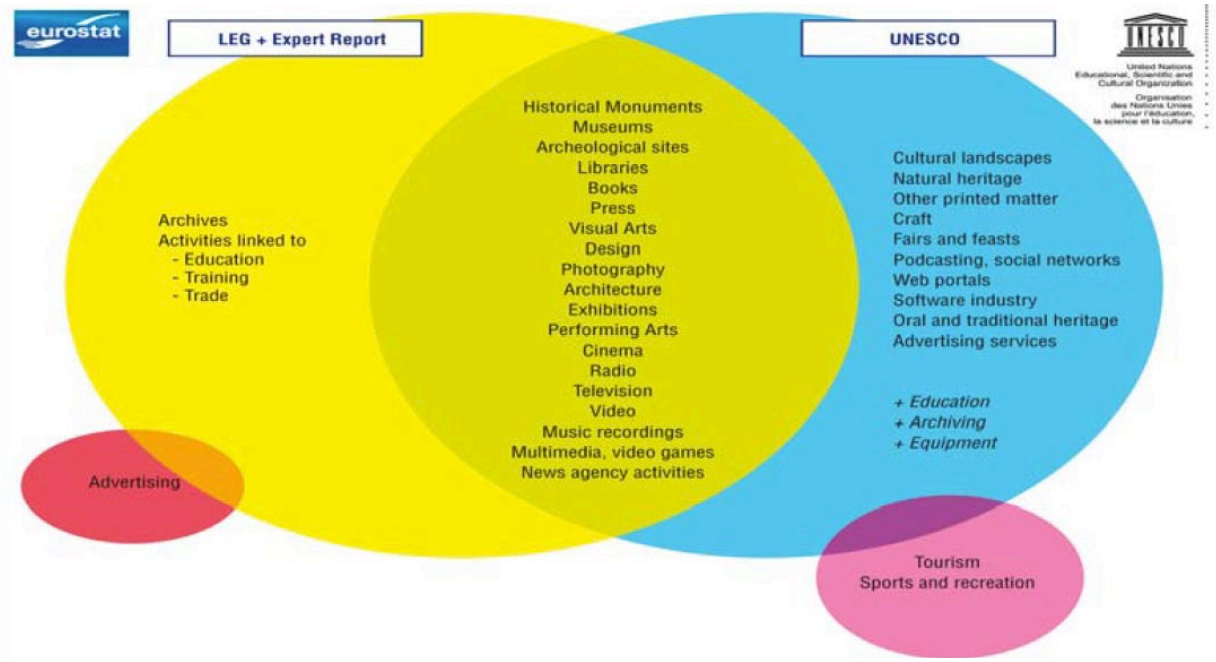
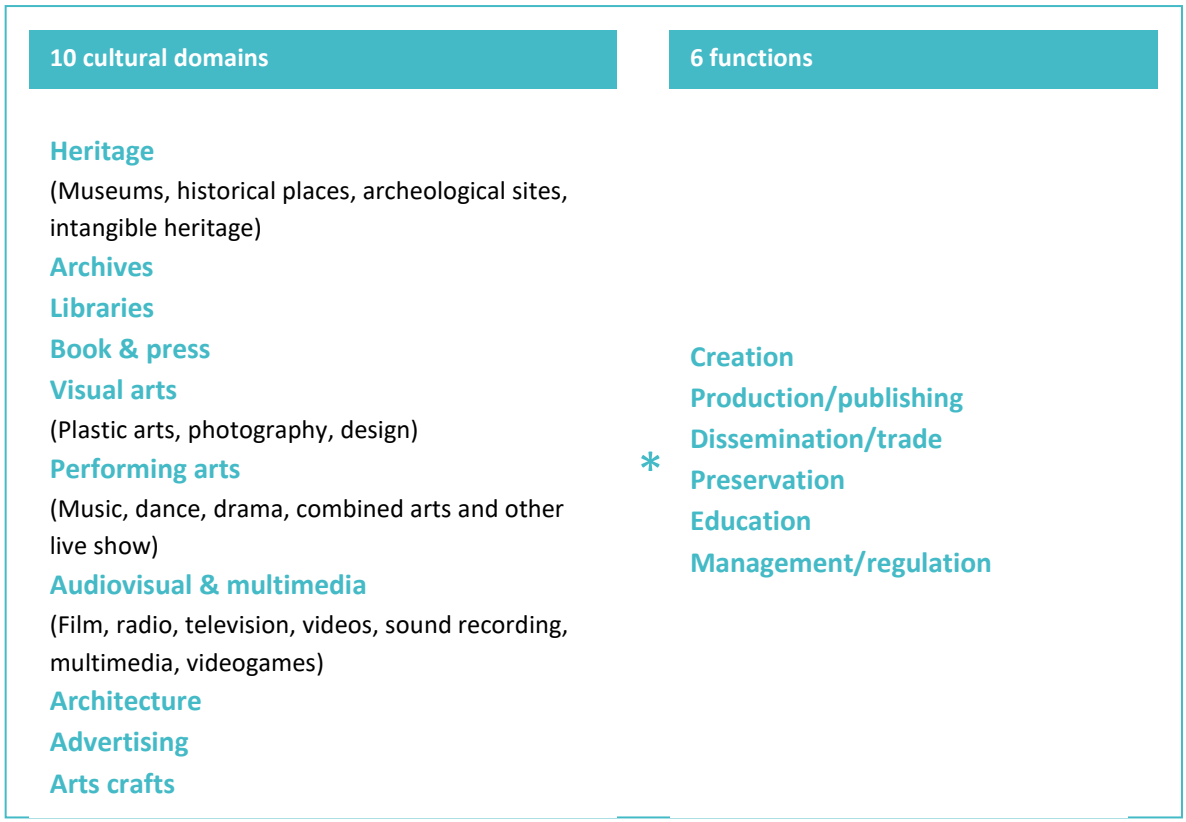


