

Creativity and productivity in the Heart of the South West: A Technical Paper

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Definition

For the purpose of this document the term creative industries encompasses a broader range of activities which include the cultural industries plus all cultural or artistic production, whether live or produced as an individual unit. The creative industries are those in which the product or service contains a substantial element of artistic or creative endeavour and include activities such as architecture and advertising.

The UK's definition of the creative industries - 'those industries that are based on individual creativity, skill and talent with the potential to create wealth and jobs through developing intellectual property' - includes thirteen sectors: advertising, architecture, the art and antiques market, crafts, design, designer fashion, film, interactive leisure software (ie. video games), music, the performing arts, publishing, software, and television and radio. (DCMS)

UNESCO defines cultural and creative industries as "sectors of organised activity whose principal purpose is the production or reproduction, promotion, distribution and/or commercialisation of goods, services and activities of a cultural, artistic or heritage-related nature."

Summary

This document has been produced to support the development of Heart of the South West (HotSW) Productivity Plan Green Paper. It is designed to supplement the Green Paper <http://www.torbay.gov.uk/devolution> providing further evidence to guide discussions.

The key areas under consideration within this document include:

- The growth of the creative industries nationally and regionally as an innovative and resilient sector;
- The spillover benefits that the creative sector offers to the wider economy on a localised level;
- The direct correlation between engagement with arts and culture and the health and wellbeing of an individual which in turn feeds a direct correlation between health and productivity;
- The opportunity to create creative clusters to drive productivity in all sectors through a spillover and multiplier effect;
- The role the creative industries can have on driving city regeneration and economic growth as part of a purposeful, long-term strategy;
- The importance of arts education to the skills agenda which in turn will drive employability and business innovation;
- The cross-sectoral links that creativity enables which are essential to future growth and productivity.

Introduction

This report examines the relationship between creativity and productivity. It explores the performance of the creative industries as a sector on a national and local level underpinned by a robust evidence base. It also explores creativity as a driver of innovation, which in turn creates the cultural conditions for productivity growth.

This discussion paper comprises the following chapters:

- **Chapter 3** examines the growth in the creative industries nationally and locally as a defined sector and the contribution it makes in terms of employment and GVA;
- **Chapter 4** explores arts and culture as a wider offer within society and the impact this has at an individual and economic level;
- **Chapter 5** explores the potential for productivity gains through a purposeful approach to the development of a cultural strategy as an economic driver;
- **Chapter 6** recognises creativity as a culture and skillset stretching beyond a sector silo and as an influential tool in workforce and business development;
- **Chapter 7** describes the ecosystem for innovation that needs to exist in order to drive growth and productivity.

Challenges and Responses

*In modern societies, all of life is **problem solving**. Changes in society, the environment and in technology mean that the content of **applicable knowledge** evolves rapidly. Adapting, learning, **daring** to try out new things and always being ready to **learn from mistakes** are among the keys to **resilience** and success in an unpredictable world.*

Source: OECD (2014), PISA 2012 Results: Creative Problem Solving: Students' skills in Tackling Real-Life Problems

There is a wide body of research that shows the power of creativity and the impact it has on society, skills and education and the economy. The correlation between creativity and productivity is increasingly being recognised and, in the cases where it is being implemented strategically to drive education and economic policy, is having a significant and measurable impact.

In making the case for creativity, research shows:

1. Participation in structured arts activities can increase cognitive abilities by 17%.
2. Learning through arts and culture can improve attainment in Maths and English.
3. Learning through arts and culture develops skills and behaviour that lead children to do better in school.
4. Students from low-income families who take part in arts activities at school are three times more likely to get a degree.
5. Employability of students who study arts subjects is higher and they are more likely to stay in employment.
6. Students from low-income families who engage in the arts at school are twice as likely to volunteer.
7. Students from low-income families who engage in the arts at

school are 20% more likely to vote as young adults.

8. Young offenders who take part in arts activities are 18% less likely to re-offend.
9. Children who take part in arts activities in the home during their early years are ahead in reading and Maths at age nine.
10. People who take part in the arts are 38% more likely to report good health

Source: Cultural Learning Alliance, Key Research Findings: the value of cultural learning 2017¹

There is interconnectivity between creativity, innovation and productivity. Raising the creativity in young people through education creates a skilled workforce, resilient and adaptable to the jobs of the future. This in turn drives a more innovative business base, whether this be through start-up innovation or process and product innovation within existing firms. This drives healthy competition, which is directly linked to increased productivity.

