Defining And Valuing Dublin's Creative Industries

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1. INTRODUCTION

The creative industries have been high on the agenda of policymakers in recent years, as is evidenced by the EU Lisbon Strategy, which identifies creativity and innovation as a means to enhance competitiveness through quality and differentiation.[1] Recent Irish policy documents have also emphasised this role of creativity and innovation in providing industry with a competitive advantage. The Irish government's policy document entitled "Building Ireland's Smart Economy" (2008), sets out a framework for sustainable economic development over the 2009-2014 period based on five action areas.[2] One of these action areas, *Creating the Innovation Island*, involves leveraging the Arts, Culture and Creative Sectors as world class business sector. This recognizes the arts, cultural and creative industries as key and primary economic contributors, and acknowledges that the challenges for creative industries differ from those in traditional export sectors. The action area identifies intellectual property protection and commercialisation as top priorities, and advocates a policy supporting research and development (R&D) investment in human and creative capital. The Dublin Economic Development Action Plan (2009) also places a strong emphasis on creating a vibrant city, and attaining and retaining creative people.[3] Among the report's action plans are measures to support the role of the creative industries in developing the knowledge economy through the delivery of local cultural/economic strategies in recognition that culture is essential to Dublin's economic vitality.

The creative industries have come to be regarded as a significant contributor to the Irish economy. Recent estimates place the total number employed in Ireland's creative industries at 60,855 in 2006, generating a total Gross Value Added (GVA) of nearly €5.5bn in 2006 – approximately 3% of total Irish employment and 3.5% of total Irish GVA (Arts Council, 2009). However, existing research has been unable to accurately determine the contribution of the creative industries to the economy of the Greater Dublin Area.[4] Given the dominance of the Greater Dublin Area in the national economic context, it is important to establish the characteristics and scale of the creative industries currently located in the Greater Dublin Area.[5] Doing so can help both policymakers and industry professionals to communicate key concepts,

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[1] See http://europa.eu/lisbon_treaty/full_text/index_en.htm for full text of the Lisbon Treaty.
[2] *Building Ireland's Smart Economy (2008)* http://www.taoiseach.gov.ie/eng/Building_Ireland's_Smart_Economy/
[3] Dublin Economic Development Action Plan (2009):
http://www.dublincity.ie/Press/PressReleases/PR2009/Press_Releases_July_2009/Pages/DublinEconomicDevelopmentActionPlan.aspx
[4] The Greater Dublin Area includes the counties Dublin, Kildare, Meath, and Wicklow. Within County Dublin, four areas are identified separately: Dublin City and the three administrative counties of Dún Laoghaire-Rathdown, Fingal and South Dublin.
[5] In 2006, the Greater Dublin area accounted for 41% of total Irish employment and 48% of total Irish GVA. See http://www.cso.ie/releasespublications/documents/economy/2006/regincome_2006.pdf.

share reliable data and make the case for greater investment. This task, however, is complicated by definitional and methodological challenges.

An initial sense of what the term "creative industries" refers to can be gleaned from Potts (2009). Potts notes several ongoing transformations in the technological and industrial composition of modern economies, including the rise of the "post-industrial society" and the "knowledge-based economy", the systematic growth of the service sector, and the rise of what Richard Florida (2002) has labelled the "creative class". It is in this context of a shifting knowledge-base of modern economies that the idea of "creative industries" has emerged.

Establishing the contribution of Dublin's creative industries, in terms of employment or GVA, is not a straightforward task. The creative industries have been hampered by multiple definitions and a lack of consistent treatment on what is classified as creative activity (NESTA, 2009). It is important that the methodology chosen to delineate and value the creative industries is robust. Undervaluing the sector affects its ability to secure supportive policy measures or to attract additional investment, while overvaluing the sector's significance (with too broad a definition) can lead to a loss of credibility.

The National Institute for Regional and Spatial Development at the National University of Ireland, Maynooth was commissioned by Dublin City Council in 2009 to conduct a research project entitled *"Measuring the Scale and Value of the Creative Industries: Possible Methods"*. The aim of the study was to provide insight into the challenges in, and possibilities of, measuring the scale and scope of the creative sector and its value to the City's and Nation's economy. The primary objectives of the study were:

- to define the creative sector
- to identify the challenges in, and possibilities of measuring the value of the creative sector to the City's and Nation's economy
- to identify the limitations in the data currently available from official sources
- to identify data requirements, or changes in the current data collection processes, that would support the monitoring of the performance of the sector and related evidence-based policy-making.

Researchers who have studied the creative industries have been keen to point out that the sector should be seen not as a traditional industry, whereby inputs are transformed into output to be consumed by an end user, but rather as an industry-wide enabler of innovation. One pertinent example is that of the green economy. Given the breadth of the green economy, encompassing subsectors such as waste management, water and wastewater, renewable

energies, energy efficiency and consultancy, and the high degree of technological convergence occurring (especially in key nexus points like energy and ICT), industry-wide creative activities will need to be embedded in potential growth areas such as sensor technologies, wind and ocean energy deployment.[6] In these fields, industry-wide enablers, such as innovative ICT solutions and agri-business methods, may well create the creative edge that policymakers speak of.

This study examines existing creative industry definitions and methodologies, and discusses how they can be applied to the Greater Dublin Area creative industries. We discuss established templates for measuring the creative industries based on industrial classifications and provide estimates for the Greater Dublin Area on this basis. However, we acknowledge the limitations of this particular type of methodology and therefore also provide a discussion of some alternative methodologies and emerging definitions that strive to address these methodological challenges.[7]

The next section elaborates on the methodology underlying our study. The report continues in section 3 with a discussion of existing creative industry definitions and methodologies based on industrial classifications, and how they can be applied to the Greater Dublin Area creative industries. We provide estimates for Greater Dublin Area creative industries employment and gross value added (GVA) using an established industrial classification-based template for measuring the creative industries.