Figure 7. ESSnet-Culture proposition for an updated European statistical framework: ten cultural domains and six functions



The ESS defines the CCS as the following:

> *Cultural activities are understood as any activity based on cultural values and/or artistic expressions. Cultural activities 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)'.*
>
> *More precisely, the creative, artistic and cultural activities that the ESSnet-Culture has defined as falling within the scope of culture includes ten cultural domains - Heritage, Archives, Libraries, Books and press, Visual arts, Performing arts, Audiovisual & Multimedia, Architecture, Advertising, and Art crafts - that are based on the economic functions of Creation, Production & Publishing, Dissemination & Trade, Preservation, Education and Management & Regulation*. (ESSnet)

This is a work in progress, incomplete so far (see for example, KEA 2006), but which has led to a number of recommendations:

ESSnet-Culture recommends a better coverage of culture in the SBS survey, on 4-digit level in particular to cover divisions 90 and 91 of the NACE Rev.2 ('Creative, arts and entertainment activities' and 'Libraries, archives, museums').

ESSnet-Culture recommends to request a more detailed level of classifications (NACE, ISCO) in the harmonised LFS survey: 3 digits for the NACE-08 and 4 digits for the ISCO-08.

ESSnet-Culture recommends Eurostat to carry out a technical assessment on the cultural employment matrix and on its production process in order to be able to ensure a perennial annual production of data on cultural employment in Europe. (ESSnet)

Whilst the ESSnet report offers a common language for 'cultural employment' it does not provide a common repository, a series of publications that report on the dimensions identified, nor an assessment of the strengths and weakness.

Whilst the ESSnet (2012) report has a comprehensive review and problem identification (see above), and proposes a system that is broadly compatible with our study, it has not yet been mobilised. We are left with the representation of culture more or less as reported in the KEA study of 2006 – and developed in the EU 2018 report on cultural statistics – but divided by functions. The latter are similar, but a little different to those adopted in this project. We will discuss the utilisation of the CICERONE functions in D4.3; however, the important point to note here is the limited and variable coverage of NACE codes by function (a point which is even more stark when compared to the CICERONE functions (which reflect a whole production system approach).

