



Invest Northern Ireland  
Building Locally  
Competing Globally

# The Northern Ireland Digital Content Strategy

“Building the Foundations”

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# Foreword by the Minister of Enterprise, Trade and Investment

The digital content industry is an increasingly important area within our growing creative and knowledge based economy.

It is estimated that the global digital content industry will be worth in excess of £900 billion by 2010 and will grow faster than other economic sectors. Invest NI has developed the Northern Ireland Digital Content Strategy to ensure Northern Ireland can capitalise on this opportunity.

While our digital content industry is still underdeveloped it has a number of important strengths. Currently the industry has low levels of investment in intellectual property, a lack of Foreign Direct Investment and limited sales into overseas markets but its strengths include talented staff, innovative ideas, global ambition and the infrastructure to support growth.

My department has made significant investments in securing 100% broadband coverage for Northern Ireland and will continue to invest in this infrastructure over the next six years to deliver increased bandwidth.

Supported by this excellent broadband network, we now need to fully utilise it if our digital content industry is to develop world class products that can be delivered to an international market.

In the digital content industry, collaboration across traditional sectoral boundaries is the key to success. Invest NI has been working with the local industry, Government bodies and stakeholders to develop a focused agenda and a framework for collaboration.

The resulting Digital Content Strategy is rightly industry led and I would like to acknowledge the commitment that the sector has shown to its development. I would also like to acknowledge the input of all stakeholders including Momentum, Northern Ireland Screen, The Northern Ireland Music Industry Commission and Skillset.

The strategy highlights the opportunities for Northern Ireland which could deliver more high value added employment, innovative products & services and increased export sales.

I welcome the publication of this strategy and I am confident that by working together we can develop a vibrant and successful digital content industry.



A handwritten signature in black ink, reading "Nigel Dodds". The signature is written in a cursive style with a horizontal line underneath the name.

**Nigel Dodds, OBE MP MLA**  
**Minister of Enterprise, Trade and Investment**

# 1.0 Executive Summary

## 1.1 The Digital Content Industry

The digital content industry is one of the most important areas of growth within the global creative and knowledge based economy. The Northern Ireland Digital Content Strategy has been developed to ensure that we capitalise on this opportunity.

Digital content includes digital animation and post production, mobile & web content, e-learning/serious gaming and console gaming. Film and TV and music are also 'digital content', but are not discussed in depth in this document as strategies are already in place in Northern Ireland for these sub sectors as developed by the Northern Ireland Screen Commission and the Northern Ireland Music Industry Commission respectively. The Northern Ireland Digital Content Strategy will complement and co-ordinate with these existing strategies.

The global digital content industry is forecast to grow at a rate of between 6 and 10 per cent per annum over the next three years<sup>1</sup>. International regions including New Zealand, Australia, Singapore, Canada and in the European Union, have all recognised the importance of digital content in developing their knowledge based economies. These regions have either developed or are in the process of developing new strategies and programmes for the sector. This will lead to an increase in international competition.

The Northern Ireland digital content industry has a number of key strengths including talented staff, innovative products, competitive pricing and the infrastructure necessary to develop and distribute new digital content products. However, similar to other regions, the industry is fragmented and embryonic and has yet to make significant advances into global markets or to secure significant Foreign Direct Investment.

The research undertaken by Invest Northern Ireland has identified a number of areas for development including leadership; investment; skills and training; research & development & innovation; and internationalisation.

The challenge is to effectively address these areas for development and thereby ensure that the industry is equipped to maximise the global opportunities presented.

## 1.2 The Role of Government

Government at European, national and local levels, recognises the importance of the digital content industry to the future development of the knowledge based economy and has embarked on policy development to embrace this emerging environment.

The European Commission has published i2010, a proactive policy to harness the potential of the digital economy. The European Commission believes that it will deliver high quality employment and modern public services<sup>2</sup>. In the UK, government has developed "Connecting the UK, The Digital Strategy" and is working towards the development of innovative content with the aim of making the UK a world leader in digital content provision<sup>3</sup>. The Department of Trade and Industry (now The Department of Business, Enterprise and

<sup>1</sup> PwC, Global Entertainment and Media Market by Region, 2006

<sup>2</sup> Working together for growth - The Lisbon Strategy i2010, February 2005

<sup>3</sup> Connecting the UK, The Digital Strategy, DTI, April 2005

Regulatory Reform), in its publication “Broadband Content Business Case: How content can aid the delivery of regional and devolved administration economic strategies<sup>4</sup>” acknowledges digital content as a driver for economic growth and calls for the promotion of high quality content in business, learning, public services and the community.

