

Oliver, J.J. (2015). *Dynamic Capabilities: exploring industry level capabilities in UK Publishing. Negotiating Culture: Integrating Legacy & Digital Cultures in News Media Conference*. Reuters Institute for the Study of Journalism, Oxford University, 28th-30 October.

Title: Dynamic Capabilities: exploring industry level capabilities in UK **Publishing**

The competitive dynamics of many industries have changed considerably over the past decade and perhaps none more so than in **news media**. There is no doubt that this industry continues to undergo structural changes that compel news media firms to adapt and transform their business in response to the dynamic nature of media environment (Oliver, 2012; 2014). Indeed, many scholars have written extensively of the influence that the digital media environment has had on news businesses in terms of organizational value chains, profitability and their strategic adaptation to an environment disrupted by innovative **new media** technologies (Kung, 2008; Picard, 2010; Coates Nee, 2013; Nielsen, 2014; Schlesinger and Doyle, 2015).

Industries have long been examined by researchers from a strategic perspective with various themes of inquiry relating to; industry structure and positioning, industry evolution and development, industry lifecycle, industry change and industry consolidation. Fundamentally, this body of knowledge emphasises the importance of an organisation's strategic fit with their competitive environment to achieve competitive advantage. This paper argues that '**industry analysis**' could usefully draw on **Dynamic Capabilities** Theory (Teece, Pisano and Shuen, 1997) which argues for the strategic adaptation and reconfiguration of news media firm resources and capabilities in order to address a rapidly changing competitive environment. The increasingly dynamic nature of news media provides an ideal context to examine the dynamic capabilities exhibited at industry level, and whilst questions of industry analysis have been extensively covered in the field of strategic management, there is a dearth of literature that examines dynamic capabilities at industry level, and more specifically, UK news media.

This paper will present empirical findings from a comparative time-series analysis (1997-2013) of the UK Publishing Industry and compare it to other industries categorised within the UK Creative Industries. Using descriptive statistics, this research will examine two key resource based metrics: the number of employees and the Gross Value Added by each industry. In doing so, this analysis will extend the limited knowledge on industry level dynamic capabilities and inter-industry performance and provide an insight into how the UK Publishing Industry has adapted to digital media over two decades change and turbulence.

Keywords: **Dynamic Capabilities, Industry Analysis, Creative Industries, Publishing, Media Management.**

ABSTRACT

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INTRODUCTION

The competitive dynamics of many industries have changed considerably over the past decade and perhaps none more so than in news media and publishing. There is no doubt that this industry continues to undergo structural changes that compel firms to adapt and transform their business in response to the dynamic nature of media environment (Oliver, 2012; 2014). In the UK, these structural changes are illustrated by the substantial number of job losses in publishing, from 308,500 in 1997 to 231,000 in 2013. Some of these losses can be attributed to macro environmental events such as the collapse of the dot.com economy in 2000 (33,100), the advent of new media technologies in 2004 (30,900) and the Global Financial Crisis of 2008 (33,100). However, it is the disruptive nature of innovative new media technologies on organizational business models, value chains, and profitability that has tended to shape the debate on the strategic adaptation of news media firms (Kung, 2008; Picard, 2010; Coates Nee, 2013; Neilsen, 2014; Schlesinger and Doyle, 2015).

Industries have long been examined by researchers from a strategic perspective with various themes of inquiry relating to; industry structure and positioning, industry evolution and development, industry lifecycle, industry change and industry consolidation. Fundamentally, this body of knowledge emphasizes the importance of an organisation's strategic fit with their competitive environment to achieve competitive advantage. This paper argues that 'industry analysis' could usefully draw on Dynamic Capabilities Theory (Teece, Pisano and Shuen, 1997) which argues for the strategic adaptation and reconfiguration of news media firm resources and capabilities in order to address a rapidly changing competitive environment. The increasingly dynamic nature of news media provides an ideal context to examine the dynamic capabilities exhibited at industry level, and whilst questions of industry analysis have been extensively covered in the field of strategic management, there is a dearth of literature that examines dynamic capabilities at industry level, and more specifically, UK Publishing.

This paper will present empirical findings from a comparative time-series analysis (1997-2013) of the UK Publishing Industry (which comprises of two employment groups: journalists, newspaper and periodical editors; and authors, writers and translators¹) and compare it to other parts of the UK Creative Industries. Using descriptive and inferential statistics, this research will examine two key resource based metrics: the number of employees in each sector; the Gross Value Added by each industry. This analysis will extend the limited knowledge on industry level dynamic capabilities and

¹ Department of Culture Media & Sport, Creative Industries Economic Estimates, January 2015, Statistical Release.

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inter-industry performance and provide an insight into how the UK Publishing Industry has adapted to a digital media environment over two decades change and turbulence.

LITERATURE REVIEW

The literature on dynamic capabilities continues to evolve, but it is largely fragmented with little in the way of shared consensus of its precise characteristics, nor indeed the development of theoretical frameworks that have been rigorously tested through empirical study. However, the review of literature for this paper argues that Dynamic Capabilities Theory describes a phenomenon that has several fundamental components that have consistently featured in studies published in the field. These common themes refer to: organisational adaptation where the focus is on reconfiguring resources, capabilities and competencies; this strategic adaptation of resources aims to produce positive effects on performance; this adaptive process occurs in a compressed timescale due to the fast changing nature of market conditions.

Dynamic capabilities: adapting resources for a rapidly changing environment

Teece et al (1997:516) seminal paper on dynamic capabilities argued that it was a firm's "ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" that explained the fundamental question of how firms achieved competitive advantage and superior performance over time.

The idea that organizations' have dynamic capabilities arose from theorists questioning how firms sustained competitive advantage and superior performance in high velocity conditions where "the increasing dynamism of the environment" (Pettigrew, Thomas and Whittington, 2007:143) made it increasingly difficult to remain competitive. Many scholars (Mintzberg, 1987; Leavy, 1998; Zollo and Winter, 2002) concluded that superior performance is driven by a firm's ability to learn, adapt and change their resource configuration in order to produce a series of temporary competitive advantages over time. Lawton and Rajwani (2011:167) took this line of thinking further and concluded that "dynamic capabilities are the bridge between firm resources and business context" and as such, this concept provided a useful lens through which to examine how news media firms adapted their resource base to produce new capabilities and subsequent superior organizational performance.