The HotSW has low productivity, ranking 32nd out of 39 LEPs for GVA per hour worked. There are many contributing factors to this but the *Building Our Industrial Strategy, Green Paper 2017* outlines a numbers of aspects that need to be in place to create the conditions for growth and increased productivity.

This document provides an evidence base for the role that creativity can play in the development of the following pillars in particular²:

- Investment in science, research and innovation;
- Developing skills;

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https://www.culturallearningalliance.org.uk/images/uploads/ImagineNation_2_the_value_of_cultural_learning.pdf

² Building our Industrial Strategy, Green Paper 2017, HM Government

- Supporting businesses to start and grow;
- Encouraging trade and inward investment;
- Cultivating world-leading sectors.

This report provides information on the creative industries and creativity within the HotSW to enable partners to develop an informed view of the challenges and opportunities for our area. The report seeks to provoke an informed debate about the role of creativity in the HotSW Productivity Plan.

The Creative Industries – A Growing Sector

The creative industries have had an impressive growth rate over recent years, showing resilience during a biting recession and indeed a considerable contribution to the UK economy.

The creative industries:

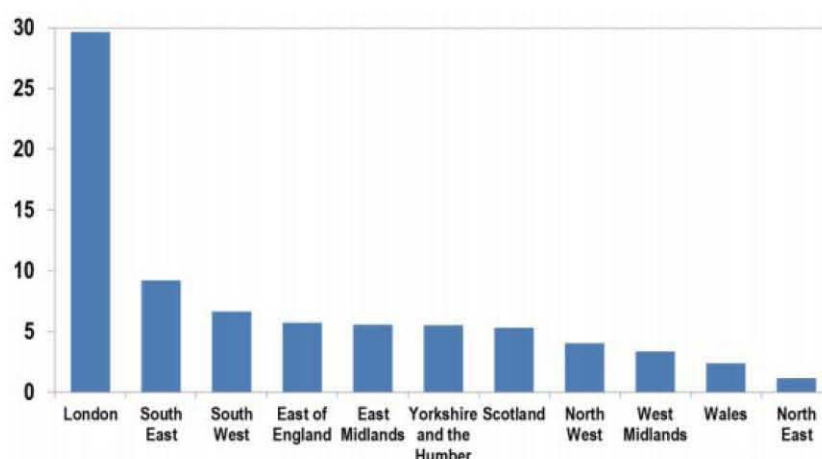
- Account for 24% of the UK workforce equating to 2.5 million jobs
- Contribute over £77 billion per year to the UK economy
- Contribute £15.5 billion in exports ³

Recent research carried out by DCMS (published June 2016) shows that creative employment continues to grow faster than the workforce as a whole. Employment in the Creative Industries (Creative Economy) grew by 3.2% (5.1%) between 2014 and 2015 and now accounts for 1.9 (2.9) million jobs. This is a 19.5% (19.6%) increase since 2011. By contrast the wider UK workforce grew by 2% (2014-15) and 6.3% (2015-2011).

Creative Industry employment has been growing rapidly in a number of regions around the country, with employment estimated to be highest in London, the South East and the South West.

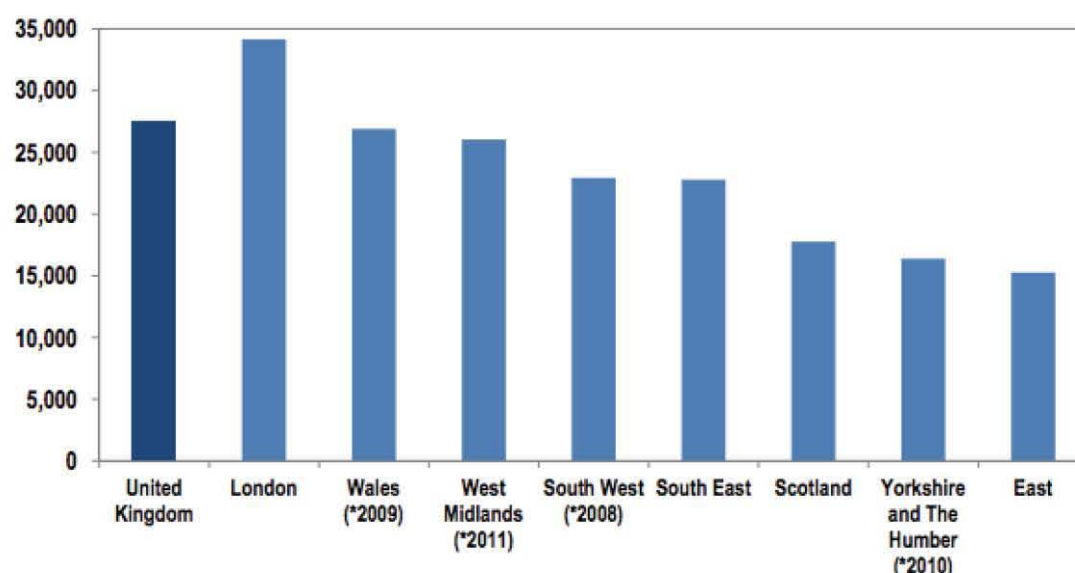
Figure 1: Regional and country-level employment in the arts and culture, average over 2008-10 FTEs thousands.