Subsequently, in Section 4, we provide a discussion of some alternative methodologies and emerging definitions that strive to address the methodological challenges inherent in industrial classification-based measures of the creative industries. In particular we outline an alternative occupation-based measure of creative activities, which allows one to distinguish between specialist creative workers within the creative industries, support staff in the creative industries, and embedded creative workers within the broader economy. We then consider how this approach could be applied in the Greater Dublin Area and identify the data requirements of such an approach. Finally, section 5 provides conclusions and recommendations, as well as avenues for further research. It therefore moves beyond simply measuring the economic value of the Greater Dublin Area creative industries and outlines a number of possible research opportunities for analysing the drivers for competitiveness in the creative industries, and the functioning of the regional-sectoral system of innovation. These

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[6] The Department of Enterprise, Trade, and Employment report "Developing the Green Economy in Ireland":
http://www.entemp.ie/publications/trade/2009/developing_the_green_economy_in_ireland_01.12.09.pdf
[7] For a critique of creative industry definitions based on industrial classifications, see for example Ross (2007).

potential avenues for future research are illustrated with maps, based on geo-coded firm-level datasets, which identify the location of the creative industries in the Greater Dublin Area.

The report was prepared by Dr. Declan Curran and Dr. Chris van Egeraat at NUIM guided by a steering committee that included Mr. Peter Finnegan, Mr. Jamie Cudden, Ms. Helen O'Leary, Ms. Izaskun Arrieta (all Dublin City) and Ms Clodagh O'Brien (Creative D Network). The authors would like to thank the members of the steering committee for their guidance and the experts who agreed to be interviewed for this study (see Appendix 3 for a list of the industry experts who participated in this study).

2. Methodology

This study undertakes a number of research actions that involves a range of methodologies, including an analysis of secondary literature and interviews with industry experts.

This input has formed the basis of our discussion of definitional issues relating to the Creative industries. We then explore how various definitions can be made operational in the Dublin context. We begin by utilising an industry classifications-based approach to delineating the set of 13 creative industries and estimating the total employment associated with these industries for the Greater Dublin Area. Based on this total employment figure and Arts Council (2009) calculations of the total level of GVA generated by the Irish creative industry in 2006, we estimate Greater Dublin Area creative industries GVA in 2006 The methodological and data limitations of this approach are then discussed.

In order to move beyond a selected group of creative industries and towards a measure of "creative activity" across the broader economy, we discuss an alternative occupation-based measure of creative activities. This approach allows one to distinguish between specialist creative workers within the creative industries and embedded creative workers within the broader economy. We then consider how this approach could be applied in the Greater Dublin Area. Finally, we outline a number of possible research opportunities for analysing the drivers for competitiveness in the creative industries, and the functioning of the regional-sectoral system of innovation. These research opportunities are illustrated using maps of the Greater Dublin Creative industries, and the methodologies underpinning these maps are outlined in the text.

3. ESTABLISHED DEFINITION OF THE CREATIVE INDUSTRIES

In this section we outline two methodologies based on similar definitions and industrial classification-based methodologies of the creative industries: DCMS (1998) and KEA (2006). The advantages and limitations of these methodologies are discussed, and we provide initial estimates of employment and GVA for the Greater Dublin Area creative industries based on these methodologies.

3.1. Definition based on standard industrial classifications

The Creative Industries Mapping Document by the UK Department for Culture, Media, and Sport (DCMS), published in 1998 and further developed thereafter, has established itself as a template for subsequent national, regional, and city-level studies of the creative industries worldwide. The DCMS study built on earlier attempts to study the size and impact of the cultural industries, and established the approach of measuring employment and business activities within selected industrial classifications. DCMS (1998) defines the creative industries as *"those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property."*

The DCMS (1998) definition characterises "creativity" as a central input to the production process, with intellectual property (and not only copyright) being the identifying characteristic of creative industries' output. The methodology developed by DCMS (1998) involves a measure of creative industries that comprises of 13 different industrial sectors: advertising; architecture; the arts and antique market; crafts; design; designer fashion; film and video; interactive leisure software; music; performing arts; publishing; software and computer services; and radio and television.

A study undertaken by KEA (2006) further develops the DCMS (1998) definition and methodology. The DCMS (1998) approach serves as the starting point from which KEA (2006) develop their methodology, and they incorporate "cultural industries" and "experience industries" definitions emanating from France and the Nordic countries, respectively, as well as a number of related UNESCO, Eurostat, and OECD measures (See Appendix 1 for details).[8]

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[8] DEPS Aperçu statistique des industries culturelles, no. 16-January 2006; Denmark in the culture and experience economy- 5 new steps, The Danish growth strategy, Danish Ministry of Culture, Copenhagen, September 2003; UNESCO developed its Framework for Culture Statistics (FCS), 1986; OECD definition of the ICT sector) available at the OECD website:http://www.oecd.org/dataoecd/49/44/35930616.pdf

KEA (2006) distinguish between a "cultural sector" constituted of traditional art fields and cultural industries, whose outputs are exclusively "cultural", and the "creative sector", which gathers the remaining industries and activities that use culture as an added-value for the production of non-cultural products.

A core "arts field" of creative ideas that radiate out to "cultural industries"; these two layers in turn radiate out into the sphere of "creative industries and activities", whose outputs are functional (distinction between activities and industries); **(1)** A core "arts field" of non-industrial cultural products, such as visual arts, performing arts, and heritage. This core "arts field" of creative ideas radiates out to **(2)** cultural industries (film and video; television and radio; video games; music; books and press. These two layers in turn radiate out into the sphere of **(3)** creative industries, such as design, architecture, advertising. Common to first three circles is copyright. All their outputs embody ideas, values and creativity which become concrete and tradable once protected by copyright. In the words of Andari (2008), *"the common denominator of all creative industries is that all use copyright in their business"*. KEA (2006) also includes an additional layer in their delineation of the creative industries: **(4)** "related industries". This "related industries" layer captures industries that depend on cultural or creative products as they specialise in the "production, manufacture and sale of equipments whose function is wholly or primarily to facilitate the creation, production or use of works and other protected subject matter". Examples of these industries include the manufacture of mobile phones and MP3 players.

