What's behind a definition? Netting the 'slippery fish'!

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Key words: creative industries; creative industries mapping; creative economy; creative industries policy.

Abstract

Objectives
The paper explains the process and problems of mapping a localised creative industry sector, contrasting the findings of secondary data with primary data from within the field; identifying implications for policy and innovation.

Prior Work
Cunningham et al (2009) term creative industries and innovation as conceptually 'slippery fish' concurring with authors who espouse the difficulty of defining creative industries (Boggs, 2009; Galloway and Dunlop, 2007). Even though Flew et al (2010) suggest that there is increasing consensus about the size and scope of CIs, there remain obstacles to mapping creative clusters, an obstacles to policy making decisions (Vecco 2009, Boggs, 2009). Yet authors persist in suggesting that creative industries are dynamic laboratories of change and innovation, exploiting new technologies in production, distribution and markets (Flew et al, 2010).

Approach
The research is based on the analysis of Official Statistics within a defined group of CIs, individual company data searches and a survey of 240 CI businesses in Nottingham, UK. The survey was administered electronically, with telephone follow-up. Questions related to business activity; age, size, turnover; markets and networks and respondents were mostly SMEs.

Results
Official statistics declare some 2,400 creative businesses in Nottinghamshire, and some 18,900 people employed in the creative industries and related networks. The survey suggests that almost all creative industries businesses are small, but challenges some official statistics in terms of sectoral activity. There are good levels of international activity, and, contrary to expectations, a sizeable nucleus of mature, established businesses.

Implications
The results reveal the scope for contrast between officially generated statistics and the observable activity within an industry, which in turn has policy implications. CIs demonstrate varying patterns of growth, business creation, innovation and market activity. While new businesses are being created, the longevity of others is an interesting finding. These are each areas worthy of further, more detailed exploration with scope for case studies to better understand business life-cycles and networks (after Cunningham 2011).

Value
The paper questions current thinking on policy for creative industries, contrasting work by Potts et al (2008) that links CIs to new media and new markets. While this tendency exists, the maturity of other CI businesses and their role in rejuvenating traditional industries provides opportunity to enhance competitiveness through appropriate and targeted support. Meanwhile, understanding of business markets and networks needs to consider evolving business to business relationships as well as the emerging social media based business - consumers interface.

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Introduction

In early 2010 the researchers embarked on the initial stages of a pan-European EU project: Organza[1], which aimed to support the exchange of knowledge between policy makers and deliverers with regard to effective support for the creative industries in medium sized cities. The first challenge set within the partnership was to identify the policy context of each of the partner cities. This was deemed to be an important first step for a number of reasons, not least because in order to share knowledge and identify transferable practice it was considered important to understand the similarities and differences of each of the cities; the uniqueness or otherwise of the creative industries that policy was being designed to support; and establish a benchmark from which effectiveness of support could be evaluated. Indeed the implementation of the methodology for describing the creative industries was considered to be one in a series of opportunities to share knowledge between partners.

The paper uses a case study approach to explain the process and problems of mapping a localised creative industry sector as they were experienced by the researchers and their local partners in the city of Nottingham, UK while attempting to develop a methodology that could be used across the Organza partnership. The analysis attempts to examine some of the similarities and differences between data obtained from secondary sources with primary data collected from within the field. The experience is used to identify any implications for policy, practice and innovation particularly as it relates to the analysis of sub-regional level data on creative industries, but also with implications for other complex sectors and contexts.

The paper begins with a review of extant literature specifically in the domain of defining and mapping the creative industries, followed by an explanation and justification of the methodology employed locally. Findings from the research exercise are presented and discussed with reference to the literature and in the context of prior and current local policy. Finally, conclusions and recommendations are proposed for academics, practitioners and policy makers.

Defining Creative Industries: A review of prior work

The term creative industries has been multiply defined and variously applied by academics and policy-makers alike. Yet, despite some recent emerging consensus over the size and scope of creative industries it remains both contested and problematic (Boggs, 2009; Cunningham, 2009; O'Connor, 2007; Flew and Cunningham, 2010). The definitional vagueness and the multitude of ways in which creative industries and occupations are measured has limited the development of accurate 'market intelligence', particularly at the regional and sub-regional level. This conceptual confusion and lack of methodological precision has had a negative impact on effective policy making for the 'sector' (Vecco, 2009).

Taking the UK's former Department for Culture, Media and Sport (DCMS) pioneering work on creative industries as our point of departure this review set out some of the conceptual, methodological, and practical complexities associated with carrying out primary research into creative industries and creative businesses. We start by reviewing existing academic literature and discuss the issues raised by those authors who have used various definitional models and approaches to measure creative industries in particular locations. The key finding of this review is that creative industries is indeed a slippery term (Boggs 2009), lacking conceptual clarity, and this has important knock-on effects for effective policy-making for the sector.

