David Comiskey uses the iAnnotate App which provides paperless feedback to students. 
Photo by Nigel McDowell/Ulster University.
## Development Challenges in the Honeycomb Eligible Area

### 4.1 Challenges

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## References

- Appendix 1: List of interactive media companies in the Honeycomb areas
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Executive Summary

This report profiles the interactive media sector in the Republic of Ireland, Northern Ireland and Scotland. It takes a more detailed look at the sector in the Honeycomb eligible areas in each of these countries – the border counties in the Republic of Ireland, Northern Ireland (excluding Belfast and greater Belfast) and the western seaboard of Scotland.

The Smart Moves report identifies key challenges hampering the development of the interactive media sector. It details future forecasts on the evolution and growth of the sector. It also develops case studies of interactive media activities, highlighting innovative companies in each of the eligible areas such as VBOT in the Republic of Ireland, Giglets in western Scotland and Performa Sports in Northern Ireland. The findings of a survey carried out by Ashbrook Research on behalf of the Honeycomb partnership are presented and analysed. The report is also informed by interviews with industry in each of the eligible areas. Based on this evidence, recommendations on how to support the interactive media sector’s sustainable future development are made. The Honeycomb survey results for each of the eligible areas are detailed in the full report and an overview is provided here.

Notable tech hubs and a strong start-up scene exist in major cities in the countries the Honeycomb eligible areas are based, such as Dublin, Belfast and Edinburgh. The Honeycomb survey however highlights the existence of a base of companies that could potentially be further developed, helping to grow the economies of more peripheral places. General structural patterns identified in the Honeycomb eligible area interactive media sector were relatively small scale, young companies with sales focused in the UK and Ireland and with one to five employees. Wider patterns identified from the Honeycomb research interviews were that freelancers are important to the interactive media sector.

Industry interviews also highlight the importance of strong networks and access to freelance skills to facilitate development and growth of start-up companies. For future growth, scaling up companies is important. An increase in business incubation programmes is one measure that could assist better scaling up of young, innovative start-up companies.

The findings of the Honeycomb survey indicate that just over one third of the interactive media sector in the eligible areas had received government assistance to help grow their business. For more than half assistance was in the form of a loan. The need for increased financial support and wider support such as with mentoring and networking, targeted at fast growing start-ups has been highlighted in other research. The Honeycomb research would also support this view. The Honeycomb survey found that assistance with employment was at the lower end of the types of assistance received, with just under one fifth having
Executive Summary

received this type of assistance. Our research interviews indicate that greater assistance with the costs of employment would assist start-ups gain the experience and talent to help them grow. Honeycomb also assessed interest in events and programmes to support business development. Interest was very high in some areas. Almost two thirds were interested in access to academic institutions. Three quarters were interested in trade events and funding workshops. Networking events emerged as the area of highest interest, which 84% were interested in.

Skill deficits are a pivotal issue for the tech sector. Companies in the eligible areas can struggle to fill certain positions. The Honeycomb survey found that vacancies for programmers and sales executives were identified as difficult to fill, pointing to a potential skill gap in the eligible area’s interactive media workforce. Skill deficits also impact the sector’s competitiveness internationally. Our research interviews with industry highlighted that the quality of skills, experience level of the workforce and competition for skilled staff were issues fundamental to the skills challenge facing the interactive media sector. The lack of an experienced workforce emerged as a key recruitment problem for companies. Primary and secondary school education needs to catch up with the digital revolution. There is a need for government action implementing digital strategies in schools in the eligible areas and beyond. Internships can assist companies to work with graduates to develop their experience. However this has advantages and disadvantages for companies and is not an option for all businesses. For internships to go some way to increasing the experience levels of tech graduates the number of opportunities would need to increase as well as financial support to companies providing internships.

From the Honeycomb survey overall business skills emerged as the area of greatest skill gap – 54% of respondents identified this skill area as lacking and needing improvement at intermediate to advanced levels. Networking nationally and internationally was the top specific business skills deficit. Greater support and facilitation of networking, especially internationally, could assist in overcoming this skill gap. Sales and marketing skills were the second greatest area of skill gap identified and emerged as needing development at intermediate to advanced levels. Three specific sales and marketing skill gaps emerged of most concern and were around accessing international markets, pitching and marketing through social media. A strong need for sales skills also emerged from our research interviews and the need for the promotion of sales as a career path.

Other challenges that may limit the growth of the interactive media sector in the eligible areas were also assessed. Overall, the two top challenges facing business growth over the next five years emerging from the Honeycomb survey were an ability to innovate/respond to customer and market needs as well as access to funding. Internationally, initiatives such as Techstars have supported mentoring and investment in innovative start-ups. Attracting similar initiatives to the eligible areas could facilitate a more supportive environment to assist start-up growth. Recruitment of skilled staff also emerged as a significant challenge, as well as
Executive Summary

access to markets. Being part of a strong network and continually building networks, locally, nationally and internationally is vital to support the growth of the interactive media sector. Networking and collaboration can be more challenging for less centrally located companies than those in well-established clusters. **Better support for interactive media networking groups and financial support for companies to network is important to support the future growth of the sector in the eligible areas.** Better provision of co-working spaces, where low rent office spaces are available in cities and large towns in the eligible areas could also facilitate business start-ups and networking. The most significant infrastructural impediment identified was broadband capacity, which 42% cited as an issue. A quality, reliable broadband infrastructure is crucial for digital business.

Honeycomb also assessed levels of collaboration between interactive media companies and a good level of collaboration was identified, with just over half stating they collaborate. However, high levels don’t collaborate with other creative industry companies, such as in TV, animation and game design. **Better collaboration across digital content sectors is important for future growth and development and high potential for collaboration was seen to exist between interactive media and TV, animation and facilities for TV and film.** Over a third also said there was potential for collaboration with computer game design and music technology. Work outside of creative industries in areas such as health, education and sport was not common and a high proportion of companies were not currently working in these areas, nor had an interest in work in these areas. However cross industry collaboration is an important area of potential growth. For example forecast research has identified that innovations in interactive media can enhance service delivery in healthcare and education. **The promotion and encouragement of cross industry collaboration will be important to support the sector’s growth.**

Future forecast research indicates that the interactive media sector presents both challenges and opportunities. The pace of change over the last ten years has been challenging for developers. Wearables present opportunities for growth, however alongside this challenges to the more widespread adoption of wearables are highlighted. The app economy is growing, but it is a complex market. Control and revenues can be concentrated. Monetisation of apps is growing more difficult as competition is fierce and consumers can be unwilling to pay for apps. Trends towards in-app purchases, ads and subscription to premium content are...
highlighted as important revenue streams as opposed to pay per download. Enterprise is highlighted as a growth area for app development and the wearables economy, as tech innovations can improve cost and time efficiencies in enterprise settings.

Carefully devised policy measures could result in stronger economic growth for the interactive media sector in the Honeycomb eligible areas. The issues highlighted in this report provide evidence that can feed into future policy development. **Centrally important is skills development, but also more widely assisting new graduates develop their experience.** An environment where networking nationally and internationally is strongly supported is vital. This can help companies to source skilled workers and short-term freelance skill needs, connect with potential clients and investors, as well as helping companies keep up with change. **Greater levels of cross industry collaboration, between the interactive media sector and other digital content sectors, but also broader industry, such as health and education, is also important to the sector’s future growth.** This report makes a range of recommendations and Honeycomb has identified the top four recommendations as follows:

1. **Skills development is a central priority.** Honeycomb research finds the development of business, sales and marketing skills is needed. In addition the introduction of measures to aid new graduates become more industry ready is also needed.

2. **Improve support for start-ups to assist scaling-up.** An increase in business incubation programmes and assistance with employment costs are measures that could assist better scaling up of young, innovative start-up companies.

3. **Funding and finance is key issue.** Measures such as improved support for the development of a stronger tech investment scene and greater availability of higher value low cost loans would assist company development.

4. **Tech community networking in peripheral areas can be challenging as companies can be at a distance from each other.** Better support for networking groups, improved financial support for companies to network internationally and the development of co-working spaces in cities and large towns in the eligible areas could better facilitate networking.
Honeycomb - Creative Works is a £3.58 million programme targeted at the digital content sector across the INTERREG IVA region of Northern Ireland, the six border counties of the Republic of Ireland and the western seaboard of Scotland, part-financed by the European Union’s INTERREG IVA Cross Border Programme, managed by the Special EU Programmes Body.

1.1 THE HONEYCOMB PROGRAMME

Honeycomb is being delivered by a partnership led by Ulster University and comprising Dundalk Institute of Technology, Creative Skillset and the University of the West of Scotland. Honeycomb addresses the economic, educational, social and cultural needs of the sector by focusing on SMEs, organisations and individuals in the following digital content sub-sectors:

- film and broadcast
- animation
- computer gaming
- interactive media
- music technologies

Through its comprehensive networking programme, Honeycomb aims to develop networks of scale, building the capacity of, and establishing greater links between, digital content SMEs, freelancers and start-ups across the three regions. Honeycomb also works to develop skills to address the shortfall in sector specific training for the digital content sector. A seed funding programme and investment fund for early stage digital content projects run by both freelancers and creative enterprises is also part of the programme.

The intelligence gathering aspect of Honeycomb aims to monitor developments in the sub-sectors of the digital content industry and devise a range of studies to inform policy, industry and the Honeycomb programme’s design. This report forms part of the intelligence gathering element of the programme. This report on interactive media is one of a series of sector specific reports produced by Honeycomb’s research group. Five sector development reports will be produced focusing on each of the digital content sub-sectors detailed above.

1.2 PURPOSE AND OVERVIEW OF THIS REPORT

This report constructs a profile of the interactive media sector in each of the Honeycomb eligible regions, identifies key challenges hampering development, explores case studies of interactive media activities and future forecasts on the evolution and growth of the sector. The findings of a survey carried out by Ashbrook Research and Consultancy on behalf of the Honeycomb partnership are also presented and analysed. This survey involved telephone interviews conducted in February 2014, based on a questionnaire designed to understand the structure, skills and networking issues in the digital content sector in the Honeycomb eligible area.
Interviews were conducted with 95 interactive media companies, 35 based in the Northern Ireland region (excluding Belfast and greater Belfast), 42 in the Republic of Ireland border region and 18 along the western seaboard region of Scotland. The report is also informed by semi-structured interviews carried out with nine industry practitioners across the three regions. Industry interviews reveal important insights that assist in understanding issues in a more detailed way. Informed by this evidence, recommendations on how to support the interactive media sector’s sustainable future development are made in the final section. This report can provide evidence for both industry and policymakers to shape their future decision-making.

The interactive media sub-sector of the digital content sector is difficult to define. Companies that develop web applications, websites, online content, mobile content, mobile applications and social media are central to the interactive media sub-sector of digital content industries (Creative Skillset 2011c). Fundamentally, Honeycomb understands interactive media to be content sitting on a software platform. In the eligible area companies can work across different business sectors, such as design. In more specialist markets interactive media sub-sectors can be more clearly identified, such as web design, app development, mobile web, computer games and e-learning. For the purposes of the Honeycomb programme computer games is classed as a distinct sector. The games sector is not focused on in this report. A separate Honeycomb sector development report will be produced for the games sub-sector.

The development of the tech sector appears to be at a turning point. Strategic planning and action could result in stronger economic growth for the sector. Without this forward planning the potential in tech could be an under-harnessed economic development opportunity. TechUK has outlined a strategy to support the UK becoming a world leading digital economy. It argues that the next five years will be crucial to creating the conditions for the next 30 and politicians and policy makers need to recognise the full significance of the digital revolution’s impact on future economic growth (Walker and Holloway, 2014).

Skill deficits are a pivotal issue for the tech sector and broader economy. A foresight report prepared for the European Commission identifies the critical importance of e-skills to European competitiveness and the risk of gaps and mismatches relating to ICT based innovation. The report forecast that over the 2012 to 2015 period between 384,000 and 669,000 jobs will be unable to be filled because of e-skills gaps (IDC Government Insights, 2009). O2 and Development Economics (2014) research found that over the 2013 to 2017 period it expects an additional 745,000 workers with digital skills will be needed to meet increasing demand in the UK economy. This growth is expected to concentrate in London and the South East of the UK. One tenth of these jobs are expected to be located in Scotland, Wales and Northern Ireland. This report adds further evidence to the growing knowledge base arguing measures need to be taken to help address skills and broader challenges limiting the development of the interactive media sector in the Honeycomb eligible areas.
A profile of the interactive media sector

Use of interactive media is growing steadily. Economic forecasts in the app sector for example highlight this growth. By the end of 2013, according to Juniper Research (2013a), 30% of people globally will have accessed an app on a mobile device.

Juniper Research (2013a) predicts that by 2018, 47% of the global population will have accessed an app on a mobile device. Juniper Research (2013a) also found that by 2013, 79 billion apps were accessed and by 2018 this is expected to increase to 186 billion. However growth may not be translating into a sustainable app economy. VisionMobile's 2014 Q3 report on the app economy however found that while the overall app economy is growing, it is a 'winner takes all game.' Revenues are very concentrated. The report found that 50% of iOS developers and 64% of android developers are operating below the 'app poverty line' of $500/£315 per app per month (VisionMobile, 2014c).

While the interactive media sector appears to provide an economic growth opportunity, there are issues to address to assist more sustainable and balanced growth. The next sections provide a context for the broader tech and interactive media sectors in the UK, Northern Ireland, Scotland and the Republic of Ireland, as well as the Honeycomb eligible areas.

2.1 INTERACTIVE MEDIA IN THE UK

According to UK Trade and Investment (2013) the UK is the most important market in Europe for mobile content. While many of the leading UK companies are still small and in early stages of growth, they are also innovative, dynamic and fast growing. According to UK Trade and Investment (2013:13) the UK is a good test market for interactive content creators: “the UK is an essential first market for early stage, new technology and content players due to its early adopter environment, meaning companies can test their new applications in a well-developed and high spending customer economy.” Another advantage is that the market also has a global reach. UK Trade and Investment (2013) also argues the UK market is well placed to grow further having a number of advantages such as ease of doing business, its base of expertise and London being an international tech and creative hub. Market research on the wider software industry also supports this contention. Key Note (2013) observes strong growth is expected in the UK software industry over the next five years, with the industry dominated by a small number of major multinationals, alongside a significant number of SMEs, focused on emerging technologies and niche markets. The UK software industry is also significant in terms of its European market share, making up an estimated 18% of the European market. It is also estimated to make up 3% of
the global market. Geographically, the industry is concentrated in the southeast and greater London - 2012 figures show that 45.4% of UK software enterprises were based in London, with 4.7% based in Scotland and 0.3% in Northern Ireland.

The crucial importance of start-ups scaling more quickly to support economic growth has been identified by Coutu (2014). In the Scale-up Report on UK Economic Growth, it is highlighted that when compared to other countries such as the US, Britain is successful at spawning start-ups, but not at scaling them. It is argued increased support should be targeted at fast growing start-ups. The report outlines measures such as the Tech City UK Digital Business Academy and the Entrepreneurial Spark business acceleration programme (see case studies on pages 64 and 34) which can facilitate this.

Apps are also a key part of the interactive content media market. Strongly export oriented, said to be a prominent part of the European app economy and accounting for over a third EU app revenues, estimates of the value of the UK app industry put its worth at £2.9 billion in 2013. Strengths of the UK market include the presence of a maturing tech start-up ecosystem and a good structure of government support (VisionMobile, 2014). The high level of
The secret to improving performance on the field is not just to train harder but also train differently. Mobile technology can harness data to tweak sports training and game play. Northern Ireland based Performa Sports provides an application to do just that.

Used by coaches, players and analysts, Performa Sports performance analysis iPad application facilities real time performance analysis, in addition to video analysis after the game. By monitoring specific key performance indicators, trends can be identified that inform better decision making. Danny Turley, Performa Sports founder explains: “Our product can expose the areas you need to improve on...there is nothing better than to learn from your mistakes. If the results show they are doing this well, and this not so well, they know what to work on in the next session. If it’s your tackling, defending, your stats will highlight that.” The product is also supported by an online analytics platform where video and data analysis can be stored and shared.

Danny Turley started Performa Sports while still completing his Masters in Multidisciplinary Design in 2010. The idea driving the business came from Turley’s own desire to analyse performance better and more efficiently. This close relationship between the problem the product solves and the businesses founder has also shaped the company focus. Turley explains: “I had this philosophy of user centred design... At the end of the day I was the user. I built the product for me. From day one I knew what I wanted the product to do and what I wanted to achieve.” Suited to sports in both a professional and amateur setting, ease of use is central to the application’s design.

While still completing his masters, Turley successfully gained funding from the Invest Growth Proof of Concept Fund, funded by Invest Northern Ireland and managed by E-Synergy. This and other funding sources helped get the product from concept to reality. Demand for sports analysis mobile technology applications is growing and the market space is becoming increasingly competitive. Performa Sports already has a strong foothold and interest in the product is high. Turley explains: “We have over 250 clients across 20 countries.” The application is now available for six sports – Gaelic football, hurling, soccer, rugby, tennis, hockey – and counting. Ice hockey is the seventh and latest sport added to the mix.
Gaelic football at Ulster University. Photo from Ulster University.
smartphone penetration is also a key contributor to growth. Market forecasts predict smartphone penetration is forecast to continue to grow at a fast pace. At 50% in 2013, smartphone penetration is forecast to reach 75% by the end of 2016 (Portio Research, 2013).

The mobile content industry’s concentration and importance in London has been highlighted (Creative Skillset, 2011a; Key Note, 2013; UK Trade and Investment, 2013). That said Northern Ireland and Scotland have potential, but there are issues to address to facilitate growth. Their main cities have been identified as good places to start a business. Based on the start-up ecosystem (e.g. number of start-ups, business survival rates), quality of life (e.g. property prices, crime rates), access to talent (e.g. number of universities) and business support (e.g. number of accelerators and science parks), Belfast in Northern Ireland and Edinburgh, Aberdeen and Glasgow in Scotland have been named among the top 25 UK cites to start a business. Belfast had 745 start-ups in 2012 and 49% survived, Aberdeen had 1,285 start-ups and 64% survived, Glasgow had 2,300 and 54% survived, while Edinburgh had 2,145 start-ups and 54% survived (Young, 2014).

2.1.1 INTERACTIVE MEDIA IN NORTHERN IRELAND
Of the UK’s interactive media sector, London makes up the greatest proportion (23%) and 6% is concentrated in Northern Ireland (Creative Skillset, 2012). Research also suggests app development across the UK is concentrated in London (31%), with just 1% of companies in Northern Ireland. However when cities are assessed, Belfast emerges strongly placed in the UK market. According to VisionMobile (2014) an estimated 94 app development companies are based in Belfast, ranking 24th out of 34 UK cities.

Evidence suggests the issue of skills shortages in Northern Ireland’s workforce is hampering the sector’s development. Reports have suggested small indigenous companies can find it difficult to fill positions (Best, 2013). A survey of computer graphics (CGI) skills in Northern Ireland found strengths and weaknesses. One weakness was that a skewed skills base exists towards some areas creating weaknesses in the industry’s ability to meet professional standards and compete in the wider UK and global markets. For example it found motion graphics animator/compositor (GFX) skills were much higher than visual effects compositors (VFX) (Murphy, 2014).

### Interactive media companies in the Honeycomb area: Northern Ireland (excl. Belfast and greater Belfast)

<table>
<thead>
<tr>
<th>Area</th>
<th>Quantity</th>
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<tr>
<td>Antrim (excl. Belfast and greater Belfast)</td>
<td>14</td>
</tr>
<tr>
<td>Armagh</td>
<td>18</td>
</tr>
<tr>
<td>Down (excl. Belfast and greater Belfast)</td>
<td>37</td>
</tr>
<tr>
<td>Fermanagh</td>
<td>4</td>
</tr>
<tr>
<td>Londonderry</td>
<td>23</td>
</tr>
<tr>
<td>Tyrone</td>
<td>17</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>113</strong></td>
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The consumer market in Northern Ireland is also promising as the use of internet enabled devices, such as tablets and smartphones is growing. Ofcom research has shown that 55% of people use a smartphone, 20% an e-reader and 45% of households have a tablet computer (Ofcom, 2014a). Use of the internet for general surfing/browsing was the most common application. However, more specific uses were also identified such as: 68% used it for buying goods or services, 58% accessing social networking sites, 54% for TV/video viewing, 51% for internet banking, 42% for instant messaging, 39% to watch short video clips and 36% to download music.

Northern Ireland interactive media companies are innovative and hold promise of growth. Routes to engage with the European and wider markets are important to support this. For example Qwizdom, which develops interactive learning solutions, entered a deal with two European technology leaders to supply them with its innovative software resulting from its presence at the GITEX technology event, which was supported by Invest NI (Invest NI, 2014). A fund to support early stage technology businesses and university spin-outs, Techstart NI (see case study, page 93) launched in 2014, a ten year fund managed on a commercial basis by Pentech Ventures.
Investments in Inflyte and Brewbot were also announced this year. Brewbot develops technology to support the growth of craft brewing. The company has in addition to Techstart NI support received investment from other sources. Inflyte is a music promotion platform that assists digital music promotion campaigns to directly reach clients’ mobile devices (Techstart NI, 2014a).

2.1.1.1 THE HONEYCOMB ELIGIBLE AREA OF NORTHERN IRELAND
The interactive media and broader tech sector is of growing importance to the Honeycomb eligible area of Northern Ireland’s economy and culture. The CultureTECH festival of digital media, technology, music and the arts was first held in Derry city in 2012 as a four day event. The festival has grown to become a week-long event of talks, workshops, exhibitions and social gatherings celebrating the crossovers between technology and culture (Henry, 2012; CultureTECH, 2014). Established in 1994 in Derry city, the success of tech company Singularity attracted the attention of US company Kofax, which purchased the company for £30 million in 2011 (BBC News, 2011). Other innovative companies in the eligible area include for example Performa Sports (see company case study, page 12) and Learning Pool. The Derry city based company Learning Pool was named in 2014 one of the Deloitte Fast 50, which ranks Ireland’s fastest growing tech companies (Sunday Business Post, 2014). The company was named a Deloitte Fast 50 ‘Rising Star’ in 2009 and 2010 (Learning Pool, 2010).

Honeycomb compiled a database of interactive media companies in the eligible area of Northern Ireland. Sources of data included the FAME database, yell.co.uk, local knowledge and web searches. Web design and development companies emerged as central to the interactive media sector in the eligible area of Northern Ireland. Companies in this area include Digiink Design, Isotrope, It’s New Media and BNL Productions. Table 2.1 (page 14) shows the number of companies contained in the Honeycomb database broken down by county. Figure 2.1 (page 15) illustrates company distribution across the Northern Ireland eligible area. The overall distribution displays a scattered nature. In the northern area concentrations around Derry city and Coleraine can be identified. There is also a greater concentration of companies in the south-east of Northern Ireland than the north or north-western areas.

2.1.2 INTERACTIVE MEDIA IN SCOTLAND
The region between Glasgow and Edinburgh became
known as Silicon Glen for its tech innovation since the 1970s. Electronics manufacturing in the region suffered greatly from the shift in manufacturing to lower cost economies and this resulted in a move away from hardware and towards software development (Curry, 1994; The Scotsman, 2007). Edinburgh has been called Scotland's tech start-up capital, with a high rate of university spin-out companies and strong networks within its closely connected business community (Moules, 2013). Business incubators located in the city include TechCube and CodeBase. According to CodeBase, it is the UK's largest tech incubator (CodeBase, no date). Interactive Scotland was established in 2009 as a three year programme to provide specialist advice and services to the digital media sector but has continued to exist to date providing support to digital media SMEs.

Of the UK's interactive media sector, estimates suggest 9% is concentrated in Scotland employing around 3,919 people. According to 2011 figures, online content dominated the sector (82%), however 2012 data shows online content has decreased to 51% with social media growing massively and now accounting for 40% of the sector. The workforce has a low proportion of females, but this is improving and 2012 figures show women make up 38% of the
VBOT

vbot.tv

With headquarters in county Louth, the mobile-centric video publishing platform VBOT has been deemed an Irish tech start-up to watch.

Named a top Irish tech start-up to watch in 2014 by Silicon Republic, VBOT was co-founded by Frédéric Herrera and Bartek Czerwinski. The company works to change how businesses use video (Silicon Republic, 2013). Established in 2013, the company’s headquarters is in Dundalk, also with offices in Dublin and London.

VBOT provides a secure cloud based system for publishing video content. The VBOT platform provides control over video content, such as how it is accessed and monetised. Video published through other digital platforms does not give the publisher control over advertising that viewers are exposed to. Bartek Czerwinski explains: “If you take the YouTube model and turn it on its head - that is what it is. Basically it is a set of open APIs that fit into different enterprise workflows, wherever there might be a video needed.” Video can also be linked to social media with trailers published to YouTube or Twitter for example. Its mobile recording app enables users to record and quickly upload videos to the platform. Uses range from technical inspections in the automotive industry to crowd sourced news reporting. Czerwinski explains another use they are looking at is in disaster recovery: “When the first reaction team arrives at the place of disaster, they need to assess quickly what is going on. The fastest way to report is to shoot videos with mobile phones.”