Despite the widespread acceptance of the DCMS (1998) and KEA (2006) templates for measuring the creative industries, a number of serious limitations inherent in methodologies based on industrial classifications have also been acknowledged in existing literature and by the experts interviewed in this study:

- Approaches centred on industrial classifications, such as DCMS (1998), characterize the creative industries as being orientated towards the production of final goods. However, Potts (2008) argues that in reality creative industries produce goods and services that are intermediary inputs into an economy-wide innovation process. This view of the creative industries as an economy-wide "enabler" has had notable consequences for measurement/empirical work concerning the creative industries. Much of the recent creative industries empirical research seeks to measure creative industries in terms of the innovation it contributes to the wider economy through, for example, backward and forward linkages with other industries, and the implications of this for economy-wide innovation policy.

- A further limitation of industrial classification-based approaches arises due to ongoing technological progress and changing industry boundaries (NESTA, 2008). The progressive convergence of the information technology, communications, cultural and content industries makes it difficult to accurately differentiate between different economic and industrial activities.

- What is more, standard industrial classifications do not always capture emerging industries, such as digital content industries. As a result, many specialist creative activities may get lost among broad industry categories such as "business activities, not elsewhere classified".

- Finally, Industrial classification data tends to be released with a significant time lag. In the Irish case, official census publications containing detailed industrial data for disaggregated geographical units is released at five year intervals.

Despite these serious conceptual and methodological challenges, the widespread use of industrial classification-based approaches to measuring the creative industries, and the adoption of a similar template in many of these studies, makes them useful as a benchmark for comparison across cities or regions. We therefore suggest a parallel approach to measuring Dublin's creative industries: we utilise an industrial classification-based measure of the Greater Dublin Area's creative activities in this section, and in the next section we present a more refined occupations-based methodology which we feel may provide additional insights into both the set of creative industries identified by DCMS (1998) and creative activities embedded in the broader economy.

3.2. Measurement of Dublin's Creative Industries based on standard industrial classifications

A number of studies have attempted to implement the DCMS (1998) definition and methodology at a national level (Crossa et al., 2007, Murphy and Redmond (2008), Arts Council, 2009). However, prior to this study, the DCMS (1998) approach has not been applied to the Greater Dublin Area. Crossa et al. (2007), as part of the ACRE project, illustrate this lack of accurate information about the size and value of Greater Dublin's creative industries:

> *"The Greater Dublin Area accounts for 40% of the population and the country's economic output. Consequently we will proceed with the assumption that figures on the creative and knowledge-intensive sector represent 40% of the Irish total."*
> Crossa et al. (2007 p.2)

However, the subsequent release of the 2006 CSO POWCAR dataset, which contains a detailed industrial breakdown at NUTS 3 (Dublin) and city/town level, allows for a more detailed study of the Greater Dublin Area creative industries employment as per DCMS (1998). We use this creative industries employment breakdown to estimate the proportion of national creative industries Gross Value Added (GVA) attributable to the Greater Dublin Area.[9] This is the first study, to our knowledge, to provide estimates of the Greater Dublin Area creative industries employment and Gross Value Added.

Table 1: Employment in the subset of industries delineated as creative industries (Greater Dublin Area and National Total), 2006

NACE Code (Rev 1.1)	Industry	Greater Dublin Area	National Total	GDA as a % of National
74.4	Advertising	3,736	5,173	72%
742	Architectural and engineering activities and related technical consultancy	10,718	21,106	51%
17	Manufacture of textiles	1,355	3,921	35%
18	Manufacture of clothes; dressing and dyeing of fur	1,237	2,854	43%
19	Tanning and dressing of leather; manufacture of luggage, handbags	88	328	27%
921	Motion picture and video activities	1,462	2,202	66%
923	Other entertainment activities	3,168	6,156	51%
927	Other recreational activities	2,597	5,257	49%
	Publishing, printing and reproduction of recorded media	10,366	16,661	62%
924	News agency activities	262	392	67%
	Computer and related activities	23,562	36,656	64%
922	Radio and television activities	3,580	5,070	71%
748	Miscellaneous business activities nec	14,895	25,050	59%
	Total Creative Industries	**77,026**	**130,826**	**59%**
	Total All Industries	**800,240**	**1,930,042**	
	Creative Emp as % of All Industries	**10%**	**7%**	

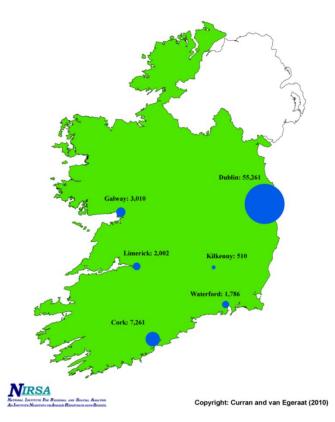**Source:** Own calculations based on CSO POWCAR dataset, available from www.cso.ie.

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[9] Based on the 2001 UK Household Census, DCMS (2001) were able to quantify 11 of the 13 creative industries: 1. Advertising; 2. Manufacture of jewellery and related items; 3. Architecture and engineering activities and related technical consultancy; 4. Motion picture and video activies; 5. Radio and television activities; 6. recreational, cultural and sporting activities nec; 7. Other entertainment activities; 8. news agencies; 9. Publishing; 10. Library,archives and other cultural activities; and 11.Computer and related activities. In our estimates for Greater Dublin Area creative industries employment, we follow this template where possible. We also include "other business activities, not elsewhere specified", as per Murphy and Redmond (2008). According to NESTA (2008), it is common for creative specialist industries to be subsumed in this industrial category.

Note 1: The CSO POWCAR 2006 figure for Irish computer and related activities employment in Table 1 above (36,656) is broadly in line with data from the 2007 Annual Business Inquiry, where the sum of Hardware consultancy, Software consultancy and supply, Data processing, Database activities, and Other computer related activities gives a total of 32,897. CSO POWCAR data is used here as a breakdown for Greater Dublin area is available. Annual Business Inquiry is only available at NUTS 2 level. **Note2:** Arts Council (2009) estimates total Irish direct, indirect, and induced creative employment to be 95, 649. The difference between this and our total Irish creative employment figure of 130,826 may be due to our inclusion of all of NACE 748 and 742, rather than just a proportion of these categories. Our calculations have shown that the Greater Dublin Area percentage of national creative employment (circa 60%) is not greatly affected by this choice.

