CLWSTWR CREATIVE INDUSTRIES REPORT NO 1

THE SIZE AND COMPOSITION OF THE CREATIVE INDUSTRIES IN WALES

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clwstwr

Cardiff University Prifysgol Caerdydd

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Creative Clusters

Arts & Humanities Research Council

Industrial Strategy

ABOUT THE REPORT

This report is part of the Clwstwr programme, a five-year project that aims to put innovation at the core of media production in South Wales. Clwstwr wants to build on South Wales' success in making creative content by putting research and development (R&D) at the core of production.

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KEY FINDINGS

The creative industries play a key role in the development of the Welsh economy - with Cardiff at its core.

Wales

8,000 enterprises

are active in Wales' creative industries.

80,000 people

are working in the creative industries in Wales (as employees and freelancers).

500 new enterprises

enter the creative industries in Wales every year, making it one of the fastest growing sectors in Wales.

98% of companies

in the creative industries in Wales are small, employing less that 50 people.

Cardiff

80%

of creative industries activities are concentrated in South Wales - with Cardiff at its core.

15%

of all enterprises in Cardiff are in the creative industries, well above the UK average of 11%.

There are

3,210

employees in Cardiff's film, TV, video, radio and photography sector;

4,174

employees in Cardiff's IT, software and computer services sector; and

2,403

employees in Cardiff's music, performing and visual arts sectors.

Contents

Introduction

The importance of the creative industries for urban development has received increasing attention from academics and urban policy makers since the 1990s. **The creative industries are seen as a means of urban regeneration and economic renewal**, particularly in areas that have undergone industrial restructuring.

Local policy makers increasingly recognise the significance of the creative industries for Wales. Since 2010 the Welsh Government's Creative Sector Team supported key creative sectors, notably film and TV, helping to bring Wolf Studios to Cardiff Bay. In 2016, the Cardiff Capital Region (CCR) City Deal was established by the UK and Welsh Governments and the ten local authorities in South East Wales to generate significant economic growth to the region through investment, upskilling, and improved physical and digital connectivity. The creative industries are one of six major target sectors of the City Deal.[1] In early 2020, the Welsh Government launched Creative Wales,[2] focusing on the Film and TV, music and digital sectors.[3] The Welsh Government has also identified the creative industries as

The data for this report was collected before the COVID-19 pandemic. It paints a picture of the Welsh creative industries before the disruption caused by COVID-19, which has had a profound impact on many creative businesses and freelancers, many of whom face significant losses in revenue. This report provides a baseline that will enable us, in the future, to make a detailed assessment of the impact of COVID-19 on the creative industries in the medium and longer term.

[1] See https://www.cardiffcapitalregion.wales/news-post/cardiff-capital-region-industrial-and-economic-growth-plan-is-showcased-at-largest-property-exhibition-in-the-world/

[2] Creative Wales published in 2020 key numbers on the creative industries in Wales (see https://www.wales.com/creative-wales). The numbers presented by Creative Wales differentiate from the here presented numbers as different data sources and a different harmonisation process have been applied. Creative Wales states that "The creative industries represent one of Wales' fastest-growing sectors, with an annual turnover of more than £2.2 billion, and employing over 56,000 people – 40% more than 10 years ago."

[3] See https://gweddill.gov.wales/topics/businessandeconomy/our-priority-sectors/creative-industries/?lang=en

one of its three priority sectors for international growth.

The creative industries have played a significant role in Wales' economic revival – most visibly in the audio-visual sector. In 2017, an Independent Review of the Creative Industries commissioned by the UK government suggested that Cardiff had become one of the UK's largest media production centres outside of London, backed by a strong independent TV production industry.[4] Growth continues at pace, and a report by Barclays in 2019 found that revenues at small and medium sized TV producers in Wales grew by 33% – significantly higher than the 7% average revenue growth of SMEs in other sectors of the economy.[5]

Nesta describes Cardiff as a city experiencing fast creative growth, supported by growing dynamism in digital and media technologies and on track to become a leader within the UK's creative geography.[6] However, Cardiff and Wales still lack international recognition as a major audiovisual production centre and creative cluster.

THIS REPORT AIMS TO BEGIN TO MAP THE OVERALL STRENGTH OF THE CREATIVE INDUSTRIES IN WALES, SO THAT WE MIGHT BEGIN TO TELL THE STORY OF A CREATIVE NATION AND AN EMERGING AND SIGNIFICANT MEDIA CLUSTER IN ITS CAPITAL CITY.

[4] See https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/649980/Independent_Review_of_the_Creative_Industries.pdf

[5] See https://businessnewswales.com/barclays-sees-big-increase-in-welsh-tv-and-film-production-revenue/

[6] See https://media.nesta.org.uk/documents/creative_nation-2018.pdf

Methodology

Data gathering process

This study is based on information about 17,182 businesses entities extracted from FAME (a database on UK companies published by Bureau van Dijk, built on Companies House data).[7] Standard Industrial Classification (SIC 2007) codes that the UK Government's Department of Culture Media and Sport (DCMS) use to describe the creative industries[8] have been used to extract data about businesses registered in Wales (see Appendix for a full list of SIC codes).

It is important to stress that this doesn't include all creative work (there are many creatives working in other sectors) or non-market creative activities and output.[9] It is therefore likely that our figures on the number of creative workers is conservative.

Data harmonisation process

Empty data fields on numbers of employees and turnover were harmonized by applying the median and average values of the applicable years.[10]

For the analysis, the location and other data variables were enriched with supplementary information, including data from the Welsh Government (see Appendix for more information on data limitations).[11]

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[7] See https://www.bvdinfo.com/en-gb

[8] See DCMS Sector Economic Estimates Methodology (last updated in February 2019): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/778360/DCMS_Sectors_Economic_Estimates_-_Methodology.pdf

[9] For more details about how the creative industries and creative economy in the UK is defined and what it includes and excludes in terms of activities see: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/499683/CIEE_Methodology.pdf

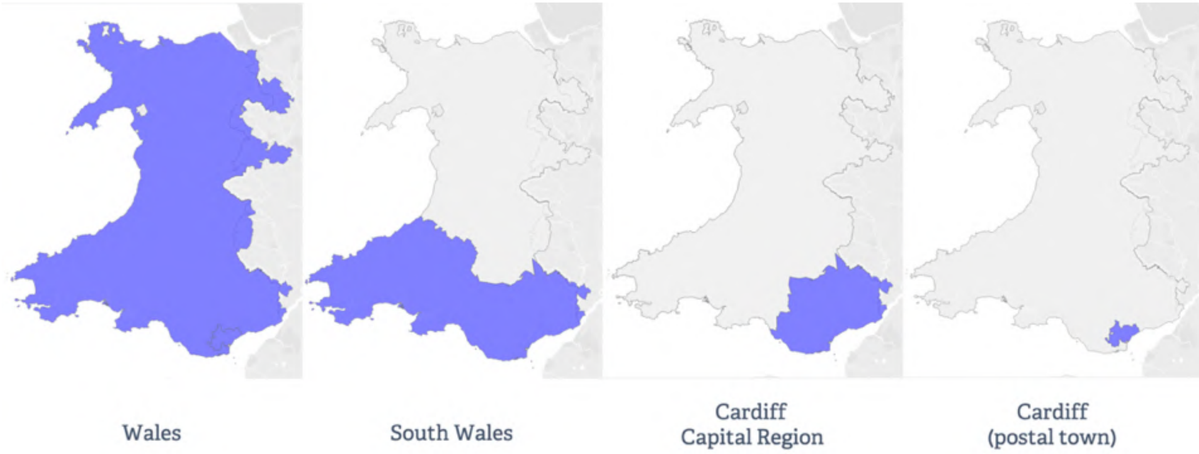
[10] See Britton, J. N., & Legare, G. (2005). Clustering and the digital economy: New media in Toronto. Canadian Journal of Regional Science, 28(2), 329–348.

[11] See https://statswales.gov.wales

Assumptions informing estimates

Our approach to the harmonisation process was cautious, and estimates were rounded down based on the extracted data. The data represents figures from 2017, unless otherwise indicated (the most recent available data in 2019 due to the filing requirements of companies). The data was analysed with the software Tableau.[12]

Geographical areas covered



The research focusses on Wales, with data further broken down for South Wales, the Cardiff Capital Region, and Cardiff, areas where creative industries activities are concentrated. South Wales (as defined here) includes the geographical areas South West Wales (Pembrokeshire, Carmarthenshire, Swansea, Neath Pot Talbot) and South East Wales (Bridgend, Vale of Glamorgan, Rhondda Cynon Taff, Merthyr Tydfil, Caerphilly, Blaenau Gwent, Torfaen, Monmouthshire, Newport, and Cardiff). The Cardiff Capital Region (CCR) represents the ten local authorities in South East Wales[13] (Bridgend, Vale of Glamorgan, Rhondda Cynon Taff, Merthyr Tydfil, Caerphilly, Blaenau Gwent, Torfaen, Monmouthshire, Newport, and Cardiff). Cardiff focuses on postal areas within the city.