The platform is highly flexible. Czerwinski explains: “We use the same platform to cater for technical inspections in the automotive industry and exactly the same platform to deliver videos from archives to classrooms in Germany. We make sure that it is flexible end to end and mobile centric.” It has a number of specific uses. VBOT’s enterprise TV allows companies to make content public or private and supports video content such as promotional videos and product demos. Its medical TV can play a role in healthcare training and support patient care at a distance, connecting patients and clinicians. Event TV provides a space to archive an event alongside a range of advertising and monetisation opportunities. Learning TV provides a platform for educational video material, which can be free or subscription based.
The Intelligent Systems Research Centre (ISRC) is a major research unit within the Faculty of Computing and Engineering. Photo by AV Browne/Christopher Heaney.
Skills shortages have been identified in the interactive media workforce, including technical, sales, marketing and business skills. In addition, finding staff with the correct mix of skills is a difficulty identified (Creative Skillset, 2011a; 2011c). Efforts are being made to support expertise and skills development in the broader tech sector in Scotland. The Skills Investment Plan for ICT and digital technologies was published in 2014. It invests £6.6 million in skills development (Scottish Government, 2014).

The consumer market in Scotland is also promising evidenced by the growing use of internet enabled devices. The laptop is no longer the most important device for getting online, a range of devices are used. According to the Ofcom Communications Market Report for Scotland, ownership of tablet computers grew from 24% in 2013 to 42% in 2014. Smartphone uptake is rising faster in Scotland than other UK nations, where 62% use a smartphone. E-readers are used by 16% of adults in Scotland. Internet users in Scotland carry out a range of activities online. While email (88%) and general browsing (87%) were found to be the top uses of the internet, a range of other uses were also high such as purchasing goods and services (65%), banking (57%), using social networking sites (55%), TV/video viewing (45%), instant messaging (43%), downloading music (36%) and playing games (35%) (Ofcom, 2014b).

### 2.1.2.1 THE HONEYCOMB ELIGIBLE AREA – WESTERN SEABOARD OF SCOTLAND

Honeycomb compiled a database of interactive media companies in the eligible area of western Scotland. Sources of data included the FAME database, Yell.co.uk, local knowledge and web searches. Web design and development appears central to the interactive media sector in the eligible area of western Scotland. Companies include Monkey6ix Media, Weesleekit Ltd, Cànan and Launch.

Other types of companies in the eligible area are in the education technology space, such as Giglets (see company case study, page 27) and Radio Lingua. Founded by language teacher Mark Pentleton, Radio Lingua develops digital language learning materials.

### Interactive media companies in the border counties, Republic of Ireland

<table>
<thead>
<tr>
<th>County</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavan</td>
<td>5</td>
</tr>
<tr>
<td>Donegal</td>
<td>23</td>
</tr>
<tr>
<td>Leitrim</td>
<td>6</td>
</tr>
<tr>
<td>Louth</td>
<td>27</td>
</tr>
<tr>
<td>Monaghan</td>
<td>2</td>
</tr>
<tr>
<td>Sligo</td>
<td>14</td>
</tr>
<tr>
<td>TOTAL</td>
<td>77</td>
</tr>
</tbody>
</table>
for a wide range of languages from French and German to Zulu and Arabic.

Table 2.2 (page 16) shows the number of companies contained in the Honeycomb database by district. Figure 2.2 (page 17) shows their geographic distribution across the western Scotland eligible area. A strong concentration is identified in the Ayrshire area, with companies more dispersed in the Dumfries and Galloway area. Overall company numbers appear to be low in the north-western part of the Honeycomb eligible area.

2.2 INTERACTIVE MEDIA IN THE REPUBLIC OF IRELAND

Ireland’s internet economy, which is driven by digital technology, has been valued at €8.4 billion or 5% of GDP in 2014. It is predicted to grow to €21.1 billion, or 10% of GDP by 2020. However Ireland is behind the UK in terms of the percentage the internet economy contributes to GDP, which was valued at 8% in 2012 (UPC and Amáraí Research, 2014).

Ireland’s software industry has a strong reputation in international markets. Growth and potential for future growth has been identified in indigenous software
**FIGURE 2.4**
Types of organisations

- Freelancer: 11%
- Limited Company: 44%
- Partnership: 2%
- Sole Trader: 42%
- Other: 1%

**BASE: 93 RESPONDENTS**

**FIGURE 2.5**
Length of time trading (%)

- 1-5 Years: 41%
- 6-10 Years: 31%
- 11-15 Years: 13%
- 16-20 Years: 11%
- 21-25 Years: 2%
- 26-40 Years: 2%

**BASE: 93 RESPONDENTS**

**FIGURE 2.6**
Type of interactive media activity

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>28%</td>
</tr>
<tr>
<td>Mobile content</td>
<td>44%</td>
</tr>
<tr>
<td>Online content</td>
<td>56%</td>
</tr>
<tr>
<td>Social Networks/Web 2.0</td>
<td>59%</td>
</tr>
<tr>
<td>Systems design/software</td>
<td>64%</td>
</tr>
</tbody>
</table>

**BASE: 95 RESPONDENTS**
development and also with multinational companies. For the continued competitiveness of Ireland’s software industry it has been highlighted that business, academia and supporting institutions need to work towards steering the industry to strongly position itself to respond to new trends and drivers. In addition broader challenges such as funding and skills shortages also need to be addressed (Fitzgerald et al., 2014).

Staying with the issue of skills shortages, UPC and Amárach Research’s (2014) study on Ireland’s digital future emphasises the importance of a digitally literate workforce, arguing that a centrally co-ordinated repository of skills and content should be available to teaching professionals. If skills shortages are not addressed, Fitzgerald et al. (2014) also identify negative impacts of digital skills shortages beyond loss of domestic job creation, but that it also leads to an overly competitive environment for top graduates pushing up salaries and reducing Ireland’s broader competitiveness.

In the discussion related to the UK earlier in this report, research suggesting start-ups need to be facilitated to scale faster was highlighted. The Irish Software Landscape Study also identifies difficulties in this regard. It points out that access to venture capital funding in the second stage of company development, when the company begins to grow, is a major challenge for the indigenous software industry. The need for greater incentivisation of investment is also highlighted, as well as innovative and radical personal taxation relief incentives (Fitzgerald et al., 2014).

Dublin is an important centre for interactive media and tech in Ireland. Since the economic downturn, tech start-ups have been important in reviving growth in the city. Reduced rents and greater availability of office space made the central city an option to locate a business (Doyle, 2014). Located in the city centre, the Digital Hub initiative was set up in 2003 to support innovation in digital content technology (Digital Hub, no date). Demand for space at the Hub is growing and plans are in place to increase space to meet growing demand (Conmy, 2014). The technology industry conference that began as the Dublin Web Summit in 2010 has become a high profile event with attendees and speakers from around the world. Opening the 2014 Web Summit Taoiseach Enda Kenny said: “It is in the recognition of Ireland’s status as a digital leader and location for business and innovation that brings the Web Summit here.” The event has grown from 500 attendees in its first year to 20,000 in 2014. However the success of the event was tainted by Wi-Fi access issues and reports have suggested its future in Ireland could be at risk if such issues are not safeguarded against (Gilbert, 2014). The presence of this problem at the Web Summit brings to light the pivotal importance of quality and reliable broadband to facilitate the broader tech sector’s development, an issue explored in more detail later in this report.

The point has already been made, based on findings from the Ofcom Communication Market report in Northern Ireland and Scotland, that digitisation is growing increasingly central to our lives. The situation in the Republic of Ireland is no different. UPC and Amárach Research (2014) found that use of internet enabled devices is growing; for example from 2012 to 2014 smartphone use increased from 61% to 75% and tablet use from 19% to 54%. The research compares the number of internet enabled devices in Irish households to those in Germany, with average numbers in use in Irish households (4.7) close to twice that of German (2.6). It also finds that nine out of 10 Irish adults have shopped online - 7% do so once a week and 49% do so one to three times a month. In addition it found that Irish businesses are good adopters of social media being ahead of the UK average. However 25% of Irish enterprises were identified not to have websites.
A profile of the interactive media sector

2.2.1 THE HONEYCOMB ELIGIBLE AREA – SIX BORDER COUNTIES IN THE REPUBLIC OF IRELAND

Honeycomb compiled a database of interactive media companies in the eligible area of the Republic of Ireland. Sources of data included the FAME database, local knowledge and web searches. Web design and development appears central to the interactive media sector in the eligible area of the Republic of Ireland and companies include Grandson, JasCom Ltd, JDK Design and Little Pig.

Interactive content media includes a diverse range of companies and other companies in the eligible area include VBOT (see company case study, page 18), Lone Star State and Locus Insight. Lone Star State, based in Donegal, creates original digital content such as digital graphic novels and apps. Locus Insight based in Sligo uses statistical, coding and design skills to develop interactive data visualisations.

Table 2.3 (page 20) shows the number of companies contained in the Honeycomb database per county. Figure 2.3 (page 21) shows the general geographic distribution of companies across the border counties. Distribution is scattered throughout the border counties. Clusters can be identified around urban areas such as Letterkenny, Sligo and Dundalk.

2.3 THE INTERACTIVE MEDIA SECTOR IN THE HONEYCOMB ELIGIBLE AREA

The following profile of the interactive media sector across the Honeycomb eligible area is based on the Honeycomb survey findings.

2.3.1 STRUCTURE

Companies and sole traders dominated the organisation structure in the eligible area’s interactive media sector (see Figure 2.4, page 22). Most of those surveyed classified themselves as limited companies (44%), closely followed by sole traders (42%). Companies were also predominantly under 10 years in existence, which 72% of respondents were identified as (see Figure 2.5, page 22).

The type of interactive media activity companies participated in is outlined in Figure 2.6 (page 22). More than half of respondents were involved in developing online content, social networks/web 2.0 and systems design/software. Developing mobile content was also significant as 44% said this was part of their activities. A range of other activities were cited, such as e-commerce, motion graphics, 3D graphics and animation, but the most predominant other activity cited was graphic design.

2.3.2 TURNOVER AND DISTRIBUTION OF SALES

For those reporting in GBP (53 respondents), 6% reported turnover of between £1 million and £4 million and a turnover of between £151,000 and £400,000 was reported by 11%. Turnover was between £25,000 and £150,000 for 43% of respondents. Turnover was between £10,000 and £25,000 for 13% and under £10,000 for 13%. The remainder declined to indicate their turnover. For those reporting in Euro (42 respondents), turnover was between €2 million and €4 million for 2% and between €151,000 and €600,000 for 12%. It was between €10,000 and €150,000 for 40% of respondents and was under €10,000 for 29%. The remainder declined to indicate their turnover or it was their first year in business.

Distribution of sales reveals a complex picture, but overall was mostly focused in the UK and Ireland. Honeycomb also assessed the overall distribution of sales in the interactive media sector in the countries the eligible areas are based. In Northern Ireland, 53% said they had no sales here, while the remainder had some (15% between 1% and 20%, 6% between 25% and 50%, 8% between 60% and 80% and 18% between 85% and 100%). In the Republic of Ireland, 43% said they had no sales here, while the remainder
had some (14% between 1% and 20%, 7% between 30% and 50%, 9% between 55% and 80% and 27% between 85% and 100%). In Scotland, 75% said they had no sales here, while the remainder had some (6% between 1% and 10%, 4% between 25% and 40% and 15% between 80% and 100%).

Honeycomb also assessed the distribution of sales in England, Wales, other EU countries, North America, Asia and other regions. In England or Wales, 62% said they had no sales here, while the remainder had some (24% between 1% and 20%, 12% between 30% and 50% and 2% had 90%). Sales in other EU countries were also low, with 91% saying they had no sales in other EU countries, while the remainder had some (8% between 5% and 20% and 1% had 60%). Sales in North America were also low with 84% saying they had no sales here and the remainder had some (13% between 2% and 45% and 3% between 70% and 90%). Sales in Asia were very low with 96% having no sales in this region, while the remainder had some (3% between 1% and 20% and 1% had 90%). Sales in all other regions were also low, with 94% having no sales in other regions.

2.3.3 EMPLOYMENT AND VACANCIES
Most of those surveyed employed between one and five people on a full-time basis. Part-time employment
Graphics from Giglets eBook of The Three Bears, western Scotland eligible area. Image courtesy of Giglets.
Giglets

giglets.net

Based in Ayrshire in the west of Scotland, Giglets is a young, growing company focused on developing digital education materials to support reading and literacy.

The award-winning education technology company Giglets was founded in 2011 by Craig Johnstone and Karsten Karcher. The company developed from Giglets Books Ltd, a student business pioneered by Craig Johnstone and a number of friends who began developing the business while at university.

Giglet's eBooks are called 'SmartReads'. These are classic stories adapted and enhanced with illustrations and available on eBook platforms such as Amazon Kindle and Kobo. They are available in English and a number are also available in Scottish Gaelic, Welsh, Irish and Manx. A library of SmartReads is available through the Learning Cloud, the education focused eReader Giglets officially launched in 2014. Craig Johnstone describes how the company has transitioned and developed: "We went through a bit of a transition from being an ebook publisher that simply sold on Amazon and iTunes to becoming a fully-fledged edTech software business."

The Learning Cloud allows teachers to embed tasks within text and when complete to correct and store them. The visual format is adaptable to maximise accessibility where readers can chose different reading themes that suit their needs. Through the Learning Cloud some SmartReads also have a 'ReadAlong' function, where an audio of the story can be played and the text is highlighted as the story progresses. Learning resources that fit with Scotland's Curriculum for Excellence (CfE) are also available through the Learning Cloud.

Giglets is currently part of the Entrepreneurial Spark business accelerator in Ayrshire. This has helped to accelerate network building and international engagement for the company.

The Three Bears SmartRead developed by Giglets. Images courtesy of Giglets
was not common - 77% of respondents indicated they had no part-time employees (see Figures 2.7 and 2.8, page 25). None said they used volunteers.

The Honeycomb survey also sought to understand if employment vacancies were difficult to fill. The majority of vacancies were seen as not hard to fill, which 75% agreed so. That said a quarter found vacancies difficult to fill and vacancies for programmers were most commonly cited, followed by sales executives. Other vacancies that were hard to fill were in creative design, light engineering, website development and web app development. Section three further explores employment and skills issues in the Honeycomb eligible area’s interactive media sector.

Use of freelancers was identified quite strongly with 43% using freelance workers, while 57% didn’t. Use of a small number of freelance workers was more common than a large number - 34% had between one and three freelancers, 6% had between four and six and 3% between 17 and 40. Interviews with industry reveal insights on why using freelancers is important. Companies can need to source skills for a short time, to for example fulfil a specific contract of work or to further develop a product or service. This

I would be the creative director but there are two junior designers that we would have freelance, two senior web developers, and then I have kind of partner agencies… that would do SEO, digital marketing, even stuff like linguistics… what I was trying to do with the place was set up something that kind of had a bigger agency feel, like something like what you would get in a city.

Killian Walsh, founder, Grandson, Republic of Ireland eligible area
is particularly important when companies are in the early phase of their development. Being able to source skills freelance assists businesses to take on work and develop the company without having to fulfil extra demands through in-house employees. Networks also appear to be important to accessing these skills. Using freelancers also assists smaller companies to take on bigger jobs than their employee numbers would indicate they could. For example the following interview quotes help to illustrate (also see page 28):

Like if there was a big job we can bring another company in. We have got a few guys locally that we can trust. If it was a collaborative project we would contact them and see how we could best serve the customer.”

Gary Morrison, creative director, Monkey6ix Media, western Scotland eligible area

This approach is also aligned with delivering a better service, not trying to be a 'jack of all trades' and making use of skilled specialists. For example:

You will find somebody that will help because you can’t be good at everything... the team needs to have a broad skillset... you have got to have the design and technical know-how... a whole collection of skills.”

Gary Carruthers, co-founder, Underwaterpistol, Northern Ireland

It is rare that you get someone that is a really good web designer and a web developer... the two don’t go hand in hand... but the two things still need each other.”

Killian Walsh, founder, Grandson, Republic of Ireland eligible area

Companies developing products, such as educational technology or applications, rather than more service focused web design agencies, did display a desire as they grow to bring previously outsourced work in-house to improve control over operations and improve the quality of products developed. For example:

We would love to bring it [development] in house at the end of the day. I would have more control over it. My background is design and some in development. I would better understand the design element, I wouldn’t know the nitty-gritty details of development... when you are more software based... you need to test... make a change here... then see the results, which is more popular, more effective... so your users decide what works better... To be able to do all that over time, research and analyse all of that data, you need someone full-time. It is resources... We have loads of little areas that we have spotted that we need resources but it will take us time to build that in.”

Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area

We are an educational technology business and we are outsourcing the tech bit, so it doesn’t sit well with me. If I am to grow the business and get investment and do all of that stuff then I think it would be important to have that control in-house.”

Interactive media company 1, Honeycomb eligible area

Cost can be a factor in outsourcing work, as well as the responsibility that comes with having more employees. Outsourcing work can also be linked with skills deficits (discussed in detail in section three).
by 35% of the interactive media sector, while 65% had not received any assistance. The nature of this assistance (see Figure 2.9) was most commonly a loan (52%) followed by assistance with marketing (45%). Other types of assistance cited were grants, start-up grants and support for conferences.

Assistance with employment was at the lower end of the types of assistance received, with just under one fifth having received this type of assistance. Our research indicates that greater assistance with the costs of employment would assist start-ups gain the experience and talent that would help them grow, as the following comments illustrate:

> We are a Scottish Enterprise directly account managed business and they do support student employment, there is always one scheme or another on the go, more specifically for 16 to 24 year olds... because we are an account managed business we can usually get financial support for the youth employment that we do, but it is usually to the tune of 30% of a salary that is maybe capped at £40,000. It is a help but you still need to have plenty of cash there to support that.”

_Craig Johnstone, chief executive officer and founder, Giglets, western Scotland eligible area_

> Some kind of help to support that salary, for example I approached InterTradeIreland... they have a programme where they can fund 50% of the salary of a sales and marketing person, but you need to be hitting a certain amount of revenue before they can support that person. We are not there yet so we can’t avail of that. That was disappointing. If you are making money and growing, you might not be too bothered with that. If it was for someone at an earlier stage... there doesn’t seem to be any kind of funding to encourage people to bring people in.”

_Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area_

Mentoring was also at the lower end of assistance received, with just under a fifth of respondents having received mentoring. This also appears a particularly important support for start-ups. Interviewees that were part of business support start-up programmes describe them positively (for example see Case Study on Entrepreneurial Spark). One interviewee describes how mentoring really helped their business progress and they could have benefited from this help earlier in their development:

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Now I am getting more support from Business Gateway and North Ayrshire Council in terms of driving the business forward - what we can do to raise more money, to get people in employment and keep those people in employment. I am getting the support now that I should have been getting when I started the business... It would have been valuable a whole lot earlier. I wouldn’t be sitting trying to do all that now. It was through the business consultant that we found all of this information and she pointed us in the right direction."

Gary Morrison, creative director, Monkey6ix Media, western Scotland eligible area

Interest in different kinds of events and programmes to support business development was also assessed in the Honeycomb survey (see Table 2.4). More than half of respondents were interested in product development support, international events and online programmes. Close to two thirds were interested in access to academic institutions. Three quarters were interested in trade events and funding workshops. Networking events emerged as the area of highest interest, which 84% were interested in. Lowest interest was found in joint tendering workshops, a sales programme and showcase conference.
2.3.5 KEY PATTERNS
The general structural patterns identified in the Honeycomb eligible area’s interactive media companies were relatively small scale, young companies with sales focused in the UK and Ireland and with one to five employees. What this does show is the existence of a base of companies that could potentially be further developed. This is consistent with UK Trade and Investment (2013) observations on the UK market, that the start-up ecosystem is strong. However for future growth, scaling up companies is important (Coutu, 2014). Increased support and stimulation of business incubation programmes, such as the Entrepreneurial Spark and Techstars (see case studies), is one measure that could assist better scaling up of young, innovative start-up companies.

The key patterns emerging from the survey findings described in the preceding sections are as follows:

- General structural patterns identified were that companies and sole traders dominated the organisation structure in the eligible area’s interactive media sector and most companies were less than ten years trading.
- For those reporting in GBP turnover was between £25,000 and £150,000 for 43% of respondents.

For those reporting in Euro turnover was between €10,000 and €150,000 for 40% of respondents.
- Distribution of sales focused in the UK and Ireland.
- Most of those surveyed employed between one and five people on a full-time basis and part-time employment was not common.
- Vacancies for programmers and sales executives were identified as difficult to fill pointing to a potential area of skills gap in the eligible area’s interactive media workforce.
- Freelancers are important to the interactive media industry. Industry interviews highlight the importance of strong networks and access to freelance skills to facilitate development and growth of start-up companies.
- Just over one third had received government assistance to help grow their business and for more than half this came in the form of a loan.

The need for increased support and wider support such as with mentoring and networking, targeted at fast growing start-ups has been highlighted in other research. Honeycomb would also support such an approach.
- Assistance with employment was at the lower end of the types of assistance received, with just under one fifth having received this type of assistance. Our research indicates that greater assistance with the costs of employment would assist start-ups gain the experience and talent that would help them to grow.

In relation to support events and programmes, 61% were interested in access to academic institutions. Three quarters were interested in trade events and funding workshops. Networking events emerged as the area of highest interest, which 84% were interested in.

So far this section has focused on the structure, employment patterns and assistance received by the interactive media sector in the overall Honeycomb region. The next sections (2.4, 2.5 and 2.6) present the Honeycomb survey results separately for each of the eligible areas.

2.4 NORTHERN IRELAND (EXCLUDING BELFAST AND GREATER BELFAST)

2.4.1 STRUCTURE
Similar to the overall patterns in the Honeycomb eligible area, in the Northern Ireland eligible area the interactive media sector was found to be dominated by sole traders and limited companies (see Figure 2.10). No freelancers were identified as part of the
**Figure 2.10**
Types of organisations (Northern Ireland eligible area)

- **LIMITED COMPANY**: 46%
- **PARTNERSHIP**: 5%
- **SOLE TRADER**: 46%
- **OTHER**: 3%

**Figure 2.11**
Length of time trading (%) (Northern Ireland eligible area)

- **2-5 Years**: 35%
- **6-10 Years**: 38%
- **11-14 Years**: 15%
- **18-22 Years**: 9%
- **39 Years**: 3%

**Figure 2.12**
Type of interactive media activity (Northern Ireland eligible area)

- **Other**: 34%
- **Mobile content**: 51%
- **Online content**: 60%
- **Social Networks/Web 2.0**: 69%
- **Systems design/software**: 69%
Entrepreneurial Spark

entrepreneurial-spark.com

Supporting start-ups through business incubation

Entrepreneurial Spark is a non-profit social enterprise based in Scotland. It aims to foster entrepreneurialism and develop a strong start-up culture in the UK. Four ‘Espark’ incubation spaces are located across the UK in Glasgow, Ayrshire, Edinburgh and Birmingham. Plans are in progress to develop additional spaces for example in Belfast, Cardiff and Bristol.

Individuals with a business idea with promise, or businesses trading for four years or less and/or with up to £1 million in turnover with growth potential, can apply to be part of the Entrepreneurial Spark business accelerator incubation programme. Businesses accepted to be part of the programme are based at an ESpark Hatchery for up to six months. Being part of the programme helps to reduce the cost of start-up by providing a free office space, including computers, broadband and access to meeting rooms in an ESpark Hatchery. Supports include mentoring provided by ‘entrepreneurial enablers’, workshops and pitching practice sessions. Businesses can remain at the incubator for a further 12 months if viewed capable of further growth, when they take up residence at an ESpark Nest.

Craig Johnstone, CEO and founder of the educational technology company Giglets based at the Ayrshire ESpark accelerator comments on the benefits to his business: “It is just great to get us access to groups, to individuals, that normally as a start-up business you could probably get to, but it would take a heck of a long time and a great deal of frustration. It can help things move more quickly.” Giglets are now part of the ESpark Nest in Ayrshire.

Applications can be made twice yearly (February and August) and entrepreneurs from anywhere in the world can apply.
Honeycomb survey in this region. Again, similar to the overall patterns, most were trading for 10 years or less (see Figure 2.11, page 33).

The type of interactive media activity companies participate in is outlined in Figure 2.12 (page 33). Social networks/web 2.0 and systems design/software were the most dominant activities, with 69% of respondents indicating they were involved in this type of activity. Developing online content was also a strong activity, which 60% were involved in. Developing mobile content was also significant and just over half said this was part of their activities. Other activities cited included social media marketing, 3D graphics and consulting, however the most predominant other activity cited was graphic design.

2.4.2 TURNOVER AND DISTRIBUTION OF SALES
Most respondents (74%) had a turnover of less than £150,000. The majority of these respondents were in the £25,000 to £150,000 category (see Figure 2.13). Distribution of sales in the Northern Ireland eligible area was concentrated in Northern Ireland. For 60% of those surveyed, between 80% and 100% of their sales were in Northern Ireland and for 14% it was between 50% and 70%. That said, some companies are not focused on the Northern Ireland market,
6% said they had no sales in Northern Ireland, 12% said between 10% and 20% of their sales were in Northern Ireland and 8% said 40% of their sales were in Northern Ireland. Sales in other countries and regions were also assessed, and in summary the results are as follows:

• 63% had no sales in the Republic of Ireland, while 20% said between 1% and 10% of their sales were here, 9% said between 20% and 30% were and 8% said 50% was.
• 91% had no sales in Scotland and the remainder said between 2% and 10% of their sales were here.
• 60% had no sales in England or Wales, 17% had between 5% and 10% of their sales in these markets, 9% had between 20% and 40%, 8% had 50% and 6% had 90% in England or Wales.
• 91% had no sales in other EU countries, while the remainder had between 5% and 60%.
• 83% had no sales in North America, while 14% had between 5% and 25% of their sales and 3% had 90% of their sales in North America.
• 93% had no sales in Asia, and the remainder indicated between 10% and 20% of their sales were in Asia.
• None of those surveyed indicated they had sales in other regions.