In its simplest form 'dynamic capabilities' is a consideration of the adaptation of firm resources and capabilities in relation to structural changes in market conditions. It suggests that tangible resources are configured and utilised to generate value and rents, and that intangible resources in the form of skills, experience, learning, systems and processes create competitive advantages that cannot

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easily be imitated by competitors. Ambrosini and Bowman (2009:30-35) argued that dynamic capabilities “specifically focuses on how firms can change their valuable resources over time”. They go on to argue that the words dynamic capabilities refer to the drive and enthusiasm of a firm in their “renewal of resources”. This perspective echoes the earlier work of Teece and Pisano (1994) and Zollo and Winter (2002) who emphasised that a changing external environment required firms to adapt and reconfigure resources, assets, operating routines and competencies in order to improve their effectiveness and competitiveness in the pursuit of superior performance. In a sense, the idea that firm capabilities need to be ‘dynamic’ is a consideration of the competitive environment, its future direction, and how a firm can take advantage of the opportunities provided in their existing and future markets (Teece et al, 1997; Danneels, 2002, Oliver, 2014).

Many industries have changed and evolved over the past decade due to high velocity market conditions that are characterised by a blurring of industry boundaries, new industry entrants and changing business models. As such, the argument for the strategic adaptation and reconfiguration of firm resources and capabilities seems well founded. Indeed, Hensman, Johnson and Yip (2013:10) noted that corporate strategies have historically had competitive advantage at their core, however, due to the dynamic nature of the digital media environment the “only advantage is the ability to change more quickly than one’s rivals” to the extent that corporate strategies need to emphasise organizational adaptation, or as they put it, “dynamic capabilities on steroids”. Hensman, Johnson and Yip (2013) also argued that researchers have largely ignored the notion of how to move dynamic capabilities from theory into implementable practice. This criticism, is to an extent justified, however, the recent work by Oliver (2012, 2014) presented a conceptual framework which focussed on specific variables that could be attributed to dynamic capabilities traits and applied these to UK media firms in a longitudinal analysis of dynamic capabilities and superior firm performance. This work argued that media organisations’ can renew, refresh and leverage new capabilities and competencies in order to successfully adapt to turbulent markets conditions by setting corporate objectives and implementing a strategy that:

- is aspirational and stretches the organisation in to winning position in the market place;
- acknowledges the need to form strategic alliances, merge or acquire other firms’ capabilities rather than rely on organic development of new capabilities;
- absorbs research and development costs for a sustained period of time;
- directs significant resource commitments in infrastructure, people and organisational processes in order to develop innovative responses to structural market changes;
- emphasises resource investment in new products and services.

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Dynamic capabilities at news media industry level

The increasingly dynamic nature of the news media environment provides an ideal context to examine the dynamic capabilities exhibited by a group of media organisations competing in a high velocity environment (Oliver, 2013, 2014) that is characterised by ambiguity and complexity (Kung, 2008; Lee, 2010). As a consequence “media firms have naturally adapted their business and corporate strategies in the face of these changes” (Doyle, 2013:35) to the extent that industry level capabilities could be considered to be converging. Whilst questions of industry analysis have been extensively covered in the field of strategic management, there is a dearth of literature that examines dynamic capabilities from an industry level perspective.

The idea that an industry can exhibit dynamic capabilities has been investigated by a relatively small number of researchers. For example, Zott (2003) developed a theoretical model that explained intra-firm differences in performance, whilst Owers and Alexander (2011) longitudinal examination of media industries found that new media technologies and media ownership acted as key drivers for media organisations’ to transform and restructure of their resource base. However, the work of Lampel and Shamsie (2003:2191), which examined the evolution of capabilities in the Hollywood movie industry, is of particular interest in terms of supporting the idea of industry level capabilities. They found that a highly turbulent competitive environment created “new patterns of competition” within the industry and “new managerial mindsets” which tended to dominate what was considered to be new industry level capabilities. In particular, they argued that new capabilities emerged in the form of ‘mobilizing capabilities’ which “consists of routines needed to identify and commit most of the resources, particularly in the form of various forms of creative talent such as producer, director, writer, and stars” and ‘transforming capabilities’ that “comprises routines that drive and regulate the process of using this bundle of resources to obtain a finished product of a desirable quality”.

This evolutionary view of industry level capabilities is supported by Eisenhart and Martin (2000) and De Witt and Mayer (2005) who argued that the emergence of new industry capabilities was determined by two factors. Firstly, that a series of incremental innovations in products and services lead to widespread imitation within the competitive set. Teece et al (1997:526) supported this view arguing that challenger firms simply reproduced the “strategic position” of market leading firms who

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had achieved a competitive advantage. Deans, Kroeger and Zeisel (2002) and Pettigrew et al (2007:39) noted that the converging nature of industry level capabilities essentially produced new capabilities that could be considered as the ‘minimum threshold’ that were required to satisfy market requirements. Secondly, these new industry level capabilities could be developed by firms competing independently of each other, but that they ultimately converged due to the limiting factors of technological capability and regulation within the industry. Madhok and Osegowitsch (2000:328) provided a different perspective on the emergence of industry level capabilities. They argued that it was collaborative activity in the form of strategic alliances between competitive rivals who possessed “complementary skills” and sought to reduce the risks inherent in the innovation process that led to a convergence of industry level capabilities.

Positioning this research

More than two decades of technological and social change has resulted in an increasingly dynamic digital media environment. This type of competitive context provides an interesting setting to examine the theory on dynamic capabilities, since high velocity market conditions drive media organisations to adapt and renew resources that produce new capabilities, maintain competitiveness and deliver superior performance.

This paper aims to investigate dynamic capabilities and superior performance at industry level by examining the UK Creative Industries, as a whole, and intra-industry performance within this broad categorisation. Whilst the creative industries have been one of the successes of the UK economy in recent times, the job losses previously discussed in the Publishing Industry suggests that each of the sub-industries are likely to have performed in different ways.

As previously mentioned, there are a limited number of studies that have looked at dynamic capabilities at industry level (Lampel and Shamsie, 2003; Zott, 2003; Owers and Alexander, 2011) and so the findings presented in this paper will extend our knowledge on industry level dynamic capabilities, inter-industry performance and provide an insight into how the UK Publishing Industry has adapted to digital media over two decades change and turbulence.

METHOD

The aim of this research was to investigate the existence of industry level dynamic capabilities and superior performance in UK publishing. To achieve this, two key resourced based variables were used as units of analysis. These were the ‘Number of Employees’ (NE) and the ‘Gross Value Added’ (GVA). These units were further combined to provide annualised figures for ‘GVA per Employee (£)’.

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This analysis will extend the limited knowledge on industry level dynamic capabilities and inter-industry performance and provide an insight into how the UK Publishing Industry has adapted to digital media over two decades change, turbulence and disruption.

The specific research objectives were:

RO1 – To examine how the UK Creative Industries has performed over time.

