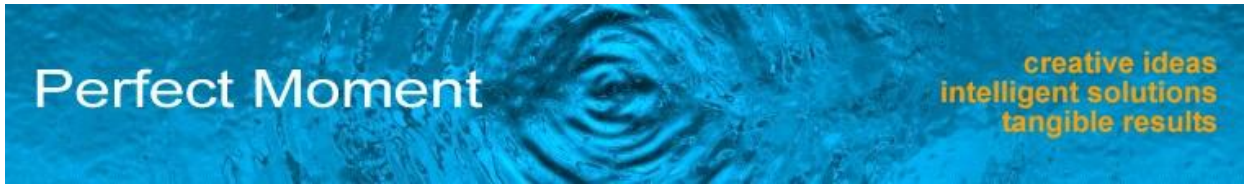

dpn digital peninsula network

CREATIVE SKILLS

adroit economics ltd

Identification of Creative and Digital Skills Needs in Cornwall and the Isles of Scilly

July 2013

European Union
European Social Fund
Investing in jobs and skills

convergence for economic transformation

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This report was commissioned by the Economic Development Department of Cornwall Council with funding from the European Social Fund via Cornwall's Convergence Programme. Our conclusions and recommendations are the results of our professional experience and judgment and are based on secondary data and information provided to us by a range of agencies, plus primary research based on survey and interview information provided to us by Creative and Digital sector businesses and practitioners in Cornwall.

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1.1 Introduction

Perfect Moment, in partnership with Adroit Economics, Creative Skills and Digital Peninsula Network were commissioned by Cornwall Council to produce a detailed research report into the Creative and Digital Sectors, with particular emphasis on skills and skills development.

The outputs from this study are intended to underpin the formation of a Work and Skills Strategy and Plan for Cornwall and the Isles of Scilly and provide an evidence base for decision-making regarding European and other public sector investment into the sectors.

The Convergence Programme for Cornwall runs from 2007-2013 and aims to stimulate economic growth and employment in the least developed regions for the EU.

The objective of the Cornwall and Isles of Scilly Programme is to continue the transformation of the economy to one where knowledge, environment and quality of life underpin sustainable economic growth.

The overall mission of the Programme is to boost businesses which provide well-paid and highly skilled jobs through growth and innovation.

To support this mission, a Work and Skills Strategy for Cornwall and the Isles of Scilly is being developed and this research is intended to underpin this by:

- Identifying key growth areas for the sectors
- Determining training support/skills needs to improve future employment opportunities for local people
- Identifying a priority set of actions to be addressed to maximize business growth and opportunities for local people associated with future growth in the sectors

1.2 Methodology

We have adopted a dual top-down and bottom-up approach to this research – reviewing key national data and trends, applying these to the sectors in Cornwall using a model jointly developed by *Adroit* and *e-skills UK* (the IT sector skills council), augmented by detailed qualitative findings from bottom-up field work (via a survey of businesses within the sector and wide stakeholder consultation).

1.3 Creative and Digital Sectors

The UK's Creative and Digital industries are a highly significant part of the overall economy responsible for around 11% of the overall workforce. They have become increasingly important to the wider economy due to the massive growth in online services and markets.

An estimated 10,700 people work in the Creative and Digital sectors in Cornwall. Over the past 4 years, there has been a net increase of 400 jobs in the sectors, made up mainly by sole traders. An additional 3,600 people who work in ICT Digital and Creative occupations work in other sectors in the wider Cornwall economy. As a result, total ICT Digital and Creative employment is estimated at 14,300 people in Cornwall and the Isles of Scilly. The sectors account for 6.2% of all businesses in Cornwall, and employ approximately 14,300 people. However, the broader impact

that these sectors have on businesses across Cornwall (particularly in helping overcome any disadvantage of geographic isolation) makes these sectors particularly important to the overall economy.

The digital and creative industries' share of overall employment in Cornwall at 3.1%[1] is approximately half the national average, but it is worth noting that between 2008 and 2011 employment in the sector grew by 6% compared with a drop of 3% in employment in the sectors nationally.

Software activities are the largest sub-sector, with 30% of all businesses, and visual and performing arts the second largest with 15% of businesses in the sector.

The fastest growing sub-sector in Cornwall is Video, Film and Photography and employment in this sub sector as a proportion of the local workforce is twice the national average.

1.4 Growth and Employment Opportunities

Our survey revealed an optimistic picture, with many businesses expecting to grow and recruit additional staff over the next 1 – 3 years.

Initially we had planned to map employment opportunities by assessing those being forecast through ERDF (and other similar) investments. However, it was not possible to do this as many planned investments are not yet secure and in many cases it is impossible to predict the impact of the proposed developments specifically on the digital and creative sectors. Instead we used a model - developed by *Adroit Economics* with *e-skills UK* (the IT sector skills council) designed to estimate the impact of current and future national, regional and local skills needs and gaps on job creation. We used this model to apply national trends to Cornwall's economy to estimate growth, current provision and current and future gaps in skills. We estimate the potential growth for these sectors to be *at least* 5.4% (or 768 jobs) over the next 5 years.

Despite the recession, business confidence remains high with 50.4% of businesses in the survey expecting growth over the next twelve months and only 8.5% expecting business to contract. For businesses with a turnover of between £300k and £1m, approximately 80% predicted growth.

43.5% of businesses cited current trading conditions as a barrier to growth, a further 58.4% cited access to finance and funding as a barrier and 32.6% cited a 'limited market'. Given the levels of business optimism and the recently history of growth (against national trends), improved marketing and business skills could arguably make a significant contribution to overcoming these barriers.

1.5 Skills Supply

Businesses claim that the level of craft and technical skills in the existing work force is high (83% rated their workforce skills in this area as either 4 or 5 out of 5). They also rated their customer care skills highly with 80% rating their workforce skills as either 4 or 5 out of 5. Marketing was the lowest rated skill with only 29% rating their workforce's marketing skills as either 4 or 5 out of 5 and one third of businesses rating their skills in this area as 1 or 2 out of 5.

[1] 2011 Annual BRES data

Whilst the Cornwall labour market can provide sufficient people at a high level of educational attainment to meet the demands of this projected growth in the sector, not all of these have the right mix and level of skills to meet the needs of businesses in both sectors.

Worryingly for the sector, 49% stated that they experience problems with recruitment compared with the 2012 *Manpower Services* survey which revealed that 11% of employers in the UK experienced difficulties in recruitment and a recent *e-skills* Business Survey which identified that 10.1% of vacancies were hard to fill. Moreover, as both sectors grow and the demand for skills increases, the skills gap is likely to increase.

1.6 Skills Demand

There is a good demand for training, and 69% of businesses we surveyed had recently invested in training. An analysis of this expenditure indicates that across the sectors businesses invest between £942,500 and £1,885,000 annually in training and skills development. However, the cost of training was viewed as an important factor when selecting a provider.

Many businesses are confident of their own technical and craft skills, but struggle to recruit additional staff with those skills. This may be in part a reflection of the difficulties faced by micro-businesses in training up appropriate staff. It is also worth noting that across Europe reports have indicated that an over-concentration on degree level qualifications is causing a shortage of technical skills. Interestingly, there is currently virtually no take up of apprenticeships in this sector which is one of the government's key initiatives to address possible skills shortages.

In addition, many businesses highlight marketing skills as a particular area of weakness, which may be connected to their perception that a 'limited market' is a significant barrier to growth.

1.7 Impact of No Action

Skills gaps/ shortages will have the following impacts:

- Of those in jobs, a proportion will not be proficient – resulting in reduced productivity, reduced competitiveness and lost potential GVA
- Filling net vacancies generated by (i) growth and (ii) replacement will be more difficult, taking longer, and resulting in higher recruitment costs. Moreover, a proportion of those filling vacancies will not be fully proficient in such a labour market – together resulting in lost weeks' working time, higher costs and lost productivity

Unless addressed, this current level of skills shortage will result in lost potential GVA to the Cornwall economy. Using the *Adroit/e-skills UK* model, which applies national trends regarding growth, skills supply and gaps to Cornwall, we estimate that, with a potential growth rate in the sector in Cornwall of 5.4% over the next five years, a minimum of £12.2m in potential GVA could be lost to the Cornwall economy if the skills gap is not closed.

1.8 Key Issues

In Cornwall, the key issues to be addressed are:

1. Businesses say that a limited market and current trading conditions are the main barriers to growth (8.2 p 27) and that marketing skills are their weakest area (Fig 12 p 37)

2. There is a mismatch between businesses' perceived area of skills weakness, marketing (Fig 12 p 37) and the training they most recently have undertaken (technical skills) (10.2 p 40)

3. Businesses are prepared to be flexible and pay for the right training. (10.3 p 41)

4. Businesses prefer training to be delivered in an intensive way rather than spread out over a period of time (10.3 p 41)

5. Online learning is becoming more predominant, but businesses also value peer-to-peer learning (10.2 p 40)

6. Only a third of the sector are interested in accredited training and of those who are interested in accredited training the highest interest is in vocational training (44%), degree or equivalent (33%), statutory – health and safety etc. (30%) (10.3 p 41)

7. The overwhelming preponderance of micro-business and self-employed in the sector (7.1, 7.2 p 19 -20) acts as a barrier to businesses acquiring a wide range of skills

8. There are skills gaps nationally in the IT Digital sector, particularly in programming. (*e-skills* survey) This is in part due to a lack of knowledge within the labour market of the opportunities that this work presents for well-paid employment and in part a negative perception of the work.

9. There is a real need for employees who can marry together high level creative skills with high level IT skills. (*e-skills* feedback)

10. The high number of part time workers in the sector present challenges to upskilling the workforce. (7.3 p 20)

11. Only 16.9% businesses cited workspace as a barrier to growth. This is a shift within this sector (compared to other workspace demand studies) away from workspace being a predominant barrier to growth. (8.2 p 27)

12. There has been recent (currently unexplained) growth in the video, film and photography sub-sector. (Figure 9 p22)

1.9 Recommendations

Our findings suggest that there is a need to strengthen skills in Digital and Creative sectors in Cornwall. These sectors have shown good levels of growth between 2008 and 2011 (against national trends) and business confidence remains high for further growth. This has to be seen in the context of difficult market conditions, which require high levels of competitiveness, with 43.5% of businesses citing current trading conditions as a barrier to growth, and 32.6% citing a 'limited market'.

Achieving further growth in a competitive market will lead to a greater demand for highly skilled personnel and any increase in the existing skills gap will reduce business opportunities across the sectors. Currently, there are significant skills gaps. Locally, over three times the national average of employers stated in the survey that they found it hard to recruit staff. Specifically, a very high proportion of businesses gave a relatively low rating to their business and marketing skills.

Closing the skills gap and thereby increasing competitiveness, represents both a challenge and an opportunity to firms in both sectors and to schools, colleges, universities, training providers and other education and skills organisations.

Our advice would be to monitor and understand the fast evolving national situation and to ensure that all Cornwall's stakeholders are pro-active in taking part in, volunteering for, and capturing as large a share of the activity and funding that they can.

In addition Cornwall's stakeholders must review, adjust and refine local infrastructure and provision so that it is in line with, and augments, new national initiatives. Cornwall should draw on its relatively unique position to access further funding (Cohesion funding) to formulate complementary and additional initiatives that address any further specific needs/ opportunities.

In our opinion there is still work to be done on the supply side, particularly in being able to provide the highest quality training which can respond to a fast changing business environment where innovation is often driving the skills agenda. However there is more work to be done on the demand side where businesses need support to enable them to identify their most pressing training needs and innovative solutions need to be found to give micro-businesses access to the wide range of skills (particularly business skills) which they need to grow.

Specifically, we recommend that:

1. A holistic approach is taken to business support and skills. Light touch business diagnostic services should be used to help businesses identify the skills and training they require for sustainability and growth. Supporting businesses to identify their real requirements is the best way to market skills development.

2. Businesses are given support to help them understand the most effective way in which they can address skills needs and skill gaps.

3. It is recognised that skills training is not the only answer to skills acquisition by micro-businesses. These businesses have a finite capacity to develop skills and so creative and collective solutions need to be devised to enable businesses across the sectors to access marketing and other business skills.

4. Solutions are offered to businesses to identify and access new markets.

5. Services are developed and enhanced which blend online learning with peer-to-peer learning, which provides opportunities to network and access to high-level experts.

6. Marketing and sales skills, which businesses cite as key areas of weakness, are areas that training providers should focus on.

7. The availability of bite-sized higher-level training is enhanced.

8. Digital sector industry should be encouraged to work closely with schools to improve the perception of IT jobs.

9. Additional research into key growth sub-sectors, such as video, film and photography should be undertaken to enable more targeted development of these important growing sub- sectors.

1.10 Conclusion

Our research shows that the Creative and Digital sectors have grown steadily, against national trends, and that businesses feel optimistic about future growth. However there are current and predicted skills gaps in these sectors, especially around business skills and marketing, which if not addressed, could result in unfilled potential of £12m in GVA over the next five years.

Whilst businesses still need to be persuaded to take up training and have a better understanding of the benefits of training there is an immediate significant market of £1m- £1.5m for training. We believe that the demand for effective training can be increased, where support for skills development is part of a holistic business diagnostic approach.

The overwhelming predominance of micro-businesses in the sectors means that providing adequate training is not the only answer and innovative collective solutions to the skills gaps need to be explored.