An issue of definition

The creative industries have a long and complex definitional history (Roodhouse, 2001, cited in Cunningham and Higgs, 2009). A multitude of studies have used a variety of definitions and combinations of industry activity, resulting in a fuzziness around defining creative business size, activity and structure - internationally, nationally and regionally. Landmark academic analyses, such as those proposed by Richard Florida in his seminal text 'The Rise of the Creative Class', have been subsequently widely criticised for their adoption of poorly conceptualised definitions, unrealistic classificatory systems and the imprecise indices used to measure

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this 'new' phenomena (Markusen, 2006; Montgomery, 2005; Peck, 2005). Even the more widely adopted definitions, such as the ground-breaking 2001 DCMS classification[2] is criticised for attempting to group a heterogeneous set of industries together with little clear or coherent logic behind their collection under the umbrella term (Higgs and Cunningham, 2008). There is a long accepted lack of coherence in the selection and inclusion of creative industries and sub-sectors within these competing definitions. This definitional issue therefore has an impact on where the boundary of the creative industries is drawn. Clearly, the adoption of any particular definition has significant implications for what industries are included and what is left out. And, this has further knock-on effects for measuring the size, structure and impact of the 'sector'. In the DCMS model (described in more detail later), cultural industries, like visual arts, or those associated with the 'experience economy' such as gambling, and live sporting events are controversially left out, as are some which include a large number of creative occupations within them, such as software development (other than for computer games; Hesmondhalgh, 2007). The examples used here clearly illustrate the 'fuzziness' of the boundaries and the industries consequently included and/or excluded. And, whilst it is argued by Flew and Cunningham (2010) that there is some emerging agreement over the analytical and conceptual categories that should be included there is by no means universal consensus and so the definition and consequent boundary of the sector remains contested.

Whilst this may initially appear to be a rather academic debate there are a number of important implications, particularly in relation to mapping exercises in specific places. This is clearly evidenced in Markusen et al's (2008) studies of Boston metro's creative economy, where it emerged that the economy could vary in size between 1 per cent to 49 per cent, depending on the definition used. Critically, the use of different definitions leads to wide variations in the measurement (and what is actually measured) of the creative industries in question. The key point though is that the definition/boundary issue clearly has a significant impact on how the creative industries are measured, and importantly, how the measures of creative industries in different places are used to determine policies to support their development and growth.

Importantly, Markusen et al (2008) identify one of the main problems associated with adopting an industry focussed approach to measuring creative industries. The focus on industries makes for an inaccurate measurement of the numbers of people employed in creative jobs because all individuals working in creative industries are measured, whether or not they are actively employed in creative jobs. For example, secretarial, administration, managerial, production, or sales jobs in a creative business would not be defined as a creative job or occupation. While early research into the creative industries was criticised for its over simplistic analysis, one could argue that this administrative and managerial jobs are counted in other industries where they perform important support functions.

More recently studies in the UK and internationally have begun to consider creative jobs outside of normal CI practices, as well as creative business activity. Cunningham's (2011, 32) recent study of the Australian creative economy found that there are more 'creatives' working outside the creative industries than inside them. Using the most sophisticated 'Creative Trident' methodology developed to date, Cunningham (2011:27) argues, 'those studies using only industry codes can underestimate the employment of some creative sectors by 40% and the pre-2006 versions of some industry classification systems produce significant errors in sizing, possibly up to 25%.' Similarly, in the UK, Higgs et al (2008, 4) found that, 'in 2001 only 37 per cent of those employed in publishing were in creative occupations; the same applies to 46 per cent of those in advertising or 44 per cent in radio and TV activities.' It is claimed, and evidenced, that the Creative Trident model represents a significant step forward in developing an accurate methodology for researching creative activity across the economy, be it within or outside the creative industries. It is claimed that the model produces more accurate estimates of the size and scope of the creative 'economy' as well as enabling wider and more detailed analyses of other indicators such as creative occupations and their average incomes. Critically, Cunningham (2011, 28) argues the benefits of such a methodology are that it, 'avoids the tendency to overreach; disaggregates creative employment effectively and with resulting insight; allows for the decomposition of specialist and support employment within creative industries; and uses population-based data sources rather than surveys, where possible.'

Markusen et al (2008) remind us of why such accurate and sophisticated analysis of creative activity is so important to support effective policy making, particularly at a regional or sub-regional level. Markusen et al (2008, 37) argue, it 'enables us to see the extent to which major metropolitan areas vary in their cultural specialization.' Thus, if we were to compare two seemingly similar creative industries sectors in two different places, despite their seemingly similar appearance, these creative clusters will be structured very differently. Effective local policy-making needs to understand the size and structure of each place, an acceptance of the

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[2] The standard definition of the creative industries used by the DCMS includes 13 industries: advertising, architecture, arts and antiques, computer games, crafts, design, designer fashion, film and video, music; performing arts, publishing , software, and TV and radio.

uniqueness of creative clusters, and the way it operates/interacts within the wider economy, both locally and internationally.

Digging through the data: the problems with national statistics datasets

Having decided what to measure, other issues confronted us when developing our underpinning understanding of the creative economy in the UK and Greater Nottingham more specifically. Initially, we discuss the issues around the use of the UK Standard Industrial Classification (SIC)[3] framework and the various publicly available datasets to analyse creative industries. Despite their significant limitations, SIC codes are the primary framework around which business units and activities are classified.

SIC code frameworks
Creative industries categories e.g. those defined by the DCMS, don't map well onto SIC code descriptors[4]. Higgs et al (2008:24) claim that 'many creative activities are 'lost' within broad industry categories… [and] they cannot be included without significant risk of overreach' as it is impossible to separate creative industries activity from other non-creative industry embedded in the same SIC code. Higgs et al (2008:24) cite the example of specialist design consulting which falls within "748 Miscellaneous business activities not elsewhere classified". As a result of the lack of alignment between creative industries and SIC codes analysts are forced into making estimates of creative activity within a broader category (e.g. the DCMS Economic Estimates analysis allocated 5 per cent of clothing manufacturing to designer fashion; Higgs et al, 2008:24).