³ Source: Creative Education Agenda, 2016, The Creative Industries Federation



Source: ONS Business Register and Employment Survey 2008-2010, Cebr analysis

Figure 2: Regional breakdown of gross annual pay in R90:creative, arts, entertainment 2012⁴



Source: ONS Annual Survey of Hours and Earnings, Cebr analysis.

Between 2011 and 2015, there were increases in Creative Industries employment of more than 25% in Yorkshire and the Humber (26.9%), East Midlands (52.5%), West Midlands (38.7%) and the South West (32.5%). In London, which accounts for the largest share of Creative Industry employment (30.8%), the growth over the same period was 15.6%.

⁴ http://www.artscouncil.org.uk/sites/default/files/download-file/The_contribution_of_the_arts_and_culture_to_the_national_economy.pdf

In the South West, the biggest sector is IT, software, and computer services, which employs 45,000 people. Music, and the performing and visual arts gives work to 23,000 people. In addition, 13,000 people work in publishing, 11,000 in advertising and marketing, 7,000 in architecture, 10,000 in design, 8,000 in museums, galleries and libraries, and 12,000 in film, TV radio, video and photography.⁵

The impact of strengthening the design sector as a defined subsector is of particular interest. The governments strategy is clear that innovation, across the public and private sectors, is the only pathway to sustainable economic growth, higher real incomes and greater quality of life in the long term. This is illustrated by research findings on the impact of innovation on business performance. For instance, NESTA's Innovation Index shows that companies that introduced a new product between 2002-2004 saw average employment growth of 4.4% during the subsequent 3 years compared to 2% for non-innovation businesses.⁶

The Innovation and Research Strategy sets out how the government's support will drive growth by addressing five critical areas:

- Discovery and Development
- Innovative Businesses
- Global Collaboration
- Knowledge Flows in Innovation Ecosystem
- Global Collaboration
- New Innovation Challenges

A Design Council paper Facts, figures and practical plans for growth (2011) ⁷ was published to coincide with the Government's Innovation

⁵ Creative Industries Economic Estimates, 2016, DCMS

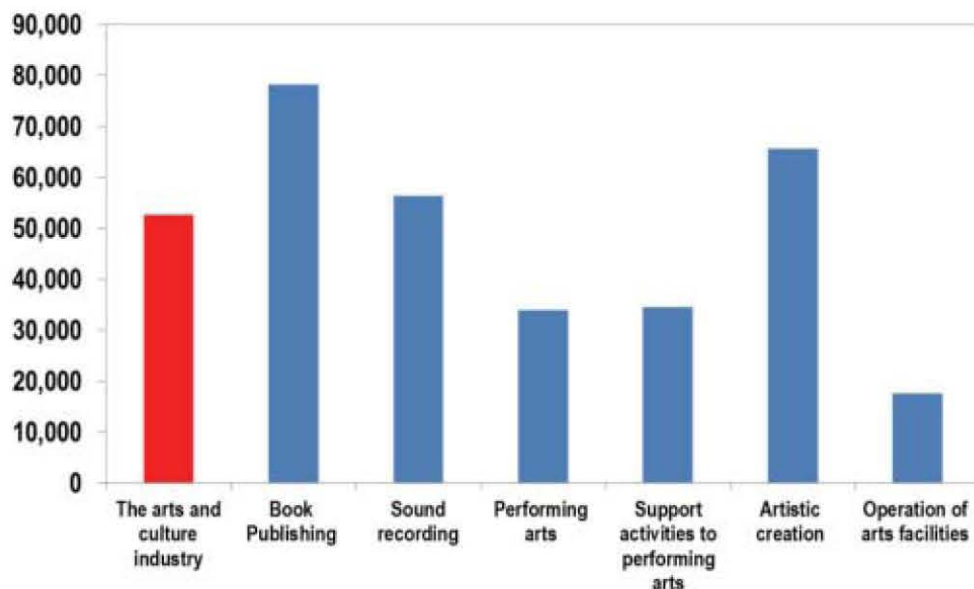
⁶ <http://www.nesta.org.uk/project/innovation-index>