In Northern Ireland, the Department of Enterprise Trade and Investment (DETI) recognises the importance of broadband in helping businesses to close the gap between their performance and that of their competitors, and in helping to create higher value services and innovative products and processes<sup>5</sup>.

The success of the DETI Broadband Content Initiative has proven that digital content companies in Northern Ireland have strong proposals and have the potential to develop world-class products.

Invest Northern Ireland has been working with the local digital content industry and stakeholders to develop the Northern Ireland Digital Content Strategy in line with government policy.

### 1.3 Global Market Size

The digital content industry worldwide was estimated to be worth \$1.4 trillion (£732 billion) in 2006 growing to \$1.8 trillion (£940 billion) by 2010 and is growing faster worldwide than other economic sectors<sup>6</sup>.

### 1.4 Local Sector Size

Detailed data was obtained for 40 Invest NI client companies. These businesses had an average turnover of £625,000 in 2006 and an average of 10 employees. Sales outside NI accounted for 50 per cent of turnover. All of these companies have received targeted support from Invest NI.

Number of Companies	Average Turnover	Average Employment	Total Turnover	Sales Outside NI
40	£625,000	10	£25m	50%

Clearly, the local digital content industry is underdeveloped in the context of the global industry.

### 1.5 Target Sub-Sectors

The Northern Ireland digital content industry is diverse with a broad range of business activity, from web design through to mobile gaming, digital animation and e-learning. If the industry is to grow and achieve success it is important that resources are targeted where they will deliver the maximum impact.

4 Broadband Content Business Case: How Broadband Content can Aid the Delivery of Regional and Devolved Administration Economic Strategies. DETI, November 2004.

5 Broadband Northern Ireland: Fully Connected

6 PwC, Global Entertainment and Media Market by Region, 2006

The key growth areas identified by the research as having the greatest potential for Northern Ireland are:

- Digital Animation;
- Mobile & Web Content; and
- E-learning / Serious Gaming.

It will be important to focus on developing these areas if we are to build the foundations of a vibrant local industry.

## **1.6 Summary of Key Issues**

Consultation with the industry, stakeholder groups and international benchmarking has led to the identification of five key issues that need to be addressed in order to support the growth of the Northern Ireland digital content industry. These are:

- Leadership;
- Investment;
- Skills and Training;
- Research & Development & Innovation; and
- Internationalisation.

These barriers to growth are discussed in more detail below.

### **1.6.1 Leadership**

Effective leadership will be a key enabling factor within the Northern Ireland digital content industry if we are to take advantage of the anticipated growth in the target markets.

The industry has been evolving in recent years, with many stakeholders and groupings emerging with an interest in the development of the sector.

The formation of an Industry Advisory Panel with associated Industry Action Groups will advise on the development and implementation of the Northern Ireland Digital Content Strategy.

### **1.6.2 Investment**

The Northern Ireland digital content industry is finding it difficult to secure private sector investment. Significant investment will be required if local businesses are to move up the value chain and achieve global success. The industry and its stakeholders need to raise awareness of digital content as an opportunity for investment.

Private equity will be required to strengthen the industry in the longer term and to assist it to become an innovative and thriving sector. Programmes to support companies to become investor ready and mechanisms to leverage private sector investment, need to be explored.

### **1.6.3 Skills & Training**

Skillset, the Sector Skills Council for the Audio Visual Industries, is the lead agency at a UK level in respect of skills development for the digital content industry. The local industry will engage with Skillset in the implementation of its existing Sector Skills Agreement through membership of the Skillset Northern Ireland Skills Panel.

### **1.6.4 Research & Development & Innovation**

The industry will need to increase levels of Research & Development & Innovation (R&D&I) if enhanced growth and wealth creation are to be achieved. Industry and stakeholders need to examine current support for R&D&I and identify any gaps.

Commercial networking and knowledge transfer linkages between further and higher education, university research centres and the digital content industry will assist in generating new intellectual property and will raise levels of collaboration in the industry.

### **1.6.5 Internationalisation**

There is a lack of global success among digital content companies in Northern Ireland and the fragmented nature of the industry is limiting growth potential.

There is a need to develop and build an export culture within the sector and map export opportunities with targeted support mechanisms and programmes. This will involve enhanced market intelligence, international best practice visits, clustering and building partnerships and collaborative networks outside Northern Ireland.