2.4.3 EMPLOYMENT AND VACANCIES
Employment patterns in Northern Ireland were similar to the overall Honeycomb survey findings. Most employed between one and five employees on a full-time basis (see Figure 2.14). Two thirds did not have any part-time employees and 29% had one part-time employee. Freelance workers were not employed in two thirds of cases, however 31% had between one and five freelance workers. One company had 17 freelancers working for them. None were found to use volunteers.

Employment vacancies were not hard to fill, according to almost two thirds of the interactive media sector surveyed. Almost a quarter said vacancies were difficult to fill and these were vacancies for sales executives, programmers, web app developers, light engineers, service engineers, software developers and web designers.

2.4.4 GOVERNMENT ASSISTANCE
Assistance from a government department or agency had been received by 43% of those surveyed, while 57% had not received assistance. This assistance most often was with marketing, and second most common was a loan (see Figure 2.15, page 38). Other types of assistance cited were grants, start-up grants or support for conferences.
Interest in different kinds of events and programmes to support business development was also assessed (see Table 2.5). Interest was highest in networking events which 88% expressed an interest in. This was closely followed by funding workshops which 83% were interested in. Interest in trade events was also high, which over three quarters displayed an interest in. In addition two thirds were interested in international events and access to academic institutions. Just over half were interested in product development support. Respondents also were clear in their lack of interest in a sales programme and showcase conference, which over 70% said they were not interested in. Interest was also low in online sales programmes and joint tendering workshops which over half expressed a lack of interest in.

2.4.5 KEY PATTERNS

• Sole traders and limited companies were the predominant type of company and most were trading for less than 10 years in the Northern Ireland eligible area.
• Distribution of sales was concentrated in Northern Ireland.
• Employing between one and five employees on a full-time basis was the dominant employment pattern.
• Almost a quarter indicated that vacancies were difficult to fill and these were in a range of areas.
• 43% had received government assistance. Assistance was most often with marketing, and second most common was a loan.
• A high level of interest was identified in networking events, closely followed by funding workshops.

2.5 REPUBLIC OF IRELAND BORDER COUNTIES

2.5.1 STRUCTURE

Patterns in the types of organisations and length of time trading in the Republic of Ireland’s border county’s interactive media sector conform to the overall patterns identified in the Honeycomb survey. Limited company was the dominant business structure. Partnerships were not identified and other structures than those displayed in Figure 2.16 (page 40) were not cited. Individuals working freelance or as sole traders were also common in the sector, which made up over half of those surveyed. Over three quarters of those surveyed were trading between one and 10 years.

The most common type of interactive media activity was systems and software design. Over half worked on online content and social networks/web 2.0. Almost one third cited other types of interactive
media activity, with graphic design most common followed by e-commerce and motion graphics. Other areas cited were animation, copywriting, digital media, multi-media localisation, systems administration and illustration.

2.5.2 TURNOVER AND DISTRIBUTION OF SALES

Turnover was less than €10,000 for 29% and between €10,000 and €50,000 for 31% of interactive media companies in the Republic of Ireland border counties (see Figure 2.19, page 41). Distribution of sales was concentrated in the domestic market. Just 5% reported no sales and one third reported that all of their sales were in the Republic of Ireland. For 43% of companies 80% to 98% of their sales were in the Republic of Ireland, 12% reported that 50% to 70%, and 7% that 1% to 40% of their sales were here. Sales in Northern Ireland, Scotland and other regions were reported, but at low levels:

- Almost three quarters (74%) had no sales in Northern Ireland, 17% had between 1% and 10%, 5% between 15% and 18%, 2% had 25% and 2% had 50% of their sales in Northern Ireland.
- A high 91% reported no sales in Scotland, while 7% had between 1% and 10% and 2% had 100% of their sales in Scotland.

### TABLE 2.5

<table>
<thead>
<tr>
<th>Event Type</th>
<th>NOT INTERESTED</th>
<th>FAIRLY INTERESTED</th>
<th>VERY INTERESTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRADE EVENTS</td>
<td>23%</td>
<td>66%</td>
<td>11%</td>
</tr>
<tr>
<td>NETWORKING EVENTS</td>
<td>12%</td>
<td>51%</td>
<td>37%</td>
</tr>
<tr>
<td>INTERNATIONAL EVENTS</td>
<td>34%</td>
<td>46%</td>
<td>20%</td>
</tr>
<tr>
<td>SHOWCASE CONFERENCE</td>
<td>72%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>JOINT TENDERING WORKSHOP</td>
<td>57%</td>
<td>29%</td>
<td>14%</td>
</tr>
<tr>
<td>SALES PROGRAMME</td>
<td>77%</td>
<td>17%</td>
<td>6%</td>
</tr>
<tr>
<td>PRODUCT DEVELOPMENT SUPPORT</td>
<td>48%</td>
<td>49%</td>
<td>3%</td>
</tr>
<tr>
<td>ACCESS TO ACADEMIC INSTITUTIONS</td>
<td>34%</td>
<td>60%</td>
<td>6%</td>
</tr>
<tr>
<td>ONLINE PROGRAMMES</td>
<td>57%</td>
<td>37%</td>
<td>6%</td>
</tr>
<tr>
<td>FUNDING WORKSHOPS</td>
<td>17%</td>
<td>40%</td>
<td>43%</td>
</tr>
</tbody>
</table>

**BASE: 35 RESPONDENTS**
**FIGURE 2.16**
Types of organisations (Republic of Ireland border counties)

- **FREELANCER** 21%
- **LIMITED COMPANY** 43%
- **SOLE TRADER** 36%

**FIGURE 2.17**
Length of time trading (%) (Republic of Ireland border counties)

- **1-5 Years** 52%
- **6-10 Years** 27%
- **12-15 Years** 12%
- **17-19 Years** 5%
- **20 Years** 2%
- **40 Years** 2%

**FIGURE 2.18**
Type of interactive media activity (Republic of Ireland border counties)

- **Other** 31%
- **Mobile content** 40%
- **Online content** 57%
- **Social Networks/Web 2.0** 52%
- **Systems design/software** 64%
• In England or Wales, 69% had no sales, while 24% had between 1% and 15% of their sales here and 7% between 20% and 40%.
• Sales were low in other EU countries where 90% reported having no sales, while the remainder reported that between 5% and 15% of their sales were in other EU countries.
• Sales were low in North America and 81% reported no sales in this region, while 12% had between 2% and 10%, 2% had 45% and 5% had 70% to 80% in North America.
• None reported having sales in Asia and 90% said they had no sales in all other regions.

2.5.3 EMPLOYMENT AND VACANCIES
Similar to the overall survey findings, low employee numbers were dominant, with 86% having between zero and four employees (see Figure 2.20, page 44). Part-time employment was also uncommon where 88% had no part-time employees - 10% had one and 2% had two part-time employees. No respondents reported they had any volunteers working with them. Freelancers were employed by more than half and over one third (36%) had one or two freelance employees, 19% had between three and six, 2% had 20 and 2% had 40.
Techstars is a mentorship-driven seed stage investment programme. It provides seed funding and mentoring for start-ups in return for between 7% to 10% equity in the start-up company. Successful applicants are part of a three month long program that runs once each year at one of the following locations: Austin (TX), Boston (MA), Boulder (CO), Cloud (San Antonio, TX), Chicago (IL), New York City (NY), Seattle (WA), and London (UK). The application process is competitive with hundreds of companies applying and only about 10 companies per city are accepted. Companies accepted on the programme get $18,000 in seed funding and are offered a $100,000 convertible debt note by a group of prominent venture capital funds immediately upon acceptance. When the program concludes participants have the opportunity to pitch to angel investors and venture capitalists, as well as remaining part of a supportive network of Techstar alumni, mentors, and investors. Techstars was founded in Boulder, Colorado by David Cohen, Brad Feld, David Brown and Jared Polis in 2006. Its headquarters are still located here. Applications are not restricted by location and anyone based anywhere in the world can apply.
Vacancies were not difficult to fill overall, with 81% agreeing so. However, in some areas there were difficulties and 19% said vacancies were difficult to fill. These were in a range of areas such as sales, web development, creative design, programming, animation and coding.

2.5.4 GOVERNMENT ASSISTANCE
Assistance from a government department or agency to help grow their business was received by 29% of interactive media companies in the Republic of Ireland and had not been received by 71%. Assistance was most often a loan (see Figure 2.21). No other types of assistance were reported.

Interest in a range of events and support programmes were assessed. Interest was highest in networking events, closely followed by trade events, where over 80% displayed an interest in both. A high interest was also found in funding workshops, which almost three quarters displayed an interest in, as well as online programmes which just over two thirds were interested in. Almost two thirds were interested in access to academic institutions. More than half were interested in product development support, international events and joint tendering workshops. The events and programmes where a

Vacancies were not difficult to fill overall, with 81% agreeing so. However, in some areas there were difficulties and 19% said vacancies were difficult to fill. These were in a range of areas such as sales, web development, creative design, programming, animation and coding.

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Interest in a range of events and support programmes were assessed. Interest was highest in networking events, closely followed by trade events, where over 80% displayed an interest in both. A high interest was also found in funding workshops, which almost three quarters displayed an interest in, as well as online programmes which just over two thirds were interested in. Almost two thirds were interested in access to academic institutions. More than half were interested in product development support, international events and joint tendering workshops. The events and programmes where a
lack of interest was identified were a showcase conference and sales programme, which more than half were not interested in.

2.5.5 KEY PATTERNS

- Limited company was the dominant business structure and individuals working freelance or as sole traders made up over half of those surveyed. Over three quarters of those surveyed were trading between one and 10 years.
- Turnover was less than €10,000 for 29% and between €10,000 and €50,000 for 31% of interactive media companies in the Republic of Ireland border counties.
- Distribution of sales was concentrated in the domestic market.
- 86% had between zero and four employees and part-time employment was not common. Freelancers were employed by more than half of respondents.
- Almost one fifth agreed that vacancies were difficult to fill, and a range of areas were cited.
- Assistance from a government department or agency to help grow their business was received by 29%. This was most often as a loan.
- Over 80% displayed an interest in networking and trade events.

### TABLE 2.6
Interest in support events and programmes (Republic of Ireland border counties)

<table>
<thead>
<tr>
<th>Event Type</th>
<th>Not Interested</th>
<th>Fairly Interested</th>
<th>Very Interested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Events</td>
<td>19%</td>
<td>45%</td>
<td>36%</td>
</tr>
<tr>
<td>Networking Events</td>
<td>14%</td>
<td>48%</td>
<td>38%</td>
</tr>
<tr>
<td>International Events</td>
<td>41%</td>
<td>45%</td>
<td>14%</td>
</tr>
<tr>
<td>Showcase Conference</td>
<td>57%</td>
<td>31%</td>
<td>12%</td>
</tr>
<tr>
<td>Joint Tendering Workshop</td>
<td>45%</td>
<td>36%</td>
<td>19%</td>
</tr>
<tr>
<td>Sales Programme</td>
<td>59%</td>
<td>31%</td>
<td>10%</td>
</tr>
<tr>
<td>Product Development Support</td>
<td>40%</td>
<td>36%</td>
<td>24%</td>
</tr>
<tr>
<td>Access to Academic Institutions</td>
<td>38%</td>
<td>45%</td>
<td>17%</td>
</tr>
<tr>
<td>Online Programmes</td>
<td>36%</td>
<td>38%</td>
<td>26%</td>
</tr>
<tr>
<td>Funding Workshops</td>
<td>26%</td>
<td>38%</td>
<td>36%</td>
</tr>
</tbody>
</table>

BASE: 42 RESPONDENTS
**FIGURE 2.22**
Types of organisations (western Scotland eligible area)

- **FREELANCER** 6%
- **LIMITED COMPANY** 44%
- **SOLE TRADER** 50%

**FIGURE 2.23**
Length of time trading (%) (western Scotland eligible area)

- 3 Years: 17%
- 5-7 Years: 33%
- 10 Years: 6%
- 13-18 Years: 33%
- 20-22 Years: 11%

**BASE: 18 RESPONDENTS**

**FIGURE 2.24**
Type of interactive media activity (western Scotland eligible area)

- Other: 11%
- Mobile content: 39%
- Online content: 44%
- Social Networks/Web 2.0: 56%
- Systems design/software: 56%

**BASE: 18 RESPONDENTS**
2.6 WESTERN SEABOARD OF SCOTLAND

2.6.1 STRUCTURE
The structure of the interactive media sector in Scotland is dominated by limited companies and sole traders. A small number of freelancers were identified in this survey (see Figure 2.22). The length of time trading was more varied within the interactive media sector in western Scotland than the other Honeycomb regions. More than half of those surveyed were in existence for less than 10 years; however the remainder were trading for between 13 to 22 years.

The types of interactive media activity varies across systems design/software, social networks/web 2.0, online content and mobile content (see Figure 2.24). More than half were involved in systems design/software and social networks/web 2.0. Other areas of activity cited were graphic design and web design.

2.6.2 TURNOVER AND DISTRIBUTION OF SALES
Most of the interactive media companies surveyed in western Scotland had a turnover of less than £150,000 (see Table 2.25). Distribution of sales in western Scotland’s interactive media sector was concentrated in the domestic market. For 72% of those surveyed between 80% and 100% of their sales

FIGURE 2.25
Interactive media western seaboar of Scotland annual turnover last accounting year (£)

<table>
<thead>
<tr>
<th>Turnover Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 10,000</td>
<td>16%</td>
</tr>
<tr>
<td>Between 10,000 and 25,000</td>
<td>5%</td>
</tr>
<tr>
<td>Between 25,000 and 50,000</td>
<td>11%</td>
</tr>
<tr>
<td>Between 51,000 and 150,000</td>
<td>28%</td>
</tr>
<tr>
<td>Between 151,000 and 250,000</td>
<td>6%</td>
</tr>
<tr>
<td>Between 251,000 and 400,000</td>
<td>11%</td>
</tr>
<tr>
<td>Between 2.1m and 4m</td>
<td>6%</td>
</tr>
<tr>
<td>Under 10,000</td>
<td>16%</td>
</tr>
<tr>
<td>Refused</td>
<td>17%</td>
</tr>
</tbody>
</table>

BASE: 18 RESPONDENTS
were in the Scottish market. For 22%, between 25% and 50% of their sales were in Scotland and just 6% had no sales in Scotland.

- A high 94% of western Scotland’s interactive media companies surveyed had no sales in Northern Ireland or the Republic of Ireland, while 6% said 10% of their sales were in Northern Ireland or the Republic of Ireland.
- Half had no sales in England or Wales, however 22% had between 40% and 50% of their sales here, 17% between 10% and 20% and 11% between 1% and 5%.
- A high 89% had no sales in other EU countries, while 11% had between 10% and 20% of their sales in this region.
- A high 94% had no sales in North America and 6% had 10% of their sales in this region.
- A high 89% had no sales in Asia, while 6% reported 1% of their sales and 5% said 90% of their sales were in this region.
- Sales in all other regions were also low with 89% reporting they had no sales in all other regions.
2.6.3 EMPLOYMENT AND VACANCIES
Employee numbers were low in most of the interactive media sector surveyed in western Scotland. Most employed between zero and two employees (66%). Part-time employment was not a significant trend as 72% of respondents identified that they had no part-time employees. 17% had between one or two part-time employees and 11% between five and eight part-time employees. Employing freelance staff was also not very common as over three quarters (78%) said they did not employ any freelance staff; however 22% employed between one and three. The use of volunteers was not identified and none said they used volunteers. Close to two thirds of vacancies were not hard to fill (61%). However 39% were difficult to fill and these included computer and software programmers, light engineers, designers and web development.

2.6.4 GOVERNMENT ASSISTANCE
One third of companies had received assistance from a government department or agency to help grow their business, while two thirds had not. Three types of assistance were found dominant, which were assistance with marketing, product development and a loan (see Figure 2.27).

### TABLE 2.7
Interest in support events and programmes (western Scotland eligible area)

<table>
<thead>
<tr>
<th>Event</th>
<th>NOT INTERESTED</th>
<th>FAIRLY INTERESTED</th>
<th>VERY INTERESTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRADE EVENTS</td>
<td>44%</td>
<td>45%</td>
<td>11%</td>
</tr>
<tr>
<td>NETWORKING EVENTS</td>
<td>28%</td>
<td>61%</td>
<td>11%</td>
</tr>
<tr>
<td>INTERNATIONAL EVENTS</td>
<td>72%</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>SHOWCASE CONFERENCE</td>
<td>61%</td>
<td>22%</td>
<td>17%</td>
</tr>
<tr>
<td>JOINT TENDERING WORKSHOP</td>
<td>83%</td>
<td>11%</td>
<td>6%</td>
</tr>
<tr>
<td>SALES PROGRAMME</td>
<td>78%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>PRODUCT DEVELOPMENT SUPPORT</td>
<td>67%</td>
<td>33%</td>
<td>0%</td>
</tr>
<tr>
<td>ACCESS TO ACADEMIC INSTITUTIONS</td>
<td>50%</td>
<td>39%</td>
<td>11%</td>
</tr>
<tr>
<td>ONLINE PROGRAMMES</td>
<td>33%</td>
<td>56%</td>
<td>11%</td>
</tr>
<tr>
<td>FUNDING WORKSHOPS</td>
<td>39%</td>
<td>61%</td>
<td>0%</td>
</tr>
</tbody>
</table>

BASE: 18 RESPONDENTS
Interest in events and support programmes were evaluated and interest was greatest in networking events, which almost three quarters were interested in. Interest was also high in online programmes which over two thirds expressed an interest in and funding workshops which 61% were interested in. Over half were interested in trade events and half in accessing academic institutions. A low interest was found in participation in joint tendering workshops which 83% were not interested in and a sales programme which over three quarters were not interested in participating in. Almost three quarters were not interested in participating in international events. Over two thirds were not interested in product development support and 61% in a showcase conference.

2.6.5 KEY PATTERNS
- The structure of the interactive media sector in Scotland was found to be dominated by limited companies and sole traders.
- More than half of those surveyed were in existence for less than 10 years. The remainder were trading for between 13 to 22 years.
- Distribution of sales was concentrated in the domestic market.
- Most employed between zero and two employees and part-time employment was not significant.
- Almost two fifths had vacancies that were difficult to fill.
- One third of companies had received assistance from government to help grow their business and three types of assistance were dominant (assistance with marketing, product development and a loan).
- High interest was found in networking events, which almost three quarters were interested in, as well as online programmes which over two thirds expressed an interest in and funding workshops which 61% were interested in.

So far this report has focused on the structure, employment patterns and assistance received by the interactive media sector in the overall Honeycomb region and each of the eligible areas. The remaining sections of this report bring to light some broader issues with the business ecosystem in the Honeycomb eligible area, particularly related to growing small businesses from a more peripheral or rural location and the impacts this has on skills availability, market access and infrastructural resources.
Skill deficits in the broader tech sector are a massive issue (Walker and Holloway, 2014). Research carried out by London Tech Advocates revealed that 70% of its members agreed a lack of skilled graduates was holding the sector back (Shaw, 2014). This issue was also clear from the interactive media industry in the Honeycomb eligible areas. Having access to a skilled workforce is also linked with facilitating start-up companies to grow and scale. For example, the following comments illustrate:

“My own company that I have just exited from, Learning Pool, if we had been able to access more technical talent in the early days our business would have been able to grow much bigger, far quicker. But there just were no people.”

Mary McKenna, chairperson, Digital Circle, Northern Ireland

Another interviewee highlights how Sussex developed Wired Sussex to assist in overcoming the recruitment problem to help start-up companies with scale potential to grow faster:

“They created this thing called Wired Sussex, they were maybe where Northern Ireland is now...not necessarily to a lot of scale, but certainly to a lot of scale potential around start-ups and tech... People were struggling to recruit so they created this recruitment portal called Wired Sussex... 20 years on and it is still going.”

Paul McElvaney, chief executive officer, Learning Pool, Northern Ireland eligible area

The next sections detail the skill gaps in the interactive media sector in the Honeycomb eligible area, as identified in the Honeycomb survey. Sections 3.2 and 3.3 focus on specific skill gaps identified in the overall and each of the eligible areas. Section 3.1 firstly discusses the broad fundamental issues that emerged from the qualitative research interviews with the interactive media industry.
To become skilled and experienced...it takes a long time to develop skills and to keep them you need to be employed. You need to maintain them. You need big projects to get experience.

Chris Mitchell, developer, Cànan, western Scotland eligible area
3.1 SKILLS ISSUES
Among the general challenges to business growth identified in section four, recruitment of skilled staff emerged as an issue for over two thirds (45%) of companies. This is further supported by the qualitative research findings. The quality of skills, experience level of the workforce and competition for skilled staff emerged as central and fundamental skills issues. Industry acknowledges that the numbers of tech graduates is improving, but the workforce is inexperienced. The lack of an experienced workforce emerged as a key recruitment problem for companies, as the following quotes illustrate:

“It is impossible to recruit experience so you end up recruiting talent and hope to make it into experience... That is just the way it is and you know there is a global shortage of tech talent so it is always highly competitive to get good people.”

Paul McElvaney, chief executive officer, Learning Pool, Northern Ireland eligible area

Because of the shortage of experienced, skilled workers, there is also competition for the most talented and skilled workers. The availability of skills in the eligible area is also impacted by the broader tech skills shortage. Skilled workers can be attracted to higher paying jobs in more centralised, attractive locations, leaving the eligible areas with an exacerbated shortage of experienced skilled workers. The following comments illustrate:

“I think there is shortage of quality programmers and the cost of employing them is going up. In the west of Scotland and a little bit beyond that you have got big companies like FreeAgent... I think IBM just took on a whole lot of new programmers and they are eating up a lot of the good guys.”

Craig Johnstone, chief executive officer and founder, Giglets, western Scotland eligible area

One of the disadvantages... is access to talent... Because you don’t want to hire students, you want to hire students with some experience... a student will go to a big company, get experience and stay in Dublin... all the good guys went to work for the Facebooks and Twitters and there was nobody in the market. But it is changing now; it is getting much easier to find decent people. Dublin especially, maybe not the rest of Ireland.”

Interactive media company 3, Honeycomb eligible area

The point is made that hoping people are attracted to an area for work is not enough to address the skills shortage. In the longer term, the issue needs more systematic, bottom-up measures to help address it. Primary and secondary school education needs to catch up with the digital revolution. The need for government action implementing digital strategies in schools emerged from our research. The following interviewee also points out the importance of a focus on schools. For example:
Skills gaps in the Honeycomb eligible area

You can’t deal with that by hoping that people are going to move here. It has to be addressed at the grassroots, with school-children. Having said that it is a global issue. Somebody needs to figure out how to make careers in the tech sector more attractive to school-children.”

Mary McKenna, chairperson, Digital Circle, Northern Ireland

It is a difficult career path to communicate. Jobs that exist today possibly didn’t 10 years ago and that will exist tomorrow don’t today. Young people need to be attracted into the industry in greater numbers and in particular young women. The following quotes illustrate this well:

Like someone says to me what are you doing… I’ll show you… you’ll see 80 lines of code, it is not like looking at a piece of pottery or a painting is it? But each has had a similar amount of work put into them.”

Chris Mitchell, developer, Cànan, western Scotland eligible area

It so male dominated…Everybody is promoting it as much as they can…I have to think it comes back to schools and teachers…In my world most jobs didn’t exist five years ago. Can we rely on teachers knowing enough about it? I don’t think we can. They are really well meaning and they want to do well for their students. But they are not best placed to advise them. There isn’t any formal way of introducing that expertise into the school system. It is just done by people coming and randomly chatting to school-children like I did yesterday at the Create conference.”

Mary McKenna, chairperson, Digital Circle, Northern Ireland

The proportion of recent graduates in the existing workforce also emerged as a key issue. Talent and enthusiasm exists, but experience and focus can be poor. For example, the following comments help to illustrate:

New graduates, they are not work-ready.”

Mary McKenna, chairperson, Digital Circle, Northern Ireland

It is not so much skills, it is qualities… Like if I am looking for a PHP developer I can get a talented one tomorrow but chances are after three weeks he’ll have lost interest or he’ll have a great idea for himself because he is entrepreneurial.”

Gary Carruthers, co-founder, Underwaterpistol

They have loads of enthusiasm but no actual skills really, even after being in university… commercial skills are different to academic skills. It is about getting those guys from there to here. You need something that helps that in the middle… it’s graduates with seven to ten years’ experience who can actually bring new people along.”

Paul McElvaney, chief executive officer, Learning Pool, Northern Ireland eligible area
At the end of the day there is book-smart, well not even book-smart, but there is no point in learning something if you are not going to practically apply it to something...like if you get a project in college and you have twelve weeks to get it done, you are never going to get that amount of time in the real world, realistically.”