RO2 – To examine how the UK Publishing Industry has performed over time.

RO3 – To examine how UK Publishing Industry has performed compared other parts of the UK Creative Industries.

Method

The quantitative method of ‘time series analysis’ provided the most appropriate way to identify dynamic capabilities and superior performance over time since it could identify patterns in historical data. The methodological approach used ‘Year’ (1997-2013) as independent variable, and the ‘Number of Employees’ (NE) and ‘Gross Added Value’ (GVA) as dependent variables. The data was obtained from the Department of Culture Media & Sport website (www.gov.uk) which hosts a number of publications relating to the creative industries. In essence, the historical data used in this research was obtained from a number of reports entitled *Creative Industries Economic Estimates* from the years 2015, 2011, 2010, 2007 and 2006.

Time series analysis is useful in a number of ways. It can identify trends in NE and GVA over time, cyclicity in the industry or wider economy, and irregular events which can produce deviations from the general trend. The collapse of the dot.com economy in 2000, the advent of new media technologies in 2004 and the Global Financial Crisis of 2007, which have previously been mentioned, are good examples of irregular events that have produced variations in the trend data.

Time series analysis also has an obvious drawback, that of the standardisation and (in)consistency in the data due to changes in the methodological approach used to collect and categorise the data over time. The data collected in this paper was also subjected to the vagaries of this issue. Indeed, the Department of Culture Media & Sport recognise this problem in their reports and

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state that they have been working with the Office for National Statistics on Standard Occupational and Industrial Classification Codes.

They further add that the NE data has been taken from Annual Population Survey and GVA data from the Annual Business Survey. Having said that, whilst it has been possible to access employment data for the 'aggregate' of the Creative Industries over the period 1997-2013, it has been impossible to replicate this data for sub-industries (eg. Publishing; Film & TV; Music, Performing & Visual Arts). However, employment data does exist for what is called the 'Creative Economy' which is defined as the contribution of those people who are in creative occupations inside and outside of the creative industries. Ideally, this analysis would have benefitted from a like for like comparison of NE and GVA the Creative Industries. Instead, the data used in this research was NE in the Creative Economy and GVA in the Creative Industries. Since, since the findings of this research are descriptive and illustrative it is possible to broadly consider the GVA per Employee data since most of the jobs in the lie in the creative industries and not the creative economy. For example, in 2013 there were 2.62m jobs in the Creative Economy, of which, 1.71m jobs were in the Creative Industries².

In terms of the two dependent units of analysis used to identify dynamic capabilities and superior performance at industry level, the NE refers to the number of jobs, rather than the number of people in the Creative Economy. This means that *main jobs* and *second jobs*, and *full and part time jobs* are counted equally. Therefore, the NE equates to the number of jobs, rather than the number of people who work in the Creative Economy. As for the second unit of analysis, GVA is used by the Office of National Statistics as the standard metric used measure the contribution of industries to the UK economy. As such, it can be used to compare performance across a number of different industries, and so, this makes conjecture about superior GVA performance easier to justify. It should also be noted that GVA calculated in current prices and not adjusted for the effects of inflation and is closely aligned to another standard measure of economic performance, that of Gross Domestic Product (GDP). Since GDP is calculated as GVA + taxes on products – subsidies on products. Therefore, GVA provides a better measure of the contribution of that individual industry makes to the Creative Industries and to the UK economy.

Finally, not all of the creative industries included in the *Creative Industries Economic Estimates* have been included in this research, primarily because of significant inconsistencies in the standard industry and occupation classification codes. Consequently, the Crafts and Museum and Galleries industries have been excluded from this analysis.

² Department of Culture Media & Sport, Creative Industries Economic Estimates, January 2015, Statistical Release

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Data Analysis

Descriptive statistics were used to describe and summarize the data, and to present meaningful information about resource reallocation in the workforce and GVA performance over time. Whilst the objective of descriptive statistics is to collect and quantify data into discernible information for the purpose of description, it also allows researchers to make basic judgements on the data in the study. As such, the analysis is presented in a time series of averages and percentages in relation to the *Number of Employees* and *Gross Value Added* and *Gross Added Value per Employee* (see Appendix 1).

The disadvantage of using descriptive statistics is that they can only be used to describe the data being studied, and as a consequence, the information gleaned from the data is illustrative of dynamic capabilities and superior performance at industry level. As a consequence, the results cannot be generalised to any other industry or industries. Having said that, the findings of this research could be considered by future researchers in this field when designing research studies of greater scale and complexity, where the aim would be to reach conclusions on industry level dynamic capabilities that are generalisable to the wider population of industries.

The author has also used data validation checks where possible. For example, any uncertainty presented in the *Creative Industries Economic Estimates* reports have been referred back to statisticians at the 'Evidence and Analysis Unit' at the Department for Culture Media & Sport. Secondly, an independent statistician has also been used to advise on issues of data consistency and analysis. In essence, the researcher has made every effort to ensure that the data and analysis presented in this paper is trustworthy and valid.

DATA ANALYSIS

How has the UK Creative Industries has performed over time?

The Creative Industries has been one of the successes of the UK economy. Over the past 20 years the contribution made by firms within these industries has increased from 3.96% (£31,205m) to 5.04% (£76,909m) of the total UK economy. The number of employees working in these industries has also increased by 83%, from 931,000 in 1997 to 1,708,000 in 2013. These statistics are largely well known and documented by various agencies, consultancies and scholars.

But how do these statistics translate into the theory on dynamic capabilities and superior performance over time? Firstly, we see a group of creative industries that are subject to the same macro-environment forces in terms of shifting economic conditions, technological change and