Furthermore, as SIC codes are updated irregularly, they do not reflect emerging developments within the economy or capture industrial change. There can be a 10-15 year gap (Cunningham, 2011:26) between updates which inhibits the capture of data for new sectors. For example, Computer Gaming, considered to be an 'engine for economic growth' is classified under ICT within the SIC framework. Nevertheless, the DCMS (2009) estimate this industry to be the largest contributor to UK creative industries Gross Value Added (GVA) and exports (FORA, 2010), demonstrating how limited the system really is. Moreover, when the SIC framework is updated, inconsistencies between the old and new versions of SIC code listings prevent a full and comprehensive comparison of data over time - a further inherent weakness of the SIC framework.

In addition to the SIC structure issues, there are also important limitations relating to the datasets collected by the Office of National Statistics. We identify four issues associated with the data collection methods of the UK national statistics datasets which are the main sources of data for mapping industry structure.

National Dataset limitations
The Annual Business Inquiry (ABI) and other datasets collect data only on VAT and/or PAYE registered businesses, a particularly disadvantages for creative industries mapping since it is estimated that a high proportion of businesses are made up of the self-employed or micro businesses who are not registered and not required to do so. Similarly, the Inter-Departmental Business Register (IDBR) misses some of the very small creative businesses, including the self-employed and micro-SMEs. Two data sources therefore miss potentially half of creative businesses because they are small. Even where small firms are represented, the data for these firms are based on relatively small samples which could under/over represent. The Labour Force Survey, which measures occupations within industry, is based on a sample survey of only 70,000 responses, and is not helpful in subregional analysis and the population census, used to measure creative occupations, is updated on a 10 yearly cycle, and does not reflect changes in real time. Datasets also lack detail at subregional level, forcing researchers to choose between geographical or sectoral focus.

Definitions of CIs in practice

The issues outlined above with reference to data access and detail make 'local' analyses very difficult indeed, particularly at the sub-regional level and can prevent meaningful comparisons between regions (Markusen et al, 2008:36) the implication of which is that a one-size fits all approach to policy making masks local differentiation and just doesn't work. The Perfect Moment's (2006) mapping of Creative Industries in Devon and Torbay is an example of the benefits of gathering local intelligence to support local policy-making. Appendix 1 outlines key points from this and two other reports of note, representing international, national and local exploration of the creative industries. The contrast is consistent with the view of FORA:

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[3] The UK SIC classification provides a framework for the collection, tabulation, presentation and analysis of data relating to different industries. Its use promotes uniformity, and can be used for administrative purposes and as a convenient way of classifying industrial activities into a common structure (ONS, 2012). The SIC structure has been updated in 2003 and 2007 to gradually bring it into line with the European Union's industrial classification system, NACE (Nomenclature Générale des Activités Économiques dans les Communautés Européennes)

There are no straightforward arguments of which definition of creative industries or which type of data should be used to identify creative industries. The answer depends on the purpose of the analyses and what the data is used for. (FORA 2010:11)

While a note of caution is expressed by Towse (2003) and Galloway & Dunlop (2007:18) who warn that without the appropriate, clear and precise definitions and measures, "*we are unlikely to promote the most appropriate type of intervention*".

Matrix and cluster aspects of CIs

More complex definitions of creative industries include elements of the supply and distribution of the industry sub-sectors considered – a practice which takes into account the production and delivery of the creative 'product' not just its conceptualisation. Figure 1 illustrates the model employed by DCMS which depends on identification of businesses using a highly detailed 5 digit level SIC code[5]. It is difficult to access such detailed data at sub-regional level in the UK, and this data is not consistently recorded across national boundaries. Among other criticisms of the model is the lack of opportunity for longitudinal comparison (Frontier Economics 2008).

Figure 1: *A Generic Supply Chain for the Creative Industries*
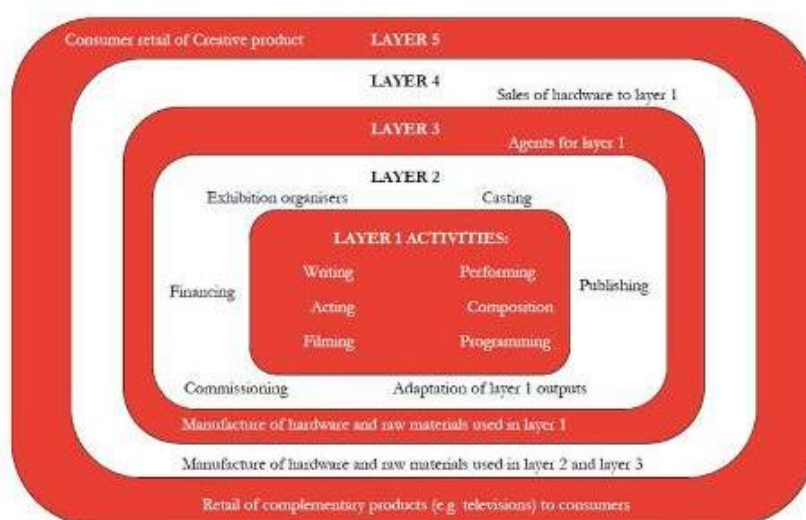
Layer 1: core creative activities such as music composition or Games industry programming. This forms the key definition of each creative activity.

Layer 2: directly support the activities of level 1, translating creative activity into a marketable product, such as editing in the Publishing industry, and casting within performing arts.

Layer 3: Supports and facilitates levels 1 and 2, such as manufacture of hardware to support the creative process. Examples include manufacture of TV cameras, book binding in Publishing

Layer 4: Supporting and supply industries for levels 1-3; for example manufacture and wholesale of raw materials and hardware used in the consumption of creative products, e.g. printing inks and paper publishing, TVs and arcade machines in broadcasting.

