



Computer Games Sector – Labour Market Intelligence Digest

Background

Labour market data provided by the Office for National Statistics (ONS) do not provide the sectoral detail required by the Creative Media Industry and Skillset to identify and fill skills gaps and shortages¹. As a result the industry charged Skillset in 1999 with generating Labour Market Intelligence (LMI) to a sectoral level throughout the four nations, where possible.

The LMI presented in this Digest are a summary of those generated through Skillset's comprehensive research programme. The full reports for each source and more information about Skillset's research programme can be found by visiting www.skillset.org/research.

Size of Computer Games Sector²

Overall the Computer Games industry comprises around **220** businesses which are shared among three sub-sectors as follows: around 155 games development companies, around 30 games publishing companies and around 35 games support companies (including those working in middleware, tools and technology). A profile of the 40 or so companies specialising in mobile content is included in a separate profile for the Interactive Media sector.

The Computer Games industry comprises a variety of company sizes, with a similar proportion of very small and large companies in the sector. A quarter (25%) of companies in the Computer Games industry employ between 1 and 5 people, one in ten (11%) employ between 6 and 10 people, and two in ten employ each of 11 to 20 people (18%) and 21 to 50 people (21%). The remaining quarter (25%) of the industry has more than 50 people working for them, which includes the 5% with a workforce of more than 200. Almost all of the larger companies are either developers or publishers.

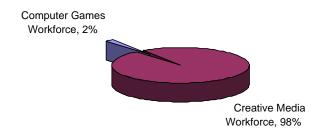
A total of **8,850** people are employed in the Computer Games industry. As can be seen in **Figure 1** this is estimated to be 2% of the entire Creative Media workforce³.

Also available in large print, Braille, audiotape and PC formatted disc formats.

¹ This is in part due to the way in which industries in the UK's economy are classified e.g. TV and radio are combined and cannot be disaggregated, and freelancers are systematically excluded. ² Until otherwise specified, data are taken from the Skillset 2006 Employment Census, which excludes film production, performers, photo imaging and freelancers not working on Census Day.

³ Until otherwise specified data for the Creative Media industry as a whole are taken from the following sources: Skillset Employment Census 2006, Joint Skillset/UK Film Council Feature Film Production Workforce Survey 2008, Experian 2007, Skillset/Equity Performing Arts Industry Survey 2005 and Labour Force Survey 2005-2007.

Figure 1 Proportion of Creative Media Workforce in Computer Games



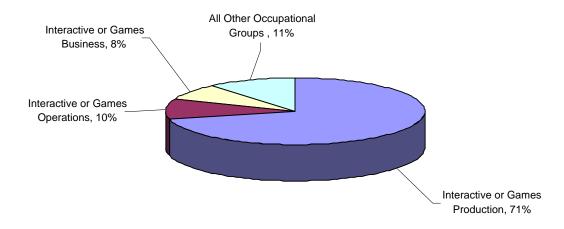
During the period that Skillset has been carrying out its Employment Census, the Computer Games industry workforce has fluctuated in size from 8,000 in 2002, rising to 9,400 in 2004 before falling back to 8,850 in 2006 (**Figure 2**).

Figure 2 Size of Computer Games Workforce

	2006	2004	2003	2002	2001	2000
Computer Games	8,850	9,400	7,900	8,000	-	-

Figure 3 below illustrates the distribution of the workforce in Computer Games by occupation. By far the most common occupation is Interactive or Games Production, accounting for 6,250 (78%) of the workforce. Interactive or Games Operations 900 (10%) and Interactive or Games Business 700 (8%) make up a smaller proportion of the workforce. Around 950 people in Computer Games (11%) work in finance, HR, IT, sales and general management roles that fall under an umbrella heading of 'other occupational groups'.

Figure 3 Distribution of the Computer Games Workforce by Occupation



As can be seen below in **Figure 4**, the Computer Games workforce is distributed more evenly across all nations and English regions than the wider Creative Media industries,

where 45% are based in London. Amongst the Computer Games workforce just one tenth (11%) is based in London. The South East (19%), West Midlands (18%) and North East (12%) are home to the highest proportion of the workforce.