Killian Walsh, founder, Grandson, Republic of Ireland eligible area

Recruiting experience is also costly when competing for example with large multinationals. One start-up company explains how they can’t compete with wage levels to recruit the skills they need. This has stifled local employment creation as the company outsources work that could potentially have translated into local jobs:

They are paying them probably upwards of £45,000 or £50,000 a year and obviously for a start-up you can’t do that. You have to find other ways to work. So for example we have outsourced all of our, well the majority of our technical development so far.”

Craig Johnstone, chief executive officer and founder, Giglets, western Scotland eligible area

Industry is also making efforts to overcome these issues through providing internships. Some interviewees note how they themselves made use of internships in early stages of their career which helped them develop. A number of the companies interviewed displayed a desire to work with graduates to develop their experience and bring their skills to a higher level. Internships also have commercial advantage as companies can assess the suitability of the employee to their work ethos and environment. For example:

“We have got three placement students this year and have rolled that up into a more formal graduate scholarship programme...a scholarship with Ulster University, the Rising Star programme...It gives us an opportunity to give back a bit and gives people a chance...also commercially there is a logic to it as well because particularly in things like computer science the best graduates are well sought after so having a year to get a look at them, see how they deliver under pressure, how they perform, how much they can learn in the space of a year. It is a good testing ground really.”

Paul McElvaney, chief executive officer, Learning Pool, Northern Ireland eligible area

There are a lot of kids out there that are hungry for an opportunity and they are not maybe getting that opportunity... Whereas I am trying to give kids that opportunity.”

Gary Morrison, creative director, Monkey6ix Media, western Scotland eligible area

But an apprenticeship system can only work if the company sees the value of it and is willing to make the time investment in developing apprentices. For example:

“It is an expensive endeavour... Once you bring in a graduate you assume a responsibility for training, mentorship and support for that person and frankly you need somebody with grey hair sitting there able to give them that.”

Paul McElvaney, chief executive officer, Learning Pool, Northern Ireland eligible area
Internships have pros and cons and for some companies the disadvantages will outweigh the advantages (see quote, right). This makes industry driven internships something that a lucky handful of leading graduates will gain access to. For example, the comments below illustrate:

Learning Pool has had a few people come to us in the past in their placement year of their course...It needs to be super-sized in order to make any kind of impact.”

Mary McKenna, chairperson, Digital Circle, Northern Ireland

Internships can help to improve the experience level of the workforce. However they need to be available in significant numbers to make a measureable contribution to improving the skills and experience level of the existing workforce. Government support is also vital to help industry balance the pros and cons of investing in interns.

In my opinion one of the biggest problems is student placements, the whole concept of student placements is wrong from the start. First of all it is too much of an investment from a company to make something meaningful out of the placement so the return on investment will never come back.
3.2 SPECIFIC SKILL GAPS

The Honeycomb survey asked respondents about skill gaps in their workforce. Figure 3.1 presents the results based on respondents that agreed a particular area of skill was lacking. Business skills emerged as the skills gap which the most respondents (54%) identified as lacking. Sales and marketing skills was the second greatest skills gap identified which 44% of respondents agreed needed developing. Around a third of respondents identified skills in the use of software, craft/technical skills and finance skills as skills gaps.

Honeycomb also sought to understand if specific skills gaps existed, at what level these skills needed improvement (see Table 3.1). Business skills and sales and marketing skills, the top two skills deficits identified, emerged as needing skills improvement most commonly at intermediate to advanced levels. Skills in the use of software, craft/technical skills and finance skills, which around one third of respondents saw as a skills gap, emerged as needing improvement most strongly at advanced levels. Over a quarter identified understanding of intellectual property rights as a skills gaps and this area emerged as needing improvement at all levels.
Skills gaps in the Honeycomb eligible area

**TABLE 3.1**
Level skills need improving

<table>
<thead>
<tr>
<th>Skill Description</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
<th>All Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding Intellectual Property Rights</td>
<td>4%</td>
<td>12%</td>
<td>23%</td>
<td>65%</td>
</tr>
<tr>
<td>Leadership and Management Skills</td>
<td>7%</td>
<td>57%</td>
<td>36%</td>
<td>21%</td>
</tr>
<tr>
<td>Sales and Marketing Skills</td>
<td>5%</td>
<td>33%</td>
<td>40%</td>
<td>36%</td>
</tr>
<tr>
<td>Business Skills</td>
<td>4%</td>
<td>25%</td>
<td>43%</td>
<td>33%</td>
</tr>
<tr>
<td>Skills in using Software Packages</td>
<td>7%</td>
<td>20%</td>
<td>67%</td>
<td>10%</td>
</tr>
<tr>
<td>Finance Skills</td>
<td>6%</td>
<td>38%</td>
<td>50%</td>
<td>22%</td>
</tr>
<tr>
<td>Craft/Technical Skills</td>
<td>0%</td>
<td>22%</td>
<td>66%</td>
<td>22%</td>
</tr>
<tr>
<td>Creative Talent</td>
<td>5%</td>
<td>37%</td>
<td>47%</td>
<td>16%</td>
</tr>
</tbody>
</table>

**KEY**
- **Severe concern 50%-100%**
- **Significant concern 25%-49%**
- **Moderate concern 1%-24%**

Base: 126 respondents, 214 respondents, 342 respondents, 451 respondents, 530 respondents, 632 respondents, 732 respondents, 819 respondents.
FIGURE 3.2
Business skill gaps

- Identifying opportunities: 57%
- Accessing international markets: 47%
- Networking (including international): 71%
- Developing business models: 33%
- Commercial acumen: 51%
- Monetising content: 22%
- Self-presentation: 25%
- Project management: 18%
- Other: 8%

BASE: 51 RESPONDENTS

FIGURE 3.3
Sales and marketing skill gaps

- E-marketing: 43%
- Other: 55%
- Pitching: 45%
- International markets: 55%
- Marketing through social media: 40%
- Market research: 60%
- Negotiation: 45%

BASE: 42 RESPONDENTS
The next sections turn to specific areas of skill, presenting the key issues emerging from the Honeycomb survey and the industry interviews. The results are presented in order of their degree of severity as a skill gap.

3.2.1 KEY AREAS OF SKILL GAP

3.2.1.1 BUSINESS SKILLS

Over half of respondents identified business skills as lacking. Business skills emerged as needing improvement most commonly at intermediate to advanced levels. Honeycomb explored the specific business skills that the interactive media sector identified as lacking (see Figure 3.2). More than half agreed that commercial acumen and identifying opportunities were business skills gaps and just less than half cited accessing international markets. One third agreed developing business models was a business skills issue.

Networking nationally and internationally was the clear top business skills deficit, which 71% of the interactive media sector surveyed identified. This also emerged strongly from the industry interviews. Its importance cannot be understated, for example the following interviewee describes:

"Networking should be at the heart of every company. You are never selling based on your brochure or your website or whatever, you are selling because of you, you are your brand."

Interactive media company 3, Honeycomb eligible area

The skill of networking is also held back by resources and our research with the interactive media industry indicates that greater support and facilitation of networking, especially internationally, can assist in overcoming this skills gap. For example:

"Like these missions to San Francisco that Belfast City Council are doing, we are bringing that expertise and experience back here so maybe we are starting to learn a bit more about that VC scene."

Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area

"I made a trip to Boston with Entrepreneurial Spark and I have been able to build a bit of a wider network. Next week I am off to Switzerland with UK Trade and Investment so gradually we are building that network."

Craig Johnstone, chief executive officer and founder, Giglets, western Scotland eligible area
3.2.1.2 SALES AND MARKETING
The second most significant skills gap that emerged from the interactive media survey was around sales and marketing skills. This area emerged as needing improvement most commonly at intermediate to advanced levels. The three specific skill gaps that emerged of concern by the most respondents were international markets, pitching and marketing through social media.

Interviewees across the eligible areas highlight how sales to customers are the bedrock of their business. Unsurprisingly therefore the importance of sales skills also emerged from industry interviews. Some interviewees highlighted how it is not promoted as a career path to young people and needs to be better respected as a profession:

“Nobody wants to go into sales because they think it is a really vulgar profession. In schools they don’t encourage students to go into sales… high value business to business sales, it is a great career for girls, you can make a lot of money in sales… why most businesses fail in their first year of being up and running is because they can’t sell anything because they don’t have anybody that can sell.”
Mary McKenna, chairperson, Digital Circle, Northern Ireland

“It is almost impossible to get sales people here… it is not a particularly well promoted, advertised or encouraged career path for people. If you are a graduate or a secondary school student everybody will say to you to go into a marketing job but nobody will actually say to you actually the smart thing to do is to go into sales and particularly software sales or technology sales of any kind are potentially hugely rewarding, profitable, well paid jobs.”
Paul McElvaney, chief executive officer, Learning Pool, Northern Ireland eligible area

3.2.1.3 FINANCE SKILLS
Finance skills emerged as an issue for over a third of respondents and needing improvement most strongly at advanced levels. The specific finance skills gaps which these respondents agreed were issues are detailed in Figure 3.4. The issue that emerged as most lacking by far was identifying sources of finance, which 84% agreed was a finance skills gap. Just over a third identified accountancy and book keeping and just less than a third identified budget planning as finance skills gaps.

Initiatives such as the Digital Business Academy (see case study, page 64) represent efforts to improve business, marketing and finance skills in digital businesses. These were significant skills issues that emerged from the Honeycomb survey, which underlines the importance of such initiatives.
FIGURE 3.4
Finance skill gaps

- 34% Accountancy and book keeping
- 31% Production managers
- 84% Identifying sources of finance
- 9% Budget planning

BASE: 32 RESPONDENTS

FIGURE 3.5
Interactive media technical skills in need of development

- 69% Knowledge of new technology and platforms
- 38% CGI: 3D/Animation/VFX/Graphic design
- 25% Web/internet design/development
- 16% Editing
- 16% Development of mobile applications
- 25% Computer/Software design
- 19% Computer programming
- 9% Audio/Sound/Music
- 9% Other

BASE: 32 RESPONDENTS
Digital Business Academy

digitalbusinessacademyuk.com

An online learning platform providing free courses developing digital business skills

Launched in November 2014, the Digital Business Academy is an online learning platform that provides digital and business skills for anyone aspiring to start, grow or join a digital business. The platform is an initiative of Tech City UK in partnership with University College London (UCL). The platform is open to anyone based in the UK. Delivered by UCL, Cambridge Judge Business School and Founder Centric, there are eight free online courses to choose from, which take three to six weeks to complete:

- Size up your idea – UCL
- Turn your idea into a digital business – UCL
- Develop and manage a digital product – Founder Centric
- Make a marketing plan – Cambridge Judge Business School
- Build the brand – Cambridge Judge Business School
- Understand digital marketing channels – Founder Centric
- Run a digital marketing campaign – Founder Centric
- Master finance for your business - Cambridge Judge Business School

Completing courses also opens up access to other supports and opportunities. Over 35 organisations are offering rewards and opportunities for participants including paid internships, free training, mentoring, and free start-up support. For example mentoring is available from companies such as Unruly, Ogilvy and Microsoft Ventures. By completing a number of courses applicants can be fast tracked to interview stage for internships with companies such as theAudience, Dizzyjam, TechStars and Tech City UK and for start-up loans with Smarta. Opportunities for co-working and desk space are available from for example Launch22, Microsoft Ventures and Dotforge. Further training can also be accessed such as in social media, public speaking and coding.
Honeycomb – Creative Works.
Graphics by Whitenoise.
3.2.1.4 CRAFT/TECHNICAL SKILLS
Craft/technical skills also emerged as an issue for over a third of respondents and emerged as needing improvement most strongly at advanced levels. These respondents also indicated which technical skills were most in need of development (see Figure 3.5, page 63). The technical skill gap emerging by far as most in need of improvement was knowledge of new technology and platforms. Computer generated imagery (CGI) was identified as a technical skill gap by over a third. A quarter identified both web design/development and development of mobile applications as technical skills gaps. UK Trade and Investment (2013) has also highlighted a challenge for companies in the mobile content business ecosystem is to keep up with constant change, both from a technical and creative perspective.

Linked to the general discussion on skills issues in section 3.1, experience is highly valuable when it comes to technical skills:

As long as individuals are confident you know there is a structure in these languages and when you understand the platforms, it is all about practice too. It is transferable a lot of these languages, but the more experienced they are the less mistakes, you always will get bugs, that is a fact of life.”

Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area

If skills are at a certain level of competence, other more specific skills applicable to a particular company can be more easily learned:

I am not talking about people not having specific programming skills it is just that the general standard of what they are being taught isn’t sufficiently high for a business...if you use particularly niche software you’ll need to teach your programmers that, which is a lot easier if people are at a certain level of competence.”

Mary McKenna, chairperson, Digital Circle, Northern Ireland

Linked to technical skills, the importance of understanding the needs of the end user emerged as important in the interactive media sector. This is developed through time, as for example users engage with interactive content. One of the 20 take-aways highlighted from the 2014 Web Summit was from Cillian Kieran CKSK: “User experience is like fairy dust. Sprinkle it on everything” (HubSpot, 2014). The following interviewee makes a similar point:

One thing that can get missed is user testing, to make sure things are fully tested and all the scenarios are catered for. In the past we have probably have such big changes ...things can fall through the gaps. And you have poor user experiences because of that.”

Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area
3.2.1.5 SOFTWARE SKILLS
Almost a third of respondents identified skills in the use of software as a skill gap in the interactive media sector. Software skills emerged as needing improvement most strongly at advanced levels. Other software packages were cited by over three quarters of respondents, but none in particular clearly emerged as a package where usage skills could be improved. Areas cited included programming, PHP, Google AdWords, advanced HTML and open source platforms.

3.2.1.6 UNDERSTANDING INTELLECTUAL PROPERTY RIGHTS
Over a quarter identified understanding of intellectual property rights as a skills gap and this area emerged as needing improvement at all levels.

3.2.2 LESSER AREAS OF SKILL GAP
3.2.2.1 CREATIVE TALENT SKILLS
Creative talent was the second lowest area of skill gap identified, which one fifth of respondents saw as an area in need of skills development. Of these respondents, over half identified writing and design as specific creative talent skills in need of development. In terms of the level these skills were viewed as needing development at, intermediate to advanced levels were most commonly highlighted.

One thing that can get missed is user testing, to make sure things are fully tested and all the scenarios are catered for. In the past we have probably have such big changes ...things can fall through the gaps. And you have poor user experiences because of that.

Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area

Students studying at Ulster University School of Media, Film and Journalism. Photo by Alan Hook.
Skill gaps in use of software

- HTML5: 30%
- Adobe Photoshop: 23%
- Final Cut Pro: 13%
- After Effects: 10%
- Avid Editing: 7%
- Other: 23%

BASE: 30 RESPONDENTS

Creative talent skills in need of development

- Design: 53%
- Writing: 58%
- Directing: 47%
- Animation: 32%
- Producing: 42%
- Script writing: 16%

BASE: 19 RESPONDENTS
Leadership and management skill gaps

**FIGURE 3.8**

- Reaching audiences in new markets: 79%
- Networking (including international): 64%
- Mid-level management: 43%
- Project management: 43%
- New business models: 43%
- Senior strategic leadership: 21%
- Developing future leaders within the company: 29%
- HR management and training/development planning: 14%
- Other: 14%
- Developing funding models and identifying sources of finance: 43%
- Company sustainability and growth: 50%

BASE: 14 RESPONDENTS
3.2.2.2 LEADERSHIP AND MANAGEMENT SKILLS
Emerging as the lowest area of concern from the Honeycomb interactive media sector survey, leadership and management skills were not identified as a priority area of skills development. Specific leadership and management skills needs were explored with respondents who found this area an issue and reaching audiences in new markets emerged as the greatest skill need.

3.2.3 KEY SKILLS ISSUES AND RECOMMENDATIONS
In this section the central findings emerging from the Honeycomb survey and the industry interviews were presented. Key findings are as follows:

- The quality of skills, experience level of the workforce and competition for skilled staff emerged as issues fundamental to the skills challenge facing the interactive media sector.
- The lack of an experienced workforce emerged as a key recruitment problem for companies.
- Primary and secondary school education needs to catch up with the digital revolution. There is a need for government action implementing digital strategies in schools in the eligible areas and beyond.
- Internships assist companies to work with graduates to develop their experience. However this has advantages and disadvantages for companies and is not an option for all businesses. For internships to go some way to increasing the experience levels of tech graduates the number of opportunities would need to increase as well as financial support to companies providing internships.
- Business skills emerged as the greatest skills gap – 54% of respondents identified it as lacking and needing improvement at intermediate to advanced levels. Networking nationally and internationally was the top business skills deficit. Greater support and facilitation of networking, especially internationally, could assist in overcoming this skills gap.
- Sales and marketing skills were the second greatest skills gap identified and emerged as needing development at intermediate to advanced levels. Three specific sales and marketing skills gaps emerged of most concern and were international markets, pitching and marketing through social media. A strong need for sales skills also emerged from our research interviews and the need for the promotion of sales as a career path.
- Just over a third of respondents identified craft/technical skills as lacking. The technical skills gap emerging by far as most in need of improvement was knowledge of new technology and platforms.
- Just over a third of respondents identified finance skills as lacking and needing improvement at advanced levels. The skill that emerged as most lacking by far was identifying sources of finance.
- Just less than one third of respondents identified skills in the use of software as a skills gap and needing improvement at advanced levels. It was unclear if skills in a particular software were needed, or if skills needed developing in a range of software.

3.3 REGIONAL SKILLS ISSUES
The overall survey results hide differences in skills deficits between the regions in the Honeycomb eligible area. Table 3.2 (page 72) displays the survey results for each area of skill, in each of the eligible areas, rating the severity of each area of skills deficit.
Skills gaps in the Honeycomb eligible area

Relating to the level skills need improvement in Northern Ireland, advanced level skills development was overall a greater concern than improvement of skills at beginner and intermediate levels (see Table 3.3, page 73). Business skills emerged as the most severe skills concern in Northern Ireland and the need for advanced level training emerged as a significant concern. Sales and marketing and finance skills emerged as the next most significant skills concerns and these both emerged as a severe concern for skills development at advanced levels. Skills in the use of software were also a significant skills concern in Northern Ireland and of particular concern to develop skills at advanced levels. Craft/technical skills emerged as a significant skills concern and a concern for improvement particularly at advanced levels. Understanding intellectual property rights emerged as a significant skills concern and was rated as a concern for improvement at all levels.

In the Republic of Ireland border counties, beginner level skills in the range of areas assessed by Honeycomb were not identified as a significant concern in relation to skills improvement (see Table 3.4, page 74). Business skills emerged as the area of greatest concern and improvement at advanced levels as most significant, which almost half of respondents indicated was the level these skills needed improvement. Sales and marketing skills emerged as the second most important area of skill needing improvement and emerged as a significant concern at intermediate, advanced and also all levels. Craft/technical skills were the next most significant skills issue identified, which two fifths cited as a problem. Advanced level emerged as the most significant level at which craft/technical skills needed improvement. One third of respondents identified skills in the use of software as a skills issue and development at advanced levels emerged as a severe concern. Understanding intellectual property rights was also cited as a skills issue for one third of respondents and seen as a skill needing development at all levels by almost two thirds of respondents. Finance skills emerged as a significant concern and most in need of development at intermediate and advanced levels. Creative talent also emerged as a significant concern and needing development at intermediate to advanced levels.

In the interactive media sector on the western seaboard of Scotland, business skills emerged as the area of greatest need in skills development and important at intermediate and advanced levels. One third identified skills in the use of software packages as a skills issue and half said these skills needed improvement at advanced levels. Sales and marketing skills were an issue for just over a quarter of respondents and developing skills at all levels, as well as intermediate levels, emerged as significant concerns. Finance skills emerged as a skills issue for just over a quarter of respondents and intermediate level skills improvement as the greatest specific area of concern. Craft/technical skills emerged as a skills issue for just over a quarter of respondents and advanced level skills improvement as the greatest specific area of concern (see Table 3.5, page 75).
Skills gaps in the Honeycomb eligible area

TABLE 3.2
Skills issues in the Interactive Media sector across the Honeycomb eligible area

<table>
<thead>
<tr>
<th></th>
<th>NORTHERN IRELAND (EXCL. BELFAST AND OUTER BELFAST)</th>
<th>BORDER COUNTIES REPUBLIC OF IRELAND</th>
<th>WESTERN SCOTLAND</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDERSTANDING INTELLECTUAL PROPERTY RIGHTS</td>
<td>29%</td>
<td>33%</td>
<td>11%</td>
<td>27%</td>
</tr>
<tr>
<td>LEADERSHIP AND MANAGEMENT SKILLS</td>
<td>20%</td>
<td>12%</td>
<td>11%</td>
<td>15%</td>
</tr>
<tr>
<td>SALES AND MARKETING SKILLS</td>
<td>40%</td>
<td>55%</td>
<td>28%</td>
<td>44%</td>
</tr>
<tr>
<td>BUSINESS SKILLS</td>
<td>54%</td>
<td>60%</td>
<td>39%</td>
<td>54%</td>
</tr>
<tr>
<td>SKILLS IN USING SOFTWARE PACKAGES</td>
<td>29%</td>
<td>33%</td>
<td>33%</td>
<td>32%</td>
</tr>
<tr>
<td>FINANCE SKILLS</td>
<td>40%</td>
<td>31%</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>CRAFT/TECHNICAL SKILLS</td>
<td>29%</td>
<td>40%</td>
<td>28%</td>
<td>34%</td>
</tr>
<tr>
<td>CREATIVE TALENT</td>
<td>11%</td>
<td>29%</td>
<td>17%</td>
<td>20%</td>
</tr>
</tbody>
</table>

KEY
- **Severe concern 50%-100%**
- **Significant concern 25%-49%**
- **Moderate concern 1%-24%**

BASE: 135 RESPONDENTS, 242 RESPONDENTS, 318 RESPONDENTS, 495 RESPONDENTS.
### TABLE 3.3
Northern Ireland (excl. Belfast and greater Belfast)
Level skills need improving

<table>
<thead>
<tr>
<th>Category</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
<th>All Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding Intellectual Property Rights</td>
<td>0%</td>
<td>10%</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>Leadership and Management Skills</td>
<td>14%</td>
<td>86%</td>
<td>29%</td>
<td>0%</td>
</tr>
<tr>
<td>Sales and Marketing Skills</td>
<td>0%</td>
<td>36%</td>
<td>50%</td>
<td>29%</td>
</tr>
<tr>
<td>Business Skills</td>
<td>5%</td>
<td>21%</td>
<td>42%</td>
<td>32%</td>
</tr>
<tr>
<td>Skills in Using Software Packages</td>
<td>10%</td>
<td>20%</td>
<td>70%</td>
<td>0%</td>
</tr>
<tr>
<td>Finance Skills</td>
<td>0%</td>
<td>29%</td>
<td>79%</td>
<td>7%</td>
</tr>
<tr>
<td>Craft/Technical Skills</td>
<td>0%</td>
<td>10%</td>
<td>80%</td>
<td>10%</td>
</tr>
<tr>
<td>Creative Talent</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

**KEY**
- Severe concern 50%-100%
- Significant concern 25%-49%
- Moderate concern 1%-24%

**BASE:** 10 respondents, 7 respondents, 14 respondents, 19 respondents, 10 respondents, 14 respondents, 10 respondents, 4 respondents.
Skills gaps in the Honeycomb eligible area

**TABLE 3.4**

Border counties Republic of Ireland
Level skills need improving

<table>
<thead>
<tr>
<th></th>
<th>BEGINNER</th>
<th>INTERMEDIATE</th>
<th>ADVANCED</th>
<th>ALL LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDERSTANDING INTELLECTUAL PROPERTY RIGHTS&lt;sup&gt;1&lt;/sup&gt;</td>
<td>7%</td>
<td>14%</td>
<td>14%</td>
<td>64%</td>
</tr>
<tr>
<td>LEADERSHIP AND MANAGEMENT SKILLS&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0%</td>
<td>40%</td>
<td>60%</td>
<td>20%</td>
</tr>
<tr>
<td>SALES AND MARKETING SKILLS&lt;sup&gt;3&lt;/sup&gt;</td>
<td>4%</td>
<td>30%</td>
<td>39%</td>
<td>39%</td>
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<tr>
<td>BUSINESS SKILLS&lt;sup&gt;4&lt;/sup&gt;</td>
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<td>24%</td>
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<td>32%</td>
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<tr>
<td>SKILLS IN USING SOFTWARE PACKAGES&lt;sup&gt;5&lt;/sup&gt;</td>
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<td>29%</td>
<td>71%</td>
<td>7%</td>
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<tr>
<td>FINANCE SKILLS&lt;sup&gt;6&lt;/sup&gt;</td>
<td>15%</td>
<td>38%</td>
<td>38%</td>
<td>31%</td>
</tr>
<tr>
<td>CRAFT /TECHNICAL SKILLS&lt;sup&gt;7&lt;/sup&gt;</td>
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<td>35%</td>
<td>59%</td>
<td>24%</td>
</tr>
<tr>
<td>CREATIVE TALENT&lt;sup&gt;8&lt;/sup&gt;</td>
<td>0%</td>
<td>50%</td>
<td>58%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**KEY**
- **Severe concern** 50%-100%
- **Significant concern** 25%-49%
- **Moderate concern** 1%-24%