Layer 5: Least creative supporting activities, e.g. retailing of games, DVDs, fashion, etc…

(Frontier Economics, 2008:30)

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[5] The UK SIC (2007) is a hierarchical five digit system of 21 sections, representing broad sectors, such as manufacturing or agriculture, subsequently broken down into divisions (two digits) relating to specific industry groups, such as textiles or clothing. The divisions are then broken down into groups (three digits), and classes (four digits) which denote the precise product and its characteristics (ONS 2007). The first four digits of SIC codes are the same across the European Community countries. Where a fifth digit appears it is often specific to an individual country's code system.

In contrast, Porter's Cluster Model is the starting point of the FORA methodology (FORA 2010) which maps core activities in the context of: firm strategy, structure and rivalry; supplier (factor) conditions (considering supply of labour, skills, information etc); market conditions; and government and institutional support. Key aspects of defining the cluster in Porter's examples are a narrow definition of the sector (e.g. Leather fashion in Italy), focus on innovation measured through firm creation and R&D investment, and an element of geographical proximity. In the context of creative industries, limitations of this model might include the diversity of activity (rather than specialised clusters) and the importance of considering the social context as a further influencing factor to innovation and development (FORA, 2010). Interestingly, the recent Europe Innova report (2010) opts to exclude much manufacturing and retail activity from its cluster analysis – largely because of difficulties identifying disaggregated data to identify cultural and creative activity in these areas. Consequently fashion design and architecture in particular are under-represented.

Approach
The research is case study based; bounded in Nottingham, a city and surrounding industrial region of the UK, and widely recognised to have a strong and, at times, thriving creative industries sector. The case based approach enables the researcher to utilise multiple methods in a single research study (Yin 2009). To this end, three stages of data collection have been implemented. Throughout, the research was accompanied by a detailed literature review to explore the advantages and limitations of such an approach. The literature review included collation of a number of public policy documents, which were subsequently analysed in the context of the CI definitions to explore how sector mapping has been interpreted and how this has shaped public policy. This enables triangulation of the data (Saunders et al, 2003).

An initial search of secondary official statistics was utilised to get an overall profile of the characteristics of the sector. Data has been collected from publicly available databases including those released by the ONS, principally the IDBR.   Defined as secondary data (Quinlan 2011) analysis of such data is increasingly of interest to business researchers because it enables wide scale data collection under rigorous conditions that are not easily replicated (Bryman and Bell, 2003). Broadly speaking, the secondary research followed the methodology employed by the DCMS, but this proved to be difficult to deliver given constraints of access to relevant, geographically and sectorally appropriate data.

The subsequent primary research is based on a stratified random sample survey of creative businesses operating in the Greater Nottingham area[6]. The survey adopted a similar definition of creative industries to that developed by the Department for Culture, Media and Sport (DCMS) for comparative reasons. However, the definition was adapted to reflect previous research findings into the structure of creative industries sectors in the locality[7]. Based on initial estimates of the size of each creative sub-sector and the total creative business population a stratified sampling framework was developed, ensuring the number of survey responses would be representative of the total population (Lind et al, 2008). Each industry category or sub-sector, e.g. Fashion, was then randomly sampled.

Sample data was obtained through a variety of sources, including a University creative business register, the Yellow pages and Thompsons directories and the Experian Business Database. The first stage of the survey was administered on-line using a standard survey software package. This was followed-up with a second stage, which involved surveys being completed over the telephone with business owners or directors. From the survey, 240 complete responses were obtained (around 10% of the total population) with sufficient numbers of surveys completed for each category, except for software, including games and design. Researchers' were unable to find sufficient numbers of these businesses from the sample data to complete the required number of surveys in that category. The survey comprised of 10 questions to establish business structure, activity, scale and age, as well as questions relating to local and international markets and supplier networks.

Prior to analysis survey responses were collated and where required data reclassified. One issue worthy of note relates to the way in which some businesses classified themselves. On a few occasions business representatives selected the wrong category and in others their self-classification didn't reflect the main business activity they reported. In these instances their responses were reclassified. Analysis of data involved the production of descriptive statistics to identify the key findings.

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[6] The Greater Nottingham area is variously defined but for the purposes of this study it is considered as including within its boundaries Broxtowe, Erewash, Gedling, and Rushcliffe Borough Councils and Nottingham City Council. Where this is not possible, data for Nottingham City Council and Nottingham County Council unitary authorities is identified.
[7] Survey categories used: Advertising, Architecture, Crafts, Fashion, Film and Video, Music, Performing Arts, Publishing, Software including games or design, Television and Radio and Visual Arts, and Other respondent classification.

Findings

From the research undertaken, a number of key findings can be identified. These have been grouped into themes that reflect the literature review discussed earlier.