The Arts Council (2009, p34 Table 3-30) estimate the total level of GVA generated by the Irish creative industry in 2006 to be €5.5 billion, applying the UK DMCS methodology to data available from the CSO Annual Services Inquiry, Census of Industrial Production, and Census of Population. An estimate of Greater Dublin Area creative industries GVA can then be deduced if one assumes that, as Greater Dublin Area accounted for 59% of Irish creative industries employment in 2006, 59% of this GVA can be attributed to Dublin. This approach suggests that the Greater Dublin Area creative industries' GVA in 2006 was in the region of €3.25 billion. Of course, numerous caveats must be attached to such an estimate due to both the methodological and data limitations discussed above.

Figure 1 below places Dublin's employment in the subset of industries delineated as creative industries in the context of other Irish cities. It should be noted that in order to facilitate meaningful comparison, Figure 1 refers to the Dublin city region as defined by the CSO (rather than that of the Greater Dublin Area). Importantly, the employment figures are work-place based, i.e. they include all commuter flows by creative industry employees into the respective cities from outside areas. Figure 1 therefore indicates the location of the jobs.

Figure 1: Employment in subset of industries delineated as creative industries (2006)

Dublin: 55,261

Galway: 3,010

Limerick: 2,002

Kilkenny: 510

Waterford: 1,786

Cork: 7,261

NIRSA
National Institute For Regional and Spatial Analysis
An Institiúid Náisiúnta um Anailís Réigiúnach agus Spásúil

Copyright: Curran and van Egeraat (2010)

Source: CSO POWCAR dataset, available from www.cso.ie

As illustrated in Figures 1 above, a comparison across Irish cities of the total number of employees in the subset of industries delineated as creative industries by the DCMS (1998, 2001) template indicates that Dublin far exceeds other Irish cities, in terms of employment, in these sectors. Table 2 further examines this point by expressing each city's employment in the subset of industries delineated as creative industries in as a percentage of that city's total employment. Dublin's employment in the creative industries in 2006 was over 12% of its total employment, with Cork and Galway being the next largest (8.41% and 7.37%, respectively).

Table 2: Employment (2006) in subset of industries delineated as creative industries expressed as a % of total city employment, and Location Quotient (LQ).

	Dublin	Cork	Galway	Waterford	Limerick	Kilkenny
Employment in creative industries as % of city total	12.14%	8.41%	7.37%	6.91%	5.56%	4.69%
Location Quotient (LQ)	1.79	1.24	1.09	1.02	0.82	0.69

Source: Own calculations based on CSO POWCAR dataset, available from www.cso.ie

The location quotient (LQ) is an index for comparing an area's share of a particular activity (in this case, Dublin's employment in the creative industries expressed as a share of national employment in the creative industries) with the area's share of an aggregate phenomenon (Dublin's total employment in the creative industries expressed as a share of national total employment). The question can be re-expressed as follows: Is employment in the creative industries more or less concentrated in Dublin than total employment? Location quotients can be interpreted by using the following conventions:[10]

1. If LQ>1, this indicates a relative concentration of the activity (employment in the creative industries, in our case) in area *i*, compared to the region as a whole.

2. If LQ =1, the area has a share of the activity in accordance with its share of the base (total employment, in our case).

3. If LQ<1, the area has less of a share of the activity than is more generally, or regionally, found.

From Table 2 it can be seen that Dublin's location quotient is far in excess of 1 and relatively higher than those of Cork, Galway and Waterford, whose location quotients are also greater than 1. This indicates that Dublin possesses a relatively larger share of employment in the creative industries relative to the nation as a whole, as well as relative to other main cities such as Cork, Galway, or Waterford.
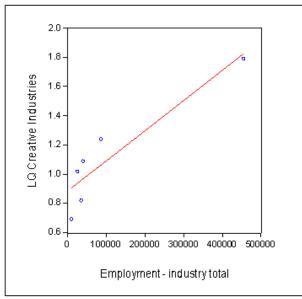
In fact, the findings emanating from the location quotients in Table 2 above reveal a near perfect relationship between the size of the location quotient and city size (see Figure 2). This

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[10] The location quotient for a given activity for area i is the ratio of the percentage of the total regional activity in area *i* to the percentage of the total base in area *i*. If *Ai* is equal to the level of the activity in area *i* and *Bi* is the level of the base, then $LQ_i = (A_i/A)/ (B_i/B)$, where A and B are the totals of the activity and base, respectively. The numerator is the percentage of the activity in area *i*, and the denominator is the percentage of the base. A location quotient is thus the ratio of two percentages and is therefore dimensionless.

means that the larger the size of an urban centre, the greater the importance of this urban centre to the creative industries, not only in absolute terms, but also in relative terms. In other words, more than industry on average, the creative industries appear to be *disproportionately* attracted to the largest urban centres in the urban hierarchy. The policy implications of this will be discussed in the final section of the report.

Given the intensity of debate surrounding these methodologies based on industrial classifications, the following section provides a discussion of some alternative methodologies and emerging definitions that strive to address these methodological challenges.

Figure 2: Creative industries location quotient versus urban industry employment (with regression line)

Note: The red line represents a regression line fitted from a linear regression where the creative location quotients are the dependent variable and total industry employment is the explanatory variable. The blue circles indicate the Irish cities listed in Table 2, above. Dublin is indicated by the blue circle furthest to the right.

4. ALTERNATIVE DEFINITIONS OF THE CREATIVE INDUSTRIES

In recent years the DCMS (1998) template for mapping the creative industries has been refined in order to develop a more comprehensive approach, which includes an examination of specific creative occupations. Studies of this nature have been undertaken in Australia, New Zealand, Singapore, France and the UK, among others. Here we illustrate these recent developments through the UK example of NESTA (2008).