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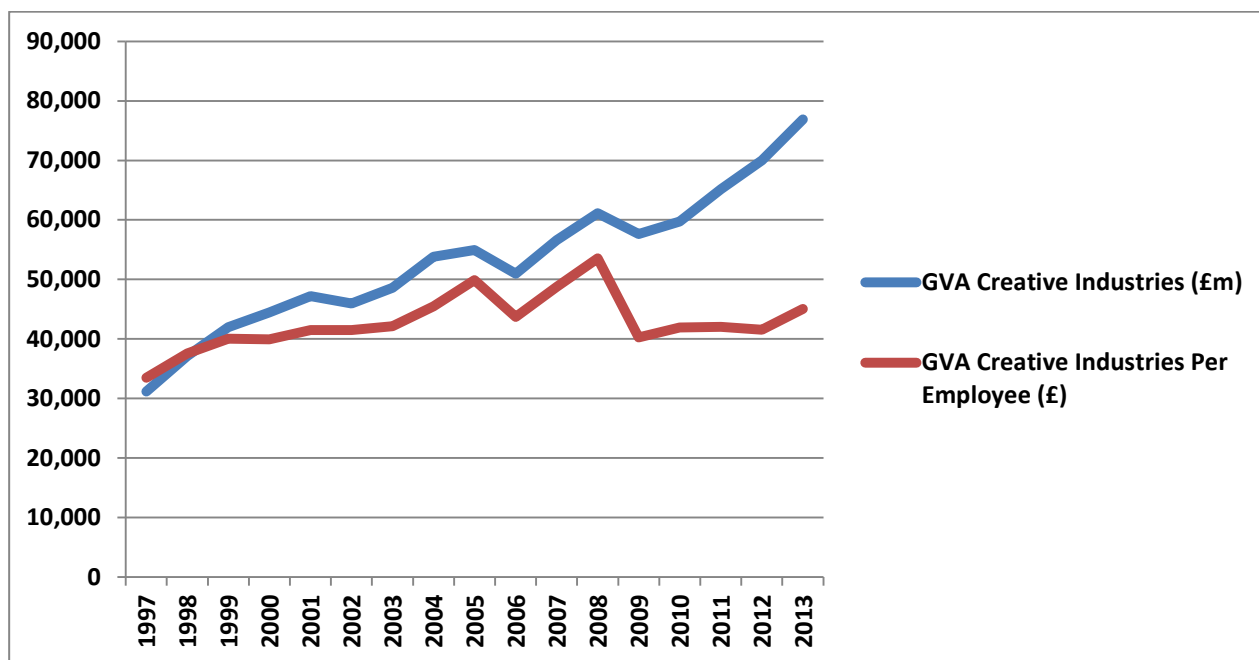
disruption in the form of digitalization and new media. Secondly, and from an aggregated point of view, we see the 'Creative Industries' adapt and increase resources in the form of the workforce substantially between 1997-2013.

Thirdly, this strategic adaption of industry resources should produce positive effects on industry performance. The data indicates a number of positive performance effects over time. For example, we see Total GVA making consistent annual increases to the UK economy of 146% between 1997-2013. In addition, the GVA Per Employee has risen by 34% from £33,518 in 1997 to £45,029 in 2013. It should also be noted that during this period we have consistently seen low levels of inflation, and even when stripping out the effects of inflation, we still see a GVA Per Employee growth of 33% between 1997-2013. Recent discussions on the UK economy, from a number of political and economic sources, have centred on the issue of high levels of employment, but relatively low levels of productivity following the Global Financial Crisis of 2007-11. Indeed, this question is equally relevant to the creative industries, where GVA Per Employee has yet to recover from the peak of £53,542 in 2008. Whilst there has been a strong recovery in Total GVA and the Number of Employees between 2009-13, at 33%, and 19% respectively, the GVA Per Employee has only increased by 12% over the same period. In essence, this trend equates to a productivity gap within the Creative Industries that has been sustained between 2009-13 (see Diagram 1 below).

Whilst productivity gaps tend to be discussed in terms of output per employee between one country and another, it is not unreasonable to consider it in terms of industry and inter-industry analysis, particularly when considering the premise of dynamic capabilities and superior performance. In many ways these lower levels of GVA Per Employee and concerns over productivity are to be expected since the sustained harshness of macro-economic conditions, created by the Global Financial Crisis, will have affected business capital expenditure, investment in research and development, skills training, and a lack of competition in the market place.

Diagram 1: Creative Industries: GVA and GVA Per Employee

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RO2 – To examine how the UK Publishing Industry has performed over time.

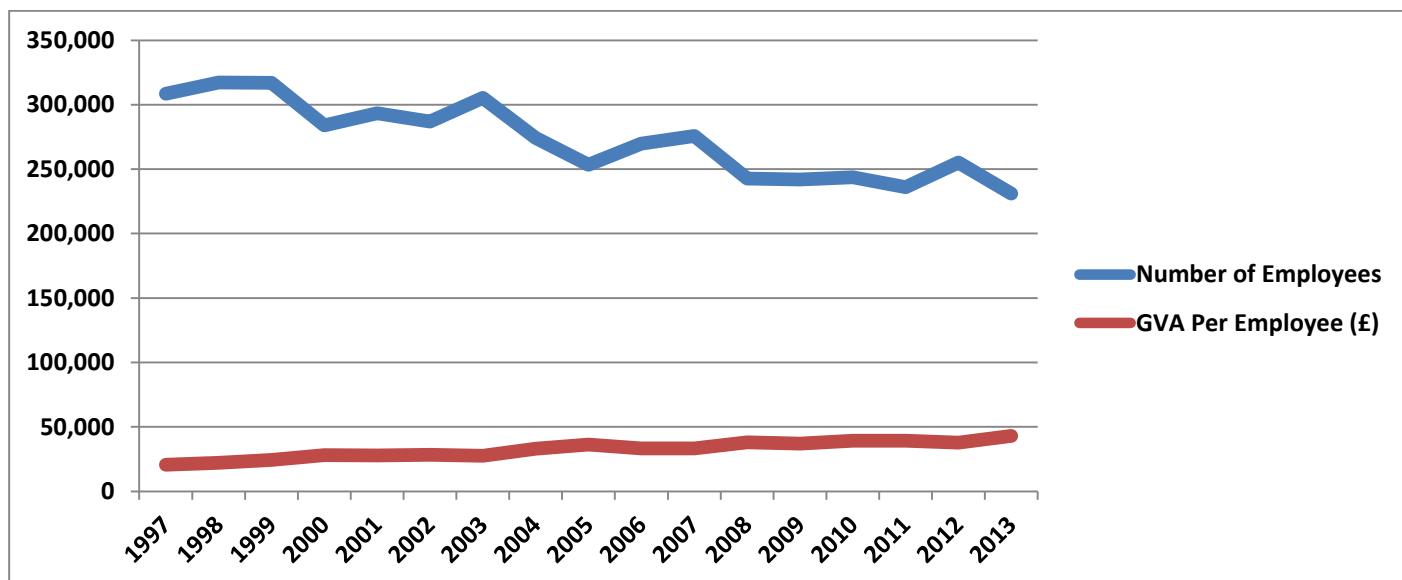
The strategic adaptation and renewal of resources at industry level, is perhaps, most visibly demonstrated in the structural changes of the workforce. The UK Publishing Industry illustrates these changes more than any other with significant job losses as a result of extraordinary changes in the macro-environment. These include: the collapse of the dot.com economy in 2000 which resulted in 33,100 job losses; the disruption caused by new media technologies in 2004 which resulted in -30,900 job losses; and the initial effects of the Global Financial Crisis which resulted in 33,100 job losses in 2008. Whilst there have been job gains following these events (+9,400 in 2001; +18,400 in 2003; +16,400 in 2006; +19,000 in 2012), the net number of job losses between 1997-2013 equates to a astonishing 77,500.