Figure 8. Matrix 1 – Correspondence table of cultural activities with NACE Rev.2 classes, by function (ESSnet: 73-74)

Functions	List of theoretical cultural activities	Identifiable within NACE 2008
CREATION	Creation of literary works	90.03
	Writing of cultural articles for newspapers and periodicals	90.03 74.20
	Translation and interpretation activities	74.30
	Creation of graphical and plastic artworks	90.03
	Creation of photographical works	74.20
	Design creation for graphical works	74.10
	Design creation for interiors	74.10
	Design creation *(for industrial products and fashion)*	74.10

	Creation of musical, choreographic, lyrical, dramatic works	90.01 90.03
	Creation of technical settings for live performance	90.02
	Creation of audiovisual works	59.11
	Creation of multimedia works	59.11 90.03
	Architectural creation	71.11
	Advertising creation	73.11
	Artistic craft creation	-
PRODUCTION & PUBLISHING	Museums science activities (constitution of collections)	91.02
	Recognition of historical heritage	91.03
	Archives' activities (incl. organization of a collection)	91.01
	Archival processing	91.01
	Activities of libraries for all kinds of libraries	91.01
	Publishing of books (incl. on-line)	58.11
	Publishing of newspapers of all types (incl. on-line)	58.12
	Publishing of magazines of all types (incl. on-line)	58.14
	Creation activities of news agency	63.91
	Production of visual art works	90.03
	Performing arts production	90.01
	Supporting activities for producing performing arts	90.02
	Motion picture production for cinema	59.11
	Video and audiovisual programmes productions	59.11
	Television programmes production	59.11
	Publishing of sound recordings (incl downloads)	59.20
	Publishing of videos and audiovisual programs (incl. downloads)	59.11
	Publishing of multimedia works	59.11
	Publishing of computer games (incl. on-line)	58.21
	Radio programme production	60.10
	Audiovisual post-production activities	59.12
	Artistic craft production	-
DISSEMINATION & TRADE	Museums exhibitions *(visuals art, books photography)*	91.02
	Other temporary exhibitions (*for any cultural domain*)	91.02
	Creation of museography and scenography works	91.02
	Art galleries activities	47.78nc 47.79nc
	Consultation of archival material	91.01
	Libraries lending activities	91.01
	Organisation of conventions and event-organising	93.29nc
	Live presentation activities	90.04

	Booking services	79.90nc
	Renting of video tapes and disks	77.22
	Motion picture projection	59.14
	Radio broadcasting (incl. on-line)	60.10
	Television broadcasting (incl. on-line)	60.20
	Visual arts works trading activities	47.78nc 47.79nc
	Antiquities trading services	47.79nc
	Book trading activities	47.61
	Newspapers and periodicals trading activities	47.62
	Photographical works trading activities	47.78nc 47.79nc
	Music and video recordings trading activities	47.63
	Audiovisual and films trading activities	47.63
	Multimedia works trading activities	47.63 47.41nc
	Advertising, campaigns trading activities	73.11
	Artistic craft trading activities	-
PRESERVATION	Preservation of activities for historical sites	91.03
	Preservation of intangible heritage	-
	Conservation activities of archives (incl. digitization)	91.01
	Conservation of libraries' collections	91.01
	Archeological activities	91.03
	Protection activities for books	91.01
	Protection activities for newspapers and periodicals	91.01
	Protection activities for visual art works	90.03
	Protection activities for photographical works	90.03
	Restoring of protected monuments	41.20nc
	Restoring of visual arts and museum collections	90.03
	Restoring of books	-
	Restoring of photographical works	74.20
	Restoring of music recordings	-
	Restoring of audiovisual material	59.12
	Applied research for cultural preservation	72.19nc
EDUCATION	Artistical education	85.52
	Adult artistic education	85.59nc
	Other cultural education	85.52
	Independent teaching activities (*for any cultural domain*)	85.52
	Awareness-raising actions in culture	94.99nc
MANAGEMENT & REGULATION	Administration of the State	84.11nc 84.12nc