⁷ <http://www.designcouncil.org.uk/resources/report/facts-figures-and-practical-plans-growth>

and Research Strategy for Growth and highlights the importance of the design sector in achieving these ambitions.

These subsets are of particular interest as whilst labour productivity across the arts and creative industries as a whole may be considered low, these subsets have high productivity relative to the national average. GVA per full-time equivalent (FTE) in book publishing was 44% higher than the national average in 2011 and artistic creation 21% higher.

Figure 3: Labour productivity measured in terms of GVA per FTE in the arts and culture industry and in each subset, average 2008-11⁸



Source: ONS Annual Business Survey 2008-11, Cebr analysis

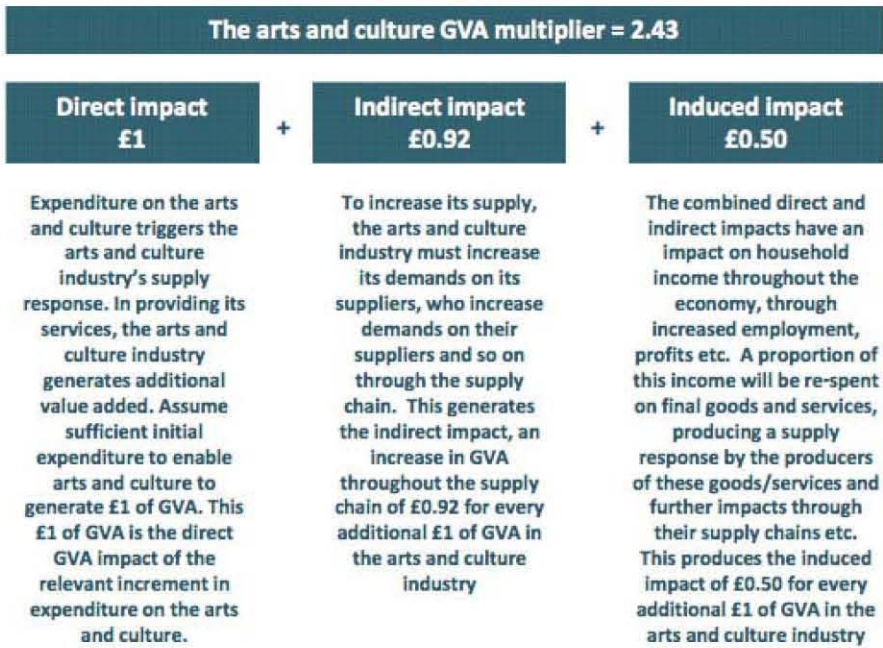
Arguably purposeful growth within these sub-sectors, which already reflect areas of strength within the HotSW, could contribute significantly to the productivity plan. With the industry paying nearly 5% more than the UK median salary of £26,095, this makes a positive contribution to average household incomes and the subsequent prosperity of the area.

⁸ http://www.artscouncil.org.uk/sites/default/files/download-file/The_contribution_of_the_arts_and_culture_to_the_national_economy.pdf

Evidence shows that arts and culture have a positive impact on the macroeconomic level and not just a sector level. Academic research shows that proximity to arts and culture can translate into higher wages and productivity in other sectors. This is thought to be related to the cross fertilisation of innovation, content and ideas that drives the whole economy upwards.