What to include?
Given the lack of consensus from the literature, it is perhaps not surprising that there was a lengthy debate about what to include in any analysis of creative industries. In the end, our decision (influenced by our European partners)[8] was to follow broadly the framework of the DCMS model, identifying the core creative sectors as architecture, design, photography, advertising, publishing of books, film/TV/radio/sound and music, and creative arts. However, the debate became more intense when we proposed to adapt the DCMS matrix model to capture the supply and distribution of creative products and build on the industrial legacy of our city. This proved to be controversial for a number of reasons. Initially our concern was how to measure these activities and avoid over-representation. Could we, for example, use the DCMS ratios to avoid over-counting? Armed with some industry knowledge, we investigated the supply chain and distribution of the textile-fashion industry complex. The results were a surprise, as the SIC code statistics appeared smaller than our knowledge of the industry suggested. The reason – we found by interrogating the FAME database - that some of the major companies had reclassified into wholesale activities or general textiles manufacture and were hidden among generic figures. Even Nottingham's most famous design company, the Paul Smith Ltd, (an employer of 900 people globally) classes itself as a wholesale organisation and would not feature in any mapping of creative industries. We also found that some of the surviving manufacturers of textiles had innovated and diversified into new added-value areas of technical and performance textiles. These results suggest that the 'manufacture' of upstream textiles and fashion is perhaps more creative than the DCMS estimate suggests, and support the argument for counting creative occupations, even within activities as peripheral as wholesale; or indeed a wider classification of business activity. A similar experience was observed in the publishing supply chain, where it was found that a significant element of graphic design and related creative activity is embedded within a few well established large 'printing' and 'packaging' companies. These findings preceded any evidence to support the potential for a hypothetical return to domestic manufacture for 'high value' items that support the local creative economy.

A problem of detail
The second problem that we encountered was in accessing an appropriate level of detailed information in order to fully implement a DCMS-like model. Publicly available statistics at local level were found to restrict access to any data that might be traced to small groups of firms. Even a local university's specialist economics statisticians have been unable to find the resources to sponsor a fully detailed exploration with this level of detail. At the time of undertaking the initial research (2010/11) we also found that the re-alignment of SIC codes to the 2007 model, precluded any historical consistency between 2008 and earlier, and 2009 and onwards. Even the ONS statisticians (Regional Statisticians 2008) had shied away from tackling this issue at regional level. Finally we found that, whichever data set we utilised, there was a lack of detail about SMEs and non-VAT registered business. The full extent of this problem was only realised after we had embarked on our own survey, which was – at least in part – generated because of these limitations. On average, 50% of our sample of 240 firms were NOT VAT or PAYE registered. While this may not correspond to large numbers in employment or GVA terms it does emphasise the significance of small, non VAT/PAYE registered firms in some creative activities, as set out in table 1, which shows around one third of firms in design, including graphic design; TV, film and music; and the majority in publishing as well as performing arts, are non-VAT registered.

A further problem emerged in matching the official statistics to individual business characteristics. During the survey we found that the categories used by firms were inconsistent, with the result that some firms undertaking graphic design work, for example might appear in the design category, while others would identify themselves as advertising and others were hidden within the printing industry. Indeed, we concluded that some companies could be advertising/marketing/webdesign businesses and are potentially all three. From our survey findings we had the benefit of being able to check classifications according to company descriptions provided, but this is not realistic on a larger scale.

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[8] Organza partners are based in 9 medium sized EU cities, each with a focus on creative industry policy support.

Table 1: Survey results showing VAT and Non-VAT registered companies

Number of Companies VAT registered		
Sub-Sector	**VAT registered**	**Not VAT registered**
Architecture	11	10
Advertising	17	2
Design	44	25
Ave Graphic Des	12	6
Ave Furniture/Int	5	2
Ave Fashion/Cloth	2	3
Ave Brand/Market	3	1
Ave Web Design	11	2
Ave Photo	6	5
All Film, TV, Vid & Music	17	9
All Written Publishing	11	12
ALL SOFTWARE	41	4
Ave Gaming	3	0
All Creative + Performing Arts & Entertainment	5	21
ALL C.I. Total	**146**	**83**

The result, comparing our own figures with those of the City Council (see Table 2), both gathered in a similar time period, show comparable headline figures, but that the details demonstrate different breakdown and trends – in key sectors, those exhibiting growth and stability. It is important to understand how these differ and why, and also to see how this information can be made more consistent. The added survey data illustrates how a greater understanding of individual businesses can help to clarify some anomalies.

Compensating for data gaps
Perhaps the biggest challenge, therefore was to try to understand more about the gaps in the data and how this information can be 'filled'. Essentially gaps appeared in three areas – confidentiality leading to suppression of some data; lack of transparency of activity within some categories and how businesses had classified themselves; lack of knowledge of the upstream and distribution networks, which appear to be growing in significance. One might argue that suppressed data is easiest to deal with. Data is often suppressed because the figures are small, in which case they have little significance, or because they relate to specific firms, in which case the data can be compensated to some extent with local knowledge. The problem here is dealing with aspects of validity (replication) and dissemination. Understanding more about the activities within business activity codes, has for us been dealt with by surveying a sample of firms. The issue of upstream and downstream 'fuzziness' has been resolved by the City Council by omitting the whole fashion design sector, although the same principal then must surely apply to publishing / printing, furniture design/ manufacture and TV production/ broadcasting – which appears not to be the case. Our estimates suggest that a significant proportion of the 9000 additional supply jobs (4800 in the City) contribute to the creative industries in some way. This does not include added jobs in distribution, which it is impossible to separate from aggregated figures.