[12] See https://www.tableau.com/

[13] See https://www.cardiffcapitalregion.wales/

Defining the creative industries

The creative industries are defined as "those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property".[14] Following the DCMS guidelines, the creative industries include: advertising and marketing; architecture; crafts; design and designer fashion; film, TV, video, radio and photography; IT, software and computer services; publishing; museums, galleries and libraries; and music, performing and visual arts. While these categories are not perfect – particularly in a world of digital convergence – they are widely used and allow us to make comparisons.

[14] The definition of the creative industries is following the guidelines from the Department for Digital, Media and Culture (DCMS). For a full list of the included sectors and SIC codes used in this study see Appendix.

Findings

Creative industries enterprises in Wales

Key numbers

Our research[15] suggests that there are more than 8,000 creative industries enterprises active in Wales. Of these, around 6,400 are located in South Wales, 4,600 in the Cardiff Capital Region and more than 2,000 in the Welsh capital.[16] This clustering of activity is very much in line with Nesta's analysis, which also shows the Welsh creative industries are concentrated in Cardiff. Our findings show Cardiff has a tenth of the Welsh population but a quarter of its creative enterprises. Around 15% of all enterprises in Cardiff are in the creative industries, well above the UK average of 11% and the Welsh average of 8%.[17] This makes the creative industries a key sector in the Welsh capital, with almost as many active enterprises as in the private health and education sector (see Figure 1).

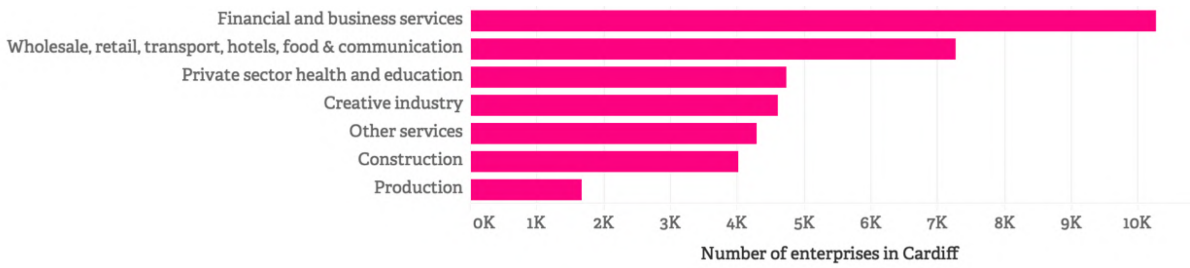


Figure 1: The number of enterprises in Cardiff's creative industries in comparison to other sectors (these figures are for comparison only – they are based on current government data which absorbs the creative industries into other sectors – notably 'other services' and 'production' – so there will be a degree of overlap).

[15] The full list of results for the population of enterprises can be found in the Appendix.

[16] It needs to be kept in mind that these numbers are based on registered enterprises in Wales. Of course, there are businesses operating in Wales that are registered somewhere else in the UK. For instance, ITV Cymru Wales is registered in London but has a business branch in Cardiff. These enterprises are not included in these numbers.

[17] See also DCMS Sectors Economic Estimates for comparison:

https://www.gov.uk/government/statistics/dcms-sectors-economic-estimates-2017-business-demographics

Company structure and turnover

More than 90% of enterprises in Wales' creative industries are registered as private limited companies. Of the remaining 10%, 3% registered as charitable organisations, 5% as companies limited by guarantee (usually non-profits) and 2% are public organisations, such as S4C and BBC Wales Cymru.

Many of the 8,000 enterprises in Wales' creative industries are small, so their average turnover tends to be lower than other sectors. Their estimated total turnover is £3.5bn, 3% of the total turnover in Wales. More than a third of this is concentrated in Cardiff, whose enterprises generated an estimated £1.2bn (see Figure 2).

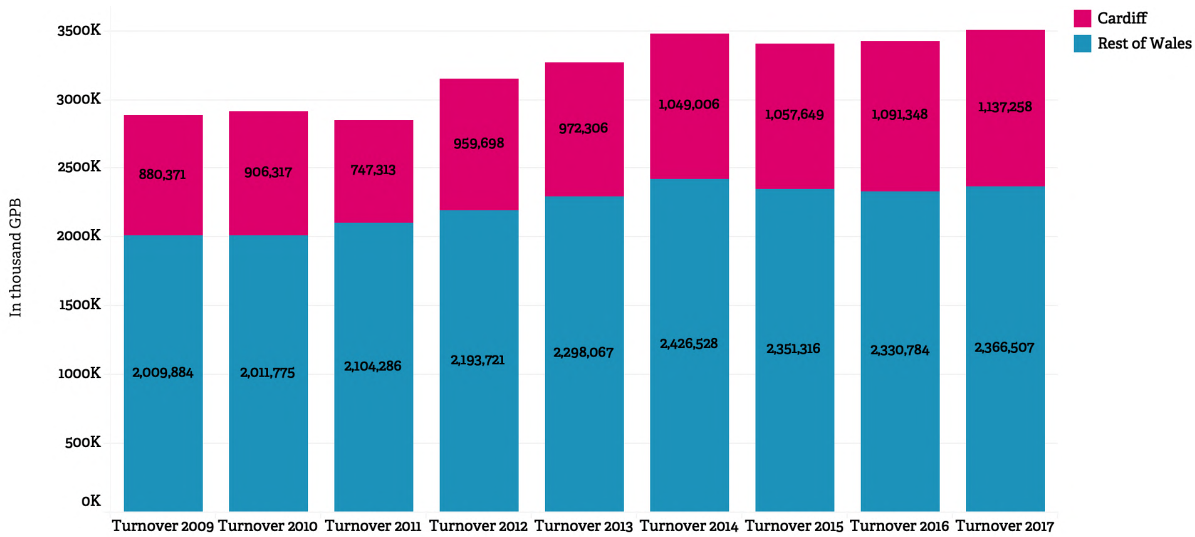


Figure 2: Turnover generated by the creative industries in Wales and Cardiff over time.

Sector distribution of number of enterprises

Most creative enterprises in Wales are in three sectors:

- 35% are in the IT, software and computer services sector (3,251 enterprises);
- 18% are in the music, performing and visual arts sector (1,567 enterprises); and
- 18% are in the film, TV, video, radio and photography sector (1,418 enterprises).

These are the three biggest sectors (in terms of number of enterprises) across Wales, South Wales, the Cardiff Capital Region and Cardiff. Advertising, architecture, design, and publishing constitute around 5% of enterprises and the crafts and museums, galleries and libraries sector less than 1% of the number of enterprises (see Figure 3). This distribution is very similar to the composition of London's creative industries.[18]

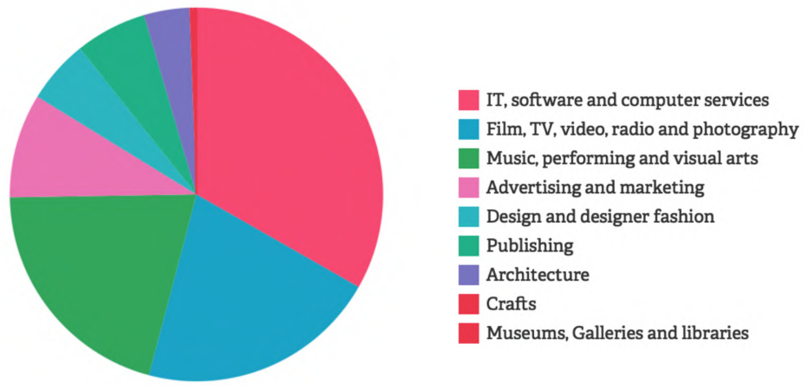


Figure 3: The size of the creative sectors in Wales based on number of enterprises.