2 Context

The Internet now connects 187 countries, and world Internet traffic is doubling every 100 days. At the core of this step-change is the socio-economic power of knowledge. Knowledge-based economies are characterised by very rapid developments around new ideas and by rapid convergence between formerly discrete sectors and activities in a search for synergy and new opportunities. A particularly important arena of development is the Creative Industries; formed from convergence between the Media/Information Industries and the Cultural/Arts sector. Exemplifying the growing significance of this convergence is the recent merger between Time/Warner and America on Line, which has produced the world's fourth largest company. Unlike many other industry sectors, the creative industries continue to benefit from high growth rates, in part because they continually build on and interact with innovations in science and technology. The Creative Industries provide a superb new opportunity in a new economy

Unlocking Creativity – a strategy for Development. Northern Ireland's Creativity in Education Working Group

Some sectors of the Creative Industries were hit very hard by the recession. For example the October 2008 Bellwether Report reports the largest ever fall in annual marketing budgets in the survey's 9 year history, Arts Council England have been asked to make a 29.6% saving from the spending round beginning in 2011, and employment in the arts, entertainment and recreation fell further than in the previous two recessions – by 23% between June 2008 and June 2010 in programming and broadcasting. An Experian study for SEEDA predicted that Creative Industries employment wouldn't return to its pre-recession levels until 2020.

A Creative Block? The Future of the UK Creative Industries The Work Foundation 2010

Given the existing significance of these sectors, but more importantly the growth that has been forecast, it is important that Cornwall addresses skills gaps in order to stay competitive, and meet future demand.

This report highlights areas of potential growth and weaknesses in the sectors and makes recommendations about how to address issues.

3 Methodology

We have adopted a dual top-down and bottom-up approach to this research – reviewing key national data and trends, applying these to the sectors in Cornwall using a model jointly developed by *Adroit* and *e-skills UK* augmented by detailed qualitative findings from bottom-up field work (in the form of a survey of businesses and wide stakeholder consultation).

3.1 Defining the Creative and Digital Sectors

Our starting point, to provide an overall context for the research, was to review the national and international literature on the sectors to draw out key trends and dynamics, particularly regarding drivers of growth and the importance of specialist skills. *e-skills UK's* 2012 Technology Insights report and the following supporting research, for example, were particularly informative:

- Sector Skills Insights, Digital and Creative, UKCES, 2012
- Sector Skills Assessment for the Creative Industries in the UK, 2011

Our next step was to formulate appropriate standard industrial classification (SIC) definitions for both sectors that reflected the characteristics of the sectors and their sub sectors in Cornwall[23]. There is a considerable degree of overlap in activity between the two sectors and the respective Sector Skills Councils have had substantial discussion nationally to agree boundaries. Nevertheless, we were aware that on the ground, in Cornwall, these boundaries will be artificial to a certain extent.

Having established agreed SIC definitions for both sectors, we then sought to map and profile both sectors, in terms of employment and skills mix, in Cornwall and to benchmark these nationally. To do this, we drew upon and updated:

- the recent research *Adroit* undertook into the Cornwall ICT Digital sector (for Cornwall Development Company in 2012), using data published by ONS from Annual Business Survey, and Labour Force Survey,
- the very recent results from the 2011 Census
- the Inter Departmental Business Register

The analysis reviewed recent trends in employment and businesses growth as well as drawing on survey work and other reports published on the sector by bodies such as e-skills UK, Skillset and DCMS.

3.2 The future of the Sectors

Initially, as set out in the study's terms of reference, we had planned to map and model employment growth opportunities in both sectors by assessing those being forecast through ERDF (and other similar) investments. However, it was not possible to do this as many planned investments are not yet secure and in many cases it is impossible to predict the impact of the proposed developments specifically on the digital and creative sectors. Moreover, ERDF-funded regeneration is only one driver of employment growth and employment change in both sectors. It was important to also explore the other drivers if we were to

2 Creative Industries Economic Estimates, DCMS, 2011

[3] Strategic Assessment for the Digital Economy, e-skills, 2010

identify a full picture of growth, change, need and gaps in skills provision for both sectors.

For these two reasons, we modified and broadened the study approach and methodology to include top-down modelling of current and future skills needs/ gaps in both sectors. To do this we used a model - developed by *Adroit Economics* with *e-skills UK* designed to estimate current and future national, regional and local skills needs and gaps. We used the model to estimate current and future needs/gaps for both sectors:

- The model has been in development over the last 18 months and has recently been finalised[4]
- It works by applying national ICT/Digital labour market trends and metrics to the Cornwall economy
- We adapted the model to also apply national Creative Industry labour market trends and metrics to the Cornwall economy
- Because modelling any future outcomes is subject to a range of assumptions and uncertainties, we modeled 3 potential scenarios, providing a range of results – a low, medium and high growth scenario. The study field work (businesses survey and stakeholder consultation) suggests that the high growth scenario may be the most relevant for Cornwall

The model provides the following results:

- The model estimates current skills/proficiency gaps in the Cornwall Digital and Creative Industries' labour markets by applying national trends to the Cornwall economy. Skills/ proficiency gaps result in sub-optimal staff, recruitment delays and additional recruitment costs. These factors adversely impact on businesses across the sectors, resulting in reduced productivity, increased costs, frustrated growth and ultimately in lost GVA.[5] These gaps are the result of shortcomings regarding the supply of skills in the labour market, which could be addressed by appropriate increased provision of relevant education, training and skills development.
- The model also estimates the future skills/ proficiency gaps which are likely to arise, if current education, skills and training infrastructure and provision shortcomings are not addressed. The model estimates future gaps by assuming that current labour market supply conditions prevail and applies these, year on year, over a five-year period, to estimate net additional jobs arising in both sectors. Net additional job requirements will be the result of two factors:

    1. growth (or decline) of each of the sectors – national trends indicated year on year growth in both sectors
    2. replacement due to retirement and other losses from both sectors

These two factors added together provide an estimate of total net additional jobs.

4 For a statement of the overall principles of the model see Appendix 4

5 Gross Value Added

The model concludes by adding together current gaps and, estimated future gaps, to provide an estimate of total skills/ proficiency gaps in the Cornwall Digital and Creative industries' sectors. These are expressed in terms of jobs (FTE[6]) and lost GVA[7]

Because the model applies national trends to Cornwall, the results assume that national trends prevail in Cornwall. This may be broadly the case, certainly regarding the IT (Digital) sector which tends to be more homogenized compared with the Creative Industries which are subject to substantial local variation.

This said, national IT labour market trends are likely to provide only a broad guide to conditions in Cornwall. One of the purposes of the survey was to provide indications of how Cornwall may vary.

We have not been able to quantify these Cornwall-specific features and hence have not included them in the model's calculations. Instead, we suggest that they provide a valuable context for interpreting the results of the model. In this regard, the survey and stakeholder findings suggest that the model has probably:

- Broadly accurately estimated growth
- But under estimated supply and hence the size of both the current and future skills/ proficiency gaps

It should also be noted that the model's results suggest shortcomings in the education, skills and training infrastructure and provision short comings on two grounds:

- on the basis of national trends and
- the gaps in skills/ proficiency, by definition suggest supply shortcomings

It is important to note though that the model does not directly model current supply, it only infers shortcomings. Again, the survey work was designed to explore the potential shortcomings.

3.3 Bottom-up research (survey identifying current and future skills demand)

To help inform the above top-down modelling, and particularly to provide a context for interpreting its results, the team also undertook extensive bottom-up field work in the form of a business survey.

The survey was web-based. To develop the questionnaire, we worked closely with Creative Skills and Digital Peninsula Network to ensure the right mix and balance of questions were asked, regarding the following topics:

- Size and scale of businesses
- Barriers to growth
- Future plans
- Skills confidence and gaps
- Skills and training demand

[6] Full Time Equivalent

[7] Gross Value Added

The questionnaire was uploaded to Survey Monkey and piloted in house to check the survey branching and routing worked. A link to the questionnaire was then circulated by email to the target audience of 3,500 businesses, based on databases provided by Digital Peninsula Network and Creative Skills, as well as other sector and business groups.

It should be noted that although the results are broadly representative of the make-up of the sectors, there may be some bias due to the responses coming largely from these groups' databases.

The results were collated and analysed. 350 businesses completed or near completed questionnaires, representing a 10% response rate and providing a robust degree of statistical confidence. This represents a relatively strong response rate for a web survey. The norm is between 3-5%. The respondents represent 5% of the 6,500 businesses in both sectors in Cornwall.

4 Definition of Creative and Digital Sectors

The Creative and Digital industries have become increasingly important to the success of individual businesses and the wider economy due to the massive growth in online services and markets. In Cornwall, the ICT Digital and Creative sectors account for 6.2% of all businesses, and employ approximately 14,300 people. However, the broader impact that these sectors have on businesses across Cornwall (particularly in helping overcome any disadvantage of geographic isolation) gives extra significance to these sectors.

The Creative and Digital Sectors are high value sectors, which are not overly-reliant on geographical location. Over the past few years, Cornwall has acknowledged the importance of these sectors, and key investments, such as the development of the Falmouth University and the Innovation Centres have helped raise the profile of the sectors.

4.1 Definition

The review of official Government data, the *Adroit* 2012 survey of the ICT Digital sector in Cornwall, and guidance published by Department for Culture, Media and Sport were all used to identify the key Standard Industrial Classification (SIC) codes for the ICT Digital and Creative sectors. These are set out in Appendices 1 and 2. Although the analysis brings together two separate definitions for ICT Digital and Creative Industries, there is a significant degree of overlap between the definitions as illustrated in Figure 1. Therefore, to avoid double counting, in the following analysis we have included data for all of the SIC codes from the ICT digital definition and only the non-duplicates from the Creative Industries definition – see Table 1

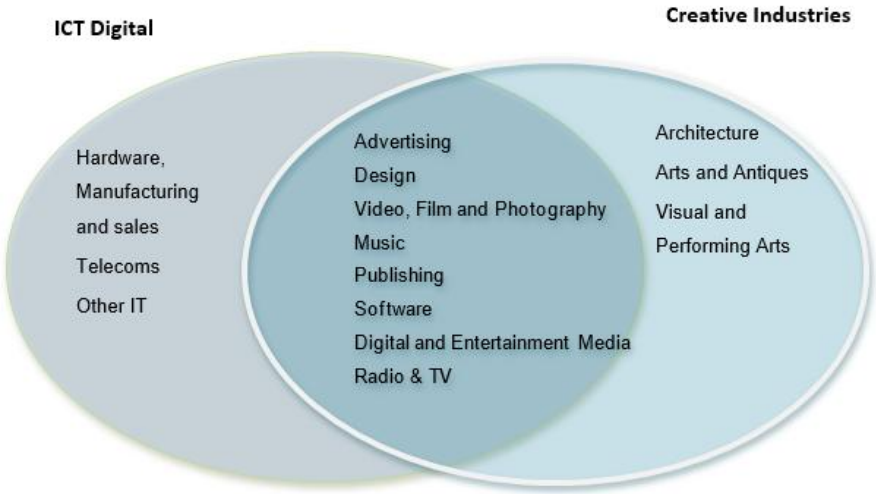

Figure 1 ICT Digital & Creative Industries

Table 1 ICT Digital & Creative Industries

Overall Sector	High Level Sub Sectors	Detailed Sub Sectors
ICT Digital and Creative Sector	ICT Digital	Advertising Design Video, Film and Photography Music Publishing Software Digital and Entertainment Media Radio & TV Hardware, Manufacturing and sales Telecoms Other IT
	Other Creative Industries	Architecture Arts and Antiques Visual and Performing Arts

The analysis draws on nationally published data for sectors and occupations, which is not detailed enough to provide an estimate of employment in those craft activities that are not captured in the wider Creative Industries definition. As a result, a range has been estimated based on assumptions about the share of the subsector in Cornwall and the Isles of Scilly compared with the national average.

In addition, previous research has found that the nationally published data does not accurately represent the number of freelancers and self-employed people within Creative Sectors. Therefore, estimates of these persons are drawn from previous studies.

Finally, it should also be noted that official definitions of the sectors have been modified in recent years. In particular, the SIC codes were updated in 2008 and these have subsequently been applied to the datasets used to analyse sectors.

5 Size and Scale of Creative and Digital Sectors in Cornwall

There are 6500 businesses in Creative and Digital Sectors in Cornwall, employing approximately 14,300 people. The sector represents 6.2% of businesses in Cornwall.

We gathered information from over 350 Creative and Digital businesses about the make-up of the businesses, including number of employees, turnover and other business information, in order to compare with Annual Business Inquiry data. Of the businesses we surveyed:

- 55% have an annual turnover of less than £25k, 27% have a turnover of between £25k and £100k, 10% £100k - £300K and 8% over £300k.
- 45% of the businesses we surveyed stated that they employ no one (i.e. are sole traders) and 47% employ between 1 – 5 FTE staff. Only 3% employ 6 – 10 staff, and 3% employ 11 – 50 staff.
- 73% of the businesses we surveyed had been in business for over 5 years.
- 54% of businesses we surveyed cite over 50% of their annual sales are from within Cornwall. A further 17% cite over 50% of their annual sales are from the rest of the UK and only 3% cite over 50% of their annual sales from outside of the UK.
- 98% of businesses we surveyed do not employ an apprentice.
- 50.6% of businesses we surveyed said they expected their business to grow over the next 12 months, and only 8.7% said they expected their business to contract – see Figure 2

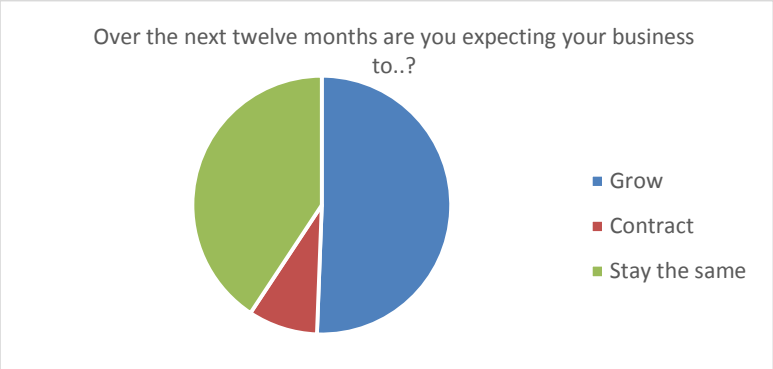

Figure 2 Expectations of Business Growth

This suggests the majority are small, but resilient businesses, often freelancers or sole traders.