Industry-centric approaches, such as that of the DCMS (1998) template, are based on the creative output within industry segments and analyse data based on standard industrial classifications relating to specialist firms within each specific segment. However, Pratt (2004) puts forward a more refined characterization of the creative economy, as one where creative activities are generated through (i) individuals (as sole traders or producers) (ii) groups working within specialist organisations (often as consultants), and (iii) individuals in creative occupations working in non-creative occupations. Methodologies based on standard industrial classifications are not suited to measuring creative activities. Creative workers frequently move between these three employment situations or modes, as they change their employment status within the creative industries or move temporarily to non-creative organisations. As NESTA (2008) note, examples of this type of movement abound: an independent film producer may take up a position with a government film agency; a designer may be working may for a non-creative organisation. This movement of creative workers between these three modes is particularly difficult for methodologies based on standard industrial classifications to capture.

Also, many specialist creative activities may get lost among broad industry categories such as "business activities, not elsewhere classified". As a result, estimates of such specialist creative activities are often based on a proportion of the larger industry, but these proportions/factors can be difficult to accurately estimate and need to be revised over time. In response to these methodological challenges, methodologies based on combining creative occupations and industry data have been developed.

4.1. Creative activities definition

The "Creative Trident" methodology of NESTA (2008) aims to move beyond creative industries to the broader creative economy, or "creative activities". The methodology brings together those employed in the creative industries and those working in specialist creative jobs in other firms and organisations. The objective is to analyse the true number of people employed in creative activities and industries, and their average incomes. The methodology recognises the three distinct employment situations (modes) of Pratt (2004): (i) *Specialist mode*: creative workers in defined creative industries; (ii) *Support mode*: non-creative workers in creative

industries; and (iii) *Embedded mode*: creative workers in non-creative industries. These three employment modes together comprise the Creative Trident, and analysis can focus on employment (of each mode, or intra- and extra- creative industry employment) and income generated by each mode (where a breakdown of average income by occupation is available). This focus on creative activities is supported in practice as NESTA (2008) find that in the UK more creative people work outside of the creative industries segment than within it**.**

In this approach "creative activities" are defined as activities that are inputs in economy's innovation process. While the methodology can be applied any well-articulated definition of activities, according to NESTA (2008) it works best conceptually where there is a concentration on what is referred to as the "pre-creation and creation" stages of the value chain ("the creative core"), so that the essential starting points of creative activity (both within the creative industries and the wider economy) are captured. Frontier Economics (2007) argue that it is in these this is where most of the creative value-added occurs. This focus on the creative stages of the value change implies that distribution and retail activities are excluded. The pre-creation stage of the value chain includes preservation, access, collecting and licensing activities. The creation stage can be defined in terms of a set of creative activities, as per Throsby (2001) definition of creative occupation:

> 1. Producing primary creative output (e.g. writers, musicians, visual artists, film and TV producers, sculptors, craftspeople)
> 2. Interpretive activity (e.g. performers, live or digital transmission)
> 3. Supplying creative services in support of artistic or cultural production (e.g. book editors, lighting designers, music producers, etc).

Implementing the "Creative Trident" methodology essentially involves compiling a list of "creative core" occupations and establishing to what extent these occupations are present in the creative industries (however one chooses to delineate these) and in the wider economy. The data requirement for this approach is a census-based matrix of detailed occupations and detailed industry classifications, from which both creative/non-creative occupations and creative/non-creative industries can be identified. In order to pinpoint the relevant occupations and industries in the census data, NESTA (2008) utilises a selection rule whereby creative occupations typically have at least 25% of their employment in creative industries and creative industries have at least 25% of employment in creative occupations. By way of illustration, the resulting list of occupations (26 in total) is reproduced in the appendix 2. The industry segments identified by NESTA (2008) are broadly in line with those of DCMS (1998, 2001).

NESTA (2008) cite a number of advantages associated with the occupations-based approach over existing industrial classification-based approaches: (i) the occupations-based approach avoids overreach, as it focuses on employment at early stages of the value chain (ii) it identifies creative employment embedded throughout the wider economy; (iii) it differentiates between specialist and support roles within the creative industries; (iv) it is based on population-based datasets, rather than sample-based estimates. However, the occupations-based approach also suffers from a number of limitations: (i) it is unlikely that a single dataset that contains both employment and average income data; (ii) the population census (in Ireland) is conducted with 5-year intervals (with the most recent release in 2006 and the forthcoming release due in 2011) (iii) the success of the methodology is dependent on the availability of detailed occupations and industry data.

4.2. Applying an occupations-based creative activities methodology to measuring Dublin's Creative Industries

As discussed above, the data requirement for an occupations-based approach to measuring the creative industries is a census-based matrix of detailed occupations and detailed industry classifications, from which both creative/non-creative occupations and creative/non-creative industries can be identified. As a result, the success of the methodology is dependent on the availability of detailed occupations and industry data. In the Irish context, the construction of the CSO POWCAR dataset presents a great opportunity to undertake an occupations-based measurement of the Greater Dublin Area creative industries, as the dataset contains both detailed occupation and industry data and is disaggregated to small geographic units (electoral divisions) for 2006, with a further release due after the 2011 population census. In addition to this, the POWCAR dataset links the occupation and industry data with education levels and nationality, which would facilitate an in depth profile of the creative workers.

NESTA (2008) also utilises average income data for each occupation in order to distinguish between income earned by creative and non-creative employees. While the POWCAR dataset itself does not contain average income data, a combination of Irish datasets may provide such data. The National Employment Survey (available from www.cso.ie) contain earnings data disaggregated employment type (managers and administrators; professional, associate professional and technical; clerical and secretarial; craft and related; personal and protective service; sales; plant and machine operatives; and other broad occupational groups). While this occupation breakdown in itself is not sufficiently detailed to distinguish between creative and non-creative occupations, the CSO may be willing to provide a more detailed breakdown of this occupations data.