Table 2: Comparison of Creative Industry Mapping exercises

Nottingham City – employment stats – Greater Nottingham	Organza Secondary research – Nottm and Nottinghamshire UA	NTU/Organza survey 240 respondents
General limitations/ benefits		
Based on 2008 ABI (VAT registered Firms only)	Based on 2008 IDBR (VAT and PAYE registered firms) at 5 digit SIC	Random stratified sample survey of VAT and NON VAT registered businesses
Based on 2008 ABI (old statistics – population census)	Includes upstream supply and distribution data from ABS (2009) 2 digit SIC	2011 survey statistics (current)
Data gap – no estimate of economic output at the 'local' city level.	IDBR covers firm and employee numbers only, and City/ County UAs. Some local data is protected.	Exemplifies statistics, but not easy to generalise
SURVEY OUTPUTS		
1,800 CI businesses in GN (800 in city) Likely underestimates these figures because of VAT registration issue. Eliminates some sectors due to lack of specific data	1,850 CI businesses in Notts County region; 700 in City. Upstream supply industry adds 520 and 300 respectively. Omits non-VAT/ PAYE registered.	Reveals extent of VAT registration. 52% firms not VAT registered/ 50% not PAYE registered. Highest rates of non-registration in CPA and architecture
10,700 people employed (6,100 in city) Likely underestimates these figures because of VAT registration issue	10,300 across Notts County (5550 in City) are employed. Upstream supply adds some 9000 (4,800) additional jobs. Some underestimation in VAT/PAYE figures, but for smaller employers only.	Our survey shows that many firms source locally, that, while internationally and national marketing is surprisingly high, the majority of firms trade in local supply networks.
Statistics demonstrate majority of businesses are MICRO: 1,700 of the 1,800 (94%) employing under 10 staff. Average employment : 6 (GN) 7.6 (City)	Average firm size is 8 employed in City LA.	60% of firms employ fewer than 5 people. 110 of 150 (73%) are Micro
ABI demonstrates creative sector is dominated by the Architecture and Computing (Software) subsectors.	IDBR data dominated by software publishing and film/ video/ TV production	Software sector was 'hard to find' in representative numbers. Design was over-represented with largest group in graphic design (not elsewhere identified).
There has also been a large degree of change between 2003 and 2008 with all subsectors apart from advertising showing an increase in the number of firms	Overall jobs have increased by 6% (almost 300), and number of firms by 12% (55) from 2006-8	New firms most evident in design (18/35) and CPA (9/18) firms less than 3 years old.
Sub-sectors declining over the 2003-2008 period: Music and Arts; Radio and TV; Video, Film/ Photo;	The only sectors with decline in jobs 2006-8 are advertising and photography.	
Sub-sectors growing over the 2003-2008 period were: Advertising; Architecture; Arts and Antiques	From 2006-2008 only architecture and software show real increase in firm numbers. These subsectors also have the only sizeable increase in jobs: up 195 (9%) and 320 (19%) respectively	On average software firms are larger 11/15 employ more than 50; and have higher turnover than other subsectors. Highest single company turnover in design.
Sub-sectors remaining stable was computing and software	Employment data for radio and TV are withheld, but firm numbers are stable.	Longest established firms (more than 12 years old) are in: software 24 of 25 and architecture 14 of 16

CPA = Creative and performing arts
Notts County figures stated include Nottingham City Unitary Authority and Nottinghamshire County Unitary Authority.

What does the data not tell us?

Perhaps the most obvious gap in the data presented in table 2 is that it is already dated, and it is only now (2012) that more recent figures are becoming available, although these lack the same detailed release at 4-5 digit SIC code level and also consistency over time. It is ironic that that this should be the case when discussing innovative and emerging industries. It is also unfortunate that at local level and industry subsector divisions there is a dearth of impact measurement for businesses in terms of turnover, investment, and GVA contribution. A limited amount of information was collected during the survey on these aspects, but a more detailed, robust, and consistent approach would be needed to extrapolate this data to a wider level. Without this, it is difficult to argue for policy support in creative industries and even harder to demonstrate its effectiveness, and this has been a limitation on policy support for CIs in the East Midlands.

The Policy Outcome

We analysed consecutive policy documents produced by Nottingham City Council during the last 5 years, as summarised in Table 3. Backed by the preceding analytical attempts, the policy focus has made a significant leap from supporting a wide range of creative industry sectors up until 2010, to focusing on a narrower band of digital and creative industries from 2012. What is interesting, however, is that much of the 'new' focus falls into the hard-to-measure subsector of creative industries. For example, we might ask to what extent is digital publishing distinguished from more conventional publishing and printing? How are the number and contribution of computer games and social media measured, when even IDBR 5 digit SIC codes fail to recognise the activity with any certainty?

Table 3: Nottingham City Strategic Priorities

	2007-2010 CI Sector Growth Plan	2012 Nottingham Growth Plan
Sector Focus	Key growth sectors: • Computer games/software • Photography • Furniture/product design & manufacture • Web design/ multimedia • Interior design • Teaching dance/ drama/ music • Architecture • Signmaking • Graphic design • Marketing/ advertising	Digital content industry (DCI): Delivering digital output and technology aided: • Video, • Film, • Photography, • Music, • Publishing, • Radio/TV, • Computer games, • Social media & supporting software
Indication of sector size	1,700 units with 9,300 employees. Discounts self-employment. Further 300 units and 1,200 jobs in cultural sectors. (Greater Nottm, 2004)	6,400 people employed (City) Mostly 'low employment-density' firms with potential to grow.
Strategic priorities	1. Develop creative people 2. Promote creative spaces 3. Support creative businesses	1. Fostering enterprise; 2. Developing a skilled workforce; 3. Building a 21st Century infrastructure
Targeted Actions	• Graduate progression/ graduate retention • CI Apprenticeship; • Place marketing; • Redevelop Designer Forum and Nottm Fashion Centre; • Recommission wet space, niche manufacturing space and rehearsal space; • Encourage VAT registration; • Support businesses in supply chain context; • Promote networking and expand networks nationally & internationally.	• Antenna Access – expansion of incubator space • Loan fund to promote growth • 'Made in Nottingham' promotion and branding for upstream strengths • 'Creative Class' – support innovation ambassadors • Super connected ultraband and wireless access • 'Creative Quarter' – regeneration zone for focus of DCI activity.