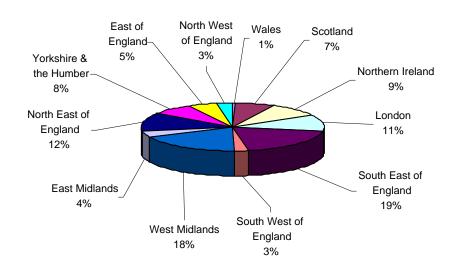


Figure 4 Distribution of the Computer Games Workforce by Nation/English Region

In 2006, Gross Value Added (GVA) for Software, Computer Games and Electronic Publishing combined totalled £24,500 million, which equates to 2.7% of UK GVA. Computer games is estimated to account for 5% of this (based on relative market sizes) which equates to £1,225 million. This represents an average year on year growth of 10% since 1997 (Annual Business Inquiry 2006).

Shape of Computer Games Sector

The Computer Games sector has a relatively low percentage of freelancers⁴; just 8% is freelance compared to 29%⁵ across the wider Creative Media industries. Representation of women in Computer Games is very low at 12%, compared with 42% of the wider Creative Media industries' workforce and 46% of the whole economy (Labour Force Survey, Autumn 2006). The proportion of women in the Computer Games workforce is now higher than it was in 2004 (8%), but lower than was the case in 2002 (15%).

Individuals from a Black, Asian and Minority Ethnic (BAME) background make up just (4%) of the workforce in the Computer Games industry. There has been little change in this proportion since 2002.

⁴ For the purpose of this document, and the sources of these data, as agreed by industry 'freelance' is defined as an individual with a contract of fewer than 365 days and an 'employee' is defined as an individual with a contract of 365 days or more. For how long the individual has been freelancing and the mode of payment is not taken into consideration.

⁵ This increases to 36% when freelancers available to but are not working are included.

This is lower than the 6% of BAME individuals in both the Creative Media workforce as a whole, and in the working age population across the entire UK economy (8%, Labour Force Survey, Autumn 2006).

4.6% of individuals working in the Computer Games industry consider themselves to be disabled as defined by the Disability Discrimination Act (DDA)⁷, compared with 8% in the wider Creative Media workforce ⁸.

The Computer Games workforce has a younger age profile than that of the Creative Media workforce as a whole and the wider economy; three fifths (59%) in Computer Games are aged under 35 years compared with more than two fifths (43%) in this age group across the whole Creative Media workforce and 36% in the wider economy (Labour Force Survey, Autumn 2008). There is evidence that the Computer Games workforce is ageing, as this proportion is lower than was the case in 2005, when three quarters (76%) were aged under 35.

As is typical of the wider Creative Media industry, the age profile of women working in the Computer Games sector is much younger than the age profile of men. Two thirds (66%) of women working in Computer Games are aged under 35 years, compared to 57% of men.

Despite having a younger age profile, three fifths (59%) of the Computer Games workforce are married or in a long-term relationship (around the same proportion as in 2005). This is only slightly lower than in the wider Creative Media workforce where 60% are married or in a long-term relationship.

One quarter (25%) of those working in the Computer Games industry have a dependent child under 16 years, up from 17% in 2005. This is a slightly smaller proportion than across the Creative Media workforce as a whole, where this is the case for more than one in four people (27%). It is also a much lower proportion than across the whole economy, around six in ten (62%) of whom has a dependent child.

Women working in Computer Games are *less* likely to have dependent children under the age of 16 living with them than men (14% and 27% respectively), and this may be related to their younger age profile.

⁷ Disability, as defined by the Disability Discrimination Act (DDA), covers many people who may not usually have considered themselves disabled. It covers physical or mental impairments with long term, substantial effects on ability to perform day-to-day activities.

⁶ Figures are from Skillset's Creative Media Workforce Survey 2008, which systematically excludes film production, performers and photo-imaging.

⁸ Until otherwise specified data for the Creative Media industry as a whole are taken from the following sources: Skillset 2005 Survey of the Audio Visual Industries' Workforce, Joint Skillset/UK Film Council Feature Film Production Workforce Survey 2008, Experian 2007, Skillset/Equity Performing Arts Industry Survey 2005 and Labour Force Survey 2005-2007.

Working Patterns and Career Development of Computer Games Sector

Four fifths (81%) of the Computer Games workforce surveyed in 2008 entered the Creative Media industries after 1999, including 17% who started their first job in the Creative Media industries since the 2005 survey was carried out (from 2006 onwards).