4.3. Emerging Definitions and Methodologies

One criticism repeatedly levelled against industrial classification-based approaches to measuring the creative industries is that creativity is ill-suited to being shoe horned into industrial categories. Industry-centric methodologies, do attempt to address questions such as "what is creativity" but inevitably find the concept difficult to fully operationalize in their methodology. For example, KEA (2006) makes a useful distinction between "artistic creativity", as discussed in Throsby (1998) and the "economic creativity" or innovation outlined by Schumpeter (1943). KEA (2006) then envisages that both feed into a definition of creativity, where creativity is multi-sectoral and cross-disciplinary, and mixes elements of artistic and economic creativity. Creativity is characterised as a complex process of innovation, benefiting almost all economic sectors, and creative industries use culture as a source of intermediate consumption in the production process that strives to produce functional innovation and creative output.

We now briefly outline an alternative definition of creative industries that attempts to incorporate a fuller understanding of the nature of creativity in the creative industries. Potts *et al*. (2008) propose a definition of the creative industries in terms of social network markets. They see creative networks as part of the innovation system of the entire economy, and whereby the adoption of novel ideas, and the value of these novel ideas, is determined by a social network of agents as they produce and consume these novelties. In these creative industries, social network feedback through direct contact between producers and end-users, reviews, and observation remove uncertainty as to whether an innovation will be accepted by the public and what value the public places on in.

Creative industries are composed of both systems that build and maintain social networks (such as advertising, architecture, media, and ICT software) and systems that create value on these social networks through content (such as film, TV, music, fashion, and design). While Potts (2008) admit that this distinction may not be clear cut, they set out one basic principle:

> *"The creative industries are a set of economic activities that involve the creation and maintenance of social networks and the generation of value through production and consumption of network-valorised choices in these networks"*
> Potts. (2008 p.10)

Their creative industries definition can be placed in an analytical framework of social network analysis.[11] However, the development of a robust methodology for measuring the creative industry along these lines is still a work in progress

5. Conclusions, Recommendations and Suggestions for Further Research

This study examines existing creative industries definitions and methodologies, and discusses how they can be applied to measuring the economic value of the creative industries to the Greater Dublin Area. As a starting point, we provide estimates for the Greater Dublin Area creative industries using an established template for measuring the creative industries based on industrial classifications.

Our estimates, based on the CSO POWCAR dataset indicate that 2006 Greater Dublin Area employment in the subset of industries delineated as creative industries was in the region of 77,000 (59% of national employment in the subset of industries delineated as creative industries). Based on this figure and Arts Council(2009) estimates the total level of GVA generated by the Irish creative industry in 2006, we estimate that Greater Dublin Area creative industries GVA in 2006 was in the region of €3.25 billion. The above figures are associated with the benign economic climate of the mid-2000s. It is reasonable to assume that the current economic downturn will have put downward pressure on these figures.

The Greater Dublin Area far exceeds other Irish cities, in terms of employment, in the creative industries. In fact, analysis of employment levels in the creative sector in a selection of Irish urban centres shows that, more than industry on average, the creative industries appear to be disproportionately attracted to the largest urban centres in the urban hierarchy. This may suggest that, more than most industries, creative industries derive important benefits from being located in metropolitan centres. The policy of dispersal of industrial activities, along the lines of the National Spatial Strategy, may therefore be less appropriate in the context of the creative industries.

Of course, numerous caveats must be attached to the above estimates due to both the methodological and data limitations. With regard to methodological and data challenges associated with defining the creative industries, we identify the main issues as being:

- Industrial classification-based approaches to defining and measuring the creative industries characterize the creative industries as being orientated towards the

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[11] For an application of social network analysis in the Irish biotechnology industry see Van Egeraat and Curran (2010).

production of final goods, rather than as a source of intermediary creative inputs into an economy-wide innovation process.

- Industrial classification-based approaches limit the discussion to a selection of "creative industries" rather than the "creative economy" as a whole, which would include creative activities embedded across the entire economy.
- Industrial classification data tends to be released with a significant time lag. In the Irish case, official census publications containing detailed industrial data for disaggregated geographical units is released at five year intervals.
- The ongoing technological progress and changing industry boundaries, which sees progressive convergence of the information technology, communications, cultural and content industries hinder accurate differentiation of different economic and industrial activities.
- Standard industrial classifications do not always capture emerging industries, such as digital content industries. As a result, many specialist creative activities may get lost among broad industry categories such as "business activities, not elsewhere classified".

We acknowledge the limitations of the industrial classification-based methodology and we provide a discussion of some alternative methodologies and emerging definitions that strive to address these methodological challenges. While industrial classification-based approaches tend to characterize creativity as being orientated towards the production of a final good, an alternative occupation-based measure of creative activities - activities that are inputs in economy's innovation process – allows one to distinguish between specialist creative workers within the creative industries, support staff in the creative industries, and embedded creative workers within the broader economy. This methodology moves beyond the creative industries to the broader creative economy, and is more in line with the view of creative activities as an economy-wide enabler in the innovation process.

A number of new Irish datasets offer great potential for undertaking such an occupations-based study of the Greater Dublin Area creative industries. In particular, the CSO POWCAR dataset contains both the detailed occupations and industrial data necessary required for such a study at disaggregated geographical units. Average income data for detailed occupation groups would also greatly enhance this type of study. At present, earnings data released as part of the National Employment Survey are only provided for broad occupation categories. In order to address issues of data availability we recommend:

- Approaching the CSO with a view to ascertaining the possibility of accessing a more detailed breakdown of National Employment Survey average income data.

- Exploring the possibility of obtaining Annual Business Inquiry data at NUTS 3 level. This dataset is currently only available at NUTS 2 level.
- Further developing the spatial dimension of the detailed industry data available in the Census of Industrial Production.

The definitional work in this report and the new insights regarding measurement and data open several areas of further research, some of which would move beyond the simple measurement of economic value and in the direction of analysing the drivers for competitiveness and innovation in the creative industries in the GDA.