Strategically significant digital content FDI will strengthen the local industry.

The Northern Ireland Digital Content Strategy proposes a road map for the industry and stakeholders identifying actions to address these issues.

## **1.7 Targets**

The digital content industry in Northern Ireland needs to develop rapidly if it is to realise its global potential in the areas of digital animation, mobile & web content, and e-learning/serious gaming.

The strategy presented in this document aims to achieve a number of key targets over the three years of the plan. Given that the Northern Ireland Industry is starting from a relatively low base, more ambitious targets are proposed over the period than the 6 per cent to 10 per cent growth expected for emerging countries:

- Increase the turnover of local Tier 2<sup>7</sup> digital content companies by 50 per cent (equivalent to 15 per cent per annum).
- Increase export sales of local Tier 2 digital content companies to 60 per cent of turnover.
- Secure 20 established digital content companies accessing Invest NI support for the first time.
- Promote 30 new digital content start-ups in the key areas of digital animation, mobile & web content, and e-learning/serious gaming.
- Of the 30 new digital content start-ups, generate 6 high growth start-ups.
- Secure one high quality digital content FDI project.

A target based on the number of jobs created has not been included as the focus of development in the digital content industry needs to be on wealth creation rather than job creation, if the industry is to be successful in attracting the private sector investment needed to support its growth.

## 1.8 Conclusion

The digital content industry and its stakeholders recognise the need for progress and believe that the industry in Northern Ireland will remain fragmented and opportunities will be lost if a structured approach for developing the sector is not put in place. The need for a framework that will assist the development of strategic alliances and collaboration across all digital content sub sectors is widely acknowledged.

Increased competition from overseas will mean that the local industry will find it difficult to compete if not prepared with a clear and focused agenda.

The Northern Ireland Digital Content Strategy proposes a focused agenda and a framework for collaboration.

In recognition of the current underdeveloped nature of the local industry, the strategy is entitled "Building the Foundations".

The course of action identified in this strategy will drive the growth and global competitiveness of the local digital content sector by increasing investment, by increasing innovation, by increasing export sales and by supporting Skillset to raise levels of skilled employment. FDI will also have a role to play in ensuring that Northern Ireland develops into a recognised hub for digital content development.

The implementation of the Northern Ireland Digital Content Strategy to 2011 will be a vital first step in achieving the vision:

"A vibrant and successful digital content industry that is entrepreneurial, innovative and globally focused, encouraging collaboration and attracting inward investment".

<sup>7</sup> Export aware companies that are already selling into markets outside Northern Ireland and have the potential to achieve growth in these markets. c.f. Section 3.6.1.

## 2.0 Policy Context

The importance of Information and Communications Technologies (ICT) to the development of a strong, competitive, knowledge-based economy is widely recognised and it is no surprise that there has been an increased strategic emphasis on ICT over the last few years, particularly with regard to the emergence of enabling technologies such as mobile and broadband telecommunications.

### 2.1 European Perspective

The European Union considers information and communications technologies to be powerful drivers for economy-wide productivity and growth - and arguably Europe's best-bet investment for the future. The ICT sector contributes to a quarter of the EU's Gross Domestic Product growth, and investment and innovation in ICT generates around 45 per cent of the EU's productivity growth. (Internet or other computer networks sales represented 8.5 per cent of total enterprise sales according to the Community 2004 survey.)

As the ICT sector is key in relation to building on the EU's Lisbon Agenda for growth, the EU has embarked on "i2010", a package of proactive policies to harness the potential of the digital economy to deliver growth, jobs and modern online public services. It also provides tools for good governance, including better regulation commitments and progress reports<sup>8</sup>.

### 2.2 UK Policy Context

In line with EU policy, the UK Government's ICT strategy "Connecting the UK: the digital strategy" states that "The Government will work to create the right environment for the creation of innovative content. We will set out guidance on broadband content procurement by the public sector, informed by an industry perspective. We are already a leader in mobile and wireless technologies. We want the UK to be a world leader in allowing people to reach any content, with any device, anywhere, anytime. Content whether as a business tool, for entertainment, a community portal, e-learning or generated by consumers themselves is the main driver for increasing the effective use of ICT"<sup>9</sup>.