Skills gaps in the Honeycomb eligible area

### TABLE 3.5
Western seaboard of Scotland
Level skills need improving

<table>
<thead>
<tr>
<th>Skill Category</th>
<th>Beginner</th>
<th>Intermediate</th>
<th>Advanced</th>
<th>All Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding Intellectual Property Rights¹</td>
<td>0%</td>
<td>0%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Leadership and Management Skills²</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>Sales and Marketing Skills³</td>
<td>20%</td>
<td>43%</td>
<td>20%</td>
<td>40%</td>
</tr>
<tr>
<td>Business Skills⁴</td>
<td>0%</td>
<td>43%</td>
<td>29%</td>
<td>43%</td>
</tr>
<tr>
<td>Skills in using software packages⁵</td>
<td>17%</td>
<td>0%</td>
<td>50%</td>
<td>33%</td>
</tr>
<tr>
<td>Finance Skills⁶</td>
<td>0%</td>
<td>60%</td>
<td>0%</td>
<td>40%</td>
</tr>
<tr>
<td>Craft /Technical Skills⁷</td>
<td>0%</td>
<td>0%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>Creative Talent⁸</td>
<td>0%</td>
<td>0%</td>
<td>33%</td>
<td>67%</td>
</tr>
</tbody>
</table>

**KEY**

- Severe concern 50%-100%
- Significant concern 25%-49%
- Moderate concern 1%-24%

**BASE:** 2 respondents, 7 respondents, 9 respondents, 12 respondents, 15 respondents, 17 respondents, 25 respondents, 33 respondents.
### Skills gaps in the Honeycomb eligible area

#### Business skills needs across the Honeycomb eligible area

<table>
<thead>
<tr>
<th>Skill</th>
<th>Northern Ireland (Excl. Belfast and Outer Belfast)</th>
<th>Border Counties Republic of Ireland</th>
<th>Western Scotland</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing Business Models</td>
<td>21%</td>
<td>40%</td>
<td>43%</td>
<td>33%</td>
</tr>
<tr>
<td>Monetising Content</td>
<td>21%</td>
<td>16%</td>
<td>43%</td>
<td>22%</td>
</tr>
<tr>
<td>Commercial Acumen</td>
<td>47%</td>
<td>44%</td>
<td>86%</td>
<td>51%</td>
</tr>
<tr>
<td>Networking (Including International)</td>
<td>63%</td>
<td>76%</td>
<td>71%</td>
<td>71%</td>
</tr>
<tr>
<td>Identifying Opportunities</td>
<td>63%</td>
<td>52%</td>
<td>57%</td>
<td>57%</td>
</tr>
<tr>
<td>Self-Presentation</td>
<td>26%</td>
<td>24%</td>
<td>29%</td>
<td>25%</td>
</tr>
<tr>
<td>Project Management</td>
<td>21%</td>
<td>16%</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>Multi-Skilling</td>
<td>26%</td>
<td>28%</td>
<td>0%</td>
<td>24%</td>
</tr>
<tr>
<td>Accessing International Markets</td>
<td>42%</td>
<td>52%</td>
<td>43%</td>
<td>47%</td>
</tr>
<tr>
<td>Other</td>
<td>11%</td>
<td>4%</td>
<td>0%</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Key**

- **Severe concern 50%-100%**
- **Significant concern 25%-49%**
- **Moderate concern 1%-24%**

**Base:**
- 19 respondents
- 25 respondents
- 7 respondents
- 51 respondents
Skills gaps in the Honeycomb eligible area

### Table 3.7
Sales and marketing skills needs across the Honeycomb eligible area

<table>
<thead>
<tr>
<th></th>
<th>Northern Ireland (Excl. Belfast and Outer Belfast)</th>
<th>Border Counties Republic of Ireland</th>
<th>Western Scotland</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pitching</strong></td>
<td>43%</td>
<td>65%</td>
<td>40%</td>
<td>55%</td>
</tr>
<tr>
<td><strong>Negotiation</strong></td>
<td>36%</td>
<td>52%</td>
<td>40%</td>
<td>45%</td>
</tr>
<tr>
<td><strong>E-Marketing</strong></td>
<td>36%</td>
<td>48%</td>
<td>40%</td>
<td>43%</td>
</tr>
<tr>
<td><strong>International Markets</strong></td>
<td>79%</td>
<td>52%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Marketing Through Social Media</strong></td>
<td>57%</td>
<td>57%</td>
<td>40%</td>
<td>55%</td>
</tr>
<tr>
<td><strong>Market Research</strong></td>
<td>36%</td>
<td>39%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>14%</td>
<td>17%</td>
<td>0%</td>
<td>14%</td>
</tr>
</tbody>
</table>

**Key**
- Severe concern 50%-100%
- Significant concern 25%-49%
- Moderate concern 1%-24%

**Base:** 14 respondents, 23 respondents, 15 respondents, 42 respondents.
### TABLE 3.8

Finance skills needs across the Honeycomb eligible area

<table>
<thead>
<tr>
<th></th>
<th>NORTHERN IRELAND (EXCL.BELFAST AND OUTER BELFAST)</th>
<th>BORDER COUNTIES REPUBLIC OF IRELAND</th>
<th>WESTERN SCOTLAND</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUDGET PLANNING</td>
<td>29%</td>
<td>31%</td>
<td>40%</td>
<td>31%</td>
</tr>
<tr>
<td>ACCOUNTANCY AND BOOK KEEPING</td>
<td>36%</td>
<td>31%</td>
<td>40%</td>
<td>34%</td>
</tr>
<tr>
<td>PRODUCTION ACCOUNTS</td>
<td>14%</td>
<td>8%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>PRODUCTION MANAGERS</td>
<td>14%</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>IDENTIFYING SOURCES OF FINANCE</td>
<td>93%</td>
<td>85%</td>
<td>60%</td>
<td>84%</td>
</tr>
<tr>
<td>OTHER</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**KEY**
- Severe concern 50%-100%
- Significant concern 25%-49%
- Moderate concern 1%-24%

**BASE:** 14 RESPONDENTS, 13 RESPONDENTS, 5 RESPONDENTS, 32 RESPONDENTS.
Skills gaps in the Honeycomb eligible area

### TABLE 3.9
Interactive media technical skills needs across the Honeycomb eligible area

<table>
<thead>
<tr>
<th></th>
<th>NORTHERN IRELAND (EXCL. BELFAST AND OUTER BELFAST)</th>
<th>BORDER COUNTIES REPUBLIC OF IRELAND</th>
<th>WESTERN SCOTLAND</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPUTER PROGRAMMING</td>
<td>0%</td>
<td>18%</td>
<td>40%</td>
<td>16%</td>
</tr>
<tr>
<td>COMPUTERS/SOFTWARE DEVELOPMENT</td>
<td>0%</td>
<td>24%</td>
<td>20%</td>
<td>16%</td>
</tr>
<tr>
<td>COMPUTER/SOFTWARE DESIGN</td>
<td>0%</td>
<td>29%</td>
<td>20%</td>
<td>19%</td>
</tr>
<tr>
<td>EDITING</td>
<td>10%</td>
<td>6%</td>
<td>0%</td>
<td>6%</td>
</tr>
<tr>
<td>AUDIO/SOUND/MUSIC</td>
<td>0%</td>
<td>18%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>WEB/INTERNET DESIGN/DEVELOPMENT</td>
<td>30%</td>
<td>29%</td>
<td>0%</td>
<td>25%</td>
</tr>
<tr>
<td>CGI: 3D/ANIMATION/VFX/GRAPHIC DESIGN</td>
<td>40%</td>
<td>41%</td>
<td>20%</td>
<td>38%</td>
</tr>
<tr>
<td>KNOWLEDGE OF NEW TECHNOLOGY AND PLATFORMS</td>
<td>70%</td>
<td>82%</td>
<td>20%</td>
<td>69%</td>
</tr>
<tr>
<td>DEVELOPMENT OF MOBILE APPLICATIONS</td>
<td>10%</td>
<td>35%</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>OTHER</td>
<td>0%</td>
<td>6%</td>
<td>0%</td>
<td>3%</td>
</tr>
</tbody>
</table>

**KEY**
- **Severe concern 50%-100%**
- **Significant concern 25%-49%**
- **Moderate concern 1%-24%**

BASE: 110 RESPONDENTS, 17 RESPONDENTS, 35 RESPONDENTS, 432 RESPONDENTS.
Skills gaps in the Honeycomb eligible area

### TABLE 3.10
Skill needs in the use of software across the Honeycomb eligible area

<table>
<thead>
<tr>
<th>Software</th>
<th>Northern Ireland (Excl. Belfast and Outer Belfast)</th>
<th>Border Counties Republic of Ireland</th>
<th>Western Scotland</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe Photoshop</td>
<td>20%</td>
<td>29%</td>
<td>17%</td>
<td>23%</td>
</tr>
<tr>
<td>Avid Editing</td>
<td>0%</td>
<td>7%</td>
<td>17%</td>
<td>7%</td>
</tr>
<tr>
<td>Final Cut Pro</td>
<td>10%</td>
<td>7%</td>
<td>33%</td>
<td>13%</td>
</tr>
<tr>
<td>After Effects</td>
<td>0%</td>
<td>7%</td>
<td>33%</td>
<td>10%</td>
</tr>
<tr>
<td>HTML5</td>
<td>40%</td>
<td>29%</td>
<td>17%</td>
<td>30%</td>
</tr>
<tr>
<td>Other</td>
<td>80%</td>
<td>86%</td>
<td>50%</td>
<td>77%</td>
</tr>
</tbody>
</table>

**Key**
- **Severe concern 50%-100%**
- **Significant concern 25%-49%**
- **Moderate concern 1%-24%**

**Base:** 10 respondents, 14 respondents, 6 respondents, 30 respondents.
Filming as part of the Honeycomb – Creative Works two day workshop with BAFTA award winning filmmaker Philip Bloom, Giant’s Causeway, Northern Ireland. Photo by Mervyn McKay.
3.3.1 KEY AREAS OF SKILL GAP

3.3.1.1 BUSINESS SKILLS
The most significant skills concern overall from the Honeycomb survey were business skills, which over half identified as a skills issue. Comparison of specific business skills needs within each eligible area shows two areas of common need, national and international networking and identifying opportunities, emerging as a severe concern across all of the eligible areas (see Table 3.6, page 76). Another significant pattern of note in western Scotland was that commercial acumen also emerged as a severe business skill concern.

3.3.1.2 SALES AND MARKETING SKILLS
Overall from the Honeycomb survey, over two fifths identified sales and marketing skills as a skills issue. When specific sales and marketing skills were assessed, market research emerged as a severe area of need in western Scotland. International markets and marketing through social media were severe concerns in both the Republic of Ireland and Northern Ireland. In addition pitching and negotiation emerged as severe concerns the Republic of Ireland.

3.3.1.3 FINANCE SKILLS
Just over a third of respondents overall identified finance skills as an area of skill needing development. The particular area of skill in need was clear across all of the eligible areas, which was identifying sources of finance. This emerged as a severe concern across all areas. In addition to this budget planning, accountancy and book keeping were significant concerns across all areas.

3.3.1.4 CRAFT/TECHNICAL SKILLS
Over a third of respondents in the interactive media sector overall in the Honeycomb eligible area identified craft/technical skills as a skills gap. Knowledge of new technology and platforms emerged as a severe concern in both Northern Ireland and the Republic of Ireland.

3.3.1.5 SKILLS IN THE USE OF SOFTWARE
Just under a third of respondents overall identified skills in the use of software as a skills issue for their business. The particular software in which skills training is needed was not clear. Among the five areas the interactive media sector were asked directly about HTML5 was identified as most in need. However a range of other software was also highlighted including the general areas of programming, web design, open source platforms, coding such as PHP as well as software packages such as AutoCAD, Adobe Premier, Da Vinci Resolve, Nuke and InDesign.
Skills gaps in the Honeycomb eligible area

TABLE 3.11
Creative talent skills needs across the Honeycomb eligible area

<table>
<thead>
<tr>
<th></th>
<th>NORTHERN IRELAND (EXCL. BELFAST AND OUTER BELFAST)</th>
<th>BORDER COUNTIES REPUBLIC OF IRELAND</th>
<th>WESTERN SCOTLAND</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRECTING</td>
<td>0%</td>
<td>25%</td>
<td>0%</td>
<td>16%</td>
</tr>
<tr>
<td>SCRIPT WRITING</td>
<td>75%</td>
<td>50%</td>
<td>0%</td>
<td>47%</td>
</tr>
<tr>
<td>WRITING</td>
<td>50%</td>
<td>75%</td>
<td>0%</td>
<td>58%</td>
</tr>
<tr>
<td>PRODUCING</td>
<td>50%</td>
<td>42%</td>
<td>33%</td>
<td>42%</td>
</tr>
<tr>
<td>DESIGN</td>
<td>25%</td>
<td>58%</td>
<td>67%</td>
<td>53%</td>
</tr>
<tr>
<td>PERFORMING</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>ANIMATION</td>
<td>50%</td>
<td>33%</td>
<td>0%</td>
<td>32%</td>
</tr>
<tr>
<td>OTHER</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

BASE: 14 RESPONDENTS, 12 RESPONDENTS, 33 RESPONDENTS, 49 RESPONDENTS.
Note: Because of the low overall response rates, these results have not been rated as severe, significant or moderate.
3.3.2 LESSER AREAS OF SKILL GAP

3.3.2.1 CREATIVE TALENT
Creative talent was identified by one fifth overall as a skills issue, the second lowest among the skills issues examined. Design emerged as a concern of note in the Republic of Ireland and Scotland (see Table 3.11, page 83).

3.3.2.2 LEADERSHIP AND MANAGEMENT
Overall leadership and management emerged as the lowest area of concern in terms of skills gaps in the interactive media sector. The results of the Honeycomb survey, based on low numbers of respondents that rated leadership and management skills as an issue, are presented in Table 3.12.

3.3.3 KEY SKILLS ISSUES AND RECOMMENDATIONS AT THE REGIONAL LEVEL
Across all of the eligible areas concerns around skills deficits in the interactive media sector were identified from the Honeycomb survey. This final section summarises the central areas of concern emerging from the Honeycomb survey.

- Comparing the severity of skills issues in each area, the Republic of Ireland border countries emerged as the area of most severe perceived skills deficit in the interactive media sector. In the Republic of Ireland two skills issues were rated severe concerns, five significant and one moderate, while in Northern Ireland one skills issue was rated a severe concern, five significant and two moderate. In western Scotland none were rated severe, five were rated significant and three as moderate concerns.

- Business skills emerged as the top skills deficit in the interactive media sector in the three eligible areas. The results are rated as a severe concern in Northern Ireland and the Republic of Ireland and as a significant concern in western Scotland.

- Sales and marketing skills emerged as a severe concern in the Republic of Ireland border counties and as significant concern in Northern Ireland and western Scotland.

- Finance skills, skills in the use of software packages and craft/technical skills were identified as a significant concern across all areas.

- Understanding intellectual property rights emerged as a significant concern in the Republic of Ireland and Northern Ireland areas, but a moderate concern in western Scotland.
Skills gaps in the Honeycomb eligible area

### TABLE 3.12
Leadership and management skills needs across the Honeycomb eligible area

<table>
<thead>
<tr>
<th></th>
<th>NORTHERN IRELAND (EXCL. BELFAST AND OUTER BELFAST)¹</th>
<th>BORDER COUNTIES REPUBLIC OF IRELAND²</th>
<th>WESTERN SCOTLAND³</th>
<th>OVERALL⁴</th>
</tr>
</thead>
<tbody>
<tr>
<td>SENIOR STRATEGIC LEADERSHIP</td>
<td>71%</td>
<td>40%</td>
<td>100%</td>
<td>64%</td>
</tr>
<tr>
<td>HUMAN RESOURCE MANAGEMENT AND</td>
<td>14%</td>
<td>40%</td>
<td>0%</td>
<td>21%</td>
</tr>
<tr>
<td>TRAINING/DEVELOPMENT PLANNING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEVELOPING FUNDING MODELS /</td>
<td>43%</td>
<td>20%</td>
<td>100%</td>
<td>43%</td>
</tr>
<tr>
<td>IDENTIFYING FINANCE SOURCES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMPANY SUSTAINABILITY AND</td>
<td>43%</td>
<td>60%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>GROWTH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEW BUSINESS MODELS</td>
<td>57%</td>
<td>0%</td>
<td>100%</td>
<td>43%</td>
</tr>
<tr>
<td>REACHING AUDIENCES IN NEW</td>
<td>71%</td>
<td>80%</td>
<td>100%</td>
<td>79%</td>
</tr>
<tr>
<td>MARKETS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETWORKING (INCLUDING</td>
<td>43%</td>
<td>40%</td>
<td>0%</td>
<td>36%</td>
</tr>
<tr>
<td>INTERNATIONAL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MID-LEVEL MANAGEMENT</td>
<td>29%</td>
<td>0%</td>
<td>50%</td>
<td>21%</td>
</tr>
<tr>
<td>PROJECT MANAGEMENT</td>
<td>43%</td>
<td>40%</td>
<td>50%</td>
<td>43%</td>
</tr>
<tr>
<td>DEVELOPING FUTURE LEADERS</td>
<td>43%</td>
<td>0%</td>
<td>50%</td>
<td>29%</td>
</tr>
<tr>
<td>WITHIN THE COMPANY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td>14%</td>
<td>20%</td>
<td>0%</td>
<td>14%</td>
</tr>
</tbody>
</table>

BASE: ¹7 RESPONDENT, ²5 RESPONDENTS, ³2 RESPONDENTS, ⁴14 RESPONDENTS.

Note: Because of the low overall response rates, these results have not been rated as severe, significant or moderate.
Development challenges in the Honeycomb eligible area

4.1 CHALLENGES

Honeycomb assessed industry views on the challenges facing growth of the interactive media sector in the next five years (see Figure 4.1, page 89). Key challenges for each region are explored in sections 4.2, 4.3 and 4.4.

Overall, the two top issues that emerged were an ability to innovate and respond to customer and market needs as well as access to funding. Outside of the challenges respondents were specifically asked about, a range of other challenges were highlighted. Highest among those cited were competition and poor or lack of broadband. Other challenges also of note were the downturn in the economy, keeping up with rapid changes in new technology and expanding their customer base.

Access to funding emerged as a significant issue impacting business growth. From the Honeycomb survey, almost two thirds of respondents identified access to funding as a challenge. Industry interviews also further reveal how finance and funding is important. Entrepreneurs differ in their attitude to grant funding. Some see it as a distraction for the business, taking them away from the key job of increasing their client base. For example some highlight how applying for grants is time consuming and may not bear fruit:

"I am over that one really, I think now we would fund it ourselves rather than sort of go asking because it is a very long process and then you are sort of beholden to people... I think it is a distraction."

Gary Carruthers, co-founder, Underwaterpistol, Northern Ireland

Not applying for grants, or an absence of grants, could lead a company to be more sales focused, as the following comments illustrate:

"The people with money are your clients. The only money that we ever took from anyone was a very small investment from Enterprise Ireland from the Company Start Fund. We were also on a business accelerator, we got a bit of money from them as well, but again that was very small money. So essentially what has been driving our company and growth since the inception are clients."

Interactive media company 3, Honeycomb eligible area

"I'd rather spend the time trying to get more customers than filling out forms and filling them out again and then spending a day in the office with [the funder] sitting beside you in the office for half a day. I'd rather just make sales to customers. It is a better use of time."

Mary McKenna, chairperson, Digital Circle, Northern Ireland
We have looked for so long for funding that it has stifled the company. A lot of our time is spent on looking for funding. It has kind of slowed us down. If there was a facility that helped young companies when they look for investment, so they don’t lose sight of running the day to day business.

Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area
Emerging from industry interviews is not simply a need for greater levels of grant funding, but a more diverse finance and funding environment. This could encompass a stronger investment scene and higher value low cost loans available to smaller companies. For example in relation to loan funds, the following comments are made:

“I would say there is not an adequate level of funding, on lots of levels. If you look at loan funding for example...the west of Scotland loan fund, you can get £100,000 payable back over seven years, that is the maximum I think, at a rate of about 7% per annum. It’s relatively cheap money. But the next closest loan availability as far as I understand is I think the Scottish Loan Fund which requires £1 million of turnover. They will give you I think upwards of £1 million of a loan but it will cost you something like 7% to do that.”

Interactive media company 1, Honeycomb eligible area

The techUK manifesto for growth and jobs highlights a lack of high growth scaling companies in the UK tech sector. This is linked to the nature of the investor scene: “the UK investor community is not perceived to understand and support tech as well as the US investor community” (Walker and Holloway, 2014: 15). The Scaling Up research referenced earlier in this report also highlights a strong business start-up environment exists, but the need for these companies to achieve scale (Coutu, 2014). In interviews with industry in the Honeycomb eligible area the need for a stronger investment scene also emerges, for example:

“But on the investment side I think, I mean there are investors that are investing definitely there is no question of that but the calibre of those investors and the level of what they are willing to invest I don’t think it is where it needs to be. If you are using world class as a benchmark it is not there.”

Interactive media company 1, Honeycomb eligible area

“[In my experience, the investment scene in Northern Ireland is not as active as it should be. Start-ups are struggling to raise the finances required to grow a successful business. There are not many investors here that would write you a cheque for half a million, whereas the VC scene in America is very different, the culture is different. In Northern Ireland there is this feeling that it’s too big of a risk, whereas if you are somewhere else the bigger the risk, the bigger the reward, that’s the difference in culture. We have good companies from Northern Ireland, now having to move to the US to be able to grow their company. Hopefully in the future it will be different].”

Interactive media company 2, Honeycomb eligible area

Internationally initiatives such as Techstars (see case study, page 43) has supported mentoring and investment in innovative start-ups. Attracting similar initiatives to the eligible areas could facilitate a more supportive environment to start-up growth. Our research also revealed that entrepreneurs see improvements and in Northern Ireland, the development of Techstart NI is one example of this (see case study, page 93).
Over two fifths of Honeycomb survey respondents indicated that market access was a challenge facing business growth. A number of industry interviewees highlighted the importance of supports that facilitate international market access. For example, business accelerator programmes and government agencies can provide ways into international markets, for example to connect with potential investors, build networks and assist in overcoming resource barriers, as the following comments illustrate:

"Because of the accelerator I am involved in… I have been able to get some really good engagement internationally…but there are challenges, cash, human resource and technical to an extent. To scale your product internationally, even though digital makes it easier, you still have to think about different time zones and how you are going to support that.”

Craig Johnstone, chief executive officer and founder, Giglets, western Scotland eligible area

FIGURE 4.1
Challenges facing business growth over next five years

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention of skilled staff</td>
<td>21%</td>
</tr>
<tr>
<td>Access to local markets</td>
<td>25%</td>
</tr>
<tr>
<td>Access to markets</td>
<td>42%</td>
</tr>
<tr>
<td>Recruitment of skilled staff</td>
<td>45%</td>
</tr>
<tr>
<td>Access to funding</td>
<td>62%</td>
</tr>
<tr>
<td>Ability to innovate/ responding to customer/ market needs</td>
<td>63%</td>
</tr>
</tbody>
</table>

BASE: 95 RESPONDENTS
Development challenges in the Honeycomb eligible area

Belfast City Council gave us some funding to travel to San Francisco last year, which was amazing. Any opportunities to go to Silicon Valley, San Francisco, or New York, where the investment scene is good would be great.”

Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area

4.1.1 MEMBERSHIP OF NETWORKS AND TRADE ASSOCIATIONS

In the Honeycomb region overall, 71% of the interactive media sector surveyed said they were not a member of, or affiliated to, an existing creative industries network, trade association or other business network. The 29% that were members of organisations and networks also indicated the organisations they were members of, which are summarised in Table 4.1

Industry interviews revealed that membership fees can discourage entrepreneurs from joining organisations when they don’t identify a valuable return for that fee. A number of industry driven networks were identified as important to facilitate networking informally and improve the profile of the industry, such as Digital Circle in Northern Ireland and Digital Dundalk in the Republic of Ireland. However, these organisations and other informal networks appear reliant on voluntary input. For example:

“I would be active in the web community, Refresh Belfast... Feedback Friday, Friday Night Mash-up. Also the Build Conference... These are an opportunity for the web community, or digital people, to come together, network, have few beers or whatever, it’s quite a good community... it’s very volunteer oriented.”

Danny Turley, chief executive officer, Performa Sports, Northern Ireland eligible area

This also however places resource limitations on these organisations, limiting their scope. Individuals that are motivated and passionate about helping to drive the tech industry forward feel their efforts are very important, but greater resourcing would allow for their stronger development. For example:

“Digital Circle is a really worthwhile organisation that is aimed at helping the people that are just starting out...it helps them find each other, collaborate, work together, but we haven’t had any support from government now for about three years. It is all done with voluntary resources...We started a steering group; we are all people who have started up digital businesses. We all do what we can because it is too important not to.”

Mary McKenna, chairperson, Digital Circle, Northern Ireland
Digital Dundalk is voluntary... It seemed like it would have had potential to keep going and had momentum but this has dried up a bit since... when it first set up, it was like a networking group. They had a website, you could register, give your skillset and a little bit of bio. People would talk to each other and run ideas past each other. It was all collaborative and open."