Sources: Nottingham City Council (2007) Nottingham Creative Industries Sector Growth Plan 2007-2010;
Nottingham City Council (2012) The Nottingham Growth Plan.

From our survey of the creative industries we struggled to find enough software and specifically gaming companies to make a 10% research sample, in spite of interrogating commercial (Experian and FAME) databases and publicly available listings (www.yell.com).   However, from those that did participate we discovered some interesting characteristics of this sector that reinforced the various UK reports, although perhaps on a smaller scale than expected. Consequently, of the 48 surveyed software firms, only 4 were specifically involved in computer games. Of the software publishers, the average business age is 14 years, with very few newly started units - perhaps surprisingly not the young dynamic sector expected. Businesses are on average more export focused than other CI sectors, and with a higher turnover (more than 1/3 have turnover in excess of £1 million). Almost all are VAT registered, suggesting there is little need to compensate for under-representation in this group.

The TV, film, music etc group of firms in our survey demonstrate a very different profile. There are more young businesses, though the average age is still 10 years established, and a higher proportion in the lower income bands: 2 out of every 3 firms have stated income below £100,000 pa. Their markets are predominantly national, and average size of firm blow 5 employees. With this in mind, the new policy assumptions make interesting reading – in particular the focus on new start businesses and support to house and mentor early stage firms. At a superficial level, there is a lack of support for those who have been established for some time. The policy does have an aspect of 'picking winners', with its focus on these sectors, and there are initiatives to support growth in the most innovative firms. Another inconsistency is the lack of transparency of upstream 'manufacturing' within the digital subsector (perhaps easiest to see in the TV, film and media industries), although this has become a policy objective.

Discussion

The findings demonstrate the complexity of mapping creative industries and the potential for an uncertain, possibly negative, impact on policy direction, very much in line with findings of Veccho (2009) and Boggs (2009). While it is true that there has been some convergence in recent years regarding which CI subsectors to include in any evaluation of creative industries, as posited by Flew and Gunn (2010), it is not the case that this consensus is operational at a detailed and localised level. Higgs et al (2008) stress that the development of a robust measurement methodology is critical to achieving the primary function of mapping studies. This is increasingly important in CIs, where detail about business activity is masked in generic level data, as identified by Markusen et al (2008), and variation is therefore lost. From the case, examples include elements of gaming and social media which are not identifiable in official statistics; and detail in fashion design/ manufacture and fashion retailing which have been lost over time, as industry restructuring has resulted in official statistics becoming more generic. The result is inconsistent mapping outcomes, and Boggs (2009) argues that competing definitions [or in this case their interpretation] make it difficult to provide well-founded policy recommendations. This presents a particular challenge to practitioners attempting to understand contrasts and differentiation between different creative sectors, to monitor progress and evolution of creative industries over time, and to evaluate the impact of policy intervention/ non-intervention.

This argument is also pursued by Higgs et al (2008) who see the extended lag of new and growing sectors, such as digital media. This is especially important in this case where business activity at company (micro) level suggests that such subsectors may be a major contributor to CI GVA and employment growth and may prove to be the city's 'next big thing'. The DCMS approach to proportioning SIC code activity against 'creative activities' is also called into question over a period of time. The latest DCMS statistical review has added SIC codes for Printing of newspapers (18.11) and pre-press and pre-media services (18.13) to the publishing sector – reflecting this change within its methodology, at least in one sector (DCMS 2011).

The rationale behind the apportionment is generic and not entirely transparent, but it certainly has little sensitivity to changes over time. Hollowing out of manufacturing capacity for example, may mean that a greater proportion of manufacturing capacity can be deemed to support value adding 'creative' activities. A cluster approach, monitoring individual business activity and the links and dependencies between firms, as undertaken in the FORA (2010) process, would appear a potentially more useful approach, but one which is no easier to achieve and perhaps more resource intensive – a cyclical argument if obstacles to support for the sector revolve around difficulties of measuring the sector's impact and importance.

In line with Rosenfeld's (1997) research on cluster economics, it is important for policy makers to really understand how clusters work and firms interact. In CIs this means it is necessary to understand more than just employment, and number of firms (although these are useful indicators). More detailed data on GVA, economic contribution, exports, extended supply networks and horizontal interactions is important, and time

series data would help to monitor trends and evaluate the impact of interventions. For example, the survey data reveals some interesting details about firms marketing exposure which helps to understand some of the firms' longevity and growth potential. Markusen et al (2008:38) found that recognising and mapping local distinctiveness allows for the development of a strategy that recognises a region's strengths and weaknesses, and this process is supported with more detailed local knowledge.

While perhaps more flexible, the approach of focusing on creative jobs also proves to be problematic at local level. While early research into the creative industries was criticised for its over simplistic analysis, and the counting of 'creative workers' found to be an improvement and more comprehensive, one could also argue that this is inconsistent and incomparable with practice in other industry sectors. Administrative and managerial jobs are counted in other industries where they perform important support functions. In manufacturing indirect workers are counted in employment figures (though they may be identifiable for comparative analysis) and it is inconceivable to imagine that activity levels in hospitals and universities might be measured only by the jobs of medical workers and academics!

Conclusion and recommendations

The paper set out to explain the process and problems of mapping a localised creative industry sector, to examine the similarities and differences between data obtained from secondary data with primary data from within the field; and to identify any implications for policy, practice and innovation.