We also sought to identify any sector clusters. Five geographic areas accounted for over 73% of respondents. These were the Penzance area, Truro area, Falmouth area, Camborne, Pool and Redruth, and the St Ives area. Figure 3 below, shows where clusters in these areas are, including a design cluster in the Falmouth area and a strong presence of video, film and photography businesses in the Penzance area.

The Data available from the Annual Business Inquiry supports the survey research:

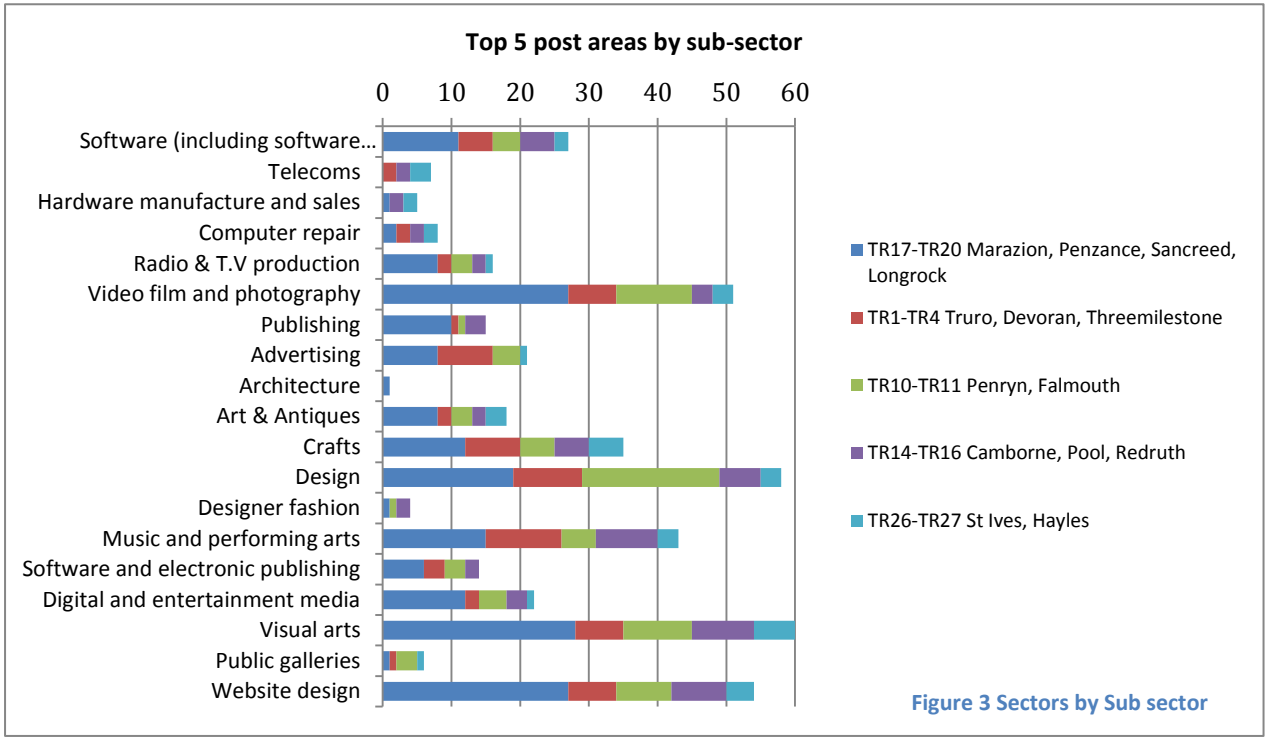

Figure 3 Sectors by Sub sector

The Digital and Creative sectors do not fit neatly into the standard industrial classifications on which most national business and employment statistics are produced and there are a substantial number of businesses in the sector that are too small to be registered in the national business surveys, in particular this includes craft workers and creative freelancers. In addition, official definitions (developed by bodies such as DCMS and *e-skills*) have changed over time, which makes it difficult to draw direct comparison with previous reports.

The Annual Business Inquiry (ABI) has been used to provide an estimate of the number of businesses in the ICT Digital and Creative sector in Cornwall employing one or more persons. It should be noted that the Annual Business Inquiry figures are estimates and therefore subject to sampling errors. However, they are the best available official data. In the latest year for which there is business unit data, 2008, there were an estimated 1,407 businesses in the Digital and Creative sector, with 1,048 ICT digital business units and a further 359 businesses in the other creative sectors in Cornwall.

In addition to these companies reported through the ABI, there are an estimated 3,900 freelancers in the creative industries and around 1,000 self-employed people working in craft activities that are not picked up in the ABI data. These figures are discussed further later in the report.

However, combining data from national surveys with estimates derived from published sector specific research, we have estimated the size of both sectors combined in Cornwall and Isles of Scilly as comprising 6,500 businesses with at total of 14,300 employees working in ICT digital and creative jobs – see Table 2

	Businesses	Employees	
ICT Digital and Creative Businesses(ABI/BRES)	1,400	Part-time:	1,500
		Full-time:	4,100
Sole Traders / Freelancers (estimate)	3,900		3,900
Craft workers (estimate)	1,200		1,200
Total ICT Digital and Creative Sector	**6,500**		**10,700**
ICT Digital and Creative Occupations in other sectors (estimate)	-		*3,600*
Total number of people working on ICT digital and creative jobs			**14,300**

Table 2 Businesses and Employee

5.1 Proportion of Creative and Digital Sector Businesses

The combined ICT Digital and Creative sector represents 6.2% of all businesses in Cornwall. This proportion is considerably below the representation of the sector at the regional (9.6%) and GB levels (10.8%). See Figure 4

- ICT Digital businesses represent 4.6% of businesses in Cornwall and Isles of Scilly compared to 9.3% in England – see Figure 4
- Other Creative businesses represent 1.6% of businesses in Cornwall and Isles of Scilly compared with 2.1% across England – see Figure 4

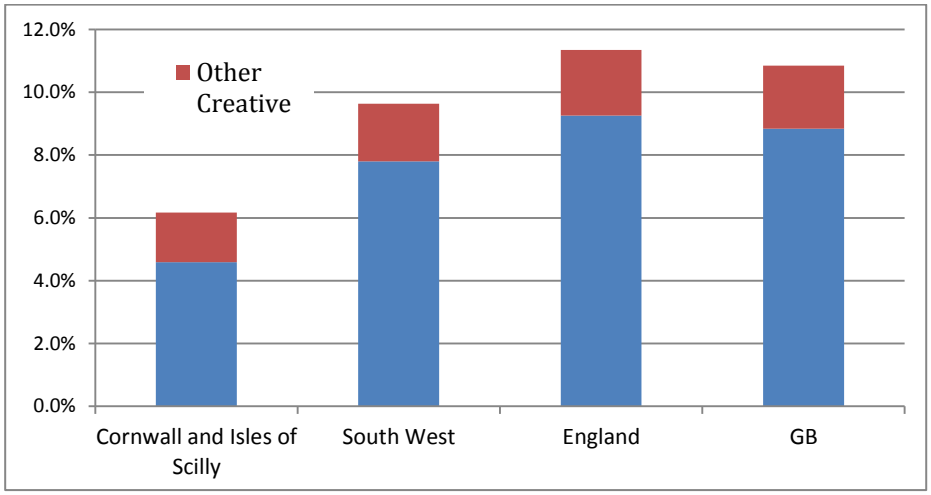

Figure 4 Proportion of All Businesses in ICT Digital and Creative Sector (2008) Source: Annual Business Inquiry

6 Creative and Digital Sub-Sectors

In terms of the businesses identified through the Annual Business Inquiry, software activities are the largest sub-sector, representing 30% of all businesses, with visual and performing arts the second largest sub-sector representing 15% of businesses in the sector. The fastest growing sub-sector in Cornwall is Video, Film and Photography.

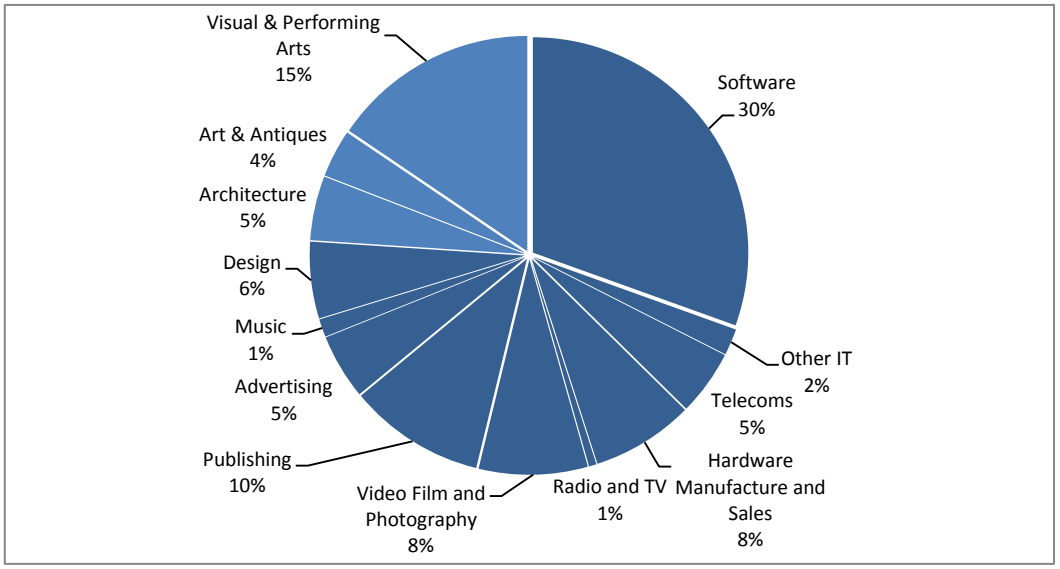

Figure 5 Profile of the ICT Digital and Creative Businesses Source: **Annual Business Inquiry 2008**

Our survey captured a good spread across all subsectors, with strongest representation from Video, Film, Photography, Design, Website Design and Visual Arts. See Figure 5

- 18% video, film and photography,
- 24% design
- 25% visual arts
- 20% website design

7 Employment in the sector

An estimated 10,700 people work in the Creative and Digital sectors in Cornwall. Over the past 4 years, there has been a net increase of 400 jobs in the sectors, made up almost entirely of sole traders. In addition, a further 3,600 people work in ICT Digital and Creative Occupations in other sectors. As a result, total ICT Digital and Creative employment is estimated at 14,300 persons in Cornwall and the Isles of Scilly – see Table 3. Video, film and photography represents a significantly higher proportion of employment than the national average and has reported strong growth in recent years.

	Businesses	**Employees**	
ICT Digital and Creative Businesses(ABI/BRES)	1,400	Part-time:	1,500
		Full-time:	4,100
Sole Traders / Freelancers (estimate)	3,900		3,900
Craft workers (estimate)	1,200		1,200
Total ICT Digital and Creative Sector	**6,500**		**10,700**
ICT Digital and Creative Occupations in other sectors (estimate)	-		*3,600*
Total number of people working on ICT digital and creative jobs			**14,300**

Table 3 Make-up of Businesses and Employees

7.1 Number of Employees in Creative and Digital Sector Businesses

Reviewing the latest available information on employment in the sector, derived from the 2011 annual Business Register and Employment Survey (BRES)[8], enables a comparison of the sector in Cornwall and Isles of Scilly with other benchmark areas as well as providing trend analysis.

In 2011, the BRES data indicates that there were an estimated **6,600** people working in the ICT Digital and Creative sectors in Cornwall and Isles of Scilly, representing 3.1% of all employment in the County.

This proportion is significantly lower than either the South West region, where the ICT Digital sector provides 4.4% of employment and England where the sector accounts for 6.1% of total employment (1,455,200 jobs).

However, the figures derived from the BRES data do not include the estimates of the number of freelancers and craft workers - which is reported separately and which does affect the overall figures.

Nationally, the ICT Digital and Creative sectors are made up of a higher proportion of micro-businesses than in the rest of the economy. Across the whole business sector, around 15% of businesses employ more than 10 people. In Cornwall and Isles of Scilly, the ICT Digital sector has a particularly high proportion of small businesses, with only 4.0% of businesses (42 businesses) employing more than 10 people[9]. This is a smaller proportion than the sector in either the South West (5.8%) or GB (6.9%).