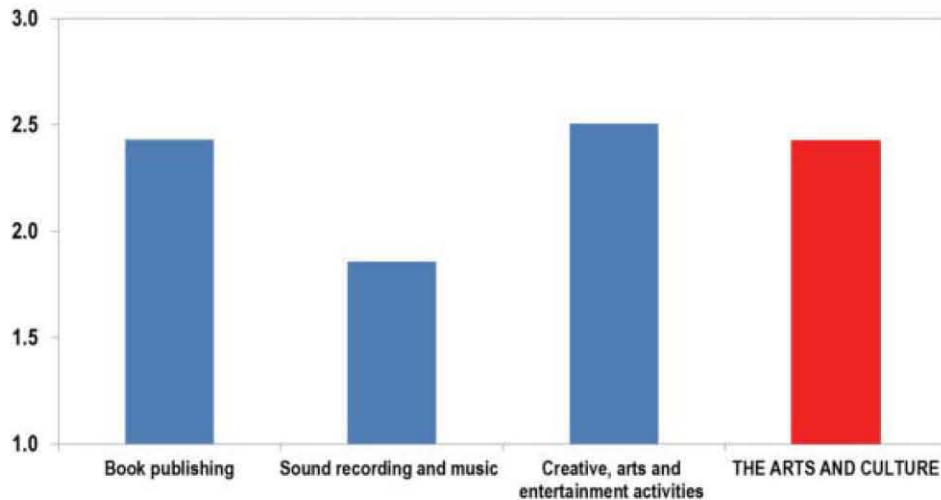
Similarly the multiplier effect of arts and culture is widely recognised and increasingly measurable in economic terms. It is thought that for every £1 of salary paid in the arts and culture industry, an additional £2.01 is generated in the wider economy through indirect and induced multiplier impacts.

Figure 4: The arts and culture industry's GVA multiplier



Source: Cebr analysis

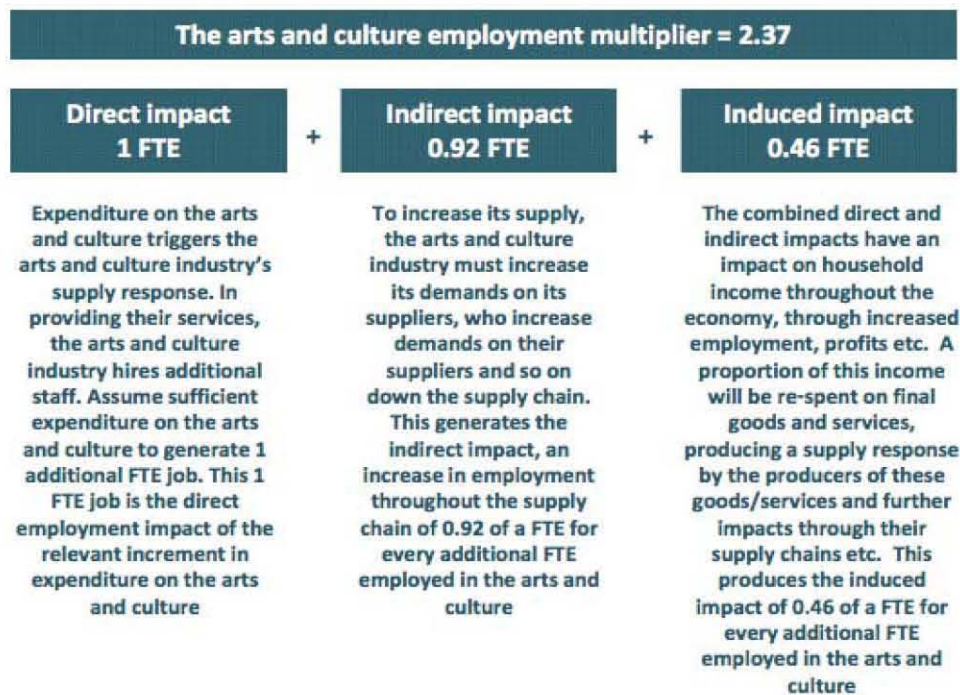
Figure 5: Comparison between arts and cultural industries, Type II output multiplier



Source: Cebr analysis

A multiplier effect also exists with regards to employment. Findings show that for every FTE job supported by arts and culture industry, an additional 1.37 FTE jobs are supported in the wider economy creating an employment multiplier of 2.37.

Figure 6: The arts and culture employment multiplier⁹



Source: Cebr analysis

⁹ http://www.artscouncil.org.uk/sites/default/files/download-file/The_contribution_of_the_arts_and_culture_to_the_national_economy.pdf

By compiling the different types of multiplier it is possible to determine the impacts at a regional level across the UK. The South West ranks the highest on all counts of multiplier impact suggesting a positive wider economic benefit to growing the sector for direct productivity benefits.