Killian Walsh, founder, Grandson, Republic of Ireland eligible area

4.1.2 COLLABORATION AND NETWORKING
UK Trade and Investment (2013) highlight how collaboration across sectors is important to fuel a more successful interactive content media market. Talent nurtured in one sector, such as games, could potentially provide more experienced workers for the wider interactive media sector down the line. It states: “To succeed in the mobile content market companies are realising that they require experienced content developers, with tested design and interaction skills, as well as a good partnerships across traditional and new media sectors. The UK’s expertise in other interactive content sectors such as games has provided a ready-made talent pool to fuel the growth of the mobile content sector” (UK Trade

<table>
<thead>
<tr>
<th>TYPE OF ORGANISATION/NETWORK</th>
<th>EXAMPLES OF ORGANISATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal networks</td>
<td>Donegal Business Network</td>
</tr>
<tr>
<td></td>
<td>Digital Dundalk</td>
</tr>
<tr>
<td></td>
<td>Business Network International</td>
</tr>
<tr>
<td></td>
<td>Digital Derry</td>
</tr>
<tr>
<td></td>
<td>Banbridge Network</td>
</tr>
<tr>
<td>Creative industry and other business organisations</td>
<td>Digital Circle</td>
</tr>
<tr>
<td></td>
<td>Chamber of Commerce</td>
</tr>
<tr>
<td></td>
<td>Federation of Small Business</td>
</tr>
<tr>
<td></td>
<td>Screen Facilities Scotland</td>
</tr>
<tr>
<td></td>
<td>Visual Ireland</td>
</tr>
<tr>
<td></td>
<td>Independent Broadcasters of Ireland</td>
</tr>
<tr>
<td></td>
<td>Donegal Enterprise Board</td>
</tr>
<tr>
<td></td>
<td>Business in the Community</td>
</tr>
<tr>
<td></td>
<td>Institute of Designers in Ireland</td>
</tr>
<tr>
<td></td>
<td>Institute of Electronic and Electrical Engineers</td>
</tr>
<tr>
<td></td>
<td>International Visual Communications Association</td>
</tr>
<tr>
<td></td>
<td>Sligo Arts</td>
</tr>
<tr>
<td></td>
<td>Irish Linen Guild</td>
</tr>
<tr>
<td></td>
<td>Producers Alliance for Cinema and Television</td>
</tr>
<tr>
<td>Other organisations</td>
<td>Northern Ireland Screen</td>
</tr>
<tr>
<td></td>
<td>Generator NI</td>
</tr>
<tr>
<td></td>
<td>Invest NI</td>
</tr>
<tr>
<td></td>
<td>Creative State North West</td>
</tr>
</tbody>
</table>
Launched in July 2014, techstart NI is a £23.6 million funding support programme for seed and early stage technology businesses and university spin-outs in Northern Ireland. Established by Invest Northern Ireland as part of its 'access to finance' strategy, techstart NI is part financed by the European Regional Development Fund through the Investment Growth and Jobs Programme. It will operate for 10 years, managed on a commercial basis by Pentech Ventures LLP.

techstart NI includes two university funds of £1.5 million each, a SME equity fund worth £13 million and a proof of concept grant fund worth £7.6 million. The SME equity fund supports investments in early-stage innovative tech start-ups providing initial investments of between £50,000 and £250,000. Proof of concept grants come in two forms, concept grants of up to £10,000 and pathfinder grants of up to £40,000. An investment awareness programme is also part of the initiative and will provide support for entrepreneurs to assist overcoming issues when putting business ideas into practice.
Development challenges in the Honeycomb eligible area

and Investment, 2013: 14). The Honeycomb survey results relating to collaboration and potential for collaboration between the interactive media sector and other sectors of digital creative industries are detailed in Table 4.2. A good level of collaboration between interactive media companies was identified, with just over half stating they collaborate. However, high levels don’t collaborate with other creative industry companies, such as in TV, animation and game design. Better collaboration across sectors is important for future growth and development. High potential for collaboration was however found to exist between interactive media and TV, animation and facilities for TV and film. Over a third also said there was potential for collaboration for the interactive media sector with computer game design and music technology.

Honeycomb also assessed collaboration and collaboration potential between the interactive media sector and other creative companies in specific areas of work (see Table 4.3, page 96). Overall, high levels don’t collaborate in specific areas of work such as product development and content creation. However a high potential for collaboration in specific areas of work was found.

Interactive media companies also appear to network to access particular supports and services (see Figure 4.2, page 98). The results of the Honeycomb survey indicated the predominant reason for networking was to access the latest technological developments, which over two thirds of respondents agreed was a reason for networking. More than half cited access to market intelligence as a service they hoped to gain from networking. Also significant was access to finance (43%) and product or service development (44%).

Collaboration and networking is important for business growth and sustainability. Collaboration is also important to facilitate small and micro scale businesses to take on work that is outside of their internal resource base and compete in a marketplace with larger companies. For example the following comments help to illustrate this point:

“It is hard, if you are a small business and you are working on a contract...but if you are a bigger business you can hold down three, four, five long term contracts because you have the scale to do it... If you are small, micro, you can’t do that...When you are small you can’t really do it like that because when you end up with projects that are so small, you do them, you finish them and you have got to get on with another one. So you end up that you don’t do anything long-term.”

Chris Mitchell, developer, Cànan, western Scotland eligible area

But local markets can also be competitive. Collaboration can become challenging as your competitors are also your collaborators:

“Businesses in rural areas have an opportunity to collaborate with each other to achieve higher goals but they are often wary of doing so because they compete with one another for smaller projects in their local area.”

Chris Mitchell, developer, Cànan, western Scotland eligible area
Development challenges in the Honeycomb eligible area

### TABLE 4.2
Collaboration and potential for collaboration: interactive media and other digital creative industry companies

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CURRENTLY COLLABORATE</th>
<th>DO NOT COLLABORATE</th>
<th>POTENTIAL FOR COLLABORATION</th>
<th>NO POTENTIAL FOR COLLABORATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>22%</td>
<td>78%</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>FILM</td>
<td>17%</td>
<td>83%</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>INTERACTIVE MEDIA</td>
<td>51%</td>
<td>49%</td>
<td>81%</td>
<td>19%</td>
</tr>
<tr>
<td>ANIMATION</td>
<td>20%</td>
<td>80%</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>FACILITIES FOR TV AND FILM</td>
<td>26%</td>
<td>74%</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>RADIO</td>
<td>7%</td>
<td>93%</td>
<td>21%</td>
<td>79%</td>
</tr>
<tr>
<td>COMPUTER GAME DESIGN</td>
<td>5%</td>
<td>95%</td>
<td>39%</td>
<td>61%</td>
</tr>
<tr>
<td>MUSIC AND MUSIC TECHNOLOGIES</td>
<td>18%</td>
<td>82%</td>
<td>34%</td>
<td>66%</td>
</tr>
</tbody>
</table>

**KEY**
- High levels 50% - 100%

**BASE: 95 RESPONDENTS**
### Table 4.3
Collaboration and potential for collaboration: the interactive media sector and other creative industry companies in specific areas

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENTLY COLLABORATE</th>
<th>DO NOT COLLABORATE</th>
<th>POTENTIAL FOR COLLABORATION</th>
<th>NO POTENTIAL FOR COLLABORATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT DEVELOPMENT</td>
<td>17%</td>
<td>83%</td>
<td>63%</td>
<td>37%</td>
</tr>
<tr>
<td>RESEARCH AND DEVELOPMENT</td>
<td>15%</td>
<td>85%</td>
<td>57%</td>
<td>43%</td>
</tr>
<tr>
<td>DISTRIBUTION CHANNELS</td>
<td>11%</td>
<td>89%</td>
<td>39%</td>
<td>61%</td>
</tr>
<tr>
<td>JOINT MARKETING</td>
<td>22%</td>
<td>78%</td>
<td>58%</td>
<td>42%</td>
</tr>
<tr>
<td>CONTENT CREATION</td>
<td>18%</td>
<td>82%</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>INTELLECTUAL PROPERTY</td>
<td>14%</td>
<td>86%</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>OTHER AREAS</td>
<td>1%</td>
<td>99%</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**BASE: 95 RESPONDENTS**

**KEY**  
- Pale Brown: High levels 50% - 100%
Industry interviews also illuminate the benefits of networking and collaboration. It can improve awareness of talent and the structure of the industry locally. For example, two interviewees describe insights they gained from involvement in local networking groups:

"With Digital Dundalk, there is a website and events...also part of what came out of it for me was that I didn't realise how strong the coding and development resources were up in DKIT...they had Coder Dojo stuff they used to do every week with kids...and it is one of the biggest robotics colleges in Ireland teaching computing, which is amazing."

Killian Walsh, founder, Grandson, Republic of Ireland eligible area

"You would have never thought that in a bleak area like this you would have so many people interested in digital and doing projects in the digital space."

Interactive media company 3, Honeycomb eligible area

Networking and collaboration can be more challenging for less centrally located companies than those in well-established clusters. Building networks can take more resources and time to establish, for example as this interviewee describes:

"In a rural place you are a lot further away from people, you have to go on the road a lot and travel. What is really quite risky in a rural place is that if you lose your connections it is hard to make new ones...and if the scene changes somewhere else, you know you have invested so much time and effort to get in contact with people and work with people."

Chris Mitchell, developer, Cànan, western Scotland eligible area

"The network in Northern Ireland is pretty easy in so far as people tend to be very accessible...the downside of that is the network isn't huge the depth of experience, certainly around online learning is pretty shallow really. For us the network in the UK is more important. The elearning fraternity is very well established in the UK. As a Northern Ireland based company we are certainly the outsiders. We are not in Brighton having a beer with competitors after work. We are not visible in that respect so we probably do have to work a bit harder on that."

Paul McElvaney, chief executive officer, Learning Pool, Northern Ireland eligible area

When one region establishes itself in an area, focus can be drawn to it. Existing clusters can be strong competition to innovation of a more dispersed nature in more peripheral areas, for example:

"There is also a perception that Dundee is the digital hub, like with the gaming industry, I mean it is a hub but I don't think it is the be all and end all."

Craig Johnstone, chief executive officer and founder, Giglets, western Scotland eligible area
<table>
<thead>
<tr>
<th>Service</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership and management</td>
<td>5%</td>
</tr>
<tr>
<td>Skills training</td>
<td>14%</td>
</tr>
<tr>
<td>Access to finance</td>
<td>43%</td>
</tr>
<tr>
<td>Export development support</td>
<td>7%</td>
</tr>
<tr>
<td>Business mentoring</td>
<td>19%</td>
</tr>
<tr>
<td>Product or service development</td>
<td>44%</td>
</tr>
<tr>
<td>Other</td>
<td>11%</td>
</tr>
<tr>
<td>Sales and marketing support</td>
<td>23%</td>
</tr>
<tr>
<td>Access to market intelligence</td>
<td>52%</td>
</tr>
<tr>
<td>Access to the latest technological developments</td>
<td>64%</td>
</tr>
</tbody>
</table>

BASE: 95 RESPONDENTS
Entrepreneurs do however see value in working to develop a sense of a hub around their own location, but this does not happen easily:

“People like Interactive Scotland do a good job in pulling digital businesses together but I don’t know, it is not Interactive Scotland’s fault… What I find lacking in the west coast of Scotland…is how we integrate and engage with each other as businesses. Maybe as well it’s because there is a relatively small pool in the area.”

Gary Morrison, creative director, Monkey6ix Media, western Scotland eligible area

The qualitative evidence discussed above illustrates the importance of and difficulties encountered in collaboration and networking in the Honeycomb eligible areas. The Honeycomb survey results show generally low levels of collaboration between interactive media and the broader digital content industries, but significant potential for collaboration in some areas (Table 4.2 and 4.3, pages 95 and 96). Initiatives that assist interactive media companies to meet and network in the eligible areas help to generate a local buzz and culture. One interviewee for example describes their aspirations for this in their locality:

“I have tried to set up a creative network, I had an initial event with Ayrshire Business Gateway and we had about 60 people at it, but it just kind of fizzled out after a month or two. But there is a need for a more industry specific networking community in Ayrshire, the west of Scotland.”

Gary Morrison, creative director, Monkey6ix Media, western Scotland eligible area

Digital Dundalk… DKIT is a good resource and there is Coder Dojo…we just need to try and push it a bit more. Get it a bit less Dublin focused… it is an epic-entre of all this stuff and just to try and shift the angle… just to create more of a scene here I think… if you are a graduate or you are a student in Dundalk and you are not in that environment. In Dublin or Belfast you can walk into a studio and see how they operate or go to a gallery and pick up a brochure that some designer has just made and be proactively looking to see how the cogs are turning. I think there’s not really an outlet for that in Dundalk.”

Killian Walsh, founder, Grandson, Republic of Ireland eligible area
Development challenges in the Honeycomb eligible area

4.1.3 COLLABORATION OUTSIDE CREATIVE INDUSTRIES
Outside of creative industries, the interactive media sector was also asked about other sectors they worked in (see Table 4.4). Work outside of creative industries in areas such as health, education and sport was not common and high levels were not currently working in these areas, nor had an interest in work in these areas.

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CURRENTLY WORKING</th>
<th>NOT CURRENTLY WORKING</th>
<th>AREA WOULD LIKE TO WORK IN</th>
<th>AREA WOULD NOT LIKE TO WORK IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>14%</td>
<td>86%</td>
<td>9%</td>
<td>91%</td>
</tr>
<tr>
<td>EDUCATION</td>
<td>19%</td>
<td>81%</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>SPORT</td>
<td>6%</td>
<td>94%</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>OTHER</td>
<td>22%</td>
<td>78%</td>
<td>25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

BASE: 95 RESPONDENTS

Wider research and Honeycomb’s qualitative research with the interactive media industry also supports the key role of broadband in supporting the development of the sector. In its manifesto for jobs and growth, techUK highlights recent improvements in digital communications infrastructure, however also that gaps still exist (Walker and Holloway, 2014). The importance of a quality, reliable broadband connection is clear from Honeycomb’s interviews with industry.

4.1.4 INFRASTRUCTURAL IMPEDIMENTS
Honeycomb also sought to understand what infrastructural impediments to growth faced the interactive media sector (see Figure 4.3, page 103). The most significant infrastructural impediment was broadband capacity, which 42% cited as an issue. Other issues received low responses signalling that legal, regulatory and transport infrastructure may not be significant impediments to the development of the interactive media sector in the Honeycomb eligible areas.
The quality of broadband impacts on where businesses choose to locate, as well as their choice to relocate. For example:

“It’s ok, we are quite fortunate because we are part of the incubator. They have got a really good network set up there. The quality is good, but if I was in a wee office down the road I would imagine it would be a bit different.”

Craig Johnstone, chief executive officer and founder, Giglets, western Scotland eligible area

That is a major issue for us. The broadband that I am getting in the office is 1Mb download and 65Kb upload speed which is horrendous if you are trying to do a lot of digital work… I am looking at another office premises that would give us access to fibre broadband, it is not moving too far from where we are now.”

Gary Morrison, creative director, Monkey6ix Media, western Scotland eligible area

Also emerging from industry interviews was the importance of low rent office space for start-ups, which can be a barrier. For example, this interviewee explains:

“It is about the spirit of doing something… if you start a business there is no money coming in… start charging rent and that already puts people off… infrastructure is being created to facilitate businesses and start-ups but a lot of the problems are to do with the fact that you can’t actually get a person in a room to do something.”

Chris Mitchell, developer, Cànán, western Scotland eligible area

We couldn’t run the business without a decent connection.”

Gary Carruthers, co-founder, Underwaterpistol, Northern Ireland

Stimulating a facilitative start-up ecosystem appears to be important in supporting the future growth of the sector. Affordable co-working spaces are an important part of a strong start-up culture. London’s Tech City for example is rich with co-working spaces and one interviewee describes how they use a co-working space there and also absorb the positive atmosphere that goes along with being partly London based:

“Our virtual office… it is a shared office space so I can spend so many hours per month there and I can also hire meeting rooms if required… it is quite a modest outlay… London is just flying along, it just seems to be so self-sufficient… full of ideas. It is a bit of a tonic going over there. I am always glad I am there because it just sort of rubs off on you, the sort of enthusiasm, the can-do approach to business.”

Gary Carruthers, co-founder, Underwaterpistol, Northern Ireland
4.1.5 KEY DEVELOPMENT CHALLENGES AND RECOMMENDATIONS

The central challenges emerging from this research that may limit the growth of the interactive media sector in the eligible areas are summarised in this section. Some ways to assist overcoming these problems are also suggested.

- Overall, the greatest challenge facing business growth over the next five years emerging from the Honeycomb survey was an ability to innovate/respond to customer and market needs.
- The next greatest challenge facing business growth over the next five years emerged as access to funding.
- Internationally, initiatives such as Techstars have supported mentoring and investment in innovative start-ups. Attracting similar initiatives to the eligible areas could facilitate a more supportive environment to start-up growth.
- Being part of a strong network and continually building networks, locally, nationally and internationally is vital to support the growth of the interactive media sector. Networking and collaboration can be more challenging for less centrally located companies than those in well-established clusters. Better support for interactive media networking groups and financial support for companies to network is important to support the future growth of the sector.
- Better provision of co-working spaces, where low rent office spaces are available in cities and large towns in the eligible areas, could also facilitate business start-ups and networking.
- 71% of the interactive media sector surveyed indicated they were not a member of, or affiliated to, an existing creative industries network, trade association or other business network.
- A good level of collaboration between interactive media companies was identified, with just over half stating they collaborate. However, high levels don’t collaborate with other creative industry companies, such as in TV, animation and game design. Better collaboration across sectors is important for future growth and development.
- High potential for collaboration was found to exist between interactive media and TV, animation and facilities for TV and film. Over a third also said there was potential for collaboration with computer game design and music technology.
- High levels don’t collaborate in specific areas of work such as product development and content creation. However broadly speaking, a high potential for collaboration in specific areas of work was found.
- Interactive media companies network to access particular benefits and the most predominant reason for networking was to access the latest technological developments.
- Work outside of creative industries in areas such as health, education and sport was not common and high levels were not currently working in these areas, nor had an interest in work in these areas.
- The most significant infrastructural impediment was broadband capacity, which 42% cited as an issue. A quality, reliable broadband infrastructure is crucial for digital business.
Development challenges in the Honeycomb eligible area

Infrastructural impediments

- Broadband capacity: 42%
- Air transport: 12%
- Road network: 11%
- Public transport: 9%
- Regulatory: 8%
- Other: 5%

Challenges facing business growth over next five years – Northern Ireland (excluding Belfast and greater Belfast)

- Innovation/ responding to customer/ market needs: 60%
- Recruitment of skilled staff: 49%
- Access to markets: 34%
- Retention of skilled staff: 23%
- Access to local markets: 23%
- Access to funding: 68%

BASE: 95 RESPONDENTS

BASE: 35 RESPONDENTS
4.2 DEVELOPMENT CHALLENGES - NORTHERN IRELAND (EXCLUDING BELFAST AND GREATER BELFAST)

4.2.1 CHALLENGES
Honeycomb assessed the significance of a number of challenges to the interactive media sector in the Northern Ireland eligible areas (see Figure 4.4, page 103). The highest proportion (68%) of Northern Ireland respondents agreed that access to funding was a challenge to growth over the next five years. An ability to innovate and respond to consumer and market needs emerged as the next greatest challenge, which two thirds of respondents identified. Almost half cited recruitment of skilled staff as a challenge facing growth and just over a third said access to markets was. All respondents agreed that other growth challenges existed and a range were cited including expanding their customer base, sales expertise, access to funding, the economic downturn and poor broadband. Competition was the most commonly cited other challenge to business growth.

4.2.2 MEMBERSHIP OF NETWORKS AND TRADE ASSOCIATIONS
Of those surveyed in the eligible area of Northern Ireland, 37% of respondents cited that they were a member of or affiliated to a network or trade association and 63% were not. Examples of the specific organisations were Digital Derry, Digital Circle and the Federation of Small Business.

4.2.3 COLLABORATION AND NETWORKING
Current levels of collaboration were high within the interactive media sector itself, but not across other sub sectors of the digital content industry in Northern Ireland (see Table 4.5, page 108). That said, potential for collaboration was high between interactive media and TV, film, facilities for film and TV and computer game design sectors. Also the potential for collaboration in the interactive media sector was higher than existing collaboration, signalling that companies within this sector could collaborate to a greater intensity than exists at present.

When collaboration in specific areas of work was examined between Northern Ireland’s interactive media sector and across creative industries, high current levels of collaboration did not emerge. However potential for collaboration was high in the areas of product development, research and development, joint marketing, content creation and intellectual property.

Networking also emerged as an important method of gaining services and supports for those in the Northern Ireland’s interactive media sector (see Figure 4.5, page 119). Access to the latest technological developments was indicated by over two thirds of respondents as a support they hoped to gain from networking. Also high was access to market intelligence which three fifths indicated they hoped to gain from networking. Just over half indicated that networking could help them access finance and almost half indicated that networking could assist with product or service development.
4.2.4 COLLABORATION OUTSIDE CREATIVE INDUSTRIES
Honeycomb was also interested to understand the level of interest in work outside of creative industries and overall a high interest was not found (see Table 4.7, page 110). Current work was highest in the education sector, which almost one third indicated they currently worked. Interest in work in health, education and sport was lower or equal to current levels of work. A range of other areas were cited as areas where companies currently worked and would like to work, such as food, tourism, history, culture, hospitality and finance.

4.2.5 INFRASTRUCTURAL IMPEDIMENTS
According the Ofcom Communications Market Report for Northern Ireland, the majority of SMEs in Northern Ireland rate communications services as fundamental to their business, such as fixed internet services, mobile and fixed phone line services. Most SMEs are online (78%). Looking at the type of broadband internet used by SMEs, 63% said they use ADSL broadband, 23% fibre, 13% mobile broadband and 9% cable broadband. Usage of fibre broadband was higher in Northern Ireland than the UK average of 13%.

Honeycomb asked the Northern Ireland interactive media sector about infrastructural issues facing their business (see Figure 4.6, page 119). The top infrastructural challenge that emerged from the survey was broadband, which just over one third indicated was an issue for their business. This was lower however than the other Honeycomb eligible areas. Other infrastructural impediments didn’t emerge as major issues in the Honeycomb survey of interactive media in the Northern Ireland eligible area.

The Ofcom Communications Market Report for Northern Ireland has identified issues that SMEs in Northern Ireland have experienced in relation to the quality and reliability of broadband. Overall one in five SMEs in Northern Ireland has experienced poor reliability in their internet connection in the last year. Satisfaction with broadband was higher in urban than rural areas. For example 92% in urban locations were satisfied with ADSL broadband, while a lower 68% were in rural areas. In a number of other areas such as the reliability of service, the speed of the connection and ability to access the speed paid for satisfaction was lower in rural than urban areas (Ofcom 2014a).

4.2.6 KEY DEVELOPMENT CHALLENGES AND RECOMMENDATIONS
- Access to funding was seen as a challenge to growth over the next five years by over two thirds of Northern Ireland respondents.
- 63% were not members of, or affiliated to, a network or trade association.
- Current levels of collaboration were high within the interactive media sector itself, but not across other sub sectors of the digital content industry in Northern Ireland. However, potential for collaboration was high between interactive media and TV, film, facilities for film and TV and computer game design sectors.
- The potential for collaboration in the interactive media sector was higher than existing collaboration, signalling that companies within this sector could collaborate to a greater intensity than exists at present.
- Collaboration in specific areas of work was not high. However potential for collaboration was high in the areas of product development, research and development, joint marketing, content creation and intellectual property.
• Networking emerged as an important method of gaining services and supports and access to the latest technological developments was indicated by over two thirds of respondents as a support they hoped to gain from networking.
• Interest in work outside of creative industries was not high. Current work was highest in the education sector, which almost one third indicated they currently worked. Interest in work in health, education and sport was lower or equal to current levels of work.
• The top infrastructural challenge that emerged from the survey was broadband capacity, which just over one third indicated was an issue for their business. This is a vital infrastructural challenge to address to facilitate the development of the interactive media sector.

4.3 DEVELOPMENT CHALLENGES - BORDER COUNTIES REPUBLIC OF IRELAND

4.3.1 CHALLENGES
In the Republic of Ireland the highest proportion (69%) cited both access to funding and an ability to innovate and respond to consumer and market needs as challenges to interactive media business growth. More than half also cited access to markets as a challenge to growth. All agreed they also faced other challenges and the most cited other challenge was competition, followed by rapid changes in technology. Other challenges also reported included the economic downturn, poor broadband, business growth, mentoring and expanding their customer base.

4.3.2 MEMBERSHIP OF NETWORKS AND TRADE ASSOCIATIONS
In the Republic of Ireland eligible area interactive media sector just under three quarters (74%) were not members of existing networks or trade associations, while just over a quarter were (26%). Networks and organisations cited included a local Enterprise Board or Chamber of Commerce, networks such as MyCreativeEdge or Digital Dundalk and international organisations such as Business Networks International and the Institute of Electrical and Electronics Engineers.

4.3.3 COLLABORATION AND NETWORKING
Similar to overall patterns, current collaboration was greatest between companies within the interactive media sector itself in the Republic of Ireland eligible area. However, a high potential for collaboration was identified between interactive media and the TV, animation and facilities for TV and film sub-sectors. In addition, potential for collaboration was greater than existing collaboration in the interactive media sector itself (see Table 4.8, page 111). Existing collaboration in specific areas was not high, but potential was identified in the areas of product development, research and development, joint marketing, content creation and intellectual property (see Table 4.9, page 112).
Networking to gain four particular types of supports and services was identified as strong in the Republic of Ireland eligible area. Over two thirds said they networked in the hope to gain access to the latest technological developments. Over half said they did so to access market intelligence and half to develop products or services. Almost half said they networked in effort to access finance (see Figure 4.8, page 120). These patterns also broadly followed those identified in the other Honeycomb areas.