However, in terms of Dynamic Capabilities Theory, the strategic adaption of human resources has delivered superior performance in terms of productivity. For example, there have been consistent increases in GVA Per Employee, which has risen from £20,554 in 1997 to £ 43,022 in 2013 (+109%). Whilst the human cost of these job losses is incalculable, from an economic point of view, the long-term reduction in the workforce has delivered vastly improved results in terms of productivity within the industry. In terms of Dynamic Capabilities Theory, UK Publishing has undergone the structural adaptation and reconfiguration of a prime resource component, its workforce, due to the changing

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nature of the market, which in turn has produced positive effects on economic performance at industry level (see Diagram 2 below).

Diagram 2: UK Publishing Industry performance over time



RO3 – To examine how UK Publishing Industry has performed compared other parts of the UK creative industries.

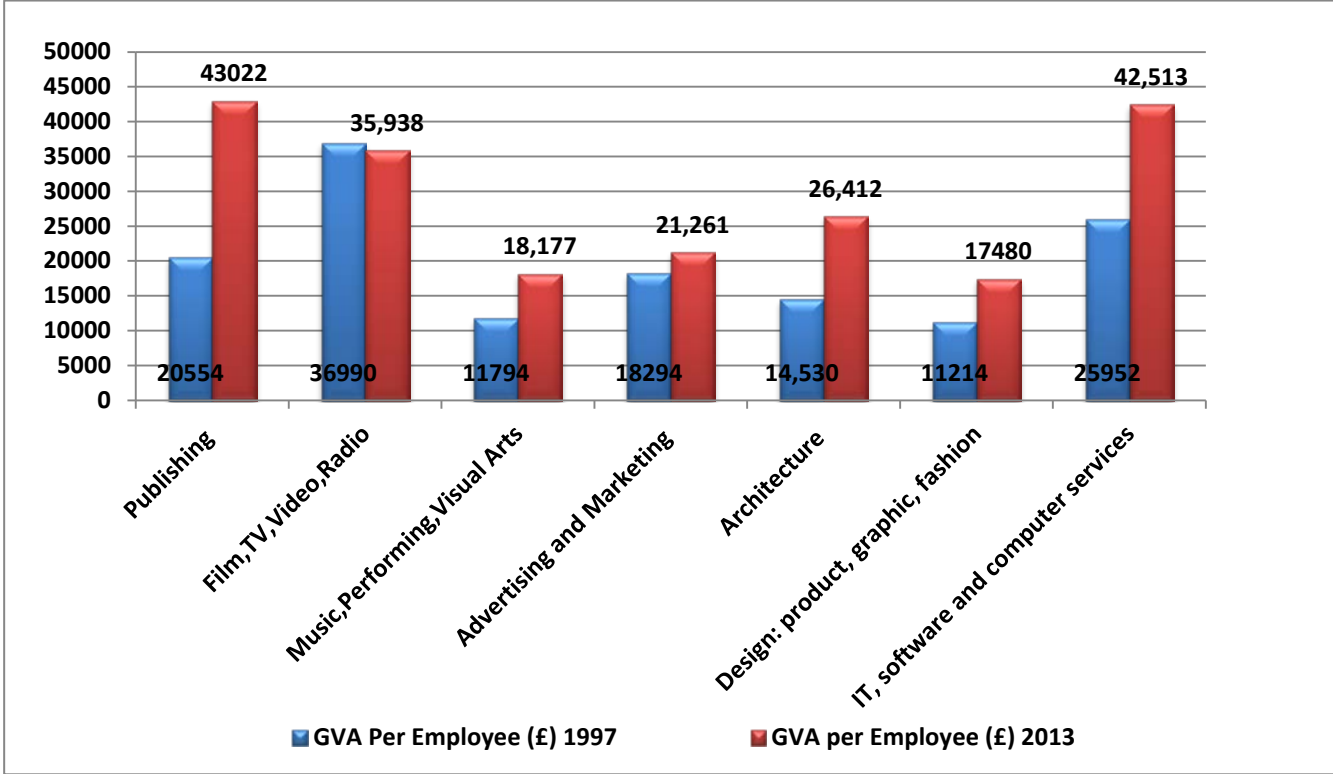
The previous discussion has set out a context to consider the strategic environment, the adaptation of industry (human) resources and performance effects within the Creative Industries and more specifically the Publishing Industry. However, in terms of discussing dynamic capabilities and industry level capabilities and comparative performance effects, we need to consider how publishing has performed in relation to other industries that are classified as ‘creative’.

Diagram 3 below illustrates the inter-industry GVA Per Employee (£) performance based on comparative figures for the year ending 1997 and 2013. Here we clearly see that the Publishing Industry has by far outperformed any other industry, by increasing the GVA Per Employee from £20,554 to £43,022 (+109%). The next best performance is seen in the Architecture Industry which has increased GVA Per Employee from £14,530 to £26, 412 (82%) and IT, Software and Computer Services where GVA Per Employee increased from £25,952 to \$42,513 (64%). The worst performing industry was Film, TV,Video and Radio where GVA increased by 56%, from £5,985m to £9,308m and

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the number of employees increased 60%, from 161,800 to 259,000. The result was a net reduction in GVA Per Employee of -3% from £36,990 to £35, 938.