	Administration of local bodies	84.11nc 84.12nc
	Administrative management of other organisations	94.12nc
	Supporting activities for managing rights and royalties	59.13 59.20 69.10nc 90.01
	Artistic agents	74.90nc

Legend: Nc = non cultural NACE (excluded from measure of cultural activities; - = not identified in NACE

2.4 Technical limitations of Matrix 1.0 and its data

Employment and location

Moving on from the important matter of taxonomies, a further critical issue is that the EU data used for populating the matrix predominantly comes from the regularly carried out Labour Force Survey (LFS), or the less regularly updated National Accounts, or the decennial National Census. Each of the sources has its own strengths and usages appropriate to it. The LFS has a generalised sampling frame that is calibrated to the overall statistical sample of ALL firms in the economy. We know that CCS are not typical of the wider economy in size, scale and organisation. Accordingly, the sub-set of industries that the CCS represents is therefore not strictly a perfect sample. It is not possible to estimate the accuracy or deviation of this subset.

Structural Business Statistics collected by nation states are based on 100% coverage, and the LFS has poorer coverage with small and micro-enterprises and self-employed workers. This is a category that we know is over-represented in the cultural field; as such it will lead to inaccuracies. Overall, this clearly is not a helpful foundation for current research on the CCS (as will be noted below). As the 2018 report indicates, only 3 digital level data is available for most nations, and only 2 digits at the regional scale: a fact that makes the CCS almost impossible to distinguish at the 2-digit scale.[15]

Figure 9. Details of digit levels of ISO * NACE classifications available in the EU-LFS

Country	2011	2012	2013	2014	2015	2016	2017
Belgium	3 * 2	4 * 2	4 * 2	4 * 2	4 * 2	4 * 2	4 * 2

[15] The only potential solution is to use decennial national census data to access 4-digit data at both national and regional scale.