Most obviously, building on the definitional and methodological work contained in this report, further research should provide elaborate and multi-facetted estimates of the economic value of the creative industries and its subsectors to the GDA, using an activity based approach. The CSO POWCAR dataset contains both the detailed occupations and industrial data required for such a study. In addition, the FAME database provides opportunities. This publicly available dataset provides detailed business and financial information such as turnover, number of employees and year of establishment for each company in Ireland. [12]

The findings in this report also form the basis from which an internationally comparative investigation of the creative industries could be undertaken, in which the creative industry's tendency to gravitate towards the largest centres of the urban hierarchy could be further explored.

The research on methodologies and datasets also highlights the possibilities of investigating the spatial distribution of the creative industries *within* the GDA. Previous research on Dublin's Creative industries has been unable to ascertain the spatial distribution of creative enterprises within the GDA due to the unavailability of sufficiently disaggregated data (Crossa et al., 2007). As a result, an analysis of the spatial concentration of these creative enterprises has not been undertaken.
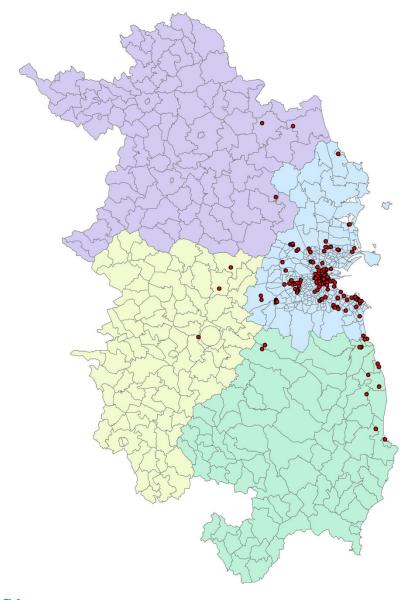
Two recent data releases (the CSO POWCAR dataset and Geodirectory), both containing geo-coded data, now present an opportunity to conduct this much-needed study of the spatial concentration of Dublin's creative industry and its sub-sectors. To illustrate the possibilities, Figures 3 and 4 present an example in the shape of the spatial concentration of the advertising industry in the Greater Dublin Area and in Dublin County. The high concentration of advertising

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[12] For further details about the FAME Business database, see http://www.bvdinfo.com/Products/Company-Information/National/FAME.aspx?gclid=CIrhuuLsnKACFQeElAodEnrAdA.

firms in the urban centre of Dublin is clearly visible in the maps, as well as pockets of firms located in the periphery to the North and South of the city centre. From this starting point, it is possible to discern from the underlying data which firms are located in specific electoral divisions (EDs).

Such knowledge of the co-location patterns provides an important platform for an investigation of the factors underpinning future competitiveness of the creative industries in the GDA. Analysis of the spatial patterns of firm location in the creative industries can identify established of emerging "clusters" and the related backward and forward linkages within the GDA. An example of this type of research for Ontario, Canada, is provided in Davis (2009) and for Singapore by Gwee (2009).

This, in turn, could form the basis of a broader study into the functioning of the regional-sectoral system of innovation (Edquist, 2005; Malerba, 2005) paying attention to all important economic, political, organizational, institutional and other factors that influence the development, diffusion and use of innovations in the industry. Such a study would focus in particular on the spatiality of knowledge flow and technological spillovers and the role of formal and informal networks of actors located in firms, universities and other relevant institutions in the GDA. A social network analyses of the various actors (as per Guiliani and Bell, 2005), based on original survey data, can establish the extent to which knowledge flows within the local concentration, between local firms and universities and other institutions, and between local firms and other national or international firms.

Figure 3: Spatial Concentration of Advertising firms (216) in Greater Dublin Area, 2009
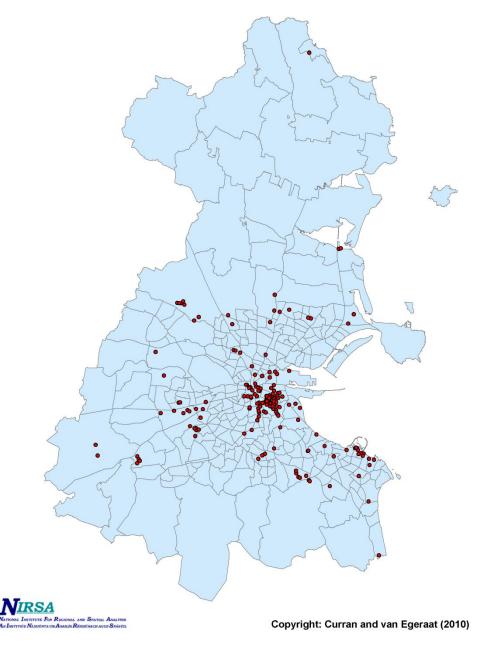

Copyright: Curran and van Egeraat (2010)

Source: GeoDirectory **(http://www.geodirectory.ie/)**

Figure 4: Spatial Concentration of Advertising firms (194) in Dublin County, 2009

Copyright: Curran and van Egeraat (2010)

Source: GeoDirectory **(http://www.geodirectory.ie/)**

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1. APPENDIX 1. CREATIVE INDUSTRY DEFINITIONS BASED ON INDUSTRIAL CLASSIFICATIONS AND INTELLECTUAL PROPERTY