4.3.4 COLLABORATION OUTSIDE CREATIVE INDUSTRIES
Honeycomb was also interested to understand the level of interest in work outside of creative industries (see Table 4.10, page 113). Similar to patterns in the other eligible areas, interest in work outside the creative industries was not high. The area where the highest level of interest was displayed was work in education, which almost a quarter were interested in working. A range of other areas were cited such as tourism, history, electronic books, e-learning, transport and hospitality.

4.3.5 INFRASTRUCTURAL IMPEDIMENTS
Honeycomb asked the Republic of Ireland eligible area’s interactive media sector about infrastructural issues facing their business (see Figure 4.9, page 121). The top infrastructural challenge that emerged from the survey was broadband, which over two fifths identified as a challenge. Legal impediments emerged higher in the Republic of Ireland than other areas, which almost a quarter identified as an impediment.

UPC and Amárach Research (2014) found that broadband speed was an issue inhibiting 60% of Irish adults who don’t work online from home from doing so. It is also argued in this research that Ireland’s broadband infrastructure needs to be ‘future proofed’ to support growing demand.

4.3.6 KEY DEVELOPMENT CHALLENGES AND RECOMMENDATIONS
• Access to funding and an ability to innovate and respond to consumer and market needs were top challenges to interactive media business growth in the Republic of Ireland eligible area.
• Just under three quarters (74%) were not members of existing networks or trade associations.
• Current collaboration was greatest between companies within the interactive media sector itself in the Republic of Ireland.
• A high potential for collaboration was identified between interactive media and the TV, animation and facilities for TV and film sub-sectors. Potential for collaboration was greater than existing in the interactive media sector itself.
• Existing collaboration in specific areas of work was not high. However potential was identified in the areas of product development, research and development, joint marketing, content creation and intellectual property.
• Networking to gain particular supports and services was identified in the Republic of Ireland eligible area. Over two thirds said they networked in the hope to gain access to the latest technological developments.
• Interest in work outside the creative industries was not high.
• The top infrastructural challenge that emerged from the survey was broadband capacity, which over two fifths identified as a challenge. This is a vital infrastructural challenge to address to facilitate the development of the interactive media sector.
Collaboration and potential for collaboration: interactive media and other digital creative industry companies

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CURRENTLY COLLABORATE¹ (NI EXCL. BELFAST)</th>
<th>CURRENTLY COLLABORATE² (OVERALL)</th>
<th>POTENTIAL FOR COLLABORATION¹ (NI EXCL. BELFAST)</th>
<th>POTENTIAL FOR COLLABORATION² (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
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<td>22%</td>
<td>69%</td>
<td>55%</td>
</tr>
<tr>
<td>FILM</td>
<td>34%</td>
<td>17%</td>
<td>60%</td>
<td>47%</td>
</tr>
<tr>
<td>INTERACTIVE MEDIA</td>
<td>51%</td>
<td>51%</td>
<td>80%</td>
<td>81%</td>
</tr>
<tr>
<td>ANIMATION</td>
<td>23%</td>
<td>20%</td>
<td>63%</td>
<td>53%</td>
</tr>
<tr>
<td>FACILITIES FOR TV AND FILM</td>
<td>31%</td>
<td>26%</td>
<td>66%</td>
<td>55%</td>
</tr>
<tr>
<td>RADIO</td>
<td>9%</td>
<td>7%</td>
<td>26%</td>
<td>21%</td>
</tr>
<tr>
<td>COMPUTER GAME DESIGN</td>
<td>11%</td>
<td>5%</td>
<td>51%</td>
<td>39%</td>
</tr>
<tr>
<td>MUSIC AND MUSIC TECHNOLOGIES</td>
<td>20%</td>
<td>18%</td>
<td>43%</td>
<td>34%</td>
</tr>
</tbody>
</table>

KEY
[Orange box] High levels 50% - 100%

BASE: ³5 RESPONDENTS, ²95 RESPONDENTS.
### TABLE 4.6

Collaboration and potential for collaboration: interactive media and other creative industry companies in specific areas

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENTLY COLLABORATE¹ (NI EXCL. BELFAST)</th>
<th>CURRENTLY COLLABORATE² (OVERALL)</th>
<th>POTENTIAL FOR COLLABORATION¹ (NI EXCL. BELFAST) (OVERALL)</th>
<th>POTENTIAL FOR COLLABORATION² (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT DEVELOPMENT</td>
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<td>74%</td>
<td>63%</td>
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<tr>
<td>RESEARCH AND DEVELOPMENT</td>
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<td>63%</td>
<td>57%</td>
</tr>
<tr>
<td>DISTRIBUTION CHANNELS</td>
<td>14%</td>
<td>11%</td>
<td>43%</td>
<td>39%</td>
</tr>
<tr>
<td>JOINT MARKETING</td>
<td>34%</td>
<td>22%</td>
<td>71%</td>
<td>58%</td>
</tr>
<tr>
<td>CONTENT CREATION</td>
<td>17%</td>
<td>18%</td>
<td>51%</td>
<td>53%</td>
</tr>
<tr>
<td>INTELLECTUAL PROPERTY</td>
<td>20%</td>
<td>14%</td>
<td>54%</td>
<td>48%</td>
</tr>
<tr>
<td>OTHER AREAS</td>
<td>3%</td>
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<td>0%</td>
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</tr>
</tbody>
</table>

**KEY**

- High levels 50% - 100%

BASE: ¹35 RESPONDENTS, ²95 RESPONDENTS.
### Development challenges in the Honeycomb eligible area

**Work in niche sectors outside of creative industries**

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CURRENTLY WORKING¹ (NI EXCL. BELFAST)</th>
<th>CURRENTLY WORKING² (OVERALL)</th>
<th>AREA WOULD LIKE TO WORK IN¹ (NI EXCL. BELFAST)</th>
<th>AREA WOULD LIKE TO WORK IN² (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>20%</td>
<td>14%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>EDUCATION</td>
<td>31%</td>
<td>19%</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>SPORT</td>
<td>9%</td>
<td>6%</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td>OTHER</td>
<td>20%</td>
<td>22%</td>
<td>29%</td>
<td>25%</td>
</tr>
</tbody>
</table>

**KEY**

| Base: 135 Respondents, 295 Respondents. |

---

High levels 50% - 100%
Development challenges in the Honeycomb eligible area

TABLE 4.8
Collaboration and potential for collaboration: interactive media and other digital creative industry companies

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CURRENTLY COLLABORATE&lt;sup&gt;1&lt;/sup&gt; (BORDER COUNTIES ROI)</th>
<th>CURRENTLY COLLABORATE&lt;sup&gt;2&lt;/sup&gt; (OVERALL)</th>
<th>POTENTIAL FOR COLLABORATION&lt;sup&gt;1&lt;/sup&gt; (BORDER COUNTIES ROI)</th>
<th>POTENTIAL FOR COLLABORATION&lt;sup&gt;2&lt;/sup&gt; (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>12%</td>
<td>22%</td>
<td>57%</td>
<td>55%</td>
</tr>
<tr>
<td>FILM</td>
<td>5%</td>
<td>17%</td>
<td>48%</td>
<td>47%</td>
</tr>
<tr>
<td>INTERACTIVE MEDIA</td>
<td>57%</td>
<td>51%</td>
<td>86%</td>
<td>81%</td>
</tr>
<tr>
<td>ANIMATION</td>
<td>19%</td>
<td>20%</td>
<td>55%</td>
<td>53%</td>
</tr>
<tr>
<td>FACILITIES FOR TV AND FILM</td>
<td>26%</td>
<td>26%</td>
<td>55%</td>
<td>55%</td>
</tr>
<tr>
<td>RADIO</td>
<td>10%</td>
<td>7%</td>
<td>21%</td>
<td>21%</td>
</tr>
<tr>
<td>COMPUTER GAME DESIGN</td>
<td>2%</td>
<td>5%</td>
<td>33%</td>
<td>39%</td>
</tr>
<tr>
<td>MUSIC AND MUSIC TECHNOLOGIES</td>
<td>14%</td>
<td>18%</td>
<td>26%</td>
<td>34%</td>
</tr>
</tbody>
</table>

KEY

- High levels 50% - 100%

BASE: <sup>1</sup>42 RESPONDENTS, <sup>2</sup>95 RESPONDENTS.
TABLE 4.9

Collaboration and potential for collaboration: interactive media and other creative industry companies in specific areas

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENTLY COLLABORATE(^1) (BORDER COUNTIES ROI)</th>
<th>CURRENTLY COLLABORATE(^2) (OVERALL)</th>
<th>POTENTIAL FOR COLLABORATION(^1) (BORDER COUNTIES ROI)</th>
<th>POTENTIAL FOR COLLABORATION(^2) (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT DEVELOPMENT</td>
<td>10%</td>
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<td>64%</td>
<td>63%</td>
</tr>
<tr>
<td>RESEARCH AND DEVELOPMENT</td>
<td>5%</td>
<td>15%</td>
<td>57%</td>
<td>57%</td>
</tr>
<tr>
<td>DISTRIBUTION CHANNELS</td>
<td>10%</td>
<td>11%</td>
<td>43%</td>
<td>39%</td>
</tr>
<tr>
<td>JOINT MARKETING</td>
<td>14%</td>
<td>22%</td>
<td>55%</td>
<td>58%</td>
</tr>
<tr>
<td>CONTENT CREATION</td>
<td>12%</td>
<td>18%</td>
<td>57%</td>
<td>53%</td>
</tr>
<tr>
<td>INTELLECTUAL PROPERTY</td>
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<td>48%</td>
</tr>
<tr>
<td>OTHER AREAS</td>
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<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

KEY: High levels 50% - 100%

BASE: \(^1\)42 RESPONDENTS, \(^2\)95 RESPONDENTS.
### TABLE 4.10

**Work in niche sectors outside of creative industries**

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CURRENTLY WORKING(^1) (BORDER COUNTIES ROI)</th>
<th>CURRENTLY WORKING(^2) (OVERALL)</th>
<th>AREA WOULD LIKE TO WORK IN(^1) (BORDER COUNTIES ROI)</th>
<th>AREA WOULD LIKE TO WORK IN(^2) (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
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<td>14%</td>
<td>12%</td>
<td>9%</td>
</tr>
<tr>
<td>EDUCATION</td>
<td>14%</td>
<td>19%</td>
<td>24%</td>
<td>20%</td>
</tr>
<tr>
<td>SPORT</td>
<td>5%</td>
<td>6%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>OTHER</td>
<td>21%</td>
<td>22%</td>
<td>24%</td>
<td>25%</td>
</tr>
</tbody>
</table>

**KEY**

| High levels 50% - 100% |

**BASE:**\(^1\) 142 RESPONDENTS, \(^2\) 295 RESPONDENTS.
## TABLE 4.11

Collaboration and potential for collaboration: interactive media and other digital creative industry companies

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CURRENTLY COLLABORATE(^1) (WESTERN SCOTLAND)</th>
<th>CURRENTLY COLLABORATE(^2) (OVERALL)</th>
<th>POTENTIAL FOR COLLABORATION(^1) (WESTERN SCOTLAND)</th>
<th>POTENTIAL FOR COLLABORATION(^2) (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>11%</td>
<td>22%</td>
<td>22%</td>
<td>55%</td>
</tr>
<tr>
<td>FILM</td>
<td>11%</td>
<td>17%</td>
<td>22%</td>
<td>47%</td>
</tr>
<tr>
<td>INTERACTIVE MEDIA</td>
<td>33%</td>
<td>51%</td>
<td>72%</td>
<td>81%</td>
</tr>
<tr>
<td>ANIMATION</td>
<td>17%</td>
<td>20%</td>
<td>28%</td>
<td>53%</td>
</tr>
<tr>
<td>FACILITIES FOR TV AND FILM</td>
<td>17%</td>
<td>26%</td>
<td>33%</td>
<td>55%</td>
</tr>
<tr>
<td>RADIO</td>
<td>0%</td>
<td>7%</td>
<td>11%</td>
<td>21%</td>
</tr>
<tr>
<td>COMPUTER GAME DESIGN</td>
<td>0%</td>
<td>5%</td>
<td>28%</td>
<td>39%</td>
</tr>
<tr>
<td>MUSIC AND MUSIC TECHNOLOGIES</td>
<td>22%</td>
<td>18%</td>
<td>33%</td>
<td>34%</td>
</tr>
</tbody>
</table>

**KEY**

- High levels 50% - 100%

**BASE:** \(^1\)18 RESPONDENTS, \(^2\)95 RESPONDENTS.
Development challenges in the Honeycomb eligible area

**TABLE 4.12**

Collaboration and potential for collaboration: interactive media and other creative industry companies in specific areas

<table>
<thead>
<tr>
<th>AREA</th>
<th>CURRENTLY COLLABORATE¹ (WESTERN SCOTLAND)</th>
<th>CURRENTLY COLLABORATE² (OVERALL)</th>
<th>POTENTIAL FOR COLLABORATION¹ (WESTERN SCOTLAND)</th>
<th>POTENTIAL FOR COLLABORATION² (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT DEVELOPMENT</td>
<td>11%</td>
<td>17%</td>
<td>39%</td>
<td>63%</td>
</tr>
<tr>
<td>RESEARCH AND DEVELOPMENT</td>
<td>11%</td>
<td>15%</td>
<td>44%</td>
<td>57%</td>
</tr>
<tr>
<td>DISTRIBUTION CHANNELS</td>
<td>6%</td>
<td>11%</td>
<td>22%</td>
<td>39%</td>
</tr>
<tr>
<td>JOINT MARKETING</td>
<td>17%</td>
<td>22%</td>
<td>39%</td>
<td>58%</td>
</tr>
<tr>
<td>CONTENT CREATION</td>
<td>33%</td>
<td>18%</td>
<td>44%</td>
<td>53%</td>
</tr>
<tr>
<td>INTELLECTUAL PROPERTY</td>
<td>17%</td>
<td>14%</td>
<td>22%</td>
<td>48%</td>
</tr>
<tr>
<td>OTHER AREAS</td>
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<td>1%</td>
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<td>0%</td>
</tr>
</tbody>
</table>

**KEY** High levels 50% - 100%

BASE: ¹18 RESPONDENTS, ²95 RESPONDENTS.
## Development challenges in the Honeycomb eligible area

### TABLE 4.13

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CURRENTLY WORKING(^1) (WESTERN SCOTLAND)</th>
<th>CURRENTLY WORKING(^2) (OVERALL)</th>
<th>AREA WOULD LIKE TO WORK IN(^1) (WESTERN SCOTLAND)</th>
<th>AREA WOULD LIKE TO WORK IN(^2) (OVERALL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>11%</td>
<td>14%</td>
<td>6%</td>
<td>9%</td>
</tr>
<tr>
<td>EDUCATION</td>
<td>6%</td>
<td>19%</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>SPORT</td>
<td>6%</td>
<td>6%</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>OTHER</td>
<td>28%</td>
<td>22%</td>
<td>22%</td>
<td>25%</td>
</tr>
</tbody>
</table>

**KEY**

- High levels 50% - 100%

BASE: \(^1\)18 RESPONDENTS, \(^2\)95 RESPONDENTS.
4.4 DEVELOPMENT CHALLENGES – WESTERN SEABoard OF SCOTLAND

4.4.1 CHALLENGES
Challenges cited by over half of interactive media respondents in western Scotland were an ability to innovate and respond to customer /market needs and recruitment of skilled staff. Access to funding was a lesser issue in western Scotland, which one third identified (see Figure 4.10, page 121). Over two thirds in Northern Ireland and the Republic of Ireland cited this as a challenge facing business growth.

4.4.2 MEMBERSHIP OF NETWORKS AND TRADE ASSOCIATIONS
In the interactive media sector on the western seaboard of Scotland, 22% were members or affiliated to a trade association or network, while 78% were not. Organisations cited included Screen Facilities Scotland and Scottish Media Group.

4.4.3 COLLABORATION AND NETWORKING
Levels of collaboration in the interactive media sector in western Scotland were lower than the other eligible areas. One third stated they currently collaborate with other interactive media companies, while in Northern Ireland and the Republic of Ireland more than half currently collaborated. However almost three quarters indicated that there was potential for collaboration. A high potential for collaboration was not identified with other digital content sectors (see Table 4.11, page 114). Potential for collaboration in specific areas of work was not high, but still significant in some of the areas assessed (see Table 4.12, page 115).

Networking also emerged as an important method of gaining services and supports for those in the western Scotland’s interactive media sector (see Figure 4.11, page 122). Access to the latest technological developments was indicated by over half of respondents as a support they hoped to gain from networking. Also high was access to market intelligence which one third indicated they hoped to gain from networking. Other supports were cited by one third. Gaining more business was a common other support cited.

4.4.4 COLLABORATION OUTSIDE CREATIVE INDUSTRIES
Honeycomb was also interested to understand the level of interest in work outside of creative industries (Table 4.13, page 116). Health was the most common sector in western Scotland that interactive media companies currently worked. Work in education emerged lower in this area than overall and interest in work in education was cited by 17%. There was also a greater interest in work in sport than current levels. Other areas cited were working with artists and with voluntary organisations, but the other area most commonly cited was tourism.
4.4.5 INFRASTRUCTURAL IMPEDIMENTS

Honeycomb asked the interactive media sector on the western seaboard of Scotland about infrastructural issues facing their business (see Figure 4.12, page 123). In similarity with the other eligible areas, the top infrastructural challenge that emerged from the survey was broadband capacity, which over half agreed was an impediment. Communications infrastructure and services emerged more strongly as an infrastructural barrier from the Scottish respondents than the other eligible areas. Close to a quarter of respondents indicated road networks were an impediment and over a quarter identified air transport as an issue. Honeycomb’s broader engagement with the industry in western Scotland would also support these findings, with transport a barrier to effective business activities, particularly in more peripheral locations of western Scotland.

The Ofcom Communications Market report found that 80% of SMEs in Scotland are connected to the internet. While 72% had ADSL broadband, just 7% were found to have fibre broadband, 12% mobile broadband and 11% cable broadband. Overall, around seven in ten (69%) SMEs were satisfied with their ADSL broadband, with satisfaction levels lower in rural (54%) than urban (79%) areas. As well as this satisfaction with the speed of connection, the ability to access the speed paid for and reliability of internet service was lower in rural than urban areas (Ofcom, 2014b).

4.4.6 KEY DEVELOPMENT CHALLENGES AND RECOMMENDATIONS

- Challenges impacting business growth cited by over half of interactive media respondents in western Scotland were an ability to innovate and respond to customer and market needs and recruiting skilled staff.
- Just 22% were members or affiliated to a trade association or network.
- One third stated they currently collaborate with other interactive media companies. However almost three quarters indicated that there was potential for collaboration.
- Potential for collaboration in specific areas of work was not high, but still significant.
- Networking emerged as an important method of gaining services and supports. Access to the latest technological developments was indicated by over half of respondents as a support they hoped to gain from networking.
- Interest in work outside the creative industries was not high.
- The top infrastructural challenge that emerged from the survey was broadband capacity. This is a vital infrastructural challenge to address to facilitate the development of the interactive media sector. Air transport, road networks and public transport were a higher rated challenge in western Scotland than in the other Honeycomb areas.
Infrastructural impediments – Northern Ireland (excluding Belfast and greater Belfast)

0% Public transport
6% Air transport
6% Road networks
9% Other
11% Legal
14% Regulatory
34% Broadband

Services and supports hoped to gain from networking – Northern Ireland (excluding Belfast and greater Belfast)

3% Leadership and management development
6% Export development support
9% Skills training
14% Business mentoring
34% Sales and marketing support
46% Product or service development
51% Access to finance
60% Access to market intelligence
69% Access to the latest technological developments

BASE: 35 RESPONDENTS
FIGURE 4.7
Challenges facing business growth over next five years – border counties Republic of Ireland

- Retention of skilled staff: 19%
- Access to local markets: 29%
- Recruitment of skilled staff: 38%
- Access to markets: 55%
- Innovation/ responding to customer/ market needs: 69%
- Access to funding: 69%

BASE: 42 RESPONDENTS

FIGURE 4.8
Services and supports hoped to gain from networking – border counties Republic of Ireland

- Other: 10%
- Leadership and management development: 10%
- Export development support: 10%
- Sales and marketing support: 12%
- Skills training: 19%
- Business mentoring: 21%
- Access to finance: 45%
- Product or service development: 50%
- Access to market intelligence: 52%
- Access to the latest technological developments: 64%

BASE: 42 RESPONDENTS
Infrastructural impediments – Border counties Republic of Ireland

- Regulatory: 5%
- Air transport: 10%
- Road networks: 10%
- Public transport: 14%
- Legal: 24%
- Broadband: 43%

BASE: 42 RESPONDENTS

Challenges facing business growth over next five years – Western seaboard of Scotland

- Retention of skilled staff: 22%
- Access to local markets: 22%
- Access to markets: 28%
- Access to funding: 33%
- Recruitment of skilled staff: 56%
- Innovation/ responding to customer/ market needs: 56%

BASE: 18 RESPONDENTS
Services and supports hoped to gain from networking – western seaboard of Scotland

![Diagram showing services and supports hoped to gain from networking](image-url)

**BASE: 18 RESPONDENTS**
FIGURE 4.12
Infrastructural impediments – western seaboard of Scotland

<table>
<thead>
<tr>
<th>Service</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory</td>
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</tr>
<tr>
<td>Legal</td>
<td>6%</td>
</tr>
<tr>
<td>Public transport</td>
<td>17%</td>
</tr>
<tr>
<td>Road networks</td>
<td>22%</td>
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<tr>
<td>Air transport</td>
<td>28%</td>
</tr>
<tr>
<td>Broadband</td>
<td>56%</td>
</tr>
</tbody>
</table>

BASE: 18 RESPONDENTS
In this section we review future forecast research in the interactive media and broader tech sector to understand some of the key challenges and opportunities for growth.

### 5.1 INTERACTIVE MEDIA: GLOBAL TRENDS, CHALLENGES AND OPPORTUNITIES

A KPMG (2014) survey of tech business leaders identified that mobile technologies and applications are expected to be central to growth in the sector. Similarly, Juniper Research (2013a) has identified an increasing demand for mobile applications or mobile-optimised websites as users carry out more tasks on mobile devices. In relation to the wider software industry, Keynote (2013) observes that late adopters of mobile software development could impact on company revenues. The KPMG (2014) survey also found that 3-D printing, Internet of Things and biotech/healthcare IT are expected to grow increasingly disruptive, transforming enterprise and enabling the development of new consumer technologies. The survey also identified challenges to tech innovation and commercialisation. Just over a third (34%) cited restrictive regulatory policies, while 29% cited consumer fatigue and 27% the ability to demonstrate return on investment as challenges.

### 5.1.1 INTERNET CONNECTED DEVICES AND APP DEVELOPMENT – BROAD MARKET CHANGES AND CHALLENGES

Over the 2008 to 2012 period, Key Note (2013) observes application software taking up a growing market share of the overall software market in the UK, in line with the uptake of tablet computers. While Deloitte’s 2014 Technology, Media and Telecommunications predictions include that the sale of devices (smartphones, tablets, PCs, TV sets and video game consoles) will continue to grow, a plateau is likely and growth will be at a slower rate than the past ten years. Its predictions extend to 2018 and it notes that developments after this could accelerate growth again. The increasing use of touchscreen when accessing the web is also highlighted as a consideration developers should be aware of: “As more web access moves to the touch screen, the size, shape and function of HTML links, buttons and other features will likely need to adapt” (Lee, Stewart and Calugar-Pop, 2014: 15).
Juniper Research (2013a) forecasts that up to 2018, growth in the number of apps accessed will increase each year at a compound annual growth rate of 18.7%. By 2018, Juniper Research (2013a) forecasts that nearly one in two of the global population will have accessed apps and growth will be particularly strong in the Far East and China, as well as strong in North America and Western Europe. However this is a complex, changing market that needs to be user focused and intense competition exists.

Deloitte’s 2014 Technology, Media and Telecommunications predictions note that this is a challenging decade for app developers having to develop versions of apps for different operating systems and formats. It is argued the plateau in device sales could provide a more stable environment for developers. The need for developers to become more user focused is also highlighted, understanding better how users interact with content when using different devices. For example Juniper Research (2013a) highlights how particular types of apps could in some cases be more suited to particular devices. It observes that use of mPublishing tablet apps is growing, particularly because of the advantage given by a tablet’s screen size compared to smartphones.

Consumer use of more than one connected device also means that consumers also wish to consume the same content on different devices. Juniper Research (2013a) highlights a growing need for users to be able to synchronise their apps across multiple devices to avoid user frustration and dissatisfaction, which also places new pressures on developers to accommodate this. Juniper Research (2013a) highlights how developers can prefer to develop apps for iOS platforms because of potentially better revenue generating opportunities and Android apps can be harder to monetise. However Android has a large consumer base, but one where users have a fragmented array of devices and different versions of Android.