Figure 7: Type II multiplies by country and region

Country / region	GVA	Output	Employment	Income
United Kingdom	2.43	2.28	2.37	3.01
Total England	2.36	2.22	2.32	2.93
South West	2.29	2.16	2.26	2.83
East of England	2.28	2.15	2.26	2.83
Scotland	2.28	2.15	2.24	2.79
North West	2.27	2.15	2.24	2.82
West Midlands	2.25	2.14	2.23	2.79
Yorkshire & The Humber	2.24	2.12	2.21	2.75
North East	2.21	2.10	2.17	2.70
South East	2.14	2.02	2.10	2.60
East Midlands	2.18	2.07	2.16	2.67
Northern Ireland	2.15	2.05	2.13	2.63
Wales	2.13	2.04	2.11	2.60
London	2.01	1.87	1.98	2.43

Source: Cebr analysis

Impact on health, well-being and social cohesion

The creative industries, and wider arts and culture offer, do not only have a direct impact on the economy. Equally important, they have a positive impact on health, well-being and social cohesion. All of which are shown to increase an individual's productivity levels.

A report undertaken by the Scottish Government found a strong correlation between engagement in cultural activities and the health and well being of individuals. The findings showed that this correlation transcends age, economic status, area deprivation, education qualification or disability and the effect was positive in all cases. Those who attended a cultural place or event were almost 60% more likely to report good health. Happiness of this sort is intrinsically linked to an individual's productivity level.

Figure 8: Association between individual cultural activities and good self-assessed health and high life satisfaction¹⁰

Variable	Self-rated Health			Satisfaction with life				
	OR	CI	P-value	OR	CI	P-value		
Participation								
Dance	1.62	1.27	2.07	0.000	1.20	0.88	1.63	0.245
Played/written music	0.74	0.56	0.97	0.031	1.20	0.83	1.75	0.336
Perform with audience	1.53	0.94	2.47	0.086	1.33	0.69	2.57	0.401
Art/sculpture	0.99	0.73	1.35	0.972	1.25	0.84	1.85	0.266
Photography	0.94	0.67	1.31	0.706	1.29	0.82	2.04	0.269
Film/video	0.70	0.38	1.28	0.242	0.67	0.34	1.33	0.253
Computer artwork/animation	0.80	0.57	1.12	0.188	1.12	0.72	1.76	0.613
Crafts	1.10	0.85	1.42	0.489	0.86	0.62	1.18	0.336
Read for pleasure	1.33	1.11	1.59	0.002	1.21	0.97	1.50	0.085
Creative writing	1.20	0.74	1.95	0.469	0.62	0.37	1.02	0.061
Other culture	0.97	0.53	1.80	0.930	1.23	0.52	2.91	0.634
Attendance								
Cinema	1.26	1.04	1.53	0.021	1.44	1.13	1.83	0.004
Exhibit/ collection of art	1.31	1.01	1.69	0.045	0.98	0.70	1.38	0.922
Craft exhibition	1.34	1.01	1.79	0.045	1.10	0.74	1.62	0.649
Books/writing event	1.14	0.75	1.72	0.540	0.86	0.51	1.45	0.571
Street art	1.32	0.97	1.78	0.077	0.96	0.66	1.41	0.846
Cultural festival	1.27	0.88	1.82	0.202	1.50	0.89	2.53	0.128
Play/theatrical performance	1.24	1.01	1.52	0.039	1.25	0.95	1.63	0.110
Opera/classical performance	0.71	0.50	1.02	0.063	1.25	0.71	2.19	0.440
Live music event	1.22	1.00	1.50	0.054	1.24	0.95	1.62	0.110
Ballet/dance	0.82	0.55	1.22	0.325	2.25	1.09	4.65	0.029
Library	1.19	0.98	1.44	0.080	1.17	0.92	1.50	0.197
Archive/record office	1.11	0.63	1.97	0.714	0.61	0.32	1.14	0.121
Museum	1.20	0.99	1.47	0.070	1.37	1.05	1.79	0.020
Gallery	1.04	0.82	1.33	0.750	0.95	0.69	1.30	0.734
Historical/archaeological place	1.22	0.97	1.54	0.094	1.52	1.09	2.11	0.013

¹⁰ Source: *Healthy Attendance? The Impact of Cultural Engagement and Sports Participation on Health and Satisfaction with Life in Scotland*, Scottish Government Social Research, 2013

Creative Clustering

The evidence presented above shows, not only that the creative industries are a growing sector with certain subsets showing above average levels of productivity, but also that arts and culture has a 'spillover' effect on society and industry.

In light of this there is an argument to be made for 'cultural clusters'¹¹. Research suggests that workers in cultural and creative occupations based in areas of high cultural density earn higher wages and are more productive.