Growth rates and new entries of enterprises

Creative industry growth in Wales has been faster in the capital than elsewhere. Cardiff has a growth rate in the number of local creative industries enterprises of 2.2% per year (based on data from 2009-2017), compared to the Welsh average of 1.2%. These growth rates are within the average of the overall business number growth rates (the average growth rate of number of businesses in Cardiff is 2.3% and 1.4% in Wales). The fastest growing creative sectors include architecture, design and designer fashion; film, TV, video, radio and photography; and the music, performing and visual arts sectors. For example, in Cardiff the film, TV, video, radio and photography sector grew on average by 2.5%, the design and designer fashion sector by 5.0% and architecture by 4.1%.

These growth rates are *not* indicators of the number new businesses created: this is expressed by the number of entries and exits in the local creative

[18] See https://www.london.gov.uk/sites/default/files/londons_creative_industries_-_2017_update.pdf

industries. A strong turnover of active businesses is seen as a marker for business dynamism and economic growth - new firms are seen as innovative and play an important role as job creators. Since the 1990s, the increase in enterprises in the creative industries has been strong. On average Wales creates 500 new creative enterprises per year. In 2018 the figure was particularly high, with 1,235 new Welsh creative enterprises. This means around10% of all enterprises in Wales' creative economy are new, while around 5% of enterprises leave the market every year.

On average a creative enterprise in Wales survives for 7 years, above the UK average. Some sectors show higher entry and exit rates than others. The film, TV, video, radio and photography and music sectors, in particular, have seen strong growth in the number of enterprises since the 2010s (see Figure 4).

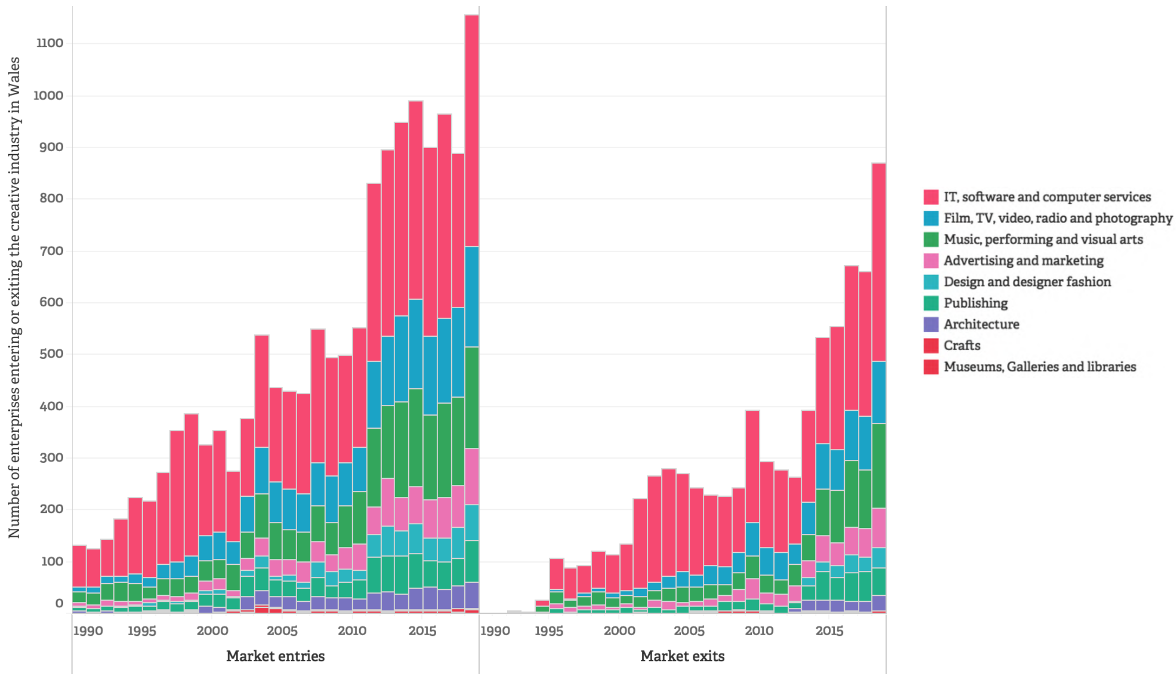


Figure 4: The number of market entries and exits of Wales' creative industries by sector.

The creative industries workforce in Wales

Key numbers

We estimate[19] that the 8,000 enterprises in Wales *directly* employ more than 40,000 employees, 3.3% of total employment in Wales.

The Welsh capital has the highest concentration of employees working in the creative industries - about 1 in 10 company jobs in Cardiff are in the creative industries.

Since the creative industries are particularly reliant on a large freelance workforce (significantly more than most other sectors), the overall proportion of creative industry jobs in Cardiff - and in Wales overall - is likely to be much higher than this.

The figure of employment under-estimates the number of people working in the creative industries, which is particularly dependent on a freelance workforce. On average almost 50% of the creative workforce are self-employed in the UK. We can therefore estimate a total of around 80,000 people working in the creative industries in Wales (including employees and freelancers).

Company size and sector distribution based on number of employees

The UK's creative industries are typically made up of small and micro enterprises – estimated to be 95% of creative businesses overall.[20][21] This is especially true in Wales, where more than 98% of companies in the creative industries employ less than 50 employees.[22] Only about 30 enterprises employ

[19] The full list of results for the number of employees can be found in the Appendix.

[20] See https://www.creativeindustriesfederation.com/sites/default/files/2018-12/Creative%20Industries%20Federation%20-%20Growing%20the%20UK%27s%20Creative%20Industries.pdf

[21] The differentiation between micro and small enterprises in the dataset cannot be made as smaller enterprises less often declare the number of employees and therefore calculations can be made just based on the harmonisation process (see Appendix).

[22] See https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Enterprise_size

more than 50 employees (medium-sized enterprises) and only 5 are large (employing more than 250 employees).

These figures highlight the very particular nature of both the Welsh creative economy and Cardiff's creative cluster. If strategic support for the creative sector is to be effective, it needs to be tailored to an ecosystem where 98% of companies are small businesses, backed by a large population of freelances. This means traditional forms of industrial strategy, based on large anchor companies with existing R&D capacity, need to be radically rethought.

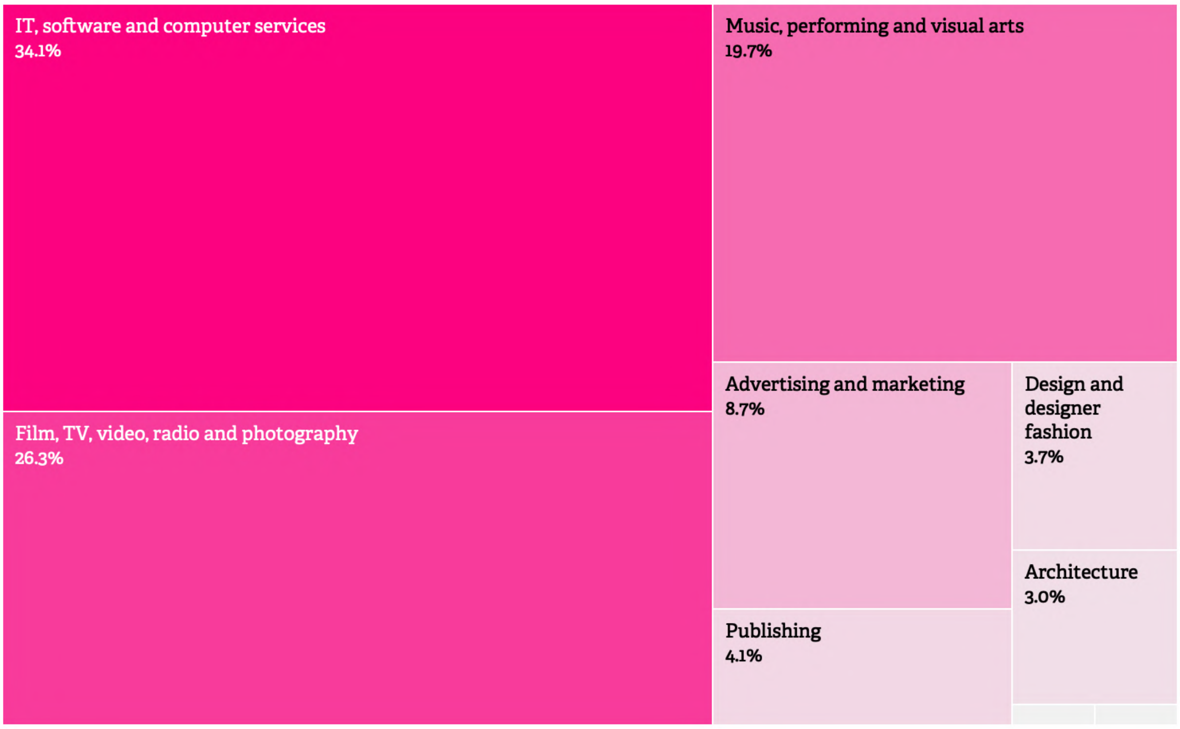


Figure 5: The size of the creative sectors in Cardiff based on number of employees.