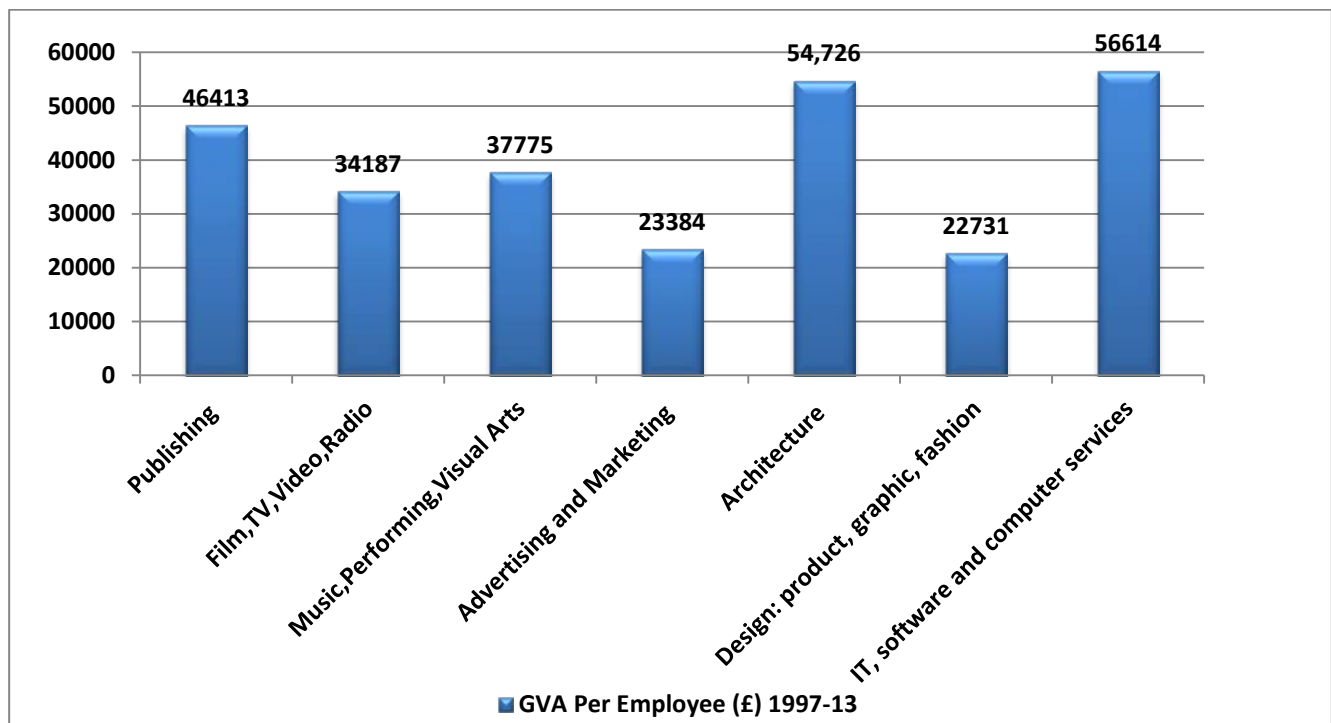
Diagram 3: Inter-Industry GVA Per Employee Performance (1997 and 2013)



What these figures indicate is that at two points in time, 1997 and 2013, the GVA Per Employee performance in publishing has by far exceeded peer creative industries. However, if we take a time series view of the data and look at the ‘average’ GVA Per Employee for each of the years between 1997 and 2013 we see that publishing has a figure of £46,413, which is less than the top two performing industries which were IT, Software and Computing (£56,614) and Architecture (£54, 726) (see Diagram 4)

Diagram 4: Inter-Industry ‘Average’ GVA Per Employee (£) Performance over time

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In all instances, with the exception of publishing, the number of employees in each industry increased between 1997-2013. In effect, the increasing Publishing Industry GVA and decreasing number of employees, has produced an adaptation in the industry and the workforce that has resulted higher far higher levels of productivity in comparison to peer industries.

CONCLUSIONS

The aim of this paper was to extend the limited knowledge on industry level dynamic capabilities. The UK Publishing Industry provided an ideal context to examine this issue due to a transformative context, driven by an increasingly digital media environment, that has created turbulence and structural industry change for more than two decades.

As mentioned previously, Dynamic Capabilities Theory proposes that resources need to be reconfigured in order to produce new capabilities and competencies, which in turn, yield positive effects on performance. It also argues that this strategic adaption of resources occurs in a compressed

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timescale due to the fast changing nature of market conditions. So what can we conclude from the analysis presented in this paper?

Firstly, we can conclude that the UK Creative Industries, as a whole, have increased its human resources significantly over the period 1997-2013 and yet this investment has led to varying degrees of success in terms of performance effects. On the positive side, we have total GVA increasing on an annual basis and GVA per Employee rising significantly between 1997 and 2013. However, GVA per Employee peaked in 2008 and whilst there has been significant investment in human resources in the form of the number of employees between 2008-2013, the return on this investment has not yielded significant increases in GVA per Employee. So much so, that the data presents a strong argument for weak levels of performance in terms of human resource (labour) productivity.

Secondly, in terms of how the UK Publishing Industry has performed over time, we see a structural adaption of human resources which, perhaps surprisingly, have produced positive effects on industry performance. For example, whilst the industry has contracted in terms the number of employees, however, this reconfiguration of human resource has resulted in a far more productive labour force in terms of GVA per Employee. In terms of Dynamic Capabilities Theory, this industry has met the criteria in terms of the reconfiguration of (human) resources which have produced superior performance effects, in terms of GVA per Employee, compared to other parts of the UK's creative industries. In terms, of examining industry level capabilities, this paper has also been able to identify productivity comparisons between different industries and as a consequence, it can be concluded that Dynamic Capabilities Theory can usefully be applied to industry level issues.

Thirdly, it can be concluded that the theory on dynamic capabilities should be re-evaluated in terms of the resource renewal being undertaken in a short timescale due to fast moving competitive conditions. What the analysis presented in this paper has demonstrated is that the UK Publishing Industry has been exposed to a long period of environmental turbulence and structural industry change. These conditions have been consistently 'dynamic' unlike other industries that have gone through periods of incremental transition or punctuated adaptation the digital environment. Future researchers in the field of dynamic capabilities may therefore wish to consider focussing their research into Dynamic Capabilities Theory on understanding how the reconfiguration of resources in dynamic environments leads to superior performance effects and the competitive advantage of firms and industries irrespective of the timescale being studied.

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Appendix 1: UK Creative Industries Performance (1997-2013)

Oliver, J.J. (2015). *Dynamic Capabilities: exploring industry level capabilities in UK Publishing. Negotiating Culture: Integrating Legacy & Digital Cultures in News Media Conference*. Reuters Institute for the Study of Journalism, Oxford University, 28th-30 October.