The Computer Games workforce, as with all the Creative Media industry, relies more on informal than formal approaches to gaining employment; in 2008, 14% of the Computer Games workforce said they had heard of their most recent job from an advertisement and this was the case for just over (27%) of the entire Creative Media workforce⁹. This is a slightly lower proportion than was the case in 2005, when 17% of the workforce had heard of their most recent job from an advertisement.

As in the wider Creative Media industries' workforce, the most common source of hearing about a job is directly from an employer (19%), followed by a previous work colleague (17%). The average working week consists of 5.0 days for the Computer Games workforce and 4.8 days for the wider Creative Media workforce, but the average working day for those in Computer Games is shorter, with a reported average of 8.5 hours per day compared with 9.3 hours across the wider Creative Media workforce.

Neither the length of the average working week nor working day have changed significantly since 2005.

The average income received by the Computer Games workforce is high at £37,364 relative to the average of £32,200 received by the Creative Media workforce as a whole ¹⁰. Average income in Computer Games has risen since 2005, when it stood at £34,600.

The incidence of unpaid working (excluding an occasional charitable contribution) is lower within the Computer Games workforce than within the wider Creative Media workforce (29% and 38% respectively). This is higher than the corresponding figure from 2005, when 21% of the workforce reported having undertaken unpaid work.¹¹

One in five (19%) of the Computer Games workforce have received structured careers advice or guidance during their career. This is lower than the proportion of the wider Creative Media industries' workforce in receipt of structured advice or guidance (28%).

Qualifications in Computer Games Sector

Perspective of Workforce

The Computer Games workforce is highly qualified and four fifths (80%) has a degree, an increase from 68% in 2005. This is high relative to the entire UK population of working age, 24% of whom are graduates (Labour Force Survey, Autumn 2008), and

⁹ Until otherwise specified data for the Creative Media industry as a whole excludes film production, performers, photo imaging and publishing.

¹¹ Skillset 2005 Survey of the Audio Visual Industries' Workforce. NB: Excludes film production, performers, photo imaging and publishing.

also higher than the proportion across the wider Creative Media workforce (56%)¹². Approaching three in ten (27%) of the degrees held by those in Computer Games are media related, the same proportion as in 2005, compared with just under two fifths (38%) of those held by individuals across the wider Creative Media workforce.

Within Computer Games technical qualifications are less common, held by 14% of the workforce compared with just under a fifth (18%) in the Creative Media workforce overall. They are becoming more common, however, as only 8% of the Computer Games workforce held a technical qualification in 2005.

Approaching one in five (16%) of the Computer Games workforce does not hold any qualifications (this includes degrees, technical qualifications, A Levels or GNVQs, S/NVQs and Modern Apprenticeships), down from nearly a quarter (23%) in 2005, compared with almost a fifth (18%) of the wider Creative Media workforce.

The most popular subjects for both media specific postgraduate qualifications and media specific undergraduate degrees and diplomas are listed in **Figures 5 and 6**.

Communications/ Media Studies is the most common postgraduate subject area (26%), followed by animation/computer animation/3D/electronic Imaging (21%). Around one fifth (19%) of media specific undergraduate degrees or diplomas are in the subject of Computer Games, and 16% are in Animation/Computer Animation/3D/Electronic Imaging.

Figure 5 Top Subjects of Media Related Postgraduate Qualifications in the Computer Games Sector

Subject of Study	
Communications/Media Studies (inc. Cultural Studies)	26%
Animation/Computer Animation/3D/Electronic Imaging	21%
Art & Design/Graphic Design	11%
Cross Sector Study/Production/Design (combination of TV/Radio/Film/Video/Theatre) or Media Production or Broadcasting	11%
Computer Games	11%
Computing/IT	11%
Digital Media/Multimedia/Media Technology	11%

Figure 6 Top Subjects of Media Related Undergraduate Degrees/Diplomas in the Computer Games Sector

Subject of Study	
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¹² Until otherwise specified data for the Creative Media industry as a whole are taken from the following sources: Skillset 2005 Survey of the Audio Visual Industries' Workforce, Joint Skillset/UK Film Council Feature Film Production Workforce Survey 2008, Experian 2007, Skillset/Equity Performing Arts Industry Survey 2005 and Labour Force Survey 2005-2007.