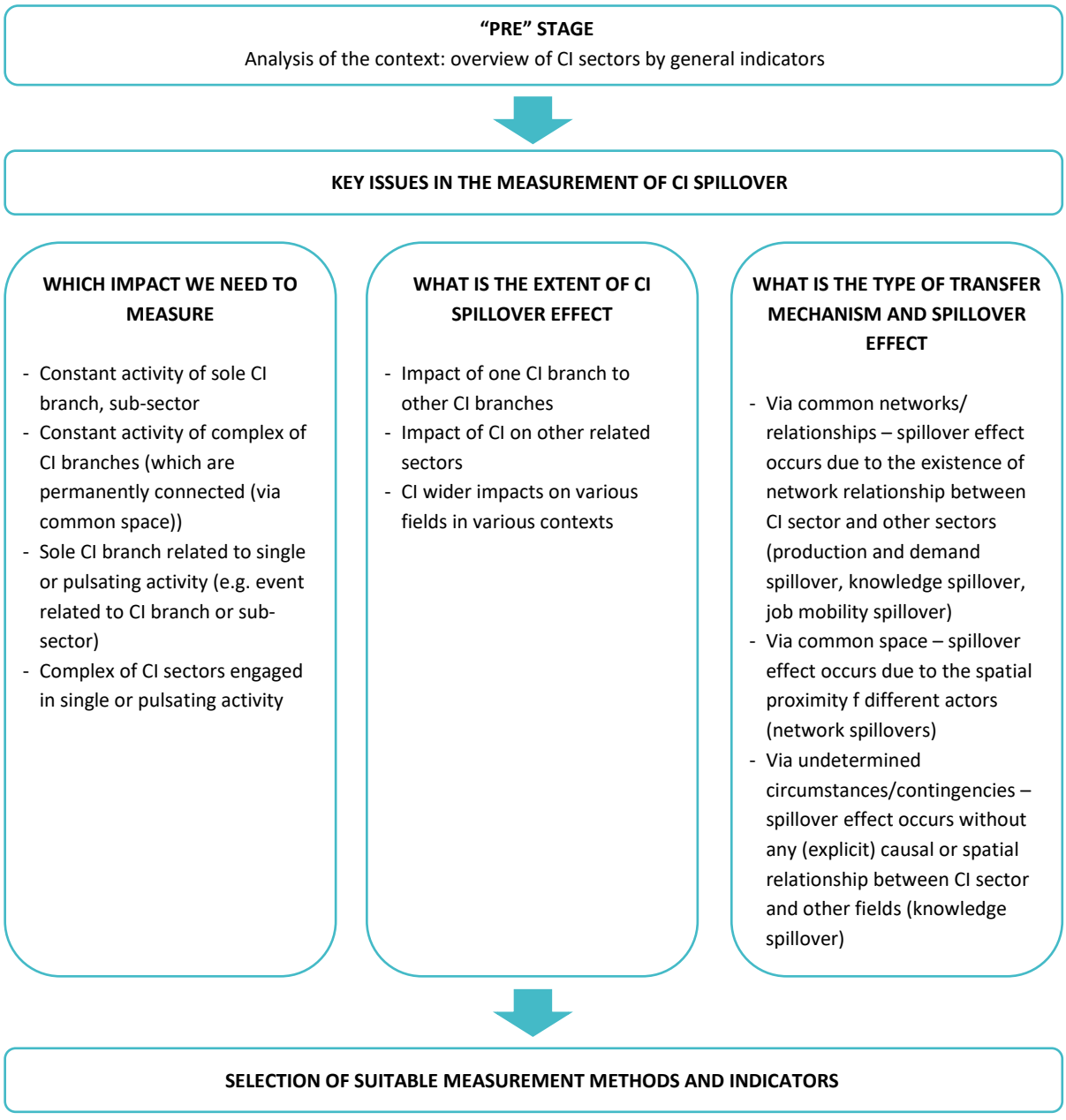
Bulgaria	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2
Czechia	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Denmark	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2
Germany	3 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Estonia	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Ireland	4 * 2	4 * 2	4 * 2	4 * 2	4 * 2	4 * 2	4 * 2
Greece	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3
Spain	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3
France	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Croatia	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Italy	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3
Cyprus	3 * 2	3 * 2	3 * 2	3 * 2	4 * 3	4 * 3	4 * 3
Latvia	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2
Lithuania	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Luxembourg	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Hungary	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Malta	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Netherlands	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Austria	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Poland	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Portugal	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3
Romania	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Slovenia	4 * 2	4 * 2	4 * 2	4 * 2	4 * 2	4 * 2	4 * 2
Slovakia	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Finland	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Sweden	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
United Kingdom	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Iceland	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3	3 * 3
Norway	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Switzerland	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Former Yugoslav Republic of Macedonia	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Montenegro	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3	4 * 3
Turkey	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2	3 * 2

Trade and services

Crucially for the current study, the ESSnet publication highlights a number of challenges with the issue of flows of goods and services. First, it represents this issue in an Annex of 'spillovers'. Whilst this is a traditional (neo-classical) economic representation of the issue, it is an approach that has

primarily been used to represent 'traded dependencies' at a local level, such as that in a creative cluster. Due to its neo-classical origins, it fails to account for structural and systematic processes of contractual and non-contractual relations, trust and exchanges such as tacit or localised knowledges.[16] These issues are played out *a fortiori* in inter-region transfers; this is a practice better represented by GPN approaches/institutional economics. Critically, trade data and flows are poorly recorded, especially services and 'invisible' trade in copyrights etc. So, whilst this insight and model provide an indication of missing data, they also advertise a gap.

Figure 10. ESSnet: The process model for measuring CI spillover



[16] These organisational and regulatory issues are 'externalities', so they are not part of the (neo-classical) economic model. The same can be said for technology, innovation and creativity; all of which are externalities.