The distribution of employees in the different sectors of the creative industries matches the distribution of the number of enterprises (see Figure 3 above).

- The IT, software and computer services sector has more than 14,000 employees across Wales.
- The film, TV, video, radio and photography sector employs more than 8,000 people across Wales.
- The music, performing and visual arts sector employs more than 7,000 people across Wales.

In Cardiff, the film, TV, video, radio and photography sector is particularly important, this sector making up more than a quarter of the city's creative industries employees (see Figure 5).

The number of employees in Wales' creative industries is growing at an average annual rate of 1.9%. Cardiff showed the strongest growth rate - of 2.7%, which equates to creative industries 300 new jobs a year. These growth rates are higher than the increase in enterprises (see above), indicating that growth comes from both the *creation of new* businesses and the *growth of the size* of existing enterprises.

Growth rates in number of employees

Most other creative sectors have seen above average employment growth rates. So, for example, we found an average yearly growth rate of (see Figure 6):

- 6.1% in the architecture sector;
- 5.1% in the design sector;
- 4.4% in the IT, software and computer sector;
- 2.3% in the film, TV, video, radio and photography sector.

The advertising and marketing sector is the only one of the creative industries sectors where employment is declining.

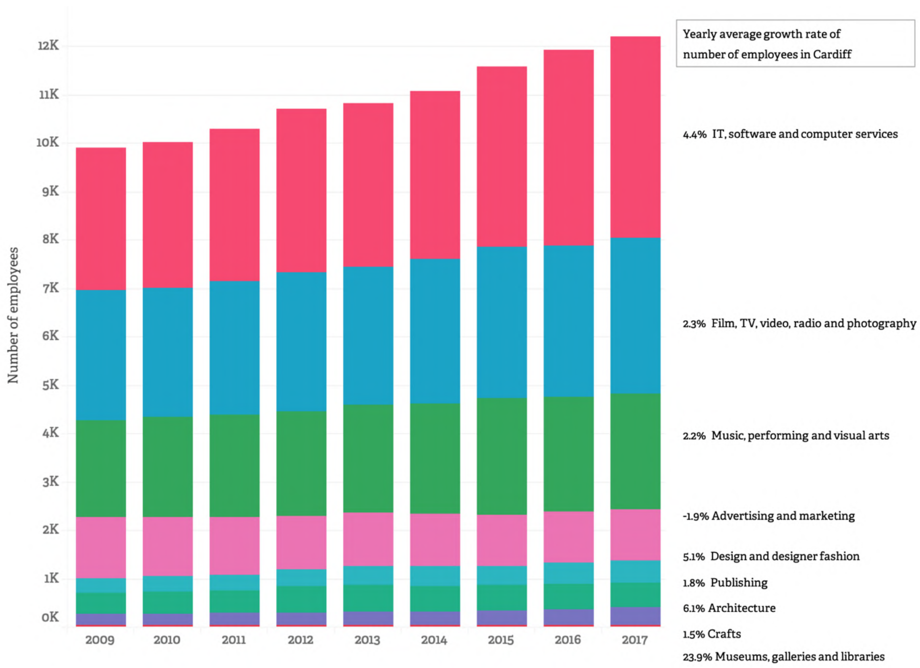


Figure 6: The growth of Cardiff's creative economy per sector in number of employees.

Renumeration in the creative industries

The average annual income of employees in Wales' creative industries is 24,000 GBP (including salaries and pensions),[23] just under the Welsh average of 25,000 GBP. But the trend in wage growth tells a different story.

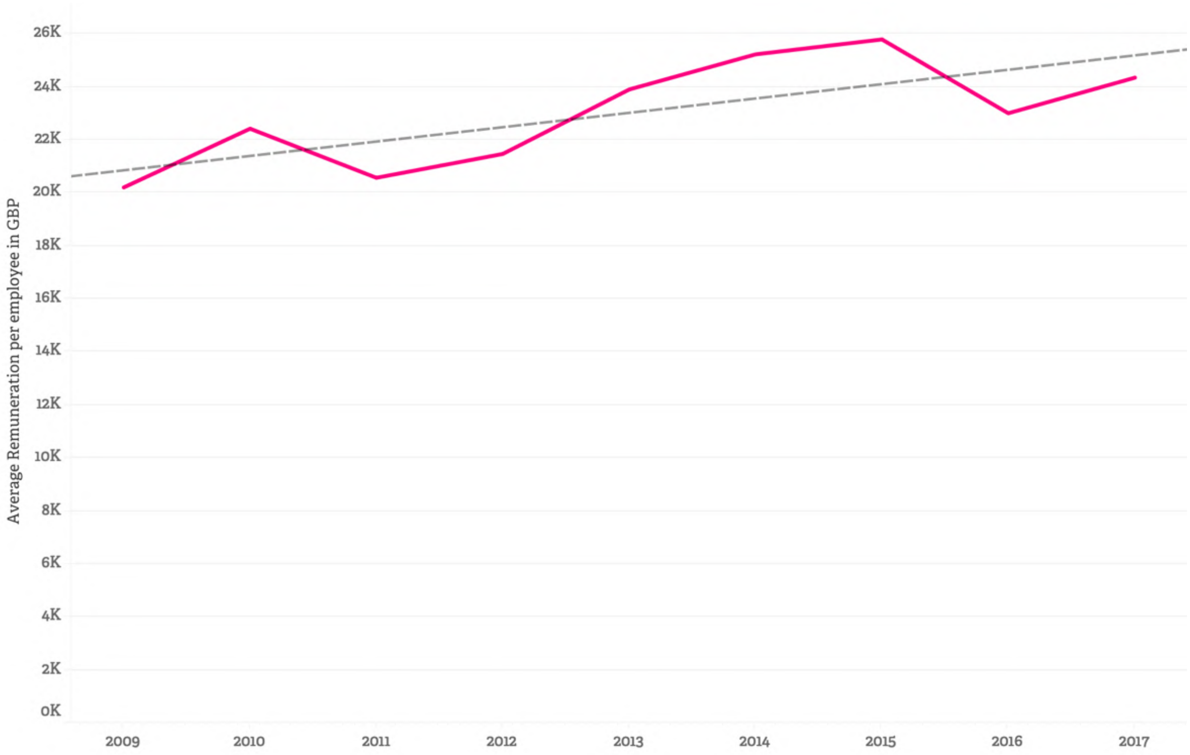


Figure 7: Average remuneration in the creative industries in Wales over time.

Between 2009 and 2017 remuneration in the Welsh creative industries grew by 2.7% per year (see Figure 7) compared with an 1.5% average annual Welsh growth rate.

These figures also conceal significant sectoral differences. The highest wages are paid in the film, TV, radio and photography sector in Wales, which

[23] We note that the estimates on remuneration of employees needs is based on only on about 1% of enterprises in Wales' creative economy. For 2017, for example, data on remuneration is only available only for 131 enterprises.

averages £47,000, almost double the Welsh average. We also found above average incomes in the advertising and marketing sector, the publishing sector and the IT, software and computer services sector (see Figure 8). We find lower wage levels those areas most dependent on the public sector, notably the music and performing arts and in museums, galleries and libraries. There are no significant wage differences between geographical areas in Wales.

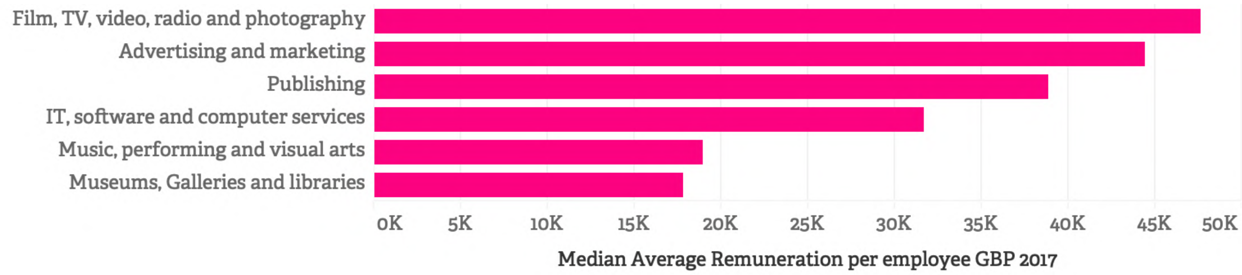


Figure 8: The average remuneration per employee in Wales' creative industries per sector (certain sectors have been left out due to lack of data).