Computer Games	
Animation/Computer Animation/3D/Electronic Imaging	
Communication/Media Studies (inc. Cultural Studies)	13%
Computing/IT	
Film Studies/Film Production/Film History/Film	
Design/Cinematography	
Music	7%

The most popular subjects of study for *other* postgraduate qualifications and *other* undergraduate degrees or diplomas are listed in **Figures 7 and 8**. Nearly one in three (28%) of those holding a postgraduate degree in a non-Media subject studied in the area of business, administration and law, and a quarter (24%) hold a postgraduate qualification in ICT. ICT is also the most common non-Media subject for undergraduate degrees or diplomas held by the workforce (31%), followed by science and mathematics (17%).

Figure 7 Top Subjects of Other Postgraduate Qualifications in the Computer Games Sector

Subject of Study	
Business, Administration and Law	28%
Information and Communication Technology	24%
Science and mathematics	14%
Arts, Media and Publishing	11%
Engineering and Manufacturing Technologies	9%

Figure 8 Top Subjects of Other Undergraduate Degrees/Diplomas in the Computer Games Sector

Subject of Study	
Information and Communication Technology	31%
Science and mathematics	17%
Arts, Media and Publishing	15%
Business, Administration and Law	13%
History, Philosophy and Theology	10%

For those holding a media specific postgraduate qualification, the most common institutions of study are: University of Bedfordshire, Bournemouth University, The University of East London, Leeds Metropolitan University, London Metropolitan University, Royal Holloway and Bedford New College, University of Abertay Dundee, and The University of Dundee (all 12%).

For those holding a media specific undergraduate degree or diploma, the most common institutions of study are: University of Abertay Dundee (13%), The Arts Institute at

Bournemouth, The University of Greenwich, The University of Salford, The University of Sunderland, The University of Surrey, The University of Teesside, West Herts College, Watford Associate College of University of Hertfordshire, University of the West of England Bristol and The University of Dundee (all 7%).

In terms of qualifications in other subjects, the most common institutions of study for postgraduate qualifications are: The Open University (9%), University of Abertay Dundee (7%), The Arts Institute at Bournemouth, The University of Cambridge, Goldsmiths College, Lancaster University, The University of Sussex, The University of Warwick, The University of Westminster, The University of York, and The Robert Gordon University (all 5%).

For undergraduate degrees or diplomas in other subjects the most common institutions of study are: The University of Cambridge (7%), The University of Leeds (7%), University of Abertay Dundee (6%), The University of Warwick (5%), The University of Glasgow (5%), The University of Liverpool (3%), and The Open University (3%).

Perspective of Employers¹³

Employers in the Computer Games industry rate pre-entry FE highly (rated as important by 14 out of 22 employers). Post entry technical training (mentioned by 13 employers), management training and CPD (both 12 employers) are also popular types of provision.

Companies in the sector also show a preference for non-media studies degrees and postgraduate qualifications (11 out of 22 employers) over media specific qualifications (7 out of 22 employers). However, it is important to note that vocational media courses that are designed to meet industry needs are often well regarded by employers. The perceived importance of media specific qualifications may be impacted by views on those that are less vocational in nature.

A consultation with a sample of computer games employers conducted by Skillset on behalf of Skillset's Computer Games Skills Forum in 2007 reports that employers look to degrees (at least at undergraduate level, but with many stating a preference for postgraduate qualifications) as a benchmark in the industry. Preferred subjects include: Games Programming, Games Art, Animation, Computer Science, Maths, Physics and Design Disciplines.

The same research shows that employers most value a combination of technical and soft skills. Technical skills include C++ programming, online skills (servers and architecture), art and animation, whilst soft skills include team working, communication, project management and sales and marketing expertise.

More than half (53%) of Computer Games employers would consider encouraging their permanent staff to work toward a qualification, a slightly higher proportion than across

¹³ Unless otherwise stated, all figures pertaining to the perspective of employers are taken from Skillset's Employers Survey 2006 which excludes film production, cinema exhibition, performers and photo imaging. A total of 68 interviews were carried out with employers in the computer games industry.

the Creative Media industry overall (51%). Specialist and specific vocational qualifications such as health & safety and degrees and postgraduate qualifications are the most popular options for Computer Games employers (59% cited each of these types of qualification). Foundation degrees (50%) were also fairly popular (and more so than the 40% of all Creative Media employers). However, just 1% of Computer Games employers take on apprentices, with a further quarter (25%) who would consider doing so (compared to 9% and 28% respectively amongst all Creative Media employers).