#### 2.2.1 Department of Business, Enterprise and Regulatory Reform

Delivering on this strategy, in November 2004, DTI (now The Department of Business, Enterprise and Regulatory Reform), published the "Broadband Content Business Case: How Broadband Content Can Aid the Delivery of Regional and Devolved Administration Economic Strategies"<sup>10</sup>. The paper acknowledges digital content as a driver of economic growth defining content as follows:

"Content applications and services, which will promote engagement with and the effective use of broadband technologies".

<sup>8</sup> Working together for growth - The Lisbon Strategy i2010, February 2005

<sup>9</sup> Connecting the UK, The Digital Strategy, DTI, April 2005

<sup>10</sup> Broadband Content Business Case: How Broadband Content can Aid the Delivery of Regional and Devolved Administration Economic Strategies. DTI, November 2004.

The paper considers the role of content and calls for work with the Regional Development Agencies (RDAs) and Devolved Administrations (DAs) to promote high quality broadband content in the following key policy areas:

- Business - particularly, but not solely, in the digital content sector;
- Learning - with the potential to transform the learning experience;
- Public Services - delivering new services and maximising the efficiencies of existing services;
- Community - supporting inclusion and empowerment at a community level.

## 2.3 Northern Ireland Policy Context

In setting out its vision for the development of the telecommunications infrastructure in Northern Ireland, DETI acknowledged the importance of Broadband, stating that "Broadband has an important role in helping Northern Ireland business to close the gap in performance against competitors and in the creation of high value services and innovative products and processes"<sup>11</sup>

Taking this forward and recognising that Northern Ireland content companies would have to look outside their local markets in order to be successful, in January 2005, DETI appointed consultants to assist in developing a broadband content initiative which would: "seek to add value to the digital content produced by Northern Ireland companies by transforming it to broadband content and through broadband technology, giving these companies access to global markets".

### 2.3.1 Innovation

Supporting the view that the availability of broadband could be a key enabler to raising the innovation performance of the region through the development of the content industry, the 2004-2006 Action Plan for the Regional Innovation Strategy for Northern Ireland states that "DETI will take the lead in encouraging the development of innovative and creative content by the NI Creative Sector to take advantage of 100% broadband coverage. Working with Invest NI, Department of Culture, Arts and Leisure (DCAL) and in partnership with the private sector we will commission a range of flagship broadband content projects. The objective will be to develop collaboration between companies and the creation of virtual clusters focusing on the development of commercially viable broadband content for global markets."<sup>12</sup>

### 2.3.2 Creativity

In addition, realising that the creative sector has a key role to play in the digital content arena, DCAL's "Unlocking Creativity - A Creative Region" has further developed thinking in this regard stating that "The availability of digital technology is enabling the development of a whole range of new products and services. Accelerating deployment of the delivery mechanisms, including broadband internet access, will increase significantly the demand

<sup>11</sup> Broadband Northern Ireland: Fully Connected

<sup>12</sup> The Regional Innovation Strategy for Northern Ireland- Action Plan, DETI September 2004 to August 2006

for digital content, particularly over the next five years. This will provide a range of opportunities for companies not only in the “traditional” content industries such as Film and TV but in new sectors such as e-Learning, digital publishing and even medical imaging. Such development will also provide opportunities for other companies providing technology for creation and distribution of content.”<sup>13</sup>

### **2.3.3 The Northern Ireland Digital Content Strategy**

It is in this context that Invest NI has developed the Northern Ireland Digital Content Strategy in consultation with the industry and key stakeholders. This strategy will enable the digital content industry in Northern Ireland to take full advantage of the opportunities presented by broadband and mobile technologies.

We need to recognise that the global digital content industry is developing rapidly and that a flexible, responsive approach will be required to ensure success.

<sup>13</sup> Unlocking Creativity, a Creative Region, DCAL

## 3.0 Market Overview

### 3.1 Background

This strategy sets out priorities for the industry and stakeholder groups over the next three years.

The research process included face to face and telephone interviews with industry leaders, Momentum<sup>14</sup> and stakeholder groups as well as in-depth desk research and analysis. Where possible the information was cross-checked using Invest NI sources, industry contacts and expertise.

The initial research was widely supported within the Northern Ireland digital content community. Further consultation meetings built on the initial work to secure industry and stakeholder commitment to, and participation in, the development of this strategic plan.

### 3.2 Vision

Our shared vision is:

“A vibrant and successful digital content industry that is entrepreneurial, innovative and globally focused, encouraging collaboration and attracting inward investment”.