Source*: Based on KEA (2006, pp. 48-56)*

Country/Definition	Approach	Definition	Criteria	Scope	Comparison with other Definitions	Origins of Definition
UK "Creative Industries"	Economic	"Those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property"	"Creativity" as a central input to the production process. Intellectual property (and not only copyright) as a characteristic their outputs	Advertising, architecture, the arts and antique market, crafts, design, designer fashion, film and video,interactive leisure software, music, performing arts, publishing, software and computer services, radio and television. Activities include: creation, production, distribution,	The scope of the DCMS definition is one of the widest amongst the approaches reviewed	Department for Culture Media and Sport (DCMS)(1998,2001)
France: "Cultural Industries"	Economic / Statistics	"A set of economic activities that ally conception, creation, and production functions to more industrial functions of manufacturing and commercialising at large scale, through the use of material supports or communication technologies"	Outputs aimed at massive reproduction. Outputs are characterised by copyright (and not intellectual property)	Publishing (book, newspapers, magazines and periodicals, music) as well as trade in books, sound recordings and press. Audiovisual activities (production of films for television, production of institutional and advertising films, production of theatrical films, technical activities related to cinema and television, theatrical film distribution, video publishing and distribution, theatrical film exhibition, radio, production of TV programmes, TV channels editing, distribution of radio and TV satellite package programmes); and directly related activities (press agencies, multimedia, advertising.	In contrast to other definitions, education activities, press critic activities, or the activities of collective management societies are not taken into account under this definition.	Ministry for Culture and Communication (2006)
Sweden and Denmark: "Experience Economy"	Economic	n/a	"Experience" or what is considered as such by the consumer.	Fashion, visual arts, music, toys and amusement, tourism, books, theatre, radio and television, architecture, sports industries, design, printed media, film and video, advertising, edutainment, content production, events, cultural institutions.	In addition to "creative industries" (advertising, architecture, the arts and antique market, crafts, design, designer fashion, film and video, interactive leisure software, music, performing arts, publishing, software and computer services, radio and television) the experience economy includes8: toys/amusement, tourism, sport, edutainment.	Danish Ministry of Culture (2003)
UNESCO's Framework for Cultural Statistics	Statistical	n/a	n/a	Nine categories: (1) cultural heritage; (2) printed matter and literature; (3) music; (4) performing arts; (5) audio media; (6) audiovisual media; (7) socio-cultural activities; (8) sports and games, and (9) environment and nature. Five cross-cutting 'processes of cultural production": (1) creation, (2) production, (3) distribution, (4) consumption and (5) preservation.	Like other approaches having a statistical purpose, UNESCO defines both sectors and cross-cutting activities. It is the only definition including environment and nature in the scope of the cultural sector.	UNESCO framework for Culture Statistics (1986)
Eurostat LEG- Culture delimitation of the cultural field	Statistic led, with the objectives of: defining a common set of core areas for activities recognised as being cultural without disqualifying national interpretations, identifying and listing the activities in each area.	n/a	n/a	The LEG Group identified 8 domains (artistic and monumental heritage, archives, libraries, books and press, visual arts architecture, performing arts, audio and audiovisual media/multimedia);6 functions designed to situate economic activities (preservation, creation, production, dissemination,trade/sales and education).	Started from the UNESCO definition but departs from it: The delimitation of the sector doe not include: advertising, sport or games. It must be stressed that it includes trade in cultural goods and services as well as architecture.	Leadership Group on Cultural Studies (LEG) Final Report 2000
WIPO Copyright Industries	Economic	Those industries that are engaged in the creation, production and manufacturing, performance, broadcast, communication and exhibition, or distribution and sales of works and other protected subject matter	Copyright is a characteristic of their outputs	Press and literature, music, theatrical productions, operas, radio and television, photography, software and databases, visual and graphic arts, advertising services, copyright and collective management societies.	Software and databases are included, which is not the case in the definition of cultural industries. An important feature is the addition of copyright and collective management societies. Interestingly, WIPO recommends that the assessment of the economic impact of the copyright industry be complemented by the assessment of "non-core" copyright industries i.e.:- Those that support core copyright-based industries, producing for examples: TV sets, VCRs, CDs players, and other equipment, computer and equipment, photography equipment and services; - And those that are inter-related to core copyright industries such as for instance: business machines, architecture, jewellery, furniture, china and glass, clothing and footwear, wall coverings, and engineering.	WIPO Guide on Surveying Copyright Industries
OECD Content Industries	Technology-driven	The definition needs to be further elaborated	The expression "content industries" is used to describe the industries which produce "information content	It needs to be further elaborated.	The approach is useful in a comparative perspective as it stresses the need to take fully account of "digitalcontent" which is generally not grasped by traditional statistical tools used to assess the	Guide to Measuring the Information Society (2005)
KEA Cultural and Creative Sectors	Based on the existing definitions above, distinguishes between (1) arts (non-industrial cultural products); (2) cultural industries; (3) creative industries and activities		all the outputs can be protected by copyright;	(1) visual arts, performing arts, Heritage; (2) Film and video, television and radio, video games, music, books and press; (3) design, architecture, and advertising + related industries (MP3 and mobile manufacturing etc)		KEA (2006)

2. APPENDIX 2. NESTA (2008) CREATIVE OCCUPATIONS

SOC Code	Occupation	SOC Code	Occupation
1134	Advertising and Public Relations Managers	3415	Musicans
2131	IT strategy and planning professionals	3416	Arts officers, producers and directors
2132	Software professionals	3421	Graphic Designers
2431	Architects	3422	Product, clothing and related designers
2432	Town Planners	3431	Journalists, newspaper and periodical editors
2451	Librarians	3432	Broadcasting Associate professionals
2452	Archivists and Curators	3434	Photographers and audio-visual equipment operators
3121	Architectural technologists and Town Planning technicians	3543	Marketing associate professionals
3122	Draughtspersons	4135	Library Assistants/clerks
3411	Artists	5421	Originators, compositors and print preparers
3412	Authors, writers	5491	Glass and ceramic makers, decorators and finishers
3413	Actors, entertainers	5492	Furniture makers, other craft woodworkers
3414	Dancers and choreographers	5495	Goldsmiths, silversmiths, precious stone workers

Source: NESTA (2008)

3. APPENDIX 3. INTERVIEWEES

The following industry experts were consulted:

- BOP Consulting (London, United Kingdom)
- Stephen Brennan (Director of the Digital Hub);
- Patrick Collins (Centre for Innovation and Structural Change, NUI Galway)
- Aphra Kerr (NUI Maynooth);
- Philip Lawton (University College Dublin and ACRE);
- Enda Murphy (University College Dublin and ACRE);
- Michael Söndermann, (Büro für Kulturwirtschaftsforschung, Germany)