Although a small proportion (5.3%) of other creative businesses has more than 10 employees in the other creative sectors, this is broadly similar to the profile across the rest of the country for these activities – see Figure 6

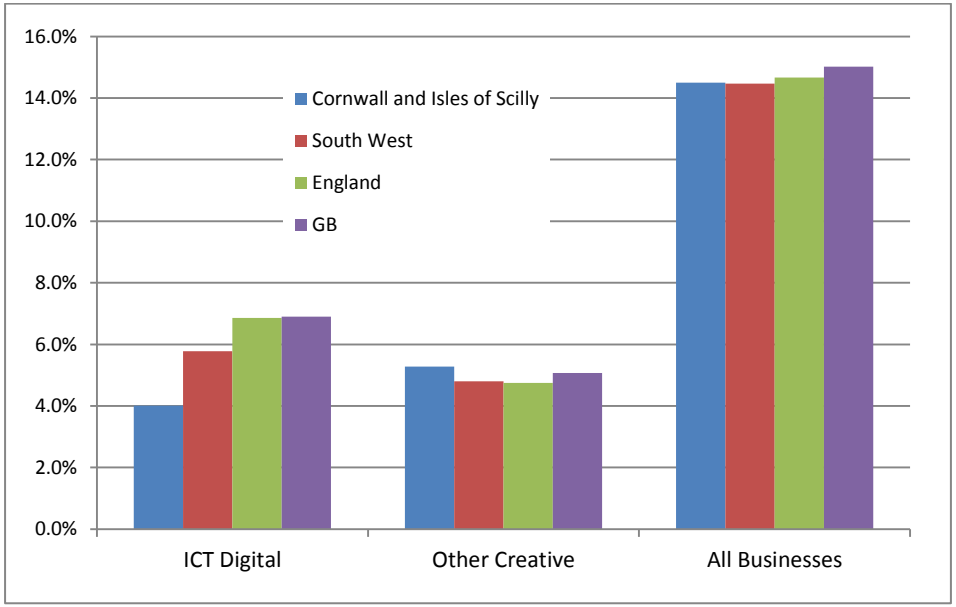

Figure 6 Proportion of businesses with more than 10 employees (2008). Source: Annual Business Inquiry

[8] The Business Register and Employment Survey (BRES) replaced the Annual Business Inquiry (ABI) as the source of national employment data in 2010.

[9] There are too few businesses with over 10 employees in the ICT sector in Cornwall to provide any further disaggregation of the data by size band.

The BRES has been conducted annually since 2010 and data for the two previous years have been rescaled to be comparable. There are, therefore, four years of data available to analyse. During this period total employment in the ICT Digital and Creative sector in Cornwall and the Isles of Scilly has increased by an estimated 400 jobs (6%). This has been exclusively driven by an increase in the number of sole traders, with a decline in the number of employees.

During the same period, the BRES data indicates that total employment in the sector across the South West has fallen by 4%, and employment across England has fallen by 3%.

7.2 Freelancers and Self-Employment

Although BRES identifies some working proprietors within the sector (1,100 persons), previous research has indicated that the estimates significantly under-represent the number of freelancers and self-employed persons in the sector.

Research undertaken by Perfect Moment into the size of the Creative Industries sector[10] found that across the Creative Industries sector in Cornwall, 76% of creative businesses are people who are either freelance or self-employed and are therefore not included in the ABI figures. Applying this estimate to the number of businesses in the Creative sector[11] indicates that there are likely to be 3,900 freelancers / self-employed people whose creative businesses are not represented in the BRES employee figures.

The national business survey data (BRES) indicates that employment in the sector has increased by 6% between 2008 and 2011, with all of the employment growth amongst sole proprietors. This compares very positively with employment trends in the sector across the South West and GB where it has fallen by 4% and 3% respectively.

Based on the estimates from previous studies, sole traders and freelancers comprise the largest proportion of people working in the sector (34%).

This highlights a relatively buoyant sector, however the significant increase in freelancers raises interesting questions, and may require different approaches to support skills development. Further investigation of freelancers may be required to better understand whether these are servicing lower value local markets or form an important part of the workforce of larger companies. It is possible that within the Digital Sector a larger proportion of freelancers will work for larger companies (therefore substituting FTE staff), whereas Creative Sector freelancers may be more likely to work on their own account.

7.3 Full-Time or Part-Time

Across all sectors, just over half (54%) of all those working in Cornwall and Isles of Scilly are in full-time jobs compared with 65% across GB. There is a much higher proportion of people in the ICT Digital and Creative Sector working full time - 62% (4,000 people) in Cornwall and Isles of Scilly - but

[10] The State of the Creative Industries in Cornwall, 2010 and Creative Value: The Economic Significance of the Creative Industries in Cornwall, 2003

[11] Calculated by dividing the number of creative businesses reported through ABI (1,224 business units) by 24% and multiplying by 76%

this needs to be compared with 80% of the workforce in these sectors across GB being in full-time employment.

The proportion of people working part-time in the Cornwall and Isles of Scilly ICT Digital and Creative sector is above the England average, 22% (see Figure 7) compared with 15%.

In addition, the sector in Cornwall and Isles of Scilly has a larger representation of sole proprietors, 16% in Cornwall and Isles of Scilly (see Fig 7) compared with 4% nationally[12].

The high number of freelancers and part time workers in the sector present challenges to upskilling the workforce

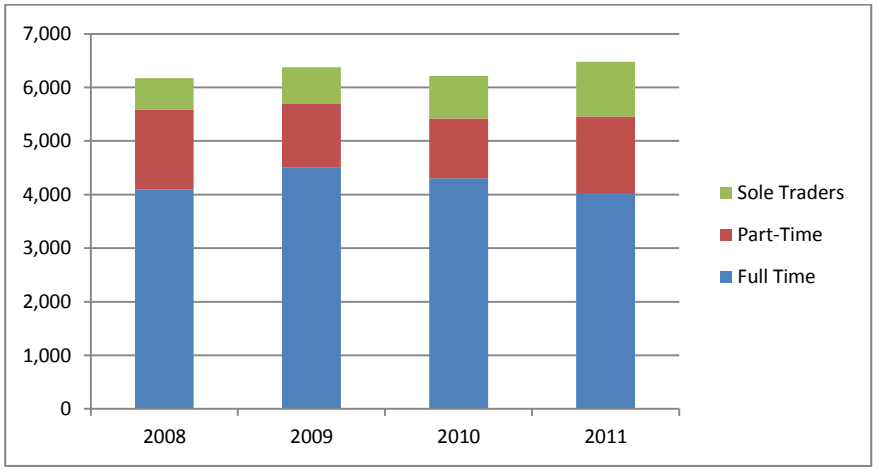

Figure 7 Employment in the Cornwall and Isles of Scilly ICT Digital and Creative Sector (2008 - 11)

7.4 Employment by Sub-Sector

In terms of the subsectors within the ICT Digital and Creative sector, the BRES data indicates that:

- Video, film and photography is the largest employer, supporting 1,800 jobs across Cornwall and Isles of Scilly (see Figure 9), although ABI figures show that this sub-sector makes up 8% of businesses. This suggests that this sub-sector is less dominated by micro businesses then other sub-sectors in the Creative and Digital Industries.
- Software represents 16% of employment in the sector, at 1,000 jobs – see Figure 8
- Telecoms is the third largest subsector providing 800 jobs – see Figure 8

[12] The BRES data includes an estimate of the number of sole proprietors, although more detailed work into the creative industries discussed below indicates that this is an under-estimate of the number of freelancers and self-employed persons.

- Arts and Antiques and designer fashion are the smallest subsectors providing less than 1% of total employment in the sector – see Figure 8

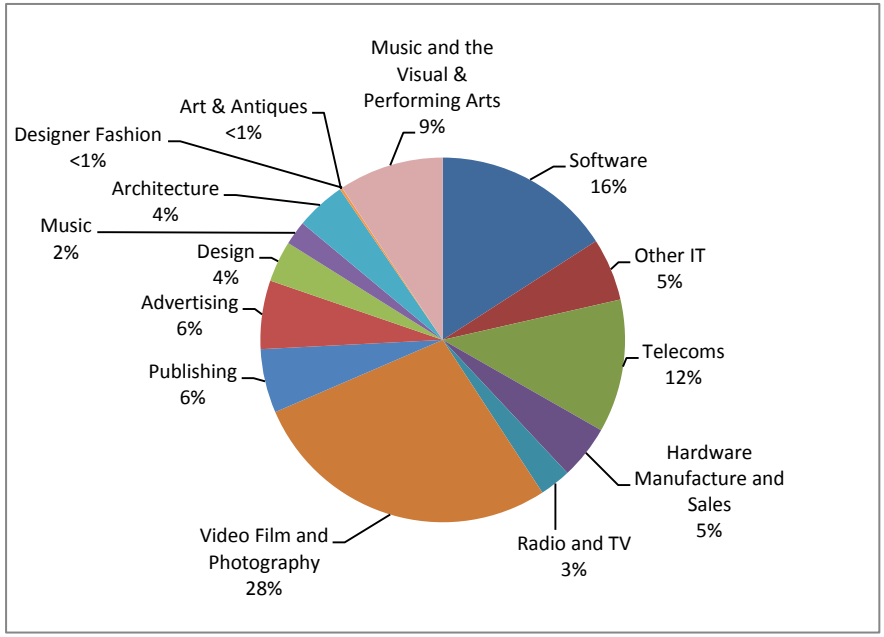

Figure 8 Employment by ICT and Creative Sub-Sector in Cornwall and Isles of Scilly (2011) Source: BRES

During the period 2008-11, video, film and photography has experienced significant employment growth (almost 600 jobs) reflecting an increase in programme production activities in the South West along with an increase in motion picture projection activities.

In addition, music design, advertising and radio/TV, have together have seen employment grow by more than 500 jobs. However, there has been a decline in employment in visual and performing arts, publishing, hardware manufacture and sales and other IT, each of which has seen employment fall by around 200 jobs. – see Figure 9

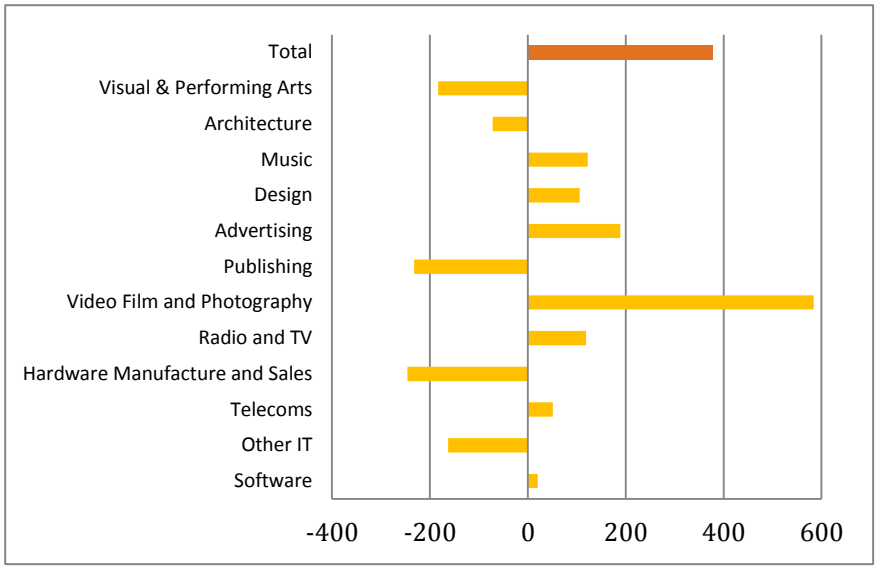

Figure 9 Employment Change in Cornwall ICT Digital and Creative Sub Sector Employment 2008-2011 Source: BRES

The performance of the ICT Digital and Creative sector compared with GB sector reveals a number of differences. Overall, the sector has a Location Quotient (LQ) [13]compared to GB of 0.56 indicating that it represents almost half the share of total employment in Cornwall and Isles of Scilly compared with the national average. However, the sector in Cornwall and Isles of Scilly has grown by 6% while the sector nationally has seen employment fall - see Table 4

There is a particular under-representation in a number of subsectors compared with the GB average, although these include activities that have traditionally had a very high representation in London and the South East: Software; hardware manufacture and sales; telecoms; publishing; and advertising- see Table 4.

However, several subsectors represent a larger proportion of employment in Cornwall and Isles of Scilly compared with the national sector – see Table 4:

- Video, film and photography is the largest subsector and has an LQ of greater than 2 which indicates that the share of employment is double the national average. The subsector has also seen strong employment growth, which is also greater than the national average
- Art and Antiques is a relatively small sub sector providing 200 jobs but has a location quotient which is greater than 2 and strong employment growth, this reflects the importance of Cornwall and in particular, West Cornwall, in the visual arts world
- Music, which although providing a greater proportion of employment than the national average is also a relatively small employer
- Other IT, which is mainly the repair of computers, has seen employment grow nationally, but decline in Cornwall and isles of Scilly in recent years, although it remains a larger share of employment than is found nationally.
- Software and telecoms are also relatively large subsectors that have also reported growth in Cornwall and Isles of Scilly during 2008 to 2011. However the proportion of employment in both of these sectors in Cornwall and Isles of Scilly remains considerably below the national average.

[13] Location quotient (LQ) is a valuable way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. Industry LQs are calculated by comparing the industry's share of regional employment with its share of national employment.