Gender balance

Our data shows that on average 34% of company directors in the Welsh creative industries are women (see Figure 9). While this figure suggests an imbalance, this is a higher percentage than in the UK as a whole, where only 28% of leaders in the creative industries are women.[24]

Previous research suggests that there are gender differences between the more business-related sectors (e.g. architecture, IT, TV and commercial filmmaking) and culture-related sectors (e.g. museums, galleries, libraries, documentary photo/video and publishing sectors). In short, business-related sectors are traditionally male, while culture-related sectors are often dominated by women.[25]

[24] See https://www.emerald.com/insight/content/doi/10.1108/17566261211234652/full/html

[25] See https://www.britishcouncil.org/sites/default/files/gender_equality_and_empowerment_cci_eastern_partnership_2018_en-compressed.pdf

Our data confirms this. So, for example, 68% of directors in the Welsh crafts sector are women, compared to only 27% in the Welsh IT, software and computer services sector. If we track this against the data on renumeration (Figure 9), we can see that men are more visible in the higher paid creative sectors and women in the lower paid sectors - suggesting a significant potential gender imbalance in pay.

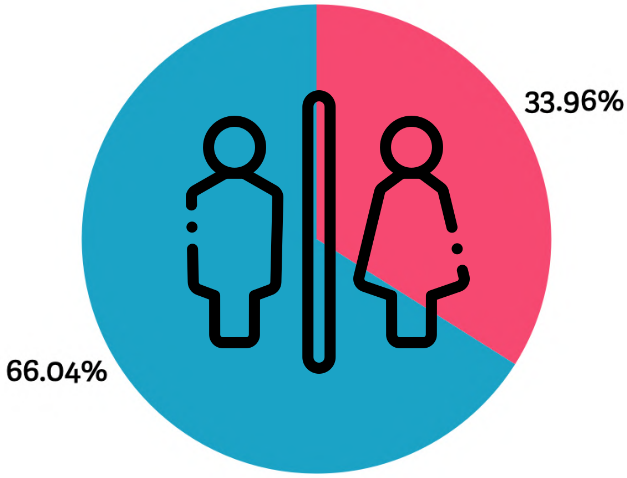


Figure 9: The percentage of female directors in the creative industries in Wales.

The geography of Wales' creative industries

The following maps visualize the geographical distribution of Wales' creative industries, providing a sense of the distribution of each sector throughout Wales. Each circle in the maps is a postal code area. The size of the circle indicates the number of employees in the creative industries in that area.

Overall, the maps underline show a high density of employees in the creative industries in the South, with Cardiff at its core. There are, however, some sectoral differences:

- The film, TV, video, radio and photography sector is strongly concentrated in the Cardiff City Region.
- The IT, software and computer services, the music, performing and visual arts, the advertising and marketing, the design and designer fashion and the publishing sector are concentrated in the South and Cardiff while also – especially IT, software and computer services - being agglomerated in parts of the North East (close to Manchester and Liverpool) and / or South West.
- The architecture, crafts, and the museums, galleries and libraries sector show much less concentration, and are more evenly scattered across Wales.

Figure 10: The distribution of employees in the creative industries in Wales

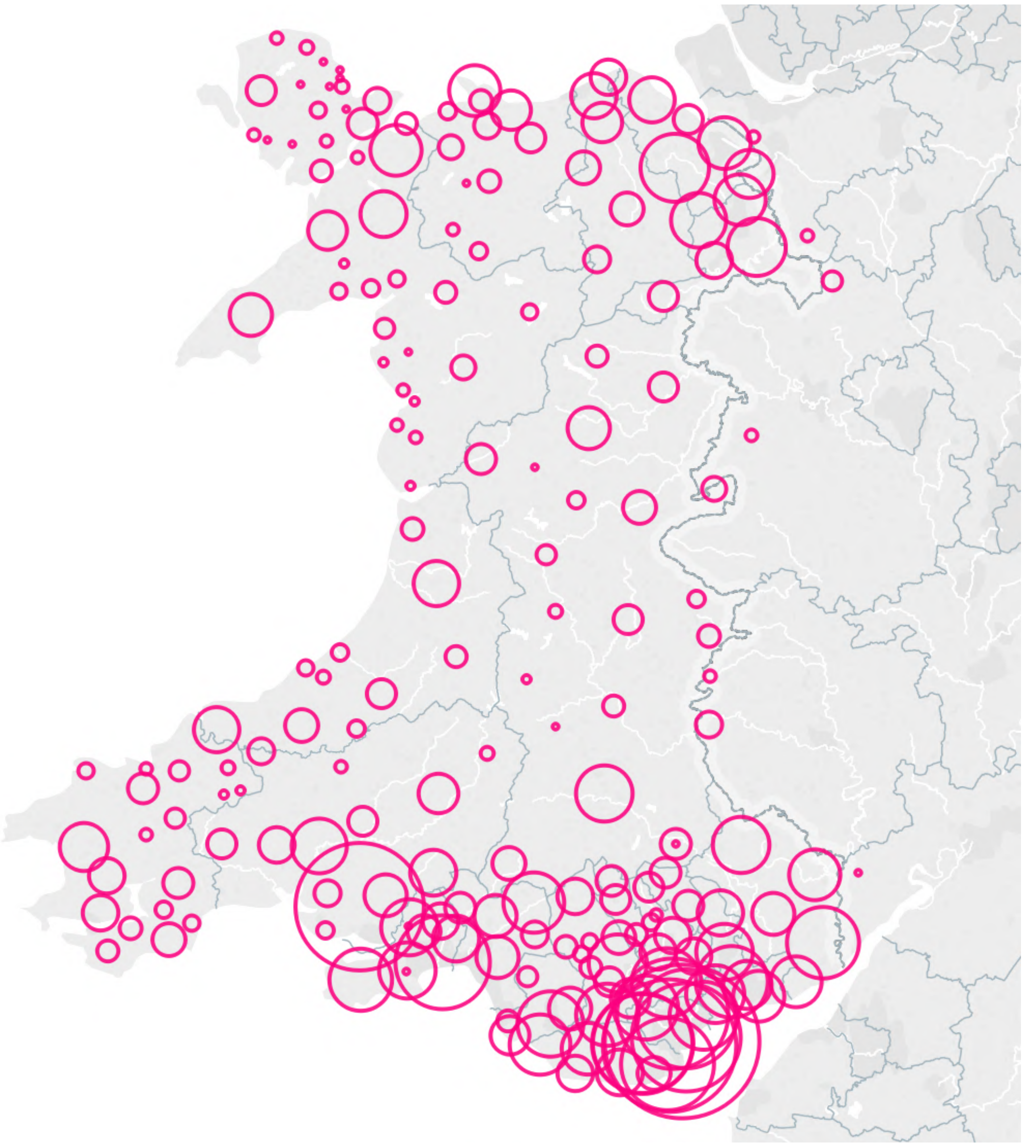


Figure 11: The distribution of the number of employees in the film, TV, video, radio and photography sector in Wales.