Approaching two thirds (63%) of Computer Games employers demonstrate the value they place on education by maintaining links with schools, colleges, universities and/or private training providers. This is higher than the proportion of all Creative Media employers (55%). The links take the form of work placements and provision of teaching support for example.

Training Delivery in Computer Games Sector

Perspective of Workforce

Three fifths (59%) of the Computer Games workforce had received some training in a twelve month period between 2007 and 2008, compared with 66% of the wider Creative Media workforce in a twelve month period between 2004 and 2005.

Those in Computer Games received fewer days training on average in a twelve month period between 2007 and 2008 than was the case in a twelve month period between 2004 and 2005 (8.2 days compared with 12.4 days).

Figure 9 shows the most common areas in which training had been received in the twelve month period. The Computer Games workforce were most likely to have received training in business skills (32%), management/leadership (30%), IT (24%), On-line/web design/interactive media/electronic games (15%) and specific software applications (14%).

Figure 9 Topic of Training Received in Computer Games

Topic of Training Received	
Industry Specific	
On-line/Web design/Interactive media/Electronic games	15%
Specific Software applications	14%
Animation	9%
Other - Industry Specific	8%
Generic	

Business Skills	32%
Management/Leadership	30%
IT	24%
Journalism/presenting	7%
Legal	7%

Of the training received by the Computer Games workforce in the past twelve months, 71% was delivered in the classroom. Over two fifths (43%) of the Computer Games workforce had received on the job training, and one third (34%) had relied on books and other printed materials.

Over half (55%) of the training received by the Computer Games workforce in the past twelve months was provided by a private company, and a slightly lower proportion (51%) was provided by an employer. Nearly one in five (19%) of the workforce has provided the training for themselves, and 11% had received training from a public education body.

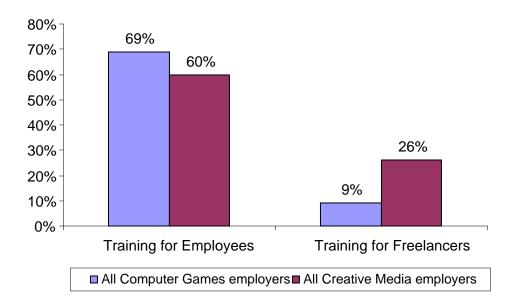
The most common source of payment of training fees for the Computer Games workforce is an employer (76%). Around one in three (28%) of the Computer Games workforce said that there were no fees for the training received in the past twelve months, and 7% had paid the fees themselves.

Perspective of Employers

Seven in ten (69%) Computer Games employers carry out some form of training or development for permanent employees (including both on and off the job training), which is higher than across the wider Creative Media industry where this is the case for three fifths of employers (60%). The most popular type delivered within Computer Games companies is in-house training sessions carried out by another member of staff (cited by 94% of employers). Other popular options are structured support on the job carried out by another member of staff (88%) and external courses/seminars (75%).

In terms of training provided for freelancers, just one in ten (9%) Computer Games employers carry out some form of training or development for freelancers (including both on and off the job training), compared with a quarter (26%) across the Creative Media industry as a whole. As with the training of permanent employees, the most common modes of training for freelancers delivered by Computer Games employers is through inhouse training sessions carried out by another member of staff or structured support on the job by another member of staff.

Figure 10 Training Provided by Computer Games and All Creative Media Employers by Contract Type



In terms of specific areas of training the 2007 consultation with Computer Games employers found that they most often invested in Project Management and Development Management training in Agile and SCRUM methods. Technical training in Art, Design and programming also feature in training programmes, particularly with regards to online development. In addition, several companies also focus on Management Development programmes for senior staff.

Half (52%) of Computer Games employers offer work experience or work placement posts to potential new entrants which is lower than the proportion of all Creative Media employers who do this (67%).

Almost half (48%) of Computer Games employers said that they were prevented from undertaking training/development more often, which is very similar to the proportion of all Creative Media employers experiencing problems (50%). Problems faced by Computer Games employers were most likely to be due to the fact that it is too costly (58%) and that they do not have enough time (44%). The 2007 consultation with computer games employers also found that most companies had sufficient access to training, however, a lack of suitable providers with relevant technical knowledge was reported to be an issue. A lack of support from regional agencies was also highlighted.