Second, the EU does have a formal means of collecting data on cultural trade, divided into data on cultural goods and on cultural services.[17] As the EU (2018: 43) notes, CN (the EU's internal taxonomy for trade, compared to the CPC used internationally) taxonomy logic makes it impossible to identify the cultural content, and often lack information on crafts and industrial manufacturing, let along intermediate systems and organisations. Moreover, the data only covers trade in tangible goods (see below).

Figure 11. Cultural goods at aggregated level by cultural domain

CULTURAL DOMAIN	CULTURAL GOODS
Heritage	- Antiques, collections and collectors' pieces, postages or revenue stamps
Books and press	- Books - Newspapers, journals and periodicals - Maps and hydrographical and similar charts
Visual arts	- Works of art (painting, engravings, sculpture, designs, etc.) - Photographic plates and films developed
Art craft	- Craft (handmade fabrics and ornamental articles) - Jewellery (of precious metals and stones)
Performing arts	- Musical instruments
Audiovisual and multimedia	- Audio-visual and interactive media (film, videos, games and consoles) - Recorded media with music (gramophone records, tapes and CDs)
Architecture	- Architecture plans and drawings

International Trade in Services (ITS) is covered by the measurement of Balance of Payments (BoP) data processed by the EU; and reporting uses the (international) BPM6 standard (reported as EBOPS). In the EBOPS 2010, cultural transactions are represented by the codes specified under items 8, 9, 10 and 11. This division is in principle promising, but many of the categories are too wide to be certain that the services referred to are cultural.[18]

[17] This has the same limitations as the UNCTAD data, in that the data available is mainly on tangible goods, and this misrepresents their contribution. In fact the flow of intangible goods is greater and growing; but, not measured.
[18] Although a classification system for services was developed for UNCTAD, the overall reporting of 'intangible and invisible trade' is so poor that it is of limited value.

Due to these limitations, Eurostat does not calculate a cultural aggregate for ITS; rather, its components are disseminated separately, those that are relevant are:

The following categories of cultural services feature in the table:

- *information services (SI3);*
- *architectural services (SJ33), which includes transactions relating to the design of buildings;*
- *audio-visual and related services (SK1), which covers services associated with audio-visual activities (movies, music, radio and television) and services relating to the performing arts;*
- *licences to reproduce and/or distribute audio-visual and related products (SH4);*
- *heritage and recreational services (SK23), which include services associated with museums and other cultural, sporting, gambling and recreational activities*. (Eurostat 2018)

2.5 Concluding comments

This paper has emphasised the definitional and taxonomic difficulties that have beset data collection in cultural and creative sectors and the need for a renewed approach. Their activities, recognised to be of growing importance globally, have historically been ill-served by cultural and industrial policy categories and justifications that fail to account for the important ways in which they intersect. Moreover, the crucial organisational dimension is routinely bypassed with normative approaches, based in neoclassical economic conceptions of firms and markets. We have shown how these limitations persist in what we call the 'Matrix 1' approach to data collection. Furthermore, challenges also exist in specialised, policy focused, attempts to develop a data framework (the European Audio-Visual Observatory). In response, we propose a new 'Matrix 2', better aligned with institutional approaches, attentive to both the breadth (domains/industries) and depth (phases/functions) of cultural and creative production, in public and privately funded contexts, and cognisant of the territorial characteristics of global production networks.

This proposed new data matrix (2.0), which is the topic of the following paper D4.3, aims to offer a number of substantive gains. First, it should be able to show the breadth of CCS domains, and the flows and synergies between them, rather than reproducing normative cultural domain-based conceptions (and therefore siloed datasets). Second, it aims to cover the whole production system: creation, production, distribution, consumption, archiving; and their recursive linkages in a circular 'ecosystem', not a linear 'chain'. Third, the institutional focus allows innovation and value capture to be understood in terms of changes in organisational process, not simply novelties in end-products.

Fourth, it identifies a common logic that links datasets of different kinds: existing public and private data, along with new primary research; micro-scale (qualitative) understanding of detail and complexity in specific cases with macro-scale (quantitative) understanding of the scope and spread of activities and transnational flows.