	Total GVA-CI	Total	Total	GVA/CE	GVA/CI			
	(£m)	CE Employees	CI Employees	Employee	Employee	UK GVA- CI	GVA-CI	CE Employees
				(£)	(£)	(% of UK Total)	Annual Change (£m)	Annual Change
1997	31,205	1,806,000	931,000	17279	33518	3.96		
1998	37,160	1,995,000	989,000	18627	37573	4.50	5,955	189000
1999	42,002	1,995,000	1,049,000	21054	40040	4.90	4,842	0
2000	44,480	1,995,000	1,114,000	22296	39928	4.88	2,478	0
2001	47,225	2,002,000	1,138,000	23589	41498	4.98	2,745	7000
2002	45,985	1,972,000	1,108,000	23319	41503	4.60	-1,240	-30000
2003	48,620	2,038,000	1,153,000	23857	42168	4.56	2,635	66000
2004	53,883	2,063,000	1,184,000	26119	45509	4.79	5,263	25000
2005	54,951	2,006,000	1,101,000	27393	49910	4.62	1,068	-57000
2006	50,955	2,075,000	1,166,000	24557	43701	4.05	-3,996	69000
2007	56,601	2,097,000	1,161,000	26991	48752	4.26	5,646	22000
2008	61,145	2,091,000	1,142,000	29242	53542	4.47	4,544	-6000
2009	57,618	2,288,000	1,430,000	25183	40292	4.28	-3,527	197000
2010	59,753	2,280,000	1,425,000	26207	41932	4.27	2,135	-8000
2011	65,180	2,407,000	1,551,000	27079	42025	4.52	5,427	127000
2012	70,012	2,550,000	1,684,000	27456	41575	4.74	4,832	143000
2013	76,909	2,616,000	1,708,000	29399	45029	5.04	6,897	66000
Total							45,704	810000

Source: Adapted from *Creative Industries Economic Estimates* from the years 2015, 2011, 2010, 2007 and 2006. Department of Culture Media & Sport (www.gov.uk).

Oliver, J.J. (2015). *Dynamic Capabilities: exploring industry level capabilities in UK Publishing. Negotiating Culture: Integrating Legacy & Digital Cultures in News Media Conference*. Reuters Institute for the Study of Journalism, Oxford University, 28th-30 October.

Appendix 2: UK Publishing Industry Performance (1997-2013)

	GVA - CI	Employees	GVA/	Total GVA	CE Employees	GVA PP PA
	(£m)	CE	CE Employee	Annual Change (£m)	Annual Change	(£)
1997	6,341	308,500	20,554			
1998	6,991	317,100	22,047	650	8,600	75581
1999	7,733	317,000	24,394	742	-100	-7420000
2000	7,983	283,900	28,119	250	-33,100	-7553
2001	8,165	293,300	27,838	182	9,400	19362
2002	8,135	286,800	28,365	-30	-6,500	4615
2003	8,390	305,200	27,490	255	18,400	13859
2004	9,072	274,300	33,073	682	-30,900	-22071
2005	9,198	253,300	36,313	126	-21,000	-6000
2006	9,011	269,700	33,411	-187	16,400	-11402
2007	9,196	275,800	33,343	185	6,100	30328
2008	9,255	242,700	38,133	59	-33100	-1782
2009	8,968	241,881	37,076	-287	-819	350427
2010	9,580	243,809	39,293	612	1,928	317427
2011	9,286	236,000	39347	-294	-7,809	37649
2012	9,624	255,000	37741	338	19,000	17,789
2013	9,938	231,000	43022	314	-24,000	-13083
Total				3,597	-77,500	46413

Source: Adapted from Creative Industries Economic Estimates from the years 2015, 2011, 2010, 2007 and 2006. Department of Culture Media & Sport (www.gov.uk).

Oliver, J.J. (2015). *Dynamic Capabilities: exploring industry level capabilities in UK Publishing. Negotiating Culture: Integrating Legacy & Digital Cultures in News Media Conference*. Reuters Institute for the Study of Journalism, Oxford University, 28th-30 October.

Appendix 3: UK Film, TV, Video, Radio, Photography Industry Performance (1997-2013)

	GVA - CI	Employees	GVA/	GVA-CI	CE Employees	GVA PP PA
	(£m)	CE	CE Employee	Annual Change (£m)	Annual Change	(£)
1997	5,985	161,800	36990			
1998	6,035	165,600	36443	50	3,800	13158
1999	7,333	154,400	47494	1,298	-11,200	-115893
2000	8,802	177,300	49645	1,469	22,900	64148
2001	8,982	179,600	50011	180	2,300	78261
2002	9,427	177,700	53050	445	-1,900	-234211
2003	9,258	185,200	49989	-169	7,500	-22533
2004	10,473	176,100	59472	1,215	-9,100	-133516
2005	8,487	172,500	49200	-1,986	-3,600	551667
2006	5,973	166,900	35788	-2,514	-5,600	448929
2007	5,349	168,800	31688	-624	1,900	-328421
2008	8,222	164,200	50073	2,873	-4,600	-624565
2009	6,296	180,374	34905	-1,926	16,174	-119080
2010	7,973	185,697	42936	1,677	5,323	315048
2011	9,987	232,000	43047	2,014	46,303	43496
2012	9,821	266,000	36921	-166	34,000	-4882
2013	9,308	259,000	35938	-513	-7,000	73286
Total				3,323	97,200	34187

Source: Adapted from Creative Industries Economic Estimates from the years 2015, 2011, 2010, 2007 and 2006. Department of Culture Media & Sport (www.gov.uk).

Oliver, J.J. (2015). *Dynamic Capabilities: exploring industry level capabilities in UK Publishing. Negotiating Culture: Integrating Legacy & Digital Cultures in News Media Conference*. Reuters Institute for the Study of Journalism, Oxford University, 28th-30 October.

Appendix 4: UK Music, performing and visual arts Industry Performance (1997-2013)

	GVA - CI	Employees	GVA/	GVA-CI	CE Employees	GVA PP PA
	(£m)	CE	CE Employee	Annual Change (£m)	Annual Change	(£)
1997	2,669	226,300	11794			
1998	2,904	217,800	13333	235	-8,500	-27647
1999	3,140	255,700	12280	236	37,900	6,227
2000	3,257	224,300	14521	117	-31,400	-3,726
2001	3,124	224,600	13909	-133	300	-443,333
2002	3,360	240,800	13953	236	16,200	14,568
2003	3,542	245,800	14410	182	5,000	36,400
2004	3,626	232,300	15609	84	-13,500	-6,222
2005	3,312	236,300	14016	-314	4,000	-78,500
2006	3,517	257,200	13674	205	20,900	9,809
2007	3,913	262,800	14890	396	5,600	70,714
2008	3,740	272,100	13745	-173	9,300	-18,602
2009	3,779	279,636	13514	39	7,536	5,175
2010	3,434	292,536	11739	-345	12,900	-26,744
2011	4,184	274,000	15270	750	-18,536	-40,462
2012	4,581	277,000	16538	397	3,000	132,333
2013	5,453	300,000	18177	872	23,000	37,913
Total				2784	73,700	37,775

Source: Adapted from Creative Industries Economic Estimates from the years 2015, 2011, 2010, 2007 and 2006. Department of Culture Media & Sport (www.gov.uk).