	2011 Employment	Change in employment 2008-11	Location Quotient[14]	National Growth Rate
Software	1,000	2%	0.24	0%
Other IT	400	-31%	1.39	35%
Telecoms	800	7%	0.50	1%
Hardware Manufacture & Sales	300	-44%	0.27	-17%
Radio and TV	200	195%	0.89	3%
Video Film & Photography	1,800	48%	2.13	1%
Publishing	400	-39%	0.31	-18%
Advertising	400	92%	0.51	14%
Design	200	82%	0.87	-1%
Music	100	*	1.61	-6%
Architecture	300	-20%	0.69	-8%
Art & Antiques	200	91%	2.42	13%
Designer Fashion	*	*	*	*
Visual & Performing Arts	600	-23%	0.94	-10%
Total	**6,600**	**6%**	**0.56**	**-3%**

Table 4 Comparison of Sectoral Employment in Cornwall and Isles of Scilly with GB
Source: BRES

***Note:** * indicates that the numbers are suppressed due to the data publishing requirements*

[14] Location Quotient (LQ) is a measure of the relative share of employment in a sector relative to national average. An LQ of 1 means that the sector represents the same proportion of employment in Cornwall and Isles of Scilly as it does nationally. An LQ of 2 means that the proportion of employment in the subsector is double the national average.

7.5 Craft Employment

Craft employment is particularly difficult to estimate at a local level, as this cannot be easily identified through BRES. Therefore this has been estimated based on figures presented by DCMS in the report *'Creative Industries Economic Estimates'.*

According to DCMS, there are estimated to be 84,000 people employed in craft occupations nationally, representing 6% of all creative jobs across the country and 0.3% of total employment. This estimate is based on occupations in sectors other than Creative Industries, since the business survey data for the sector does not capture craft businesses. Equivalent occupational data is not available for Cornwall and Isles of Scilly.

Assuming that craft employment in Cornwall and Isles of Scilly is at least equal to the share of the employment nationally (i.e. 0.3% of total employment) and could represent up to double the average share of total employment across the country (i.e. 0.6%), then this suggests that employment in craft activities Cornwall and Isles of Scilly is between 600 and 1,200 jobs for 2011.

7.6 Creative and ICT occupations in other sectors

The DCMS report on the Creative Industries sector indicates that employees in the Creative Industries represent 39% of all people working in creative occupations, with creative occupations in other sectors also estimated to be 39% of the workforce. Self-employment in the sector is high, representing 22% of all creative occupations nationally – see Figure 10. In particular:

- There are more self-employed people in Music and visual and performing arts and Design than there are in employment in businesses in these subsectors
- There are more creative jobs in sectors outside of the creative industries for people in advertising, design, and music and visual and performing arts occupations

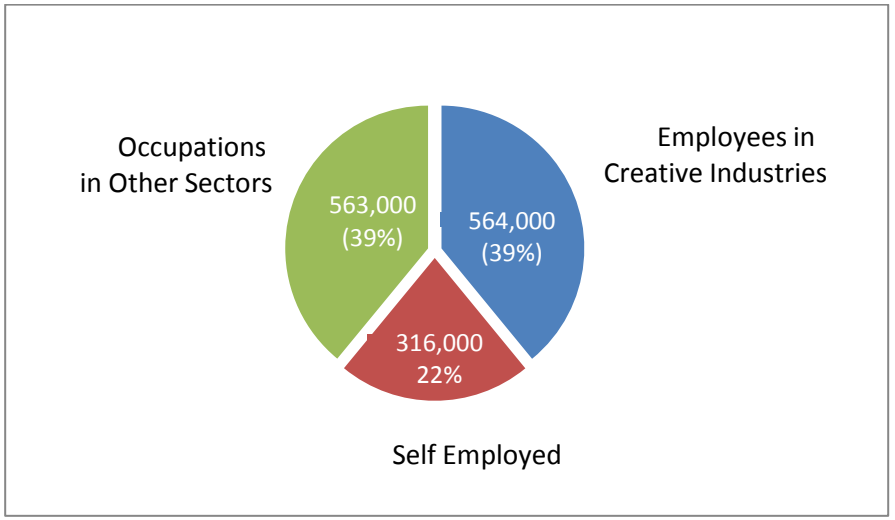

Figure 10 Total Number of People Employed in Creative Occupations in UK - Source: DCMS, 2012

Likewise, 41% of people in IT occupations work in sectors other than the IT sector. This would indicate that there are **3,600** people working in ICT Digital and Creative Occupations in other sectors

8 Growth and Employment Opportunities

Our survey revealed an optimistic picture in Cornwall, with many businesses expecting to grow and recruit additional staff over the next 1 – 3 years. Taken within the context of national forecasts, this suggests potential growth for these sectors of at least 5.4% (or 768 jobs) over the next 5 years, although this figure may be much higher.

8.1 Optimism

Our survey captured a very optimistic picture, across all sub-sectors – see Figure 11:

- 50.4% businesses expect their business to grow over the next 12 months, and only 8.5% expect to contract. The remaining 41% expect to stay the same. No sub-sector we surveyed had a high proportion of businesses expecting to contract (then grow or stay the same)
- Areas where creative industries and ICT skill strongly overlapped were particularly optimistic; with 57% of Video, Film and Photography businesses, 61% of Radio and TV production businesses and 54%, of website design businesses, expecting to grow

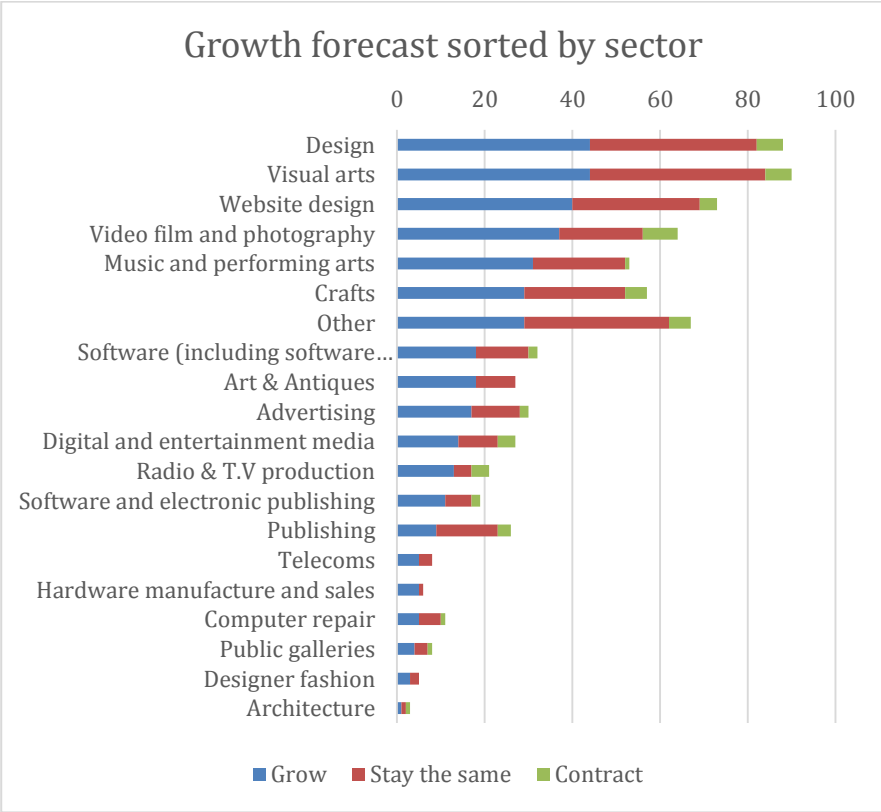

Figure 11 Growth forecast by Sector

Businesses with a turnover of £100,000 plus were particularly optimistic: In terms of recruiting new staff – see Table 5

Turnover	Grow	Contract	Stay the same	Response Percent
Under £25,0000	42%	11%	47%	55.1%
£25,001 - £50,000	59%	7%	33%	15.2%
£50,001 - £100,000	54%	10%	37%	11.5%
£100,001 - £300,000	69%	0%	31%	10.1%
£300,001 - £500,000	80%	0%	20%	2.8%
£500,001 - £1m	78%	11%	11%	2.5%
Over £1m	30%	10%	60%	2.8%

Table 5 Business Optimism by Turnover

- 17.2% of businesses we surveyed expect to recruit 1 additional staff member in the next 12 months, and 17.2% expect to recruit 2 – 5 additional staff within the next 3 years. Applied across the whole sector, this would result in up to 1,118 additional jobs in the next 12 months and up to 5,590 additional staff within the next 3 years – significantly higher than applying national forecasts, and demonstrates a likely over-optimistic response from businesses surveyed.

8.2 Barriers to Growth

- 43% cite current trading conditions as their biggest barrier to growth, which (given the apparent growth and recruitment optimism) suggests business believe they are nearing the end of more difficult times. This is also reflected in businesses identifying marketing skills as an area of weakness (which is covered later in the report)
- Additionally 21% cited access to capital and a further 36% said lack of funding, suggesting finance may be a real barrier to business growth. Further investigation may be required to understand whether there is a lack of finance, or whether there is a lack of understanding about how to access finance, and what is required. It is likely to be both of these, and it should certainly be an area of focus for future funding (both ESF and ERDF)
- Only 12.2% said lack of staff skills, 16% lack of own skills and 11% lack of suitable training.
- Lastly 16.9% businesses cited lack of workspace, which (although not insignificant) suggests workspace has become less of an issue for businesses over the last few years[15].

15 See Redruth Demand Study 2004 where 50% of businesses cited lack of appropriate workspace as a key barrier to growth

8.3 Future employment opportunities

As noted in the methodology section, we used the skills/proficiency gaps model – jointly developed by *e-skills UK* – to estimate current skills/ proficiency gaps and likely future gaps - assuming current skills/ proficiency gap ratios continue for both the IT and the Creative Industries' sectors in Cornwall.

The model does this by applying national trends to the Cornwall economy.

The model estimates future skills/ proficiency gaps in both sectors in Cornwall, by estimating two factors:

1. sector growth (or decline) based on national trends and
2. replacement jobs resulting from retirement and other leavers

Growth and replacement added together provide an estimate of total future job/skills needs. The model estimates future needs, year on year, over a five year period.

Because estimating future outcomes is inherently uncertain, in accordance with impact assessment guidance and best practice, we have modelled three growth scenarios

- Scenario 1 applies national trends to the sectors in Cornwall[16]
- Scenario 2 applies 'aspirational' objectives to the sectors in Cornwall[17]
- Scenario 3 – assumes no growth – only churn within the labour market

The results are as follows:

- Scenario 1 – 5.4% growth over five years (768 jobs FTE)
- Scenario 2 – 25.4% growth over five years (3,606 jobs (FTE)
- Scenario 3 – no growth.

Table 6 on next page provides further details.

[16] Forecasts of national employment growth rates in the IT and Telecoms sector based on Table 17 in Technology Skills Insights (e-skills). Forecast employment growth rates in the creative sector presented in the Creative and Cultural Skills report 'Sector Skills Assessment for the Creative and Cultural Industries'.

[17] The Creative and Cultural Skills report presents an aspirational scenario for growth in the sector. The aspirational scenario used for the IT & T sector was to assume that annual growth could be double the baseline forecast for professionals and that employment for non-professionals in the sector would remain constant (baseline forecasts are for a fall in the number of non-professionals in the IT&T sector).

CDI employment change				
Scenario 1: Sectors Grow at National Rate				
	Year 1	Year 5	Change	% Change
ICT Sector - Professionals	3,016	3,252	236	7.8%
ICT Sector - Other	1,158	1,066	91	-7.9%
Cultural and Creative Sector	4,965	5,589	623	12.6%
Freelancers	5,077	5,077	-	0.0%
Total	14,216	14,984	768	5.4%
Scenario 2: Sectors Grow at 'Aspirational Rate				
	Year 1	Year 5	Change	% Change
ICT Sector - Professionals	3,016	3,501	485	16.1%
ICT Sector - Other	1,158	1,158	-	0.0%
Cultural and Creative Sector	4,965	6,509	1,543	31.1%
Freelancers	5,077	6,654	1,578	31.1%
Total	14,216	17,822	3,606	25.4%
Scenario 3: Assume No Growth				
	Year 1	Year 5	Change	% Change
ICT Sector - Professionals	3,016	3,016	-	0.0%
ICT Sector - Other	1,158	1,158	-	0.0%
Cultural and Creative Sector	4,965	4,965	-	0.0%
Freelancers	5,077	5,077	-	0.0%
Total	14,216	14,216	-	0.0%

Table 6 Predicted Employment change by scenario[18]

[18] For Employment forecast see Appendix 3

8.4 Components of the Creative and Digital Industries Employment Change

As noted, it is also important, when considering skills needs and skills shortages, to consider employment change rather than just growth. Employment change comprises 3 components:

1. Growth
2. Losses, requiring replacement
3. Churn

Growth and replacement, together equal net change i.e. the total number of new entrants required

Net change is estimated to be as follows for each of the three scenarios

- Scenario 1 – 13,785 posts over 5 years
- Scenario 2 – 21,520 posts
- Scenario 3 – 14,850 posts

Table 7 provides further details[19].

[19] Replacement demand is sourced from Table 21 in the e-skills Technology Insights report for the IT&T sector and from the Summary report of the Sector Skills Assessment for the Creative and Cultural Industries.