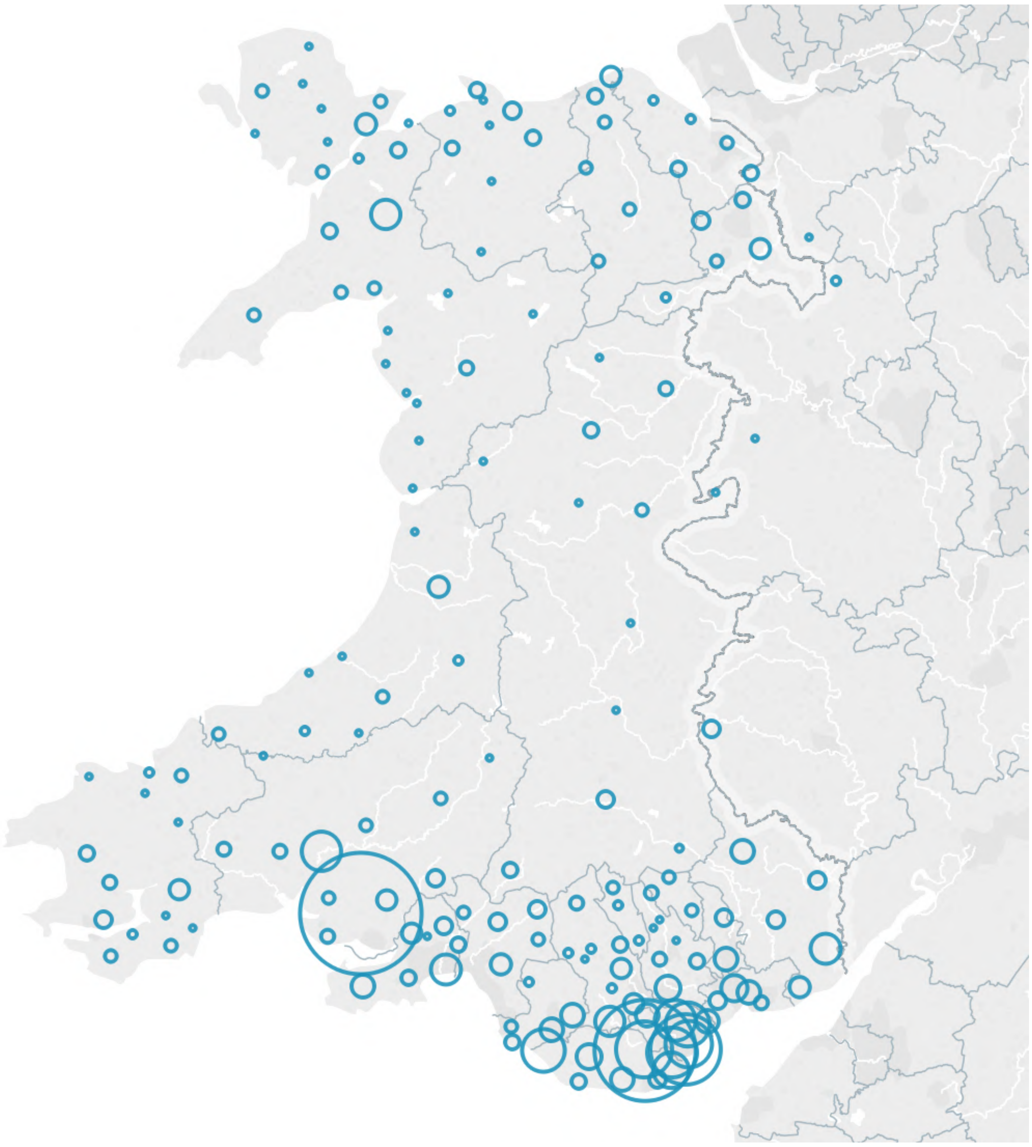
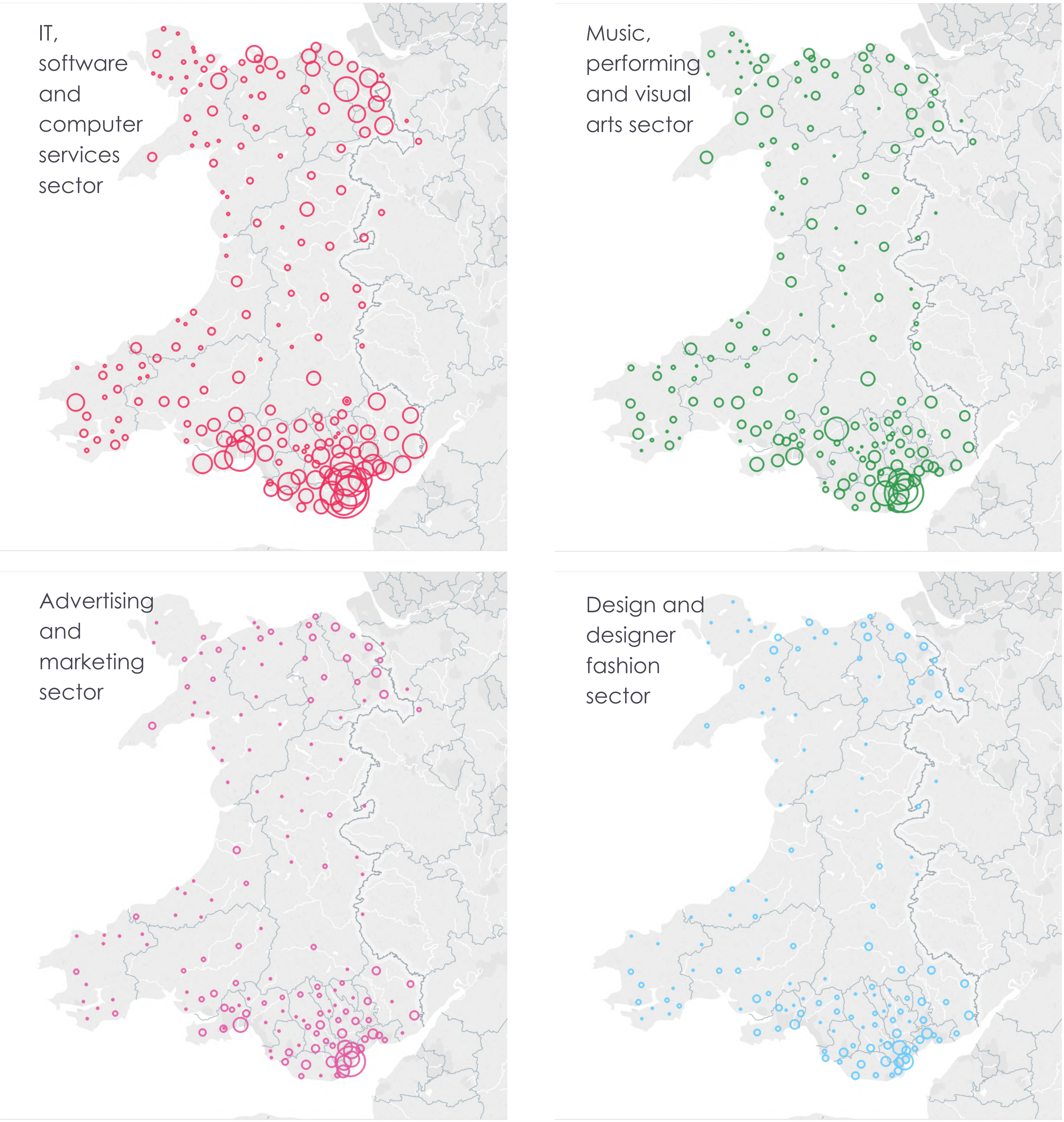
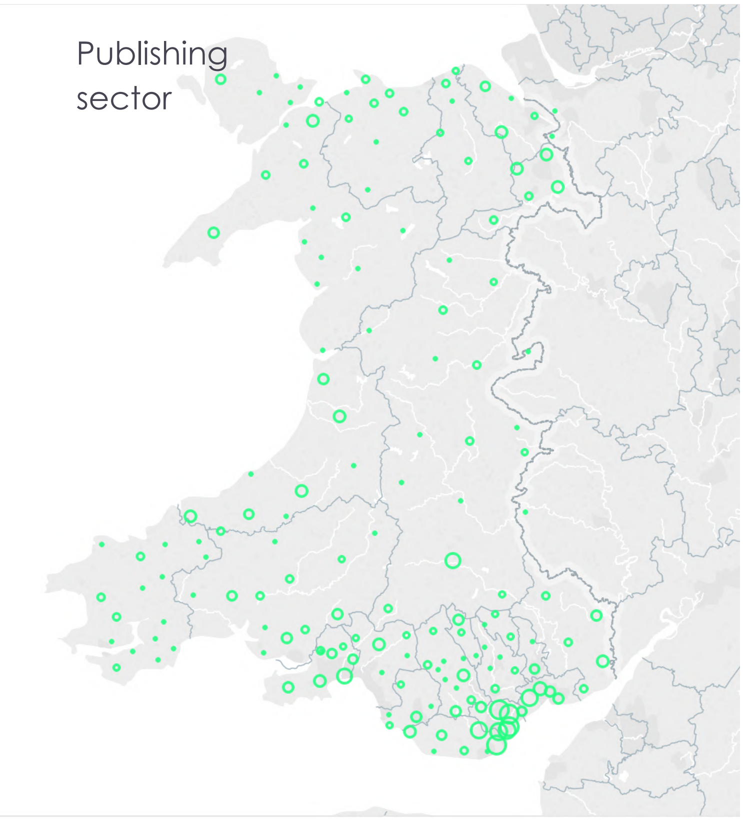
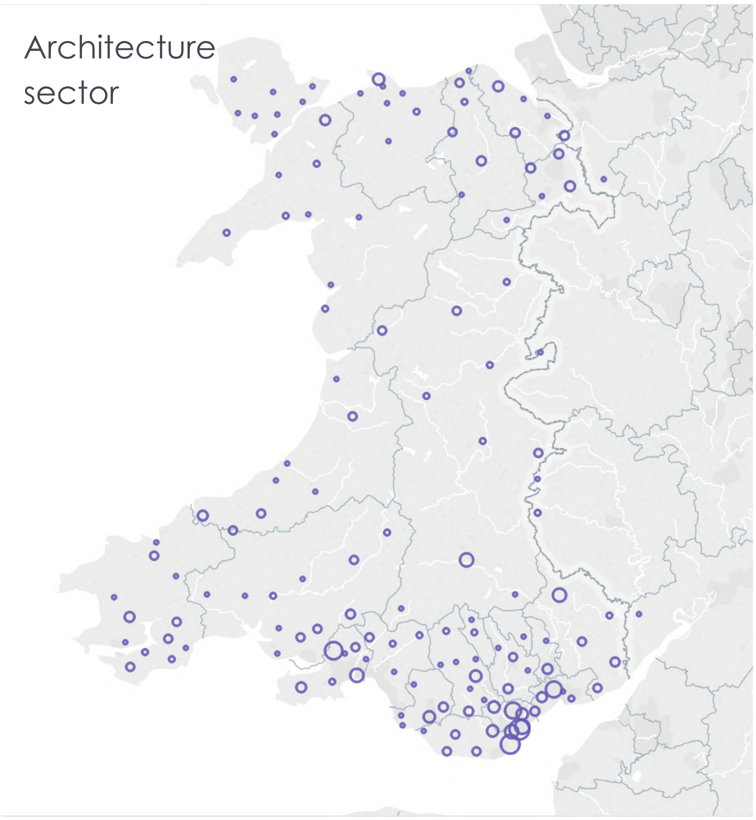
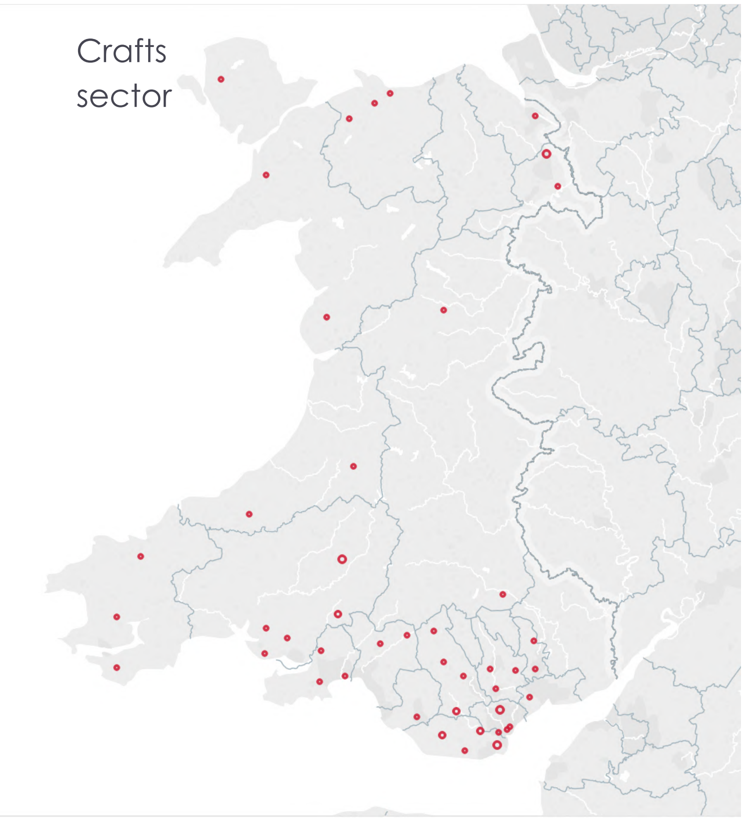