Advertising is a growing revenue stream as internet ad spend is growing. One source forecast growth of internet ad spend in the UK at a compound annual growth rate of 12.2% from 2012-2014 to a value of £6,486.8 million (Heernet Ventures, 2013). Mobile is an advertising platform of growing importance. UK Trade and Investment (2013) highlight how advertising is an important revenue stream for interactive content developers in the UK. In app advertising grew by 178% in 2012 in the UK (Heernet Ventures, 2013). More broadly mobile advertising is expected to take up a consistently growing proportion of the digital ad spend, as well as the overall media ad spend in the UK. It is predicted to reach 44.4% of the total digital ad spend and 22.9% of total media ad spend by 2017. Total mobile ad spend in 2017 is predicted to reach £3.71 billion, a sharp rise from almost £1 billion in 2013. It is also predicted that by 2017 over a fifth of UK ad investment will be focused on mobile devices (eMarketer, 2013).
5.1.2 WEARABLES
Newer internet connected devices - wearables, such as smart glasses, fitness bands and watches have also entered the market. The size and rate of growth of this market is uncertain. Overall Deloitte predicts that wearable devices, smart glasses, fitness bands and watches are predicted to reach sales of ten million units in 2014 (smart glasses - four million units, smart fitness bands - four million units and smart watches - two million units). Juniper Research (2013b) predicts that by 2018 there will be a base of 9.6 million smart glasses globally, with 1.8 million in Western Europe by 2018. It also forecasts a very strong global growth rate, of a compound annual growth rate of 97.2% over the 2013-2018 period, increasing from $184 million in 2013 to $5.5 billion in 2018. Sales of smart glasses are predicted to be concentrated in North America, Western Europe, the Far East and China. While demand is increasing, it predicts however that wearables will remain niche, specialist devices in the near future. Research has suggested that fitness wearables are more likely to lead sales than smart watches (Ramsay, 2014). Price is an issue that will slow growth. Juniper Research (2013a) also observes that the expense of augmediated reality head-up displays and smart glasses is likely to inhibit their adoption, but take-up is expected to increase as prices fall.

Wearable devices introduce a new space for app development and Deloitte highlights that manufacturers of wearable devices need to foster app development. This has challenges, for example because of the low user numbers of these devices (Lee, Stewart and Calugar-Pop, 2014). The more apps developed for particular wearable devices, the better their utility (Juniper Research, 2013a; Lee, Stewart and Calugar-Pop, 2014). In relation to augmediated reality, Juniper Research (2013b) identified a number of wider barriers to wearable’s adoption before mobile augmediated reality apps can grow significantly, such as social (consumer expectations and awareness), technological (battery life, mobile internet connectivity, camera qualities) and legal (safety, privacy) issues. It is highlighted that these barriers, combined with the small consumer base, do not encourage content creators to develop augmediated reality apps. Consumer expectations are also thought to be higher than the reality of what augmediated reality can deliver. Juniper Research (2013b) highlights that growth in augmediated reality is dependent to some extent on the smartphone user and the ability of these devices to run augmediated reality apps. Smartphone growth is however in low cost and low capability devices, not suited to running augmediated reality apps. But an important change observed is that augmediated reality is no longer just seen as a gimmick. There is a need for development of meaningful and useful apps to sustain growth so that engagement is not limited to trial and one time use.
While challenges do exist, this is said to be a growth market: “early adopters tend to have a high propensity to purchase apps and so may be a small but lucrative market” (Lee, Stewart and Calugar-Pop, 2014: 12). Berg Insights (2015) predicts that annual shipments of connected wearables will reach 19 million in 2014 and 168 million by 2019. Deloitte’s 2014 Technology, Media and Telecommunications predictions also identify changes in the use of smart glasses as their specification changes – consumer applications will be predominant in 2014 but in future use in enterprise is expected to increase. The Deloitte predictions state: “analysts have estimated that smart glasses could save companies up to one billion dollars per year by 2017, through displaying instruction guides, relaying photos and videos and interacting with remotely located experts” (Lee, Stewart and Calugar-Pop, 2014: 10). Of six categories of augmented reality app (enterprise, multimedia and entertainment, lifestyle and healthcare, games, social networking, location based), the category with the greatest number of downloads in 2013 was games making up 41.1% of the total, followed by location based (e.g. travel, navigation) apps at 27.1%, according to Juniper Research (2013b). Also according to Juniper Research (2013b), games are expected to be a major driver of augmented reality app growth, accounting for almost one third of predicted app revenue by 2018. Multimedia and entertainment (26.1%), lifestyle and health (22.1%) and enterprise (17.6%) also have notable predicted revenue share by 2018.

5.1.3 THE APP MARKET
Globally the app economy was estimated to be worth £40 billion in 2013 and the UK app market is forecast to grow at an annual growth rate of 38% between 2013 and 2015 (VisionMobile, 2014b). According to App Annie app industry insights (from Q3 2014), globally app markets are dominated by ‘app store superpowers’ or the three largest markets by revenue (Japan, South Korea and the United States). However App Annie observes that the market is not static and BRIC (Brazil, Russia, India and China) countries are becoming stronger and could shift power away from the app store superpowers. It also cites Mexico, Indonesia, Turkey and Vietnam as markets to watch because of the growth in share of downloads (App Annie, 2014).

VisionMobile (2014b) forecast that future growth in the UK app market will be driven by a range of factors. Certain sub-sectors are identified to be of particular growth potential, such as enterprise, business-to-business, financial technology, mobile commerce and internet of things. Deloitte’s 2014 Technology, Media and Telecommunications predictions highlight that the over 55s market is a lucrative, untapped area in the smartphone and app market. But it also points out that users in this market group could involve others (e.g. friends or family) in app download. Tapping into this market could benefit from the functionality of allowing users to control devices remotely (Lee, Stewart and Calugar-Pop, 2014).
Globally, revenues from consumer spend on apps are predicted to rise at a compound annual growth rate of 17% from 2013 to 2018. Games are predicted to make up the greatest share of consumer spend on apps in 2018 ($27 billion of the $85 billion total) and multimedia apps the next most significant ($23 billion), followed by lifestyle apps ($14 billion). In user number terms, based on analysis of eight categories of app (games, multimedia, lifestyle, eReaders, productivity, healthcare, social communications and finance), Juniper Research (2013a) forecasts that users of social communication apps will grow at the fastest rate, from 1.72 billion users in 2013 to 3.05 billion users by 2018. In relation to apps accessed, of the eight categories, healthcare apps are forecast to be the fastest growth category, from 75.9 million apps accessed in 2013 to 419 million in 2018.

5.1.3.1 APP MARKET OPPORTUNITIES, DISCOVERABILITY AND MONETISATION

VisionMobile (2014c) highlight how revenue is very concentrated in the app economy and how many app developers are in an unsustainable financial scenario. The VisionMobile research also highlights however that, according to its survey, most (67%) mobile app developers target consumers, but the 16% it identified as targeting enterprises can earn $5,000/£3,181 and up to $25,000/£15,905 per app per month. It also identified iOS as the primary platform where enterprise app development is concentrating. It recommends that developers building businesses around app development should carefully consider their audience. Enterprise is a growing market as it moves to adopt mobile technology.

Improving the discoverability of apps is central to increasing downloads (Juniper Research, 2013a; Lee, Stewart and Calugar-Pop, 2014). With the number of available apps increasing, how consumers find apps is becoming more important. While there are low barriers to entry into app development, gaining visibility in the largest app stores is challenging because of competition. This makes generating revenue from app development difficult. Consumers don’t often browse beyond the top 100 apps in a particular category. Increasingly apps ideally need to feature in top 10 or top 25 lists, which a very small percentage of apps actually achieve, to generate significant revenues (Juniper Research, 2013a). Methods cited by Juniper Research (2013a) used to assist better revenue generation include introducing the app for sale at a lower price for a short period
with view to increasing downloads and popularity of the app. Another is ‘freemium’ apps or providing a free or ‘lite’ version of the app with additional features paid for, such as removal of ads or purchase of weapons for particular games. This method is noted as particularly lucrative as revenue streams continue after the app is downloaded. Subscription is another model used where subscribers pay for content over a period of time. Apps can also be funded through in app display of ads, such as banner or pop-up ads, and Juniper Research (2013a) points out that ads could prove a source of more stable income for developers.

Another important factor in generating revenue from app development is competition. It has driven change and consumers are now less willing to pay for apps. Juniper Research (2013a) highlight that revenue generation from apps has evolved from pay per download and towards ad funding and in app purchases. For example, in 2012 eight of the 10 leading apps in Apple’s App Store in 2012 were free to download and monetised through in app purchases. Juniper Research (2013a) also points out that content providers need to monetise users in different ways. Traditionally pay per download and advertising is how apps are monetised and possibly preferred by developers because of their more stable income source. It is suggested however that in app purchases is a more novel and fruitful way to monetise.

Juniper Research (2013a) predicts a drop in payment for apps at the point of download from 2013 to 2018 from 6.1% to 4.8%. However 47.4% of healthcare apps were paid for on download in 2013. This is however expected to decrease to 41.5%, still a significant proportion for this type of app. Multimedia apps are also of note with 10.9% paid for at the point of download in 2013, decreasing to 8.3% by 2018. Post download monetisation is growing increasingly important, such as upgrades or subscriptions, rising at a compound annual growth rate of 51.3% from 2013 to 2018. In app purchases are highlighted as particularly important for monetisation of some categories of app, such as eReader and lifestyle apps. Juniper Research (2013a) highlights that lifestyle apps are often free to download and monetisation is often through in app purchase or advertising. By 2018 it predicts that 88.5% of revenue generated through lifestyle apps will be in this way.
In the future, Juniper Research (2013a) highlights that developers may increasingly move to developing browser or web-based apps, rather than apps sold through apps stores, or in addition these, to increase the accessibility of their product. Juniper Research (2013a) also considers if web browser apps could present a threat to app stores as web based apps are accessed through a web browser and apps stores are not part of the distribution chain from developer to end user. If growing numbers of developers choose to develop web based apps this could mean app stores lose their control of the marketplace. However Juniper Research (2013a) does not predict a huge shift in this direction and many developers will still see app stores as a key method of distribution. It does however also highlight that app stores can typically take a 30% cut of purchases. Reaching the consumer directly would allow developers to capture a greater amount of the revenues generated from their apps. VisionMobile (2014c) identify that third party tools, such as Ad Networks, Cloud Computing, Push Notifications, Cross-Platform Tools and User Analytics, as a vital element to greater revenue generation and app business success. It highlights that third party tools enable app developers to write less code and identifies a strong co-relation exists between using developer tools and higher revenues.

5.1.4 TECH ACROSS INDUSTRY SECTORS

Particular future growth potential in the interactive media sector is through its cross-overs with more established industry sectors. A theme emerging from discussion at the 2014 Web Summit in Dublin was how tech can be used to help address issues in health and education (Ray, 2014). TechUK’s manifesto for growth argues that the overall UK technology sector is strong and an innovative early adopter of new technologies. It also highlights that support for technology led innovation is crucial to support growth in tech alongside better productivity and growth in other sectors (Walker and Holloway, 2014).

Interactive media’s link with the health sector is growing increasingly important: “Deloitte predicts that in 2014, there will be 100 million eVisits globally, potentially saving over $5 billion when compared to the cost of in-person doctor visits and representing growth of 400% from 2012 levels” (Lee, Stewart and Calugar-Pop, 2014: 20). Deloitte notes that tele-medicine may provide opportunities in the middle to long term.

Deloitte’s 2014 Technology, Media and Telecommunications predictions include that massive open online courses (MOOCs) are not yet massively disruptive of traditional courses, but are expected to become more so because of ease of access to content, cost effectiveness over traditional courses and increasing demand for courses from the developing world. In the 2014 to 2015 period, a key growth area is particularly within enterprise, where staff are up-
5.2 KEY TRENDS

- The pace of change has caused this decade to be a challenging one for developers, but suggestions of a stabilisation occurring have been made.
- Wearables present opportunities for growth of the interactive media sector; however alongside this many challenges to more widespread adoption are highlighted.
- The app economy is growing. But it is a complex market. Control and revenues can be concentrated. Monetisation of apps is growing more difficult as competition is fierce and consumers can be unwilling to pay for apps. Trends towards in app purchases, ads and subscription to premium content are highlighted as important revenue streams as opposed to pay per download.
- Enterprise is highlighted as a growth area for the app development and the wearables economy. Innovations can improve cost and time efficiencies in enterprise settings.
- Innovations in interactive media are expected to enhance service delivery, such as in healthcare and education.
6.1 KEY FINDINGS AND RECOMMENDATIONS TO REDUCE SKILL GAPS

- The quality of skills, experience level of the workforce and competition for skilled staff emerged as issues fundamental to the skills challenge facing the interactive media sector.
- Freelancers are important to the sector. Industry interviews highlight the importance of strong networks and access to freelance skills to facilitate development and growth of start-up companies.
- Assistance with employment was at the lower end of the types of government assistance received, with just under one fifth having received this type of assistance. Our research indicates that greater assistance with the costs of employment would assist start-ups gain the experience and talent that would help them to grow.
- The lack of an experienced workforce emerged as a key recruitment problem for companies.
- Primary and secondary school education needs to catch up with the digital revolution. There is a need for government action implementing digital strategies in schools in the eligible areas and beyond.
- Internships assist companies to work with graduates to develop their experience. However this has advantages and disadvantages for companies and is not an option for all businesses. For internships to go some way to increasing the experience levels of tech graduates the number of opportunities would need to increase as well as financial support to companies providing internships.
- Business skills emerged as the greatest skills gap – 54% of respondents identified it as lacking and needing improvement at intermediate to advanced levels. Networking nationally and internationally was the top business skills deficit. Greater support and facilitation of networking, especially internationally, could assist in overcoming this skills gap.
- Sales and marketing skills were the second greatest skills gap identified and emerged as needing development at intermediate to advanced levels. Three specific sales and marketing skill gaps that emerged of significant concern were international markets, pitching and marketing through social media. A strong need for sales skills also emerged from our research interviews and the need for the promotion of sales as a career path.
Key findings and recommendations
• Just over a third of respondents identified craft/technical skills as skills gap. The technical skills gap emerging by far as most in need of improvement was knowledge of new technology and platforms.

• Just over a third of respondents identified finance skills as lacking and needing improvement at advanced levels. The skill that emerged as most lacking by far was identifying sources of finance.

• Just less than one third of respondents identified skills in the use of software as a skills gap and needing improvement at advanced levels. It was unclear if skills in a particular software were needed, or if skills needed developing in a range of software.

6.2 KEY FINDINGS AND RECOMMENDATIONS TO AID GROWTH AND REDUCE BROADER CHALLENGES

• Overall, the two top challenges facing business growth over the next five years emerging from the Honeycomb survey were an ability to innovate/respond to customer and market needs as well as access to funding.

• Internationally, initiatives such as Techstars have supported mentoring and investment in innovative start-ups. Attracting similar initiatives to the eligible areas could facilitate a more supportive environment to start-up growth.

• Being part of a strong network and continually building networks, locally, nationally and internationally is vital to support the growth of the interactive media sector. Networking and collaboration can be more challenging for less centrally located companies than those in well-established clusters. Better support for interactive media networking groups and financial support for companies to network is important to support the future growth of the sector.

• Better provision of co-working spaces, where low rent office spaces are available in cities and large towns in the eligible areas, could also facilitate business start-ups and networking.

• 71% of the interactive media sector surveyed indicated they were not a member of, or affiliated to, an existing creative industries network, trade association or other business network.

• A good level of collaboration between interactive media companies was identified, with just over half stating they collaborate. However, high levels don’t collaborate with other creative industry companies, such as in TV, animation and game design. Better collaboration across sectors is important for future growth and development.

• High potential for collaboration was found to exist between interactive media and TV, animation and facilities for TV and film. Over a third also said there was potential for collaboration with computer game design and music technology.

• High levels don’t collaborate in specific areas of work such as product development and content creation. However broadly speaking, a high potential for collaboration in specific areas of work was found.

• Work outside of creative industries in areas such as health, education and sport was not common and high levels were not currently working in these areas, nor had an interest in work in these areas.

• The most significant infrastructural impediment was broadband capacity, which 42% cited as an issue. A quality, reliable broadband infrastructure is crucial for digital business.
6.3 KEY FINDINGS AND RECOMMENDATIONS FOR THE HONEYCOMB ELIGIBLE AREAS

6.3.1 NORTHERN IRELAND (EXCLUDING BELFAST AND GREATER BELFAST)

- The Honeycomb survey found the distribution of sales was concentrated in Northern Ireland. Broadening of its market base should be a key growth strategy for the sector.
- Access to funding was seen as a challenge to growth over the next five years by over two thirds of Northern Ireland respondents.
- Business skills emerged as the top skills deficit in the interactive media sector in the three eligible areas. The results are rated as a severe concern in Northern Ireland.
- The next most severe skills issues in Northern Ireland were in around sales/marketing skills and finance skills, which two fifths of respondents identified as skills issues.
- Current levels of collaboration were high within the interactive media sector itself, but not across other sub-sectors of the digital content industry in Northern Ireland. However, potential for collaboration was high between interactive media and other digital content sectors.
- The potential for collaboration in the interactive media sector was higher than existing collaboration, signalling that companies within this sector could collaborate to a greater intensity than exists at present. Better collaboration across sectors is important for future growth and development.
- Collaboration in specific areas of work was not high. However potential for collaboration was high in the areas of product development, research and development, joint marketing, content creation and intellectual property.
- Networking emerged as an important method of gaining services and supports and access to the latest technological developments was indicated by over two thirds respondents as a support they hoped to gain from networking.

6.3.2 REPUBLIC OF IRELAND BORDER COUNTIES

- Distribution of sales was concentrated in the domestic market. Broadening of its market base should be a key growth strategy for the sector.
- Access to funding and an ability to innovate and respond to consumer and market needs were top challenges to interactive media business growth in the Republic of Ireland eligible area.
- Business skills emerged as the top skills deficit in the interactive media sector in the three eligible areas. The results are rated as a severe concern in the Republic of Ireland.
- The second most severe skills issue in the Republic of Ireland were sales and marketing skills which over half identified as a skills challenge.
- The top infrastructural challenge that emerged from the survey was broadband capacity, which just over one third indicated was an issue for their business. This is a vital infrastructural challenge to address to facilitate the development of the interactive media sector.
Key findings and recommendations

- Current collaboration was greatest between companies within the interactive media sector itself in the Republic of Ireland. A high potential for collaboration was identified between interactive media and other digital content sub-sectors. Potential for collaboration was greater than existing in the interactive media sector itself. Better collaboration across sectors is important for future growth and development.

- Networking to gain particular supports and services was identified in the Republic of Ireland eligible area. Over two thirds said they networked in the hope to gain access to the latest technological developments.

- The top infrastructural challenge that emerged from the survey was broadband capacity, which over two fifths identified as a challenge. This is a vital infrastructural challenge to address to facilitate the development of the interactive media sector.

- One third stated they currently collaborate with other interactive media companies. However almost three quarters indicated that there was potential for collaboration. Potential for collaboration in specific areas of work was not high, but still significant. Better collaboration across sectors is important for future growth and development.

- Networking emerged as an important method of gaining services and supports. Access to the latest technological developments was indicated by over half of respondents as a support they hoped to gain from networking.

- The second most severe skills issue in western Scotland were skills in the use of software packages which one third identified as a skills issue.

6.3.3 WESTERN SEABOARD OF SCOTLAND

- Distribution of sales was concentrated in the domestic market. Broadening of its market base should be a key growth strategy for the sector.

- Challenges impacting business growth cited by over half of interactive media respondents in western Scotland were an ability to innovate/respond to customer and market needs and recruiting skilled staff.

- Business skills emerged as the top skills deficit in the interactive media sector in the three eligible areas. The results are rated as a significant concern in western Scotland.

- The second most severe skills issue in western Scotland were skills in the use of software packages which one third identified as a skills issue.

- One third stated they currently collaborate with other interactive media companies. However almost three quarters indicated that there was potential for collaboration. Potential for collaboration in specific areas of work was not high, but still significant. Better collaboration across sectors is important for future growth and development.

- Networking emerged as an important method of gaining services and supports. Access to the latest technological developments was indicated by over half of respondents as a support they hoped to gain from networking.

- The top infrastructural challenge that emerged from the survey was broadband capacity. This is a vital infrastructural challenge to address to facilitate the development of the interactive media sector. Air transport, road networks and public transport were a higher rated challenge in western Scotland than in the other Honeycomb areas.
Key findings and recommendations
References


References


### Appendix 1

List of interactive media companies in the Honeycomb eligible areas

<table>
<thead>
<tr>
<th>NORTHERN IRELAND ELIGIBLE AREA</th>
<th>Company Name</th>
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<tbody>
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<td><strong>ANTRIM</strong></td>
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<td></td>
<td>Not Forgotten Associates</td>
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Appendix 1

FERMANAGH
Advantage Interactive
Cloud 9 Digital
Erne Web Design
Tick Tock Design

LONDONDERRY
Avaunt IT Solutions
Blue Splat
D4 Webdesign
Dee.ie
Derry Productions
Diglink Design
Eplus Design
In Your Element
Lancorz Designs
Lanoc Web Design
Learning Pool
Nolka Design
Octoberstone
Own Brand Media
Redback Creation
Sevengate Publishing
Silverfish Studios
Stevenson IT
Tiger Monkey Creative
Truffle Pig

TYRONE
10 Man Productions
Aspire Web Works
Blackthorn Design
Concept NI Web Solutions
Divine Media
Green Beans Media
High Contrast Design
iDesign
Link:Ni
Martin Hughes Website Design
Peter Kerr Design
PG Multimedia
Purple Oak Design
Reflex Studios
Subversive Design
Website NI
William Web Design

REPUBLIC OF IRELAND ELIGIBLE AREA
CAVAN
Blade Web Design
Bluenet Internet Solutions
Moonman Design
Ronan Donnellan IT Services
Visual Design

DONEGAL
3D Issue
Aileach Design
Aurora Web Design
Bexter Productions
Digital Door Image and Web Services
Donegal Connect
Fire Cloud 365
Ghosh IT Solutions
I-stream Solutions
Littlepig
Local SEO Ireland
Lone Star State
Manna Design
Meanit
Netserve Internet Solutions
Netspace Design
Pixel Crush
Presto Web Design
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Appendix 1

Billy McCallion Website Design
Bolt Blue Media
Corrie D Marketing
Cyncronet
Dark Flare Design
Design Direct
Digital Art F L
Digital Marketing Ayrshire
Eikon Graphic Design Limited
Essence Creative Solutions
Fraser Internet
Fresh Air Design
Giglets
Green Orb Web Design
Greythorn Associates
IJ Web Design
Launch
Level One Creative
Mad About Design
McGawn Design
Monkey 6ix
Netfocus Solutions
Nexus
Norm4webdesign
Outbox 4
Paligap Brands
Planet Groucho

Polsart
Radio Lingua Ltd
RW Web Design
Saint Valley Web Consulting
Smart Multimedia
Soapgraphics
Storm 360
Synergy Knowledge
Thinked
Ulka Media
Webage
Websoft Design
Websters Ltd
Webstorm Online Web Services
Wigwam Web Services

DUMFRIES AND GALLOWAY
AOI Media
Bluecommerice Solutions
Brook House
Creatomatic
CSU Web Design
Eskdale Solutions
Galloway Web Services
Get Known
Hoggett Creative
Hollinger Creative

Indigo Web Design
Infraredweb
Internet Design Shop
Kirkmoor Com Ltd
Nathon Jones Website Design
South Rhins Web Design
Superwebs
Tourism Doctor
Weesleekit

LOCHABER
HotScot
Linnhe Creative
Objective Software Services

SKYE AND LOCHALSH
Calco UK
Canán
Hunter Davies
Pelican Design Consultants
Ronan Martin Design
Sky Web Design
Appendix 2

The Honeycomb Creative Works Team

STAFF AND MANAGEMENT COMMITTEE

- David Brown, Scottish Programme Coordinator, Creative Skillset
- Dr Paul Beaney, Project Director, Ulster University
- Deirbhíle Doherty, Finance Assistant, Ulster University
- Professor Sarah Edge, Skills Director, Ulster University
- Kevin Fearon, Networks of Scale Coordinator, Dundalk Institute of Technology
- Professor Nick Higgins, Research Associate, University of West Scotland
- Ian Kennedy, Management Committee, Creative Skillset Northern Ireland
- Camilla Long, Skills Coordinator, Ulster University
- Irene McCausland, Management Committee, Dundalk Institute of Technology
- Fiona McElroy, Programme Manager, Ulster University
- Stephen Michael, Web Developer, Ulster University
- Dr Colm Murphy, Intelligence Director, Ulster University
- Aisling Murtagh, Research Associate, Ulster University
- Dr Douglas Nanka-Bruce, Research Associate, Dundalk Institute of Technology
- Caroline O’Sullivan, Skills Coordinator, Dundalk Institute of Technology
- Maria Prince, Programme Administrator, Ulster University
- Alasdair Smith, Management Committee, Creative Skillset Scotland
- Agnieszka Walsh, Project Administrator, Dundalk Institute of Technology
- Dan Wilks, Research Associate, Creative Skillset London

PARTNERS

- Creative Skillset
- Dundalk Institute of Technology
- University of the West of Scotland

DELIVERY PARTNERS

- Creative Scotland
- Letterkenny Institute of Technology
- MG Alba
- Regional Development Centre, Dundalk Institute of Technology
- ScreenHI
- The Nerve Centre

LEAD PARTNER

- Ulster University
About Honeycomb

The Honeycomb – Creative Works programme is a collaborative project led by Ulster University, in partnership with Dundalk Institute of Technology, Creative Skillset and the University of the West of Scotland.