Components of employment change: Growth and Replacement						
	Scenario 1: Sectors Grow at National Rate		***Scenario 2: Sectors Grow at 'Aspirational Rate***		***Scenario 3: Assume No Growth***	
	Rate of change	***Total over 5 years***	***Rate of change***	***Total over 5 years***	***Rate of change***	***Total over 5 years***
Growth						
ICT Sector - Professionals	1.90%	298	3.80%	618	0.00%	-
ICT Sector - Other	-2.03%	-113	0.00%	-	0.00%	-
Cultural and Creative Sector	3.00%	791	7.00%	1,999	0.00%	-
Freelancers	0.00%	-	7.00%	2,044	0.00%	-
Total		**976**		**4,661**		**-**
Replacement						
ICT Sector - Professionals	11.4%	1,783	11.4%	1,852	11.4%	1,716
ICT Sector - Other	11.4%	632	11.4%	659	11.4%	659
Cultural and Creative Sector	29.8%	7,856	29.8%	8,510	29.8%	7,399
Freelancers	10.0%	2,538	20.0%	5,839	5.0%	5,077
Total		**12,810**		**16,859**		**14,850**
Total		**13,785**		**21,520**		**14,850**

Table 7 Components of employment change

8.5 Impacts of CDI skills gaps/shortages in Cornwall

Estimating skills gaps/ shortages affecting the Cornwall CDI sector over the next 5 years

Skills gaps/ shortages in any sector, in any labour market, will have the following impacts

- Of those in jobs, a proportion will not be proficient – resulting in reduced productivity, reduced competitiveness and lost GVA
- Filling net vacancies generated by (i) growth and (ii) replacement will be more difficult taking longer and resulting in high recruitment costs. Moreover, a proportion of those filling vacancies will not be fully proficient in such a labour market – together resulting in lost weeks working time, higher costs and lost productivity

This section estimates the lost GVA likely to result to the CDI sector, assuming that national skills gaps/ shortages apply to Cornwall

The results are as follows see Table 8:

- Scenario 1 – £12.2m lost GVA over a 5 year period (NPV@3.5%)[20]
- Scenario 2 - £12.4m lost GVA over a 5 year period (NPV@3.5%)
- Scenario 3 – £11.9m lost GVA over a 5 year period (NPV@3.5%)The following tables provide further detail

These calculations are all based on a current GVA projection for the sectors of £434,667,146

	Scenario 1: Sectors Grow at National Rate		Scenario 2: Sectors Grow at 'Aspirational Rate		Scenario 3: Assume No Growth	
Total current and future potential GVA loss due to skill shortages/proficiency gaps	**GVA £**	**equivalent jobs FTE**	**GVA £**	**equivalent jobs FTE**	**GVA £**	**equivalent jobs FTE**
IT professionals	5,441,597	63	5,525,369	64	5,363,173	62
Creative Industries	6,734,563	191	6,906,407	196	6,619,007	188
Total lost GVA and equivalent jobs FTE	**12,176,160**	**254**	**12,431,776**	**260**	**11,982,180**	**250**

Table 8 Predicted Loss of GVA

[20] Net Present Value (NPV) discounted at 3.5% (HM Treasury's advised discount rate)

Breakdown: IT professionals and Creative Industries

	Scenario 1: Sectors Grow at National Rate		Scenario 2: Sectors Grow at 'Aspirational Rate		Scenario 3: Assume No Growth	
IT professionals	**GVA £**	**equivalent jobs FTE**	**GVA £**	**equivalent jobs FTE**	**GVA £**	**equivalent jobs FTE**
Current proficiency gaps - lost GVA as a result of underperformance of proportion of those in work in the sector resulting from sub optimal skills/competency	4,990,693	58	4,990,693	58	4,990,693	58
Future lost growth, based on 3 growth scenarios, assuming current proficiency gap ratios continue and are not addressed (NPV@3.5%)	450,904	5.2	534,676	6.2	372,480	4.33
Total lost GVA (and equivalent jobs FTE)	**5,441,597**	**63**	**5,525,369**	**64**	**5,363,173**	**62**
	Scenario 1: Sectors Grow at National Rate		**Scenario 2: Sectors Grow at 'Aspirational Rate**		**Scenario 3: Assume No Growth**	
Creative Industries	**GVA £**	**equivalent jobs FTE**	**GVA £**	**equivalent jobs FTE**	**GVA £**	**equivalent jobs FTE**
Current proficiency gaps - lost GVA as a result of underperformance of proportion of those in work in the sector resulting from sub optimal skills/competency	5,924,316	168	5,924,316	168	5,924,316	168
Future lost growth, based on 3 growth scenarios, assuming current proficiency gap ratios continue and are not addressed (NPV@3.5%)	810,247	23.0	982,091	27.8	694,691	19.68
Total lost GVA	**6,734,563**	**191**	**6,906,407**	**196**	**6,619,007**	**188**

Table 9 GVA loss by sector

8.6 Investments in Cornwall

Of 115 ERDF projects funded since the programme began, we identified 23 that would support growth in the Creative and Digital sectors. These include projects such as the Innovation Centres, High-Spec Workspace, Business Support Projects and Superfast Broadband Access, which alone is forecast to create 4000 jobs.

Around 7,000 jobs are forecast to be created as a result of this £131m investment, of which we would expect at least 6.2% (the percentage of businesses in Cornwall that are in the Creative and Digital Industries) to be in the Creative and Digital sectors (i.e. 434 jobs), although this figure is more likely to be around 10% (700 jobs) given the programme's emphasis on high value 'knowledge economy', the national forecasts and the optimism indicated through our survey.

In terms of understanding the impact of **future** (planned) ERDF investments, there was only one project identified as being directly relevant to the Creative and Digital Sectors. **Krowji** is Cornwall's biggest creative sector workspace cluster, based on the former grammar school site in Redruth and currently housing about 60 creative businesses and sole traders, with a total workforce of about 110 people. It is about to embark on Phase 1 of its capital development programme, with an application being submitted to the Convergence ERDF programme in May 2013 for around £1.9 million towards a £3.8 million scheme which will provide 2,200 m^2 of new workspace buildings and a new access road, due for completion in March 2015. This is predicted to lead to 145 new jobs and £16.4 million gross GVA over the period to 2019.

9 Labour Market

Whilst there are people with the sufficient levels of skills for these sectors, these are not the right skills to meet the needs of businesses in the Creative and Digital Sectors.

9.1 Recruiting Staff

Of the businesses we surveyed, 50.8% businesses said it was easy to recruit staff with the right skills, and 49.2% said it wasn't. The percentage of businesses finding it hard to recruit the right staff with the right skills is higher then the national picture[21], and therefore should be an area of focus.

In addition, of those who find it hard to recruit the right people, of the businesses we surveyed, 45.3% say technical skills are the main issue and a further 41% say sector knowledge is missing. This reinforces the thinking that there are people with the right level of qualifications, but not necessarily with the right skill or sector knowledge.

The initial effect of skills shortages are delays in recruitment, but the longer term effects are much greater and nationally nine out of ten recruiters experiencing shortages stated that this had caused them delays in developing new products or services. Although this was not specifically addressed through our Cornwall survey, the perception that a lack of market was a significant barrier to growth could be due in part to the lack of sector specific skills.

More needs to be done to create a better supply of 'job-ready' graduates into the Creative Industries as a whole. In particular, a better fit between employers and FE and HE providers needs to be developed with more relevant and up-to-date courses.

Nationally, specific skills gaps for potential employees for the Digital sector have been highlighted as: [22]

- The technical skills most often requested from applicants for IT&T positions are: SQL, C, C#, .NET, SQL SVR, ASP, Java, HTML, JavaScript and Oracle, all of which appear in more than one in twenty adverts for IT&T professionals each quarter.
- Skills shortages were most often reported by businesses seeking to recruit Software Engineers, IT & Telecoms Management, Systems Developers or Internet Professionals though a larger number of Networking vacancies were actually proving difficult to fill due to related skills shortages.

Nationally, gaps in skills for the Creative Sector are more-wide ranging (which is reflective of a broad sector):[23]

- Career paths across the sector are not necessarily well-known or understood by school leavers, graduates or their careers advisors.

[21] A recent *e-skills* Business Survey identified 10.1% of vacancies per annum are hard to fill.

[22] *e-skills* analysis of the national labour force survey

[23] Sector Skills assessment for the Creative Industries of the UK, Skillset, 2011

- Whilst some employers are doing a considerable amount of learning and development (accredited and non-accredited), the sector as a whole is characterised by a lack of formality or comparability in its approach to learning and development.
- There is a general lack of the right formal qualifications post first degree level and scepticism over the quality of qualifications provided by many of the existing suppliers.
- Existing demand from applicants wanting to work in the industry in some sub-sectors creates a strong economic disincentive to change. In many sectors such as Music, Cultural Heritage, Design, Performing Arts, Advertising, Film and Television there is huge demand for placements and work from people with level 4 qualifications and above. However employers still complain that too many graduates are not job ready and lack basic industry specific skills.

9.2 Skills Levels

Our findings have shown that Cornwall has a broadly similar percentage of people with Level 4+ qualifications to national figures. The sectors themselves though present some anomalies to this in that they employ a significantly higher percentage of people with high-level skills than in other sectors.

The 2011 Census provides data on the number of people within the workforce in Cornwall and Isles of Scilly that could have appropriate skills for the sector.

This data indicates that there are over 110,000 people in Cornwall with level 4+ qualifications representing 25% of all persons over 16 not in full time education. The proportion is slightly below the England and Wales average of 27%, however is broadly similar, suggesting that the quantity of people with high-level qualifications in Cornwall is not an issue.

However, national figures show that over half (57%) of those working in the IT&T sector across the UK have HE qualifications and around 60% in the Creative Industries. This is well above the economy average, where just over 25% have a degree. Therefore there is a higher proportion of people with degrees (and equivalent) working in the Digital and Creative sectors. Although we were not able to verify this in Cornwall, we would expect to find similar figures to those presented nationally.

In addition, nationally, both the Creative and Digital sectors have low proportions of female employees (only 18% in the Digital Sector). This lack of females working in these sectors suggests a gender imbalance, which (if resolved) may meet some of these skills gaps identified.

10 Skills Demand

There is a good demand for training, and many businesses we surveyed had training budgets identified. The cost of training was viewed as an important factor when selecting a provider. Many businesses are confident of their own technical and craft skills, but struggle to recruit additional staff with those skills. In addition, many businesses highlight marketing skills as a particular area of weakness, which may be reflected by their perception that a 'limited market' is a significant barrier to growth. A significant number of businesses do not have training plans, highlighting a need to support businesses to better understand the benefits of training, as well as assessing key skills gaps.

In our survey, Creative and Digital sector businesses based in Cornwall, have identified clear skills strengths and weaknesses within their businesses, which link strongly to their barriers to business growth. In particular, they are confident about their technical and customer service skills, but identify marketing as an area of weakness. (see Figure 12)

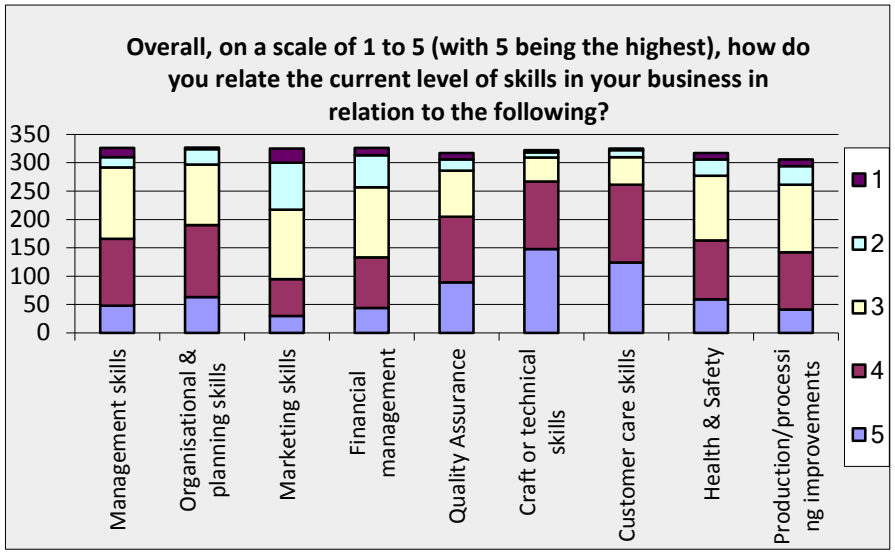

Figure 12 Level of skills in businesses

Given their perception that a limited market and current trading conditions are the main barriers to growth, this would appear to be an area that training providers should focus on.

However, this does contrast with businesses who say they are struggling to recruit people with the right technical skills. We therefore should be asking the question: ***Do creative industries businesses need marketing / business development skills in addition to sector specific skills and qualifications?***

Ultimately, this may be best reflected by the lack of businesses with training plans. Only 12% of businesses we surveyed said they have a Skills Training Plan.

Businesses would benefit from a diagnostic approach to assessing their barriers to growth and matching those specific needs to training and skills development.

Our results suggest that there is plenty of potential in the market for skills training; however businesses still need to be persuaded to take up training and have a better understanding of the benefits of training. (Interestingly those who did undertake training did see benefits). There is some evidence that businesses have a preference to informal skills development, such as peer-to-peer learning, or from other staff.

- 27% have a budget of £100 - £500 per year for training, although 30% had £0 budget. 12% have a budget of £500 - £1000, and a further 5.8% have a budget of £1000 - £5000. Applied across the whole of both sectors, this would indicate businesses could invest between £942,500 and £1,885,000 annually in training and skills development.
- 71% said they would need training over the next 2 – 3 years.
- 47% had not done any training in the past year, although 71 % have said they would like training over the next 2 to 3 years.