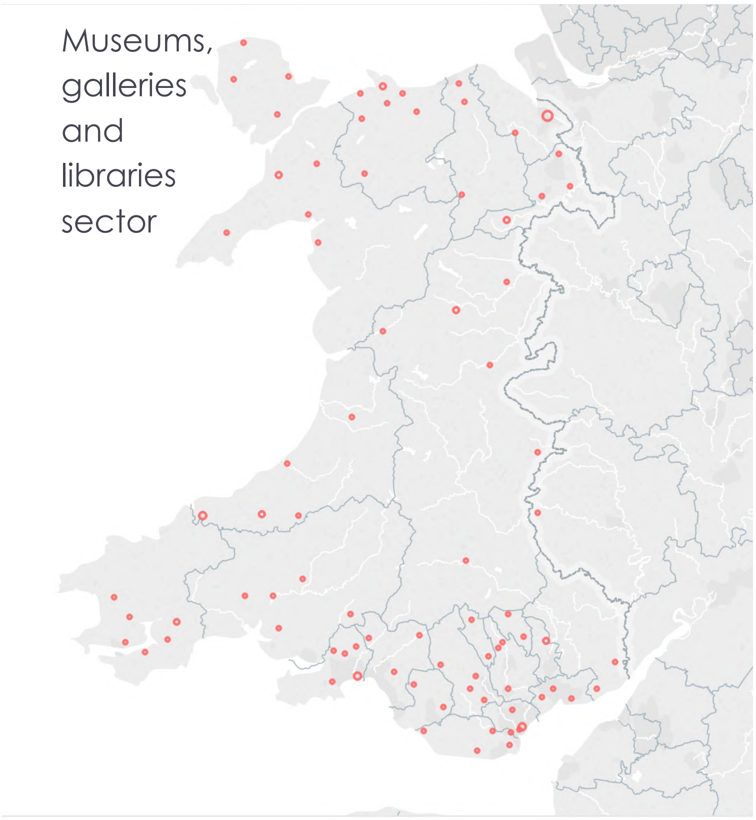
Figure 12: The distribution of the number of employees in different creative sectors in Wales.




Publishing
sector


Architecture
sector


Crafts
sector


Museums,
galleries
and
libraries
sector

CONCLUSION

OUR FINDINGS CONFIRM THAT THE CREATIVE INDUSTRIES ARE AN IMPORTANT AND GROWING PART OF THE WELSH ECONOMY.

We have estimated that there are more than 8,000 active enterprises and 80,000 people working in the creative industries in Wales. This number is likely to grow, particularly in those creative sectors – such as film and TV - where we have tracked higher than average growth rates. Wages in the film and TV sector are already almost double the Welsh average, while wages in the creative industries are rising at a rate which is likely to see creative industries renumeration exceed the Welsh average.

In Wales the creative industries are dominated by three sectors**: IT, software and computer services; film, TV, video, radio and photography; and the music, performing and visual arts sector.** In Cardiff, companies in the film, TV, video, radio and photography sector employ more than 3,000 people, (more than a quarter of all those working in Cardiff's creative industries).

The Welsh creative industries are concentrated in the Cardiff Capital Region with Cardiff at its hub. The presence of major broadcasters in the capital like BBC Cymru Wales, ITV and S4C, alongside a range of national companies and organisations (such as Ffilm Cymru Wales, Welsh National Opera and Arts Council Wales), the availability of major studio spaces (notably the BBC Drama Village and Wolf Studios), and a variety of creative coworking spaces (such as Rabble, Tramshed Tech and Welsh Ice) has made the **Cardiff Capital Region a central node of creative industries activities not only in Wales but also the UK**. We found that **15% of enterprises in Cardiff are in the creative industries**. Cardiff has also become of the UK's leading media cities, with a thriving TV and film production centre reaching international audiences.

The creative industries are not only an important pillar for economic growth and a way of re-shaping the local economy, they are the nation's storytellers, representing and promoting Welsh culture, Welsh talent and the Welsh language.

The creative industries nonetheless face huge challenges in a rapidly changing digital world. The global economy is dominated by large, highly integrated media and technology companies (e.g. Disney, Amazon, Comcast). **98% of enterprises in the Welsh creative industries are small and**

micro businesses. They will need specific forms of support if they are to thrive in a competitive global market.

This includes the creation of collaborative networks that can promote synergies between independent companies with Wales, providing resources to allow them the time and space to innovate, while securing a skills and talent pipeline. Their economic resilience would also be enhanced by a suite of support mechanisms enjoyed by larger companies, from tailored legal and business advice (Intellectual Property being a key currency for the creative sectors) to support in promotion and reaching international markets.