The overspill effect applies in this instance with productivity as a whole increasing through the cross fertilisation of innovation, ideas and content. The creative industries foster innovation and growth in all sectors thus supporting productivity in the workforce as a whole.¹²

There are examples of UK cities that have actively driven their economic regeneration through a focus on creative and cultural activities, rebalancing the effects of traditional industry decline. Liverpool turned its fortunes around in 2008 by securing European Capital of Culture. Similarly the Turner Contemporary gallery transformed Margate as did the Newcastle-Gateshead cultural development project.

Development of arts and culture can contribute to economic, social and environmental outcomes, which drive regeneration. Cities with a distinctive offer and unique character, achieved through a strong arts and culture sector, are the most successful. Not only does this drive productivity amongst workers, as discussed, but it also serves to attract skilled workers and inward investment to the area.

¹¹ http://www.nesta.org.uk/sites/default/files/1406_capital_of_culture_-_final.pdf

¹² Bakshi, H., Lee, N. and Mateos-Garcia, J. (2013), *Capital of Culture*, NESTA

CASE STUDY – Nantes, France

Nantes has 600,000 inhabitants spread across 24 municipalities, the Nantes metropolitan area (Nantes Metropole) is the 6th largest French metropolitan area. Nantes is the first metropolitan area in France in terms of job creation and its unemployment rate is two points lower than national average. It is France's 3rd largest industrial city and 2nd most successful city in terms of employment and growth

Previously known as 'the grey city' Nantes adopted a revolutionary approach to development in the early 1990s when local policy-makers stated to pioneer the use of culture (and later creative industries) as a driver for territorial change and growth, international attractiveness, social inclusion and well being, innovation and creativity. Nantes Metropole developed connections with regional policy objectives (e.g. Design in Pays de la Loire) in order to strengthen the role of culture in cohesion policy, thus ensuring considerable financial investment in CCLs.

Nantes has created an open air lab for design, art, architecture and sustainable development. Nantes was part of ECIA (European Creative Industries Alliance), a platform which brings together policy-makers and local stakeholders to foster creative industries as drivers for competitiveness and job creation (www.eciapplatform.eu).

The central island of Nantes (340 hectares) near the city centre was a former shipbuilding industrial area. As part of this policy drive the Island of Nantes has been transformed through culture and creative industries (CCLs). The island is structured around three core pillars:

- culture and creative industries ("Quartier de la Création" cluster)
- sustainability (housing and green public transportation)
- social diversity by developing job opportunities in the services sector, promoting education with various universities and schools on the island, and promoting social housing.

Creative industries are now a distinct area of interest for economists, statisticians, cultural specialists and public-policy makers which reflects a growing awareness of their economic potential and their role in supporting productivity growth.

Creativity in Education – the skills agenda

The *Skills and productivity in the Heart of the South West: A technical Paper* outlines the importance of skills development and the direct link to productivity. For instance a 10% in the share of university graduates in a city is associated with an increase in productivity of approximately 3%.

However, it is not simply about the acquisition of skills that is important but the application of knowledge that enables the development of new products and services and the introduction of new businesses and business models.

Innovation is the successful exploitation of new ideas. New ideas can take the form of new technologies, new products or new corporate structures and ways of working. Such innovations boost productivity, for example as better equipment works faster and more effectively, or better organisation increases motivation at work'.

Fixing the Foundation, HM Treasury, 2015

The link between creativity and academic achievement, skills acquisition and the development of new innovation is well researched. Cultural education provides:¹³

- Knowledge of the arts and culture, which introduces young people to a broad range of ideas and attitudes;
- Development of critical and analytical skills;
- Accumulation of expressive and creative abilities;
- Experience of both collaborative and solo work, and development of the ability to work alone to complete a task;
- Increases in the extent to which young people engage with their education, improving academic attainment across the board;

¹³ Henley, D. (2012), "Cultural Education in England: An independent review by Darren Henley for the Department for Culture, Media and Sport", Department for Culture, Media and Sport.

- and
- Improvement of cognitive abilities.

Engagement in creative subjects increases attainment in all subjects as a result of the points set out above. "Most notably, schools with higher levels of per-pupil GCSE arts entries got above average results in the EBacc, Progress 8 and Attainment 8, suggesting that the best state secondary schools in England are those that combine high expectations in a core of academic subjects with a strong focus on the arts".¹⁴

As such there is an argument to be made for the development of a STEAM agenda as opposed to a STEM agenda. This places value on bringing the 'two cultures' of arts and science together in a purposeful way to drive creativity and innovation. In so doing we create an education system that nurtures creativity in all subjects which in turn develops into creativity in all sectors.