We can conclude that the challenge of mapping the creative industries in a meaningful way is no less problematic than the experience of Boggs (2009) and Cunningham et al (2009) and indeed, like the latter authors can concur that the industry itself is something of a conceptual '*slippery fish'*. We find that the issues are compounded at sub-industry level and sub-regional scale and that the combination of both de-values any meaningful statistical analysis. The combination of restricted data, 'lost' sectors and fear of over-estimating appears to result in considerable under-estimation.

Contrasting our own statistical research against the statistical methods and interpretation of others and the micro-data generated by our survey, highlights the dearth of data available from official sources. Our survey of approximately 5 to 10% of the local CI sector reveals the importance of micro-enterprises within some subsectors of the creative industry and the degree to which they are under-represented in official statistics. While this may not have drastic impact on overall employment or sector GVA, their omission results in a poor understanding of the characteristics of the sector. Furthermore, understanding the behaviours of these and larger businesses highlights the dynamics of the sector – with real surprises being evident in the longevity of many creative businesses and the extent to which they engage in international markets. This in-depth understanding could be even more valuable over a longer time period. Our experience of undertaking the survey also highlights the difficulty of keeping up with emerging or changing industry activities – in the field as well as in the use of official data.

In turn, these findings demonstrate the importance of 'getting it right' if policy decisions and impact evaluation are to depend on such research. Indeed, Boggs (2009) concludes that inaccurate estimates and mapping of creative industries makes for inappropriate and ineffective policy development. Our experience of mapping the Nottingham creative industry sector points to the advantages and benefits of accessing and cross analysing multiple sources of data, and complementing secondary data with field studies to fill gaps and enhance understanding, providing a complementary triangulation method to that offered by the 'Creative Trident' approach (Cunningham, 2011:27) However, we would also propound the benefits of introducing a regular and consistent 'mechanism' to maintain currency in understanding the 'state of the industry' and reduce the issues of replication. An 'observatory' such as that employed in Nottinghamshire's textile industry in the 1990s (Totterdill, 2000) could have considerable value in securing policy support, evaluating impact and contributing to a better process for mapping complex industries. Indeed, our mixed experiences of mapping the creative industries in Nottingham may have important lessons in other complex and emerging sectors, not least another of Nottingham's target growth industries: the 'Cleantech sector' – a compilation of activity in sustainable energy generation, waste processing and energy management – each with several guises.

At the time of writing it is clear that the Uk political agenda on creative industries is changing, although it is not clear how this will manifest itself in the mapping of creative industries and any resulting policy support, economic development and growth, except that a shift towards support for digital and creative industries pushes local policy making firmly into the 'fuzzy' area of CI mapping. A final word on the case reflects on the SMEs themselves within the digital and creative industries. The long standing problem expressed in the paper requires innovative solutions, and there is scope for an innovative 'bottom-up' solution to the problems of expressed, that could perhaps best be developed in association with creative practitioners.

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Word count 9050; words in tables, abstract and references - 2200, net words in text 6850

Appendix 1 Contrasting approaches to CI analysis: KEA, NESTA and Perfect Moment

Title	NESTA	KEA	Perfect Moment
Scale	UK	Europe	Devon and Torbay Region
Scope	Creative industries Creative jobs • Creatives in CI • Support roles in CI • Creatives non CI	Culture and creative Incs • Non industrial cultural sector • cultural products for mass reproduction • creative sector '***use of cultural resources as an intermediate consumption in the production process of non-cultural sectors'***	Creative industries only
Findings	Jobs Income generated	Contribution to economy	Economic impact; Support and skills implications
Sources	Population data Occupations Incomes Labour Force Survey LFS 'occupation within industry' datasets	Eurostat database Amadeus Database	The Annual Business Inquiry (ABI) Inter Departmental Business Register (IDBR) A Business Database (Experian) Local data and primary research
Methods	Analysis of creative jobs based on census occupation and income data	Matrix of sector codings – see report appendix - Eurostat Draws on Amadeus business datasets to complete gaps Measures: Turnover, Value Added to EU GDP, Contribution to EU growth, Employment	1. secondary data: national regional stats; national, regional, local reports 2. database of 5000 businesses, postcode mapping 3. Survey of 250 firms 4. Consultation through interviews with stakeholder groups and 3 sub-regional focus groups
Focus	Creative core Pre-creation, creation (primary, interpretation, creative services)	Cultural and creative (using culture as an intermediate consumable!)	***DCMS definition and methodology***: includes creative content, manufacture and distribution See DCMS evidence toolkit (DET)

Excludes	Other parts of value chain (manufacture, distribution, retail)	*Cultural: non industrial:* visual arts including paintings, sculpture, craft, photography; the arts and antique markets; performing arts including opera, orchestra, theatre, dance, circus; and heritage including museums, heritage sites, archaeological sites, libraries and archives *Culture for reproduction:* film and video, video-games, broadcasting, music, book and press publishing	DCMS definitions of cultural industries
Advantages	Population not sample based Map extent of creative spread beyond CI, and added value of creative core Defines skills needs of creatives and support staff Earnings indicator	Data available at national and EU levels; *Sees cultural sector as factor resource to creative sector*	Estimate size of sector, growth trends and support/skills needs Comparison to other regions/ clusters
Limitations	No single dataset Labour Force Survey data not robust - small sample; Omits earnings of self employed Popn census dated – every 10 years Few classification codes relevant to CIs	Lack of data at local/regional level, Amadeus data based on sample: Omits self employed, micro enterprise and public sector. Underestimates impact.	Statistical data less reliable at sub-regional level DET specific data maps across creative sectors – where some data not available or cannot be separated from 4 digit SIC Omits small firms

Sources: Higgs et al 2008, KEA, 2006 and Perfect Moment, 2006