10.1 Confidence

In terms of existing skills, most businesses we surveyed had a very high level of confidence regarding their craft or technical skills (with 83% rating their technical / craft skills 4-5 on a scale of 1 – 5). In addition, 80% said they had high levels of customer service skills.

However, only 29% of businesses said they had good marketing skills, which indicates this is an area of need.

This supports other indicators that lack of marketing skills for these sectors is impacting on businesses' ability to grow. In addition, micro-businesses may not be best placed to develop other business skills, such as marketing when their key skills and capacity lies in the development and delivery of a product or service. For these sectors, and for micro-businesses, we would suggest that this should remain their priority, and that other business skills could be bought in or collectively supplied.

Nationally, the picture is similar to that in Cornwall, and a broad range of skills have been highlighted. In Cornwall, these are likely to be similar, however strategically, the County must decide what the focus is – and which sub-sectors should be prioritized for investment. Clearly growing sub-sectors, such as Video, Film and Photography should be researched further to identify what they require.

Nationally[24], there are 5 skills needs emerging out of an analysis of future trends for the Digital sector:

- Security skills – skills to deal with emerging security and data protection issues

[24] *e-skills* analysis of the national labour force survey

- Business skills – creative and technical skills are no longer enough – professionals need to be able to manage product development and solve business issues
- Technology specific skills – central to many of the future trends will be high level technical knowledge. This includes addressing the convergence of communication and network devices
- Interpersonal skills –understanding customer challenges and consumer choices
- Analytical and research skills – being able to connect information and technology to business problems.

Nationally[25], skills needs affecting the Creative Industries include:

- Multi-skilling: an understanding of different technology platforms and their impact on content development and digital work flow, and new approaches to working in cross-functional creative / technical teams within and across companies.
- Multi-platform skills (relevant to some digital sectors of the Creative Industries)
- Management, leadership, business and entrepreneurial skills: especially project management for multi-platform development; the hybrid skills combining effective leadership with innovation, creativity and understanding of technology, and the analytical skills to understand audience interests and translate it into business intelligence.
- IP and monetisation of multi-platform content
- Broadcast engineering
- Archiving
- Sales and marketing
- Supply chain management
- Foreign language skills: as part of operating in a global marketplace
- Other Business Skills: including Human Resources, Financial management and project management
- Fundraising skills: These are particularly in demand for Performing Arts, Visual Arts and Cultural Heritage.
- Creative skills: These include skills such as story-writing, music composition, etc and are often in demand for Film, Literature, Performing Arts, Music and Cultural Heritage sub sectors.

10.2 Identifying training / skills needs

88% of businesses we surveyed said they did not have a skills training plan, which is somewhat surprising given the reach of recent ESF funding (and the requirement of many of the ESF programmes in Cornwall for businesses to develop a training plan before being supported with any funding for training). This may be due to providers taking broader or different approaches to this specific area.
Businesses need to be supported to identify which skills and training may support their business to grow.

Of the businesses we surveyed, the majority (65%) had developed skills within the last 3 years through informal methods, such as learning from

[25] Sector Skills assessment for the Creative Industries of the UK, Skillset, 2011

other staff and from peers. 22% had attended a college training course, 26% had attended a privately provided training course and 30% had undertaken online learning. Skills development through informal routes, such as from other staff and peers, appears to be the preferred route. It may be that businesses find this approach enables them to tackle a specific and immediate issue (such as needing to understand one part of a software programme in order to deliver a specific task). These approaches to learning should be developed and encouraged, for example through train-the-trainer programmes, mentoring support, peer learning groups and cascade learning approaches.

36% of businesses we surveyed had undertaken craft or technical training in the last 12 months, and 16% had undertaken marketing training. This indicates that businesses either prefer to undertake training in areas in which they are already proficient, or that business training (such as marketing) has not been offered in a way that either appeals to or meets the needs of this business group.

Only a third of the sector are interested in accredited training and of those who are interested in accredited training the highest interest is in vocational training (44%), degree or equivalent (33%), statutory – health and safety etc. (30%)

The biggest impact from taking part in training (see figure 13) was the development of partnerships and joining networks, as well as:

- development of new products,
- improving the outlook for the future
- developing a more competitive market position

Figure 13 Impact of training on businesses

10.3 Access to Training

Creative and Digital sector businesses in Cornwall expressed clearly that they prioritise 'meeting skills needs' and cost over all other factors when sourcing training. They prefer short courses and are more likely to source training and skills development from networks and business support providers then from a higher education training provider.

Cost (34%) and meeting skills needs (35%) are the most important factors when sourcing training. Flexibility and convenience do not seems to be major factors with most businesses not citing location or time out of the office as major barriers to taking part in training. This does not reflect an often held perception that businesses will not attend training if the location and timing are not tailored to them.

Cost, however, does remain a concern for businesses, but importantly, this is equal to meeting skills needs. Businesses are weighing up these two factors when making a choice to attend training.

The majority of businesses we surveyed said they found training using known sources (word of mouth, networks and business support organisations) and 57% said they look online. 27% said they had direct contact from a training provider. Looking online for training is becoming the preferred route.

In terms of the format of training;

- 52% businesses we surveyed said they prefer a one day course
- 32% said they prefer to get training from networks or business support organisations
- 14% said they like to get training from a Higher Education training provider.

However, 30% of businesses said they preferred online learning, suggesting this is a growing market, and one which in certain circumstances meets the needs of businesses, at an acceptable cost and with little disruption to the business.

The majority (68%) of businesses we surveyed said their staff do not undertake accredited training, although 31% do. This indicates that there is a majority who do not require accredited training. Of those who would undertake accredited training, 32% would do a degree or equivalent, and 44% vocational training.

Taking into account that many businesses stated a preference for shorter courses, this suggests that a bite-size-chunks approach to the delivery of accredited training should be supported.

10.4 Apprenticeships

Only 2% of people we surveyed employed an apprentice, revealing a very low level of take-up for apprenticeships for the Digital and Creative Sectors. When we asked those who did not employ an apprentice why they did not, 52% people said they don't need to, whilst others cited other barriers to employing an apprentice, such as financial constraints (34.5%) and time (25.5%). There are clearly barriers to be overcome by these sectors in order for them to take on apprentices.

This suggests businesses would consider taking on an apprentice, although they face significant barriers to this. Innovative solutions will need to be found to support apprenticeship schemes for small employers.

One approach that appears to address some of these concerns is the recently awarded ELISA project: Recently funding has been awarded by the UK Commission for Employment and Skills to deliver an apprenticeship programme in Cornwall.

The project will create:

- A new **specialist skills brokerage capacity** focussed on 10 economically important sectors to provide dedicated expert skills advice and support to 3,600 businesses.
- A new model of **Apprenticeship Training Agency** (called the Cornwall Apprenticeship Agency) designed to greatly reduce the risk and cost barriers small businesses have said they have with employing apprentices, leading to the creation of 650 new apprenticeship vacancies.

Partners, including Creative Skills and Digital Peninsula Network have agreed to collaborate to improve the benefits available to businesses in their respective sectors in Cornwall. The project's priority focus will be to develop a common skills agenda for Small and Medium Enterprise (SME) members, raising awareness of, and increase apprenticeship places.

11 Policy Context

The current coalition Government is in the process of changing education, skills and training policy, infrastructure and funding, at all levels. Vocational education and training is one of the last areas to be addressed and it is only just now that the new national approach is becoming clearer.

The Learning and Skills Councils along with the RDAs have gone but the Sector Skills Councils have survived and have been strengthened, in particular because they already embodied close involvement with industry.

Instead of being allocated funding, the SSCs now have to bid for funding, administered in large part by the Skills Commission. Over the last 18 months SSCs bid for funding for national pilot programmes that were industry-led and which pioneered new and better approaches to addressing the problems identified by industry.

Whilst much needs to be done locally, the new emerging national policy provides a framework and context for local action. It also, indirectly provides funding for local action.

12 Key Findings

12.1 About the Sectors

- The Creative and Digital industries have become increasingly important to the success of individual businesses and the wider economy.
- In Cornwall, the ICT Digital and Creative sectors are made up of 6,500 businesses (Table 3 p 18) which accounts for 6.2% of all businesses compared with 9.6 regionally and 10.8% nationally (6.1 p 15).
- An estimated 10,700 people work in the Creative and Digital sectors in Cornwall with 3,600 working in creative and digital occupations in other sectors. (Table 3 page 18)
- The broader impact that these sectors have on businesses across Cornwall (particularly in helping overcome any disadvantage of geographic isolation) makes these sectors particularly significant.
- Software activities are the largest sub-sector, representing 30% of all businesses, with visual and performing arts the second largest sub-sector representing 15% of businesses in the sector. (Figure 5 p 17)
- The fastest growing sub-sector in Cornwall is Video, Film and Photography. (Figure 9 p 22)
- Over the past 4 years, there has been a net increase of 400 jobs in the sectors, against a national trend of a 3% reduction in employment. (7.1 p 20)
- In Cornwall, many businesses in the Creative and Digital sectors in Cornwall are expecting to grow and recruit additional staff over the next 1 – 3 years (8.1 p26-27).
- Both sectors are estimated to grow, year on year, based on national trends and survey findings that anticipate significant opportunity and growth.

12.2 Skills Supply and Demand

- There are current skills/ proficiency gaps in both the IT and the creative sectors in Cornwall (Figure 12 p 37)
- Whilst there are people with the sufficient levels of skills for these sectors, these are not the right skills to meet needs of businesses in the Creative and Digital Sectors. (9.1, 9.2, p 35-36)
- There is a good demand for training, and many businesses have training budgets identified. (10 p38)
- The cost of training and 'meeting skills needs were viewed the most important factors sourcing training.(10.3 p 41)
- Many businesses are confident of their own technical and craft skills,(Figure 12 p37) but struggle to recruit additional staff with those skills (9.1 p35).
- Many businesses highlight marketing skills as a particular area of weakness (Figure 12 p 37)
- Only 12% of the businesses surveyed have training plans, (10 p38) highlighting a need to support businesses to better understand the benefits of training, as well as assessing key skills.

12.3 Impact of addressing skills gaps

- If successful in addressing the skills gaps, based on a medium growth rate of 5.4% over the next five years and a current baseline GVA of £435m, the sectors could create an additional

£23.5m of GVA which would equate to 768 additional jobs in the knowledge economy. This would in turn generate significant additional knock on affects:

  - The additional jobs and GVA will in turn generate multiplier affects, derived from increased consumer spending and supply chain spending – typically estimated to add a further 10-25% to the additional GVA
  - Both sectors have more far reaching impacts on the Cornwall economy than just supplier and consumption impacts.

- The research also suggests that without significant changes to the education, training and skills infrastructure and provision in Cornwall that future job/skill needs will also not be fully met. Future job/skill needs derive from a combination of:
  - a need to replace existing staff (due to retirement and other leavers)
  - growth of both sectors

This study estimates that if current and future potential skills/ proficiency gaps are not met then the sector will fall short of the medium growth projections by at least £12.2m of GVA

13 Key Issues

In Cornwall, the key issues to be addressed are:

1. Businesses say that a limited market and current trading conditions are the main barriers to growth (8.2 p 27) and that marketing skills are their weakest area. (Fig 12 p 27)

2. There is a mismatch between businesses perceived area of skills weakness (marketing) and the training they most recently have undertaken (technical skills). (10.2 p 40)

3. Businesses are prepared to be flexible and pay for the right training. (10.3 p 41)

4. Businesses prefer training to be delivered in an intensive way rather than spread out over a period of time (10.3 p 41)

5. Online learning is becoming more predominant, but businesses also value peer-to-peer learning. (10.2 p 40)

6. Only a third of the sector are interested in accredited training and of those who are interested in accredited training the highest interest is in vocational training (44%), degree or equivalent (33%), statutory – health and safety etc. (30%) (10.3 p 41)

7. The overwhelming preponderance of micro-business and self-employed in the sector (7.1, 7.2 p19-20) acts as a barrier to businesses acquiring a wide range of skills.

8. There are skills gaps nationally in the IT Digital sector, particularly in programming. (*e-skills* survey) This is in part due to a lack of knowledge within the labour market of the opportunities that this work presents for well-paid employment and in part a negative perception of the work.

9. There is a real need for employees who can marry together high level creative skills with high level IT skills. (*e-skills* feedback)

10. The high number of freelancers and part time workers in the sector present challenges to upskilling the workforce. (7.3 p20)

11. Only 16.9% businesses cited workspace as a barrier to growth. This is a shift within this sector (compared to other workspace demand studies) away from workspace being a predominant barrier to growth. (8.2 p 27)

12. There has been recently (currently unexplained) growth in the video, film and photography sub-sector. (Figure 9 p22)

14 Recommendations

Our findings suggest that there is a need to strengthen skills in Digital and Creative Industries sectors, in Cornwall. These sectors have shown good levels of growth between 2008 and 2011, against national trends and business confidence remains high for further growth. This has to be seen in the context of difficult market conditions, which require high levels of competitiveness, with 43.5% of businesses citing current trading conditions as a barrier to growth, and 32.6% citing a 'limited market'.

Achieving further growth in a competitive market will lead to a greater demand for highly skilled personnel and any increase in the existing skills gap will reduce business opportunities across the sectors. Currently, there are significant skills gaps. Locally, over three times the national average of employers stated in the survey that they found it hard to recruit staff. Specifically, a very high proportion of businesses gave a relatively low rating to their business and marketing skills.

Closing the skills gap and thereby increasing competitiveness, represents both a challenge and an opportunity to firms in both sectors and to schools, colleges, universities, training providers and other education, skills and organisations.