New initiatives like Clwstwr and Creative Wales, alongside strategic funding agencies like Ffilm Cymru Wales, Arts Council Wales, networks like Creative Cardiff and national broadcasters like BBC Cymru Wales and S4C, are making important steps in this direction. But more will be needed if Wales is to move its creative industries from national to international strength.

Appendices

Appendix 1: Methodological limits

Our research process has some inevitable limitations:

First, the creative industries involve complex structures and is strongly impacted by converging technology advances. The demarcation of the creative industries through **classification systems (like SIC) as applied in this study is neither exclusive nor exhaustive**. Additionally, irregularities can be encountered between attributed codes and actual business activity.

Second, working with industry statistics means that there are **constraints in data availability**. Financial data on firms have many constraints. In particular, the UK does not have any obligatory filing requirements for freelancers, and small companies do not file financial figures in detail. Only about 5% of creative enterprises extracted from FAME include numbers on employees. The remaining 95% have been harmonised using calculations based on median and average values per year. BBC Wales – the largest media employer in Wales - was also not included in the database due to filing requirements (information was added in the research process). Other unavailable data cells due to reporting requirements and time constraints needed to be harmonized.

Third, the **available data does not allow us to distinguish directly between trading addresses, addresses for filing purposes and subsidiaries**. Only companies registered at one of the analysed locations are included in the analysis. The data does not allow to see where employees are located and therefore where exactly economic activities are taking place. Consolidated accounts have been used, meaning if subsidiaries are working at different locations, the turnover and number of employees are still designated to one location.

Appendix 2: SIC 2007 codes of the creative industries

Creative industries Sector	SIC Code	Description
Advertising and marketing	70.21	Public relations and communication activities
	73.11	Advertising agencies
	73.12	Media representation
Architecture	71.11	Architectural activities
Crafts	32.12	Manufacture of jewellery and related articles
Design and designer fashion	74.1	Specialised design activities
Film, TV, video, radio and photography	59.11	Motion picture, video and television programme production activities
	59.12	Motion picture, video and television programme post-production activities
	59.13	Motion picture, video and television programme distribution activities
	59.14	Motion picture projection activities
	60.1	Radio broadcasting
	60.2	Television programming and broadcasting activities
	74.2	Photographic activities
IT, software and computer services	58.21	Publishing of computer games
	58.29	Other software publishing
	62.01	Computer programming activities
	62.02	Computer consultancy activities
Publishing	58.11	Book publishing
	58.12	Publishing of directories and mailing lists
	58.13	Publishing of newspapers
	58.14	Publishing of journals and periodicals
	58.19	Other publishing activities
	74.3	Translation and interpretation activities
Museums, galleries and libraries	91.01	Library and archive activities
	91.02	Museum activities
Music, performing and visual arts	59.2	Sound recording and music publishing activities
	85.52	Cultural education
	90.01	Performing arts
	90.02	Support activities to performing arts
	90.03	Artistic creation
	90.04	Operation of arts facilities

Appendix 3: Enterprise population results

		Wales	South Wales	Cardiff Capital Region	Cardiff (post town)
Creative economy	Number of enterprises	8,464	6,442	4,646	2,033
	Percent of total	8.25%	9.1%	9.4%	15.8%
	Average yearly growth rate (9-17)	1.2%	1.3%	1.4%	2.2%
Advertising and marketing	Number of enterprises	596	468	363	183
	Percent of total	0.5%	0.6%	0.7%	1.4%
	Average yearly growth rate (09-17)	0.04	0.3%	07%	1.5%
Architecture	Number of enterprises	464	339	216	80
	Percent of total	0.4%	0.5%	0.4%	0.6%
	Average yearly growth rate (09-17)	3.3%	3.8%	3.3%	4.1%
Crafts	Number of enterprises	39	30	19	6
	Percent of total	0.03%	0.04%	0.03%	0.04%
	Average yearly growth rate (09-17)	1.4%	1.0%	3.2%	-1.4%
Design and designer fashion	Number of enterprises	479	358	267	112
	Percent of total	0.4%	0.5%	0.5%	0.8%
	Average yearly growth rate (09-17)	4.8%	4.9%	5.1%	5.0%
Film, TV, video, radio and photography	Number of enterprises	1,418	1,163	855	424
	Percent of total	1.4%	1.6%	1.7%	3.3%
	Average yearly growth rate (09-17)	2.2%	2.5%	2.4%	2.5%
IT, software and computer services	Number of enterprises	3,251	2,445	1,793	676
	Percent of total	3.2%	3.4%	3.6%	5.3%
	Average yearly growth rate (09-17)	0.2%	0.3%	0.3%	1.6%
Publishing	Number of enterprises	573	420	282	126
	Percent of total	0.5%	0.6%	0.6%	0.9%
	Average yearly growth rate (09-17)	0.2%	0.08%	0.08%	1.6%
Museums, galleries and libraries	Number of enterprises	75	42	19	6
	Percent of total	0.07%	0.06%	0.04%	0.05%
	Average yearly growth rate (09-17)	2.0%	1.2%	4.2%	24%
Music, performing and visual arts	Number of enterprises	1,567	1,177	832	420
	Percent of total	1.5%	1.7%	1.7%	3.3%
	Average yearly growth rate (09-17)	1.7%	1.8%	1.8%	2.7%

Appendix 4: Employees results

		Wales	South Wales	Cardiff Capital Region	Cardiff (post town)
Creative economy	Number of employees	40,404	32,063	22,819	12,226
	Percent of total	3.3%	3.7%	3.7%	8%
	Average yearly growth rate (9-17)	1.9%	2.0%	1.8%	2.7%
Advertising and marketing	Number of employees	2,728	2,208	1,788	1,068
	Percent of total	0.2%	0.3%	0.3%	0.7%
	Average yearly growth rate (09-17)	-1.1%	-1.2%	-1.3%	-1.9%
Architecture	Number of employees	1,907	1,407	915	371
	Percent of total	0.2%	0.2%	0.1%	0.2%
	Average yearly growth rate (09-17)	3.7%	4.4%	4.4%	6.1%
Crafts	Number of employees	156	120	76	24
	Percent of total	0.01%	0.01%	0.01%	0.01%
	Average yearly growth rate (09-17)	1.5%	1.0%	3.2%	1.5%
Design and designer fashion	Number of employees	1,916	1,432	1,068	448
	Percent of total	0.2%	0.2%	0.2%	0.3%
	Average yearly growth rate (09-17)	4.9%	5.0%	5.2%	5.1%
Film, TV, video, radio and photography	Number of employees	8,717	7,697	4,932	3,210
	Percent of total	0.7%	0.9%	0.8%	2.1%
	Average yearly growth rate (09-17)	2.9%	3.2%	2.3%	2.3%
IT, software and computer services	Number of employees	14,797	11,519	8,718	4,174
	Percent of total	1.2%	1.3%	1.4%	2.7%
	Average yearly growth rate (09-17)	1.4%	1.6%	1.8%	4.4%
Publishing	Number of employees	2,370	1,734	1,182	504
	Percent of total	0.2%	0.2%	0.2%	0.3%
	Average yearly growth rate (09-17)	0.5%	0.5%	1.4%	1.8%
Museums, galleries and libraries	Number of employees	321	170	82	24
	Percent of total	0.03%	0.02%	0.01%	0.02%
	Average yearly growth rate (09-17)	2.6%	2.5%	3.3%	23.9%
Music, performing and visual arts	Number of employees	7,492	5,776	4,058	2,403
	Percent of total	0.6%	0.7%	0.7%	1.6%
	Average yearly growth rate (09-17)	2.3%	2.4%	1.7%	2.2%

Appendix 5: About the authors

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Marlen performs the impact analysis of Clwstwr's interventions in the screen sector (and creative industries more generally) in South Wales. She is also associated with the research centre imec-SMIT-VUB (Studies on Media, Innovation & Technology) in Brussels. As a researcher, her work focuses on media and creative industries-related projects, impact analysis, industry clustering, ecosystem and value network analysis, new business models and the impact of the digitisation and innovation on industries and firms.

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Justin is Professor of Communication and Creative Industries at Cardiff University's School of Journalism, Media and Culture. He has conducted research with many different creative organisations, including the BBC, the BBC Trust, Channel 4, the Guardian, as well as UK and European Research councils. He has published over 100 books, journal articles and chapters about a wide range of media and cultural issues.

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