In these four respects, Matrix 2 aims to describe the change and dynamism of CCS activities as they are, rather than as existing statistical categories tell us they should be. Hence, fifth, it is driven fundamentally by practice and policy needs, not by availability of existing data based in outdated conceptualisations. Finally, sixth, it offers a framework to support decision-making in identifying activities that are known and unknown, where data is available, accessible or absent, and where resources can be strategically targeted to improve data collection. In these last two respects, in other words, our approach does not merely aim at collecting 'more data'; it also contains further meta-level gains which allow us to reflect on and adapt the categories, processes and systems of data collection itself. These qualities imply a need for stakeholders to be involved in the setting of data needs and in the design/architecture of the Observatory.

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Annex 1: Beyond public data: the special case of the European Audio Visual Observatory

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It is indicative that the data collection issues discussed in the main paper are present even within 'well established' cultural industries such as the Audio Visual (AV) sector, where absences in both public and private data collection present real challenges for maintaining accurate and applicable statistics. The AV sector is in a process of economic convergence. There are horizontal and vertical mergers and purchases that transcend national boundaries, as well as the boundaries of sub-sectors (cinema, TV, radio, video games).[19] New business models emerge, which form hybrid value chains with overlaps between cinema and TV – for example the digital distribution of film and TV productions (TVOD, SVOD). Some of these new digital processes are not included in the current statistical observations. This convergence in AV sectors is obvious in a small market like Bulgaria: the TV industry market is consolidating; new players enter the markets; telecoms take part not only in the distribution but also content creation; global streaming platforms become part of national markets. These powerful transformations in the past decade, are not reflected in statistical monitoring. Hence, we have insufficient tools to measure and govern these processes, which are crucial for the GPN in the AV sectors. Those inconsistencies and shortcomings of statistical data remains both at national and European level.

The GPN in AV industries cannot be correctly covered by Eurostat:

a. Overlapping/transversal NACE codes in "Creation" and "Archiving" phases of the GPN do not allow us to distinguish creation in one sector from another (such as Artistic creation (90.03) and Archives and libraries (91.01))
b. Spill-over between industries, such as Film production and TV production (codes 59.11, 5912, 59.13)
c. Broad scope of the code, that includes also "non-cultural activities (for example codes 26.40, 47.51). In this case, the mapping method attributes relative weights to the four-digit codes.

[19] The EAV does not cover computer games: sources are available Turnover video games industry: 14 (in € billion IN KEY EUROPEAN MARKETS, 2019). Source: IFSE https://www.isfe.eu/wp-content/uploads/2020/08/ISFE-final-1.pdf Data about turnover in the video games sector: national reports available at http://www.egdf.eu/data-and-studies/

The gap of publicly collected data has been plugged by the European Audio Visual Observatory (EAO), rooted in a policy aspiration to establish European media regulation as well as film and TV industry support. The EAO compiles a collection of privately sourced and anonymised sources to characterise the EU AV 'market', providing the most comprehensive and comparable data for the AV industry. These are collected from specialized national agencies and statistical bodies, as well as from a number of dedicated "satellite" monitoring tools, such as the MAVISE database for TV digital services, IRIS on legal updates, Media Salles on cinemas, EFARN film research library and others. The EAO covers 41 countries that are Council of Europe members that provide membership contributions for the functioning and governance of the EAO. Its sustainable model (since 1992) allows it to collect data via a vast network of national correspondents (public and private bodies) for each of the AV sub-sectors.[20] Together with its additional databases and monitoring tools, the EAO provides a vast number of specialized reports on various aspects on the AV industries and markets and publishes bi-annual yearbooks: key trends (2018/2019) on TV, Cinema, video and on-demand AV services.

The EAO is the most elaborate and sustainable observatory model its kind. It compensates for data collection gaps in Eurostat and the national statistics, specifically regarding the TVOD, VOD, FOD and the digital sharing platforms. The EAO supports EU Member States in the transposition, monitoring of implementation and reporting on the Audiovisual and Media Services Directive (AVMSD) and other EU legal dispositions of the EU. EAO and its monitoring tools provides data reports relevant for governments, investors and businesses in Film and TV (incl. on-demand and digital services).