### 3.3 Digital Content Industry Overview

Digital content is becoming an increasingly important part of growing economies as they shift from the manufacture of physical items to delivering high value intangibles, and is becoming the basic creative infrastructure underpinning the knowledge economy<sup>15</sup>. Digital content includes the creation and design of digital products and services that are managed and distributed through multiple delivery platforms and channels including ICT hardware and infrastructures, consumer electronics, mobile and hand held devices.

The global digital content industry is continually changing and evolving as new innovations, technologies and novel business models shape our lives. Digital content is becoming increasingly important to other traditional sectors such as health, education, public administration, voluntary and community and architecture as an enabler which transforms the way that business is done.

The convergence of ICT, multimedia, entertainment, mobile and the availability of broadband are the driving factors in the increasing demand for digital content. Deloitte in their 2005 publication, The Trillion Dollar Challenge<sup>16</sup>, stated that convergence is all about redefining boundaries. They conclude that the biggest winners are generally the companies who are pushing the boundaries, sometimes being first to market, sometimes being agile fast followers. The boldest party, taking the largest but measured risk, nearly always makes the most significant return.

<sup>14</sup> Momentum is the NI ICT trade association: [www.momentumni.org](http://www.momentumni.org)

<sup>15</sup> OECD, Digital Broadband Content, Strategies and Policies, May 2006

<sup>16</sup> Deloitte, The Trillion Dollar Challenge, Principles of Profitable Convergence, 2005

On a global scale the total value of the media and entertainments sectors was estimated at \$1.4 trillion (£732 billion) in 2006 growing to \$1.8 trillion (£940 billion) by 2010. This is an average annual rise of 6.6 per cent. Emerging regions such as Latin America and Asia Pacific are returning average annual percentage increases (AAPI) of 9 per cent<sup>17</sup>.

To develop this sector, Northern Ireland requires a co-ordinated approach, engaging key stakeholder groups; otherwise we run the risk of being permanently outpaced by other global regions. This strategy has been developed to ensure that the local digital content industry will have the opportunity to grow in global markets and become a major contributor to our economy.

### 3.3.1 Digital Content Sub-Sectors

The following sub-sectors are considered:

- Web content,
- Mobile content,
- Film and Television,
- Digital Animation and Post Production,
- E-learning,
- Games,
- Serious Gaming, and
- Music.

**Web content** offers government and business/consumer information services, video on demand, online gaming, blogging<sup>18</sup> (myspace), podcasting<sup>19</sup> and a wide selection of Google, Yahoo and MSN content services to both businesses and consumers.

In 2006, PriceWaterhouseCoopers (PwC) measured global spending through online and wireless channels. This consists of online rental subscriptions and digital streaming in filmed entertainment, licensed digital downloads and mobile music, online and wireless video games, electronic books and online casino gaming. These five categories generated \$19 billion (£10 billion) in 2005 and will increase to \$67 billion (£35 billion) by 2010<sup>20</sup>. This equates to AAPI of 29 per cent.

**Mobile content** offers regular updates, location services, downloads and video/TV programming on demand. Data Monitor, in December 2005 viewed the latest frontier of convergence as the broadcasting of TV content to mobile phones. Today, consumers are able to download pre-recorded television programmes and video clips over 2.5G and 3G phones, but in the next few years broadcasting networks and next generation handsets will be deployed which will enable consumers to watch broadcast TV on their mobile phone screens.

<sup>17</sup> PwC, Global Entertainment and Media Market by Region, 2006

<sup>18</sup> Blog - universally used for web-log (blog) a type of website where text and image entries are made or commentary on subjects such as news, food, politics, current affairs etc can be posted by any user (www.myspace.com, www.youtube.com)

<sup>19</sup> Podcasting- Is a blend of ipod and broadcasting and is a method of distributing digital audio and video content over the internet and downloading it to computer or handheld, mobile devices.

<sup>20</sup> PwC, Global Entertainment and Media Market by Region, 2006

Today not all **Film and Television** content is digital, however in the near future it will be. This change will impact across production, marketing and the distribution of film and television programmes. The distribution of this content across various platforms and devices including interactive TV (iTV), satellite, set top box, mobile devices, high definition (HD) DVDs, HDTV, film streaming<sup>21</sup> and Apple's iPod and iPhone are providing new channels for what were traditional creative industries. The global market for filmed entertainment is estimated to be worth \$82 billion (£43 billion) and is set to increase to \$104 billion (£54 billion) by 2010, an AAPI of 5 per cent. The market for global television distribution is expected to reach \$230 billion (£106 billion) in 2010 from \$154 billion (£80 billion) in 2005<sup>22</sup>, an AAPI of 8 per cent. Digital animation and digital post production are also becoming an integral part of the Film and TV industry, offering computer generated animation films and special effects.