*In the most comprehensive model specification (which controls for a wide range of personal characteristics, including test scores at the age of 10), across all individuals, the returns to 2 or more STEM A levels stand at **17.8%**, compared to returns of **20.3%** for 1 STEM A level and **5.3%** for non-STEM A levels, relative to those with GCSEs/O levels as their highest qualification (Table 3). In other words, possession of 1 STEM A level boosts earnings by approximately 15 percentage points compared to possession of non-STEM A levels. The analysis suggests that **some degree of subject breadth at A level delivers the greatest wage returns.***

2015 London Economics report for DfE

The real value comes in the combination of subjects (STEM and Arts) to provide the most significant benefits to not only employment rates but productivity.

Surveys undertaken in 2014 of Civil Engineering (QUEST) scholarship

¹⁴ <http://www.newschoolsnetwork.org/what-are-free-schools/free-school-news/nsn-arts-report-arts-not-at-odds-with-the-ebacc>

applications showed that 36.5% had studied a creative/design subject at AS/A-Level with 67% combining arts and STEM at GCSE. Almost 25% of those employed within the visual effects industry have a degree in STEM. Nobel laureates in the sciences are 17 times more likely than average scientists to be a painter, 12 times as likely to be poet and 4 times as likely to be a musician. This would suggest that the combination of arts and science creates the most innovative of employees.

However, whilst the US education policy has created a formal movement in support of the STEAM agenda it remains somewhat of an ambition in the UK. Despite the evidence of the benefits from 2012-13 only 8.4% of students combined arts and science disciplines at AS level and there has been a 50% drop in student numbers taking GCSE Design and Technology between 2003-2013.¹⁵

The situation at HE is even more complicated, as the combining of subject areas is not readily available to students. There are challenges around fostering creativity while teaching STEM subjects, which is where attention needs to be given. It is through the combination of creative attributes and the delivery of STEM subjects that creates the premiums relating to net lifetime earnings, for example.

These combined and transferable skills are highly valued by employers and are increasingly important for a future workforce for future jobs. The ability to problem solve, adapt, enquire and innovate will become increasingly important for businesses to remain competitive. The tables below show the direct link between creative education and employability.

¹⁵ Creative Education Agenda, 2016, The Creative Industries Federation

Figure 9: Employment prospects for school leavers

Subjects studied before leaving school at 16	Probability of employment at age 19
Average young person	61.2%
At least one arts subject	64.7%
At least two arts subjects	70.1%

Subjects studied before leaving school at 16	Probability of employment at age 19
At least two science subjects	62.1%
At least two business subjects	63.3%
At least three language subjects	62.4%

Source: Adapted from DTZ Consulting & Research (2006)

"Science, Technology, Engineering and Math – the STEM subjects – alone will not lead to the kind of breathtaking innovation the 21st century demands. Innovation happens when convergent thinkers, who march straight ahead towards their goal, combine forces with divergent thinkers – those who professionally wander, who are comfortable being uncomfortable, and who look for what is real."

John Maeda, Rhode Island School of Design (2013)¹⁶

¹⁶ Cultural Learning Alliance STEM+ARTS+STEAM, 2014, Cultural learning alliance

Creativity and the innovation ecosystem

In order to foster creativity and innovation it is necessary to create the right conditions. This ecosystem relies on many contributions including:

- An education system that actively seeks to combine arts and sciences (STEAM) through a programme of embedded creativity that builds transferable, adaptable, resilient and innovative skills in all students;
- A place-based regeneration programme that recognises the arts and culture as a driver for economic regeneration. In so doing the distinctive character of a location is defined and works to attract skilled workers as well as raising well-being and productivity across all sectors;
- An inward investment policy that supports creative clustering so that overspill and multiplier benefits can be seen across the whole region and workforce;
- A business infrastructure that operates like an open lab to encourage and facilitate cross fertilisation between sectors.

Through the evidence presented in this paper it is apparent that there is value within the creative industries as a sector, which may allow for a targeted approach to productivity growth. However, there appears to be more value in considering creativity more widely, as a culture that sits outside of a sector silo driving an approach to education, business and regeneration that is cross cutting and a distinct opportunity for the HotSW.