However, its focus on the 'market', and implicitly the regulation of that market, has skewed its data concerns to consumption of media by audiences, and output of media forms; the organisation and flow of trade, let alone locations of production and subsidies (see WP3) does not show up in these reports. To illustrate, the EAO provides data on the elements of the AV GPN outlined in the below matrix. Despite it being a relatively 'well documented' field of activity we can see that aspects of the AV sector are insufficiently, or incorrectly, measured through the statistics, or not covered at all. This is due to data confidentiality, the small size of markets, inadequate taxonomy of the subject, and so on.

Data Matrix Audiovisual Industries 2018 – Other international data sources (EAO and related) (non-final)

	Creation	Production	Distribution	Exchange	Archiving

[20] https://www.obs.coe.int/en/web/observatoire/what-we-do (last seen 16/03/2021)

Employment		EAO	EAO	EAO	
Turnover		EAO Trends (yearbooks) - on circulation, admissions, revenues from digital platforms; EFARN, National film institutes & the like; MAVISE Database for TVOD, SVOD; Media Salles - on cinemas and cinema going	EAO Trends (yearbooks) - on circulation, admissions, revenues from digital platforms; EFARN, National film institutes & the like ; MAVISE Database for TVOD, SVOD Media Salles - on cinemas and cinema going	EAO Trends (yearbooks) - on circulation, admissions, revenues from digital platforms; EFARN, National film institutes & the like; MAVISE Database for TVOD, SVOD Media Salles - on cinemas and cinema going	
Value added					
Number of enterprises	EAO	EAO - MAVISE Number of TV channels, TV-companies, ownership etc.	EAO - MAVISE Number of TV channels, TV-companies, ownership etc.	EAO – MAVISE	
Size of firms		EAO - MAVISE Number of TV channels, TV-companies, ownership etc.	EAO - MAVISE Number of TV channels, TV-companies, ownership etc.		
Foreign direct investment (FDI)					
Export + Inter-Country Input-Output tables (ICIO)			MEDIA Programme; EAO/LUMIERE - Data on the circulation of European films outside Europe; Worldwide cinema admissions of European films. EFARN Network (EAO); Comscore.com	EAO/LUMIERE - Data on the circulation of European films outside Europe; EFARN Network (EAO); Comscore.com; MEDIA Programme; MAVISE Database for TVOD, SVOD	
Public funding	EAO Yearbook;	EAO - Subsidies for			

(subsidies)	Subsidies for film creation & production; Breakdowns on private, public, incentives	film creation and production; Film budgets			

"The main criterion for the quality of statistical information in the ESS (European Statistical System), which is applied in quality assessment and management in the NSS (National Statistical System), is applicability. Applicability is very important criterion, because if the statistics are not applicable, it does not matter whether they are accurate, timely, comparable, etc. The applicability of statistical information shows whether all the statistics needed by users are produced and to what extent the concepts used (definitions, classifications) are adjusted to the needs of users. Principle 11 "Applicability" of the European Statistics Code of Practice stipulates, "European Statistics meets the needs of consumers".[21]

In order to have applicable statistics (as well as accurate, reliable, comparable) in the AV sectors, we need to amend and add new statistical definitions and taxonomies. This is the only way to reflect the realities, respectively, of the processes, markets activities and professions that have emerged. We believe that CICERONE's case-studies and their qualitative data, would also shed light on these sectors and contribute to evidencing our demands for realistic taxonomies.

[21] National Statistical Institute –Bulgaria, 2011. Guidelines for quality criteria in the National Statistical System (НАСОКИ ЗА КРИТЕРИИ ЗА КАЧЕСТВОТО В НАЦИОНАЛНАТА СТАТИСТИЧЕСКА СИСТЕМА, НСИ 2011, проект „Осигуряване на качеството в Националната статистическа система", финансиран от Евростат и НСИ).