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Appendix 5: UK Advertising & Marketing Industry Performance (1997-2013)

	GVA CI (£m)	Employees CE	GVA/ CE Employee	GVA-CI Annual Change	CE Employees Annual Change	GVA PP PA (£)
1997	3,677	201,000	18294			
1998	3,890	204,200	19050	213	3,200	66,563
1999	5,859	200,900	29164	1,969	-3,300	-596,667
2000	6,588	206,000	31981	729	5,100	142,941
2001	6,032	220,500	27356	-556	14,500	-38,345
2002	5,833	215,400	27080	-199	-5,100	39,020
2003	5,722	213,800	26763	-111	-1,600	69,375
2004	6,162	200,000	30810	440	-13,800	-31,884
2005	7,364	223,400	32963	1,202	23,400	51,368
2006	6,067	230,300	26344	-1,297	6,900	-187,971
2007	7,118	247,200	28794	1,051	16,900	62,189
2008	8,347	248,600	33576	1,229	1,400	877,857
2009	6,967	252,022	27644	-1,380	3,422	-403,273
2010	6,840	268,254	25498	-127	16,232	-7,824
2011	8,128	468,000	17368	1,288	199,746	6,448
2012	9,339	465,000	20084	1,211	-3,000	-403,667
2013	10,248	482,000	21261	909	17,000	53,471
	Total			6571	281000	23384

Source: Adapted from Creative Industries Economic Estimates from the years 2015, 2011, 2010, 2007 and 2006. Department of Culture Media & Sport (www.gov.uk).

Oliver, J.J. (2015). *Dynamic Capabilities: exploring industry level capabilities in UK Publishing. Negotiating Culture: Integrating Legacy & Digital Cultures in News Media Conference*. Reuters Institute for the Study of Journalism, Oxford University, 28th-30 October.

Appendix 6: UK Architecture Industry Performance (1997-2013)

	GVA	Employees	GVA/	GVA-CI	CE Employees	GVA PP PA
	CI (£m)	CE	CE Employee (£)	Annual Change (£m)	Annual Change	(£)
1997	1,392	95,800	14,530			
1998	1,470	101,500	14,483	78	5,700	13684
1999	1,437	101,500	14,158	-33	0	#DIV/0!
2000	1,571	102,600	15,312	134	1,100	121818
2001	1,653	103,400	15,986	82	800	102500
2002	1,552	102,900	15,083	-101	-500	202000
2003	1,805	103,100	17,507	253	200	1265000
2004	1,868	102,600	18,207	63	-500	-126000
2005	2,132	108,200	19,704	264	5,600	47143
2006	2,161	111,300	19416	29	3,100	9355
2007	2,518	120,700	20,862	357	9,400	37979
2008	3,565	130,100	27,402	1,047	9,400	111383
2009	3,205	136,534	23,474	-360	6,434	-55953
2010	2,638	136,298	19,355	-567	-236	2402542
2011	3,235	121,000	26736	597	-15,298	-39025
2012	3,497	120,000	29142	262	-1,000	-262000
2013	3,592	136,000	26412	95	16,000	5938
Total				2,200	40,200	54726

Source: Adapted from Creative Industries Economic Estimates from the years 2015, 2011, 2010, 2007 and 2006. Department of Culture Media & Sport (www.gov.uk).

Oliver, J.J. (2015). *Dynamic Capabilities: exploring industry level capabilities in UK Publishing. Negotiating Culture: Integrating Legacy & Digital Cultures in News Media Conference*. Reuters Institute for the Study of Journalism, Oxford University, 28th-30 October.

Appendix 7: UK Design: product, graphic and fashion design Industry Performance (1997-2013)

	GVA - CI	Employees	GVA/	GVA-CI	CE Employees	GVA PP PA
	(£m)	CE	CE Employee (£)	Annual Change (£m)	Annual Change	(£)
1997	905	80700	11214			
1998	887	88800	9989	-18	8100	-2222
1999	993	93500	10620	106	4700	22553
2000	1,177	98,500	11949	184	5,000	36800
2001	1,062	103,000	10311	-115	4,500	-25556
2002	1,095	115,000	9522	33	12,000	2750
2003	1,173	113,200	10362	78	-1,800	-43333
2004	1,380	110,400	12500	207	-2,800	-73929
2005	1,507	115,500	13048	127	5,100	24902
2006	1,608	118,700	13547	101	3,200	31563
2007	1,684	130,700	12884	76	12,000	6333
2008	1,856	107,200	17313	172	-23,500	-7319
2009	1,886	227,454	8292	30	120,254	249
2010	2,049	234,393	8742	163	6,939	23490
2011	2,504	151,000	16583	455	-83,393	-5456
2012	2,500	166,000	15060	-4	15,000	-267
2013	3,094	177,000	17480	594	11,000	54000
Total				2,189	96,300	22731

Source: Adapted from Creative Industries Economic Estimates from the years 2015, 2011, 2010, 2007 and 2006. Department of Culture Media & Sport (www.gov.uk).

Oliver, J.J. (2015). Dynamic Capabilities: exploring industry level capabilities in UK Publishing. *Negotiating Culture: Integrating Legacy & Digital Cultures in News Media Conference*. Reuters Institute for the Study of Journalism, Oxford University, 28th-30 October.

Appendix 8: UK IT, software and computer services Industry Performance (1997-2013)

	GVA - CI	Employees	GVA/	GVA-CI	CE Employees	GVA PP PA
	(£m)	CE	CE Employee (£)	Annual Change (£m)	Annual Change	(£)
1997	9,846	379,400	25,952			
1998	14,591	426,000	34,251	4,745	46,600	101,824
1999	15,218	488,600	31,146	627	62,600	10,016
2000	14,790	544,600	27,158	-428	56,000	-7,643
2001	17,825	567,700	31,399	3,035	23,100	131,385
2002	16,144	556,700	28,999	-1,681	-11,000	152,818
2003	18,269	581,200	31,433	2,125	24,500	86,735
2004	20,838	593,900	35,087	2,569	12,700	202,283
2005	22,469	596,800	37,649	1,631	2,900	562,414
2006	22,267	631,300	35,272	-202	34,500	-5,855
2007	26,296	640,900	41,030	4,029	9,600	419,688
2008	26,018	681,600	38,172	-278	40,700	-6,830
2009	26,403	690,000	38,265	385	8,400	45,833
2010	26,991	700,000	38,559	588	10,000	58,800
2011	27,672	709,000	39,030	681	9,000	75,667
2012	30,552	791,000	38,625	2,880	82,000	35,122
2013	35,073	825,000	42,513	4,521	34,000	132,971
Total				25227	445600	56614

Source: Adapted from Creative Industries Economic Estimates from the years 2015, 2011, 2010, 2007 and 2006. Department of Culture Media & Sport (www.gov.uk).