**Digital Animation and Post Production** is an expanding area of creativity and technical development. It is now used extensively in film and television, in blockbuster films such as Toy Story, Shrek and Finding Nemo, Valiant, Magic Roundabout and recent animations for TV including the successful The Ugly Duckling produced in Dublin for world wide television distribution<sup>23</sup>. Animation and Post Production also opens up wider possibilities in the entertainment markets as it is used in simulation rides and walkthroughs, computer games, television advertisements, and e-learning environments. Animation and Post Production allows the creation of virtual actors, virtual trainers, props, sets and special effects. The technology required for animation is more widely available largely because of lower system costs, the increasing power of computers and quality software. There has been constant growth in the use of computer animation in existing areas and in newer applications.

Limited forecast figures are available on the global animation market, however, Nasscom (National Association of Software Services Companies) estimated that the global market in 2005 was worth around \$45 billion (£24 billion) and is expected to jump to between \$50 billion (£26 billion) and \$70 billion (£37 billion) by the end of 2006<sup>24</sup>. Even at the lower end of this scale this projected growth represents an AAPI of 9 per cent for the 2005 to 2006 period. The digital animation sector is expected to grow tenfold over the next five years<sup>25</sup>.

**E-learning** offers cost-effective and self-paced learning. It is flexible, accessible, convenient and uses interactive and rich multimedia digital learning content to enhance the learning experience. E-learning also offers online tutoring, learner interaction, feedback and self testing. Originally called distance learning, e-learning has evolved into an interactive activity which fully exploits the assets of today's information technology.

The ACTeN 2004 report on E-learning commented that, "Gathering and analysing data on the European learning market is still more difficult compared to the US market as it appears to be much more fragmented"<sup>26</sup>. The US training market size is significantly ahead of the rest of the world, with companies spending \$66 billion (£34 billion) annually on corporate education. This is only a subset of the gigantic educational market in the US. In the US, the total training market was about \$735 billion (£384 billion) in 2000.

21 Real time TV or Films, 'streamed' through broadband enabled hardware or mobile devices

22 PwC, Global Entertainment and Media Market by Region, 2006

23 FACTIVA 2006 Article, Irish News, Cartoon Makers are animated by success, 22nd August 2006

24 FACTIVA 2006 Article, The Hindustan Times, Animation industry gets serious about Bollywood, 28th August 2005

25 FACTIVA 2006 Article, Belfast Newsletter, Taking a bite out of monster market, 2nd August 2005.

26 Anticipating Content Technology Needs (ACTeN), E-Content Report 6, 2004

**Games** are delivered on a wide variety of platforms including personal computers, mobile phones, game consoles (Xbox 360, Play Station 3, Nintendo Wii), and hand held devices (PSP). The range of skills required to develop games includes producers, coders, designers, artists, modellers, animators, texturing and sound specialists.

In 2006 PwC forecast that online and wireless would become important distribution channels for gaming. This will be helped by growing broadband penetration, new mobile phones capable of downloading games, and the movement towards 3G wireless networks, facilitating distribution of more advanced wireless games. It is estimated that the video games market will increase from \$27 billion (£14 billion) in 2005 to \$46 billion (£24 billion) in 2010, an AAPI of 11.4 per cent. Gaming will be the second fastest growing segment of the market during the next five years behind internet advertising<sup>27</sup>. The figures above do not include **Serious Gaming** which is the use of computer gaming technology in education and simulated training. No separate figures for serious gaming are currently available given the common characteristics with e-learning and computer gaming.

There is intense competition in the games sector from Australia, Korea, India and some Eastern European countries. Large publishers in the USA and Japan no longer take risks in multi-million pound investments in the development of a console or PC entertainment brands.

The cost of entry into this market as a developer is high: circa £50,000 for development hardware for the PlayStation Portable, and tools alone can add an extra £5,000 per person. Additional software such as middleware (like RenderWare) may add £15,000 per title. Add salaries and development time and a figure of up to £20 million was quoted for an average console development<sup>28</sup>.

Another barrier to entry is that often only elite well established studios have early access to the technology and the large publishers.