Training Needs in Computer Games Sector

Perspective of Workforce

Just under half (47%) of the Computer Games workforce cited a current training need in 2008, exactly the same proportion as in 2005. The areas of training need most commonly cited by the Computer Games workforce are business skills (39%), management/leadership (29%), IT (21%) and specific software applications (17%) (**Figure 11**). In contrast, the areas of training most commonly cited in 2005 were management/leadership (36%), IT (32%), business skills (20%) and on-line, web design, interactive media or computer games (17%).

Figure 11 Areas of Training Need in Computer Games

Topic of Training Received	
Industry Specific	
Specific Software applications	17%
On-line/Web design/Interactive media/Electronic games	8%
Other: industry-specific	7%
Generic	
Business Skills	39%
Management/Leadership	29%
IT	21%
Accounting/finance	10%
HR/Personnel	7%

As shown in **Figure 12**, over three quarters (78%) of the Computer Games workforce who had tried to obtain training or training materials had experienced barriers to receiving it, a small increase since 2005 (when it stood at 72%).

The most common obstacle cited in 2008 was that fees were too high (42%), followed by lack of suitable courses in the region where the workforce live (37%), lack of information about available training (37%) and difficulty in assessing the quality of courses (37%). Since 2005, the lack of information about available training has grown in prominence (rising from 8% in 2005), while fear of losing work, employers not willing to give time off and employers not willing to pay for training have all decreased in likelihood as barriers.

Figure 12 Barriers to Training in Computer Games

Barrier to Training	Computer Games 2008	Computer Games 2005
Any barriers or obstacles	78%	72%
Lack of suitable courses/training in UK	20%	13%
Lack of suitable courses/training in the region/nation I live/work	37%	26%
Possible loss of earnings too high a risk	19%	8%
Fees are too high	42%	46%
Training is in inconvenient places	36%	18%
Training is in inconvenient times	27%	33%
Domestic/personal arrangements	14%	8%
Fear of losing work through committing time in advance	7%	13%
Lack of information about available training	37%	8%
Difficult to assess the quality of courses	37%	44%
Employers not willing to pay for training	28%	36%
Employers not willing to give time off for training	19%	26%
I don't have enough time	6%	-
Lack of employment support	3%	-

Other	-	8%
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Perspective of Employers

Just under a quarter (24%) of Computer Games employers recognise a gap between existing skills and those needed to meet business objectives, a phenomenon echoed in the wider Creative Media industry (26%). The most common skill gaps reported by Computer Games employers are programming, games design, graphic design, business development skills and accountancy/financial skills. In addition, future skill gaps are anticipated by 18% of large Computer Games employers, fewer than the average across the wider Creative Media industry (36%). Specific skill areas cited relate to graphic design, high resolution modelling and buying skills.

The 2007 consultation with Computer Games employers adds further detail to the current and future skill gaps in the sector. Companies had mixed views on whether skill gaps existed in their current workforce, with some feeling that they have the skills in house to face their business challenges (not including any successful recruitment activity to fill vacant roles) and others highlighting a need for high level skills such as programming, art and producing roles. Few companies identified gaps that would develop in their workforce over the next 12 months. Those that did cited online developments for MMO's, network development and business management as perceived future problem areas.

The consultation also found that employers have been finding it difficult to recruit for senior roles but not for new entrants. A shortage of appropriate candidates for lead programmer positions was a common problem area. Other senior roles including designers, lead artists and producers are also proving difficult to fill.

In terms of the skills of new employees specifically, the view of Computer Games employers is less positive than the view across the Creative Media industry as a whole; 23% of Computer Games employers compared with three in ten (30%) employers across the wider Creative Media workforce rate them as 'fully equipped'. Meanwhile 45% of Computer Games rate them as having '...most of the skills but have some need for development' and 23% rate them as having '...some of the skills but need development' (compared to 43% and 11% respectively amongst all Creative Media employers).

Future Research

Labour market data from Skillset's regular cycle of research will continually update this Digest. This includes data gathered on the size and shape of the industry, the demands of individuals and employers in terms of training experiences, skill gaps and shortages.

Skillset, 2009