Our advice would be to monitor and understand the fast evolving national situation and to ensure that all Cornwall's stakeholders are pro-active in ensuring they take part in, volunteer for, and capture as large a share of the activity and funding that they can. In addition Cornwall's stakeholders must review, adjust and refine local infrastructure and provision so that it is in line with, and augments, new national initiatives.

Cornwall should draw on its relatively unique position to access further funding (Cohesion funding) to formulate complementary and additional initiatives that address any additional and specific needs/ opportunities.

In our opinion there is still work to be done on the supply side, particularly in being able to provide the highest quality training which can respond to a fast changing business environment where innovation is often driving the skills agenda. However there is more work to be done on the demand side where businesses need support to enable them to identify their most pressing training needs and innovative solutions need to be found to give micro-businesses access to the wide range of skills (particularly business skills) which they need to grow.

Specifically, we recommend that:

1. A holistic approach is taken to business support and skills. Light touch business diagnostic services should be used to help businesses identify the skills and training they require for sustainability and growth. Supporting businesses to identify their real requirements is the best way to market skills development.

2. Businesses are given support to help them understand the most effective way in which they can address skills needs and skill gaps.

3. It is recognised that skills training is not the only answer to skills acquisition by micro-businesses. These businesses have a finite capacity to develop skills and creative and collective solutions need to be devised to enable businesses across the sectors to access marketing and other business skills.

4. Solutions are offered to businesses to identify and access new markets.

5. Services are developed and enhanced which blend online learning with peer-to-peer learning, which provides opportunities to network and access to high-level experts.

6. Marketing and sales skills, which businesses cite as key areas of weakness, are areas that training providers should focus on.

7. The availability of bite-sized higher-level training is enhanced.

8. Digital sector industry should be encouraged to work closely with schools to improve the perception of IT jobs.

9. Additional research into key growth sub-sectors, such as video, film and photography should be undertaken to enable more targeted development of these important growing sub- sectors.

15 Conclusion

Our research shows that the Creative and Digital sectors have grown steadily, against national trends, and that businesses feel optimistic about future growth. However there are current and predicted skills gaps in these sectors, especially around business skills and marketing, which if not addressed, could result in unfilled potential of £12m in GVA over the next five years.

Whilst businesses still need to be persuaded to take up training and have a better understanding of the benefits of training there is an immediate significant market of £1m - £1.5m for training. We believe that the demand for effective training can be increased, where support for skills development is part of a holistic business diagnostic approach.

The overwhelming predominance of micro-businesses in the sectors means that providing adequate training is not the only answer and innovative collective solutions to the skills gaps need to be explored.

Appendix 1: National Sector definition for ICT Digital

Table 10 ICT Sector SIC Codes

Sub Sector	2007 SIC Code	Description
Software (including software services, games & e-publishing)	62	Computer programming, consultancy and related activities (including business, domestic, interactive leisure & entertainment software development)
		Data processing, hosting and related activities; web portals
	63.1	Software publishing (including publishing of computer games)
	58.2	Reproduction of Computer Media
	18.20/3	
Other IT	95.1	Repair of computers and communications equipment
Telecoms	61	Telecommunications
Hardware manufacture & sales	26.2	Manufacture of computers and peripheral equipment
	26.3	Manufacture of communication equipment
	27.31	Manufacture of fibre optic cable
	46.5	Wholesale of information and communication equipment
	47.4	Retail sale of information and communications equipment in specialised stores
Digital Content	60.10	Radio broadcasting
	60.20	TV programming and broadcasting
	59.11	Motion picture, video and TV programme production,
	59.12	Motion picture, video and TV programme post-production,
	59.13	Motion picture, video and TV programme distribution
	59.14	Motion picture, video and TV programme projection
	74.20	Photographic activities
	58.1	Publishing of books, directories & mailing lists, newspapers, journals & periodicals
	63.91	News agency
	63.99	Other information service activities n.e.c
	73.11	Advertising agencies
	73.12	Media representation
	18.20	Reproduction of sound recording
	59.2	Sound recording and music publishing activities
	32.2	Manufacture of musical instruments
	74.1	Specialised design activities

Appendix 2: National Sector Definition for Creative Industries

Table 12 Creative Industries SIC Codes

Sub Sector	2007 SIC Code	Description	Proportion applied
1. Advertising	73.11	Advertising agencies	
	73.12	Media Representation	
2. Architecture	71.11	Architectural activities	
	74.10	Specialised design activities	4.5%
3. Art & Antiques	47.78/1	Retail sale in commercial art galleries	
	47.79/1	Retail sale of antiques including antique books, in stores	
4. Crafts	Majority of businesses too small to be picked up in business surveys		
5. Design	74.10	Specialised design activities	89.6%
6. Designer Fashion	10 Codes	Clothing Manufacture (†)	0.5%
	74.10	Specialised design activities	5.8%
7. Video, Film & Photography	18.20/2	Reproduction of video recording	25%
	74.20	Photographic activities	25%
	59.11/1 & 59.11/2	Motion picture and video production activities	
	59.12	Motion picture, video & TV post-production activities	18.4%
	59.13/1 & 59.13/2	Motion picture and video distribution activities	
	59.14	Motion picture projection activities	
9 &10. Music and the Visual & Performing Arts	59.20	Sound recording and music publishing activities	
	18.20/1	Reproduction of sound recording	25%
	90.01	Performing arts	
	90.02	Support activities to performing arts	
	90.03	Artistic creation	
	90.04	Operation of arts facilities	
	78.10/1	Motion picture, television and other theatrical casting	0.07%
11. Publishing	18.11	Printing of newspapers	

Sub Sector	2007 SIC Code	Description	Proportion applied
	18.13	Pre-press and pre-media services	
	58.11	Book publishing	
	58.13	Publishing of newspapers	
	58.14	Publishing of journals and periodicals	
	58.19	Other publishing activities	50%
	63.91	News agency activities	
8 & 12. Software / Electronic Publishing	18.20/3	Reproduction of computer media	25%
	58.29	Other software publishing	
8 & 12. Digital & Entertainment Media	58.21	Publishing of computer games	
	62.01/1	Ready-made interactive leisure and entertainment software development	
13. Radio & TV	60.10	Radio broadcasting	
	60.20	Television programming and broadcasting activities	
	59.11/3	TV programme production activities	
	59.12	Motion picture, video & TV post-production activities	81.6%
	59.13/3	TV programme distribution activities	

Appendix 3 Employment forecast calculations

Table 13 Employment Forecast Calculation Scenario 2

Scenario 2: Assume CDI sectors grow at the aspirational rate							
	Assumptions	***Annual Growth Rate***	***Year 1***	***Year 2***	***Year 3***	***Year 4***	***Year 5***
Actual							
ICT Sector - Professionals			3,016	3,131	3,250	3,373	3,501
ICT Sector - Other			1,158	1,158	1,158	1,158	1,158
Cultural and Creative Sector			4,965	5,313	5,685	6,083	6,509
Freelancers			5,077	5,432	5,812	6,219	6,654
Total			14,216	15,033	15,904	16,833	17,822
Growth							
ICT Sector - Professionals	assume double national rate	3.80%	115	119	123	128	133
ICT Sector - Other	assume no change	0.00%	-	-	-	-	-
Cultural and Creative Sector	national aspirational forecast from Creative and Cultural Skills	7.00%	348	372	398	426	456
Freelancers	assume same as creative sector	7.00%	355	380	407	435	466
Total			818	871	928	989	1,054
Replacement							
ICT Sector - Professionals	as per baseline	11.38%	343	356	370	384	398
ICT Sector - Other	as per baseline	11.38%	132	132	132	132	132
Cultural and Creative Sector	as per baseline	29.80%	1,480	1,583	1,694	1,813	1,940
Freelancers	double working assumption	20.00%	1,015	1,086	1,162	1,244	1,331
Total			2,970	3,158	3,358	3,572	3,801

Table 14 Employment Forecast Scenario No Growth

Scenario 3: Assume no growth							
	Assumptions	***Annual Growth Rate***	***Year 1***	***Year 2***	***Year 3***	***Year 4***	***Year 5***
Actual							
ICT Sector - Professionals			3,016	3,016	3,016	3,016	3,016
ICT Sector - Other			1,158	1,158	1,158	1,158	1,158
Cultural and Creative Sector			4,965	4,965	4,965	4,965	4,965
Freelancers			5,077	5,077	5,077	5,077	5,077
Total			14,216	14,216	14,216	14,216	14,216
Growth							
ICT Sector - Professionals	assume double national rate	0.00%	-	-	-	-	-
ICT Sector - Other	assume no change	0.00%	-	-	-	-	-
Cultural and Creative Sector	national forecast from Creative and Cultural Skills	0.00%	-	-	-	-	-
Freelancers	assume same as creative sector	0.00%	-	-	-	-	-
Replacement							
ICT Sector - Professionals	as per baseline	11.38%	343	343	343	343	343
ICT Sector - Other	as per baseline	11.38%	132	132	132	132	132
Cultural and Creative Sector	as per baseline	29.80%	1,480	1,480	1,480	1,480	1,480
Freelancers	double working assumption	5.00%	1,015	1,015	1,015	1,015	1,015
Total			2,970	2,970	2,970	2,970	2,970

Appendix 4 Overall principles of the model

- The model applies national (rather than Cornwall specific) metrics/trends to Cornwall
    - Trends such as proficiency gaps, hard to fill vacancies, costs/impacts of these
    - The national trends are derived from national research (e.g. *e-skills UK's* national IT industry survey conducted annually, some of the results of which are published in IT & Telecoms Technology Insights)
- The survey and stakeholder consultations then help the team advise on the extent to which national trends reasonably might apply to Cornwall and on the extent to which trends are likely to differ in Cornwall
- To help the team do this, the model provides a choice of results (it calculates three alternative sets of results) – and the set most likely to be relevant to the specific conditions in Cornwall can be picked.
    - The three sets of results are based on varying one main factor (growth of employment in the sector) namely; zero, medium and high sector employment growth scenarios
    - The consultations and survey suggest the high growth scenario would not be unreasonable for Cornwall

15.1 Logic and assumptions in the model

In short, the model calculates lost productivity and hence lost GVA (to firms in the sector and to the sector as a whole) resulting from two factors

- Some of those working in the sector are not fully trained/ not fully proficient
- Firms will have difficulties in recruiting enough fully proficient staff, quickly enough to fill future vacancies – resulting in lost working time, higher recruitment costs and more improficient staff
- All of this translates into reduced productivity and hence lost GVA – this is particularly the case for high growth high tech sectors with rapidly emerging new products and services requiring high specific skill levels

15.2 …more detail on the model's logic

- As a result of a 'tight labour market' (characterised by under-supply of sufficient appropriately skilled people) a proportion of those currently working in the sectors are unlikely to be fully proficient (fully trained/ competent) to industry standards. This will then mean they are less productive, resulting in lost productivity, competitiveness etc, to the company, to the sector which in turn results in lost GVA. The *e-skills* industry survey suggests that c7% of current professional IT workers are not fully proficient
- Also, if the conditions of a tight labour market persist, then a proportion of future vacancies each year (and the model calculates this for 5 years) will be 'hard to fill' resulting in lost productivity and increased costs – as follows
    - The proportion of vacancies that are hard to fill, will take longer to fill – for example 4 weeks longer, resulting in lost working time and hence output and GVA to the company, to the sector

- The proportion of vacancies that are hard to fill will be more expensive to fill (due to higher recruitment costs) resulting in additional bottom line costs to the company, to the sector – expressed as lost GVA
- Some of the hard to fill vacancies will also be filled by sub optimally trained/ sub proficient staff resulting in under performance/ productivity when in post, resulting in lost GVA to the firm, to the sector
- These three factors, added together, give a total lost GVA figure for the firm/ sector regarding future vacancies, year on year

- The model calculates hard to fill vacancy costs for a typical year, then applies the results to total vacancies anticipated in each of the next 5 years.
- Vacancies in any one year will arise from two factors (i) growth and (ii) replacement of those leaving the sector due to retirement and for other reasons
- The total lost GVA relating to hard to fill vacancies for all five years is presented as Net Present Value (NPV) discounted at 3.5% (HM Treasury's advised discount rate)

15.3 Robustness of national trend evidence

- *e-skill's UK's* national annual IT industry survey has identified these trends and their extent for the IT sector – the model applies these to the size of the sector in Cornwall
- The creative sector is less well researched nationally – some evidence is available, which we have used, and in other cases, we have assumed that the trends for IT also apply to the creative sector, which may not be entirely correct, but is the best we can do without more robust national research

15.4 What does this mean for Cornwall?

- If conditions of a tight labour market/ recruitment difficulties remain, then the sector will (a) not be able to address current staff proficiency gaps and (b) will experience hard to fill vacancy problems in future years
- Nationally, the reasons for a 'tight labour market' in the IT sector are
  - Not enough new entrants
  - New entrants not trained to meet industry's needs
  - Proportion of existing staff not sufficiently trained/ proficient
- All three factors need to be addressed – for IT this means
  - Getting more students interested in and following careers in IT, and easing the recruitment process
  - Ensuring curriculums meet industry's requirements
  - Helping firms ensure sub optimal staff are better trained
- If all factors are addressed, this will mean all current and future staff are fully proficient and are not hard to recruit, resulting in increased productivity and hence GVA
- Regarding IT, new solutions are being trialled by Skills Commission funded pilots being run by e-skills UK – these are being trialled nationally.