**Music** is a key component of the digital content industry. The recorded music market is reported to have increased by 1.2 per cent in 2005. This is the second consecutive rise following four years of decline. Large increases in mobile music and licensed digital distribution have offset declines of traditional formats. Rising broadband subscriptions are set to fuel digital distribution, while next generation wireless networks will foster growth in mobile music. In the mobile music market, the move from ring tones to real tones (actual music) will assist market growth. Spending is projected to rise to \$48 billion (£25 billion) in 2010 from \$37 billion (£19 billion) in 2005<sup>29</sup>, an AAPI of 5 per cent.

### 3.4 Digital Content Globally

Globally the digital content sector is growing faster than the rest of the economy. In the UK and US, the average annual growth rates for the creative industries of which digital content is a key sub sector, have consistently been more than twice that of the economy at large. This translates directly into jobs and wider economic growth<sup>30</sup>.

<sup>27</sup> PwC, Global Entertainment and Media Market by Region, 2006- Internet access will be the fastest growing

<sup>28</sup> Invest NI Industry Source

<sup>29</sup> PwC, Global Entertainment and Media Market by Region, 2006

<sup>30</sup> Research and Innovation Systems in Production of Digital Content, in The Creative Industries Cluster Study, Vol 3, 2004

Table 1: Global Entertainment and Media Market by Region (US\$ Millions)

Region	2003	2004	2005
United States	490,958	528,004	553,488
% Change	5.2	7.5	4.8
EMEA	379,878	407,893	430,425
% Change	4.2	7.4	5.5
Asia Pacific	229,166	253,224	274,018
% Change	6.2	10.5	8.2
Latin America	32,483	35,934	39,763
% Change	4.4	10.6	10.7
Canada	28,153	30,054	31,092
% Change	6.7	6.8	3.5

PriceWaterhouseCoopers 2006

### 3.5 International Benchmarking

International regions are very active in their recognition and programme support for the digital content sector. The Organisation for Economic Co-Operation and Development (OECD)<sup>31</sup> has compiled research on digital content sector policy initiatives and this research is summarised below<sup>32</sup>. All of the countries listed are providing support to develop their digital content industries.

#### 3.5.1 New Zealand

New Zealand has developed an integrated strategy to build its Digital Content Industry, allocating \$24 million (£13 million) in seed funding over four years to support the development of broadband infrastructure. To unlock New Zealand's stock of content and provide seamless, easy access to the information that is important to communities, businesses, and cultural identity, New Zealand aims to develop and launch a National Content Strategy, develop an online Cultural Portal, implement a National Digital Heritage Archive and digitise existing content and develop new content through a Community Partnership Fund worth \$20.4 million (£11 million) over four years.

#### 3.5.2 Singapore

The Connected Singapore Media 21 blueprint was launched in March 2003 with funding of S\$100 million (£34 million) over five years. Singapore's Digital Exchange is part of the overall blueprint. The aim of the Digital Exchange strategy is to position Singapore as a global distribution hub for the processing, management and distribution of digital assets. Digital assets refer to any content, service and resource that can be digitised. These will include content such as films, video, music, games and software applications. Leveraging on Singapore's excellent international telecommunications connectivity, pro-business environment, and established legal and financial frameworks, the Digital Exchange strategy will create a new source of growth and extend Singapore's hub status in the digital medium.

<sup>31</sup> OECD, Digital Broadband Content, Strategies and Policies, May 2006

<sup>32</sup> Australian Government, Unlocking the Potential, Digital Content Industry Action Agenda, November 2005

The target is to increase the value of digital transactions through Singapore from the current S\$150 million to S\$500 million (£102 million) by 2006. Singapore's Media Development Authority (MDA) has begun a number of programmes under its Media 21 blueprint to encourage the development of content for broadband, television and film. There are a number of broadband content programmes such as:

- Digital Content Development Scheme:  
A seed fund which aims to support the development of innovative ideas and concepts into real content products.
- Digital Technology Development Scheme:  
Supports the development of original and innovative products or processes that lead to tangible outcomes such as investment for new products, introduction of new services or adoption of new technology.
- Digital Broadcasting Development Fund:  
Supports the development of original, innovative and high-quality digital broadcasting content and services for digital TV.

### **3.5.3 Canada**

Canada has a comprehensive range of programmes which support Canadian digital content production. Whenever there is a sale or transfer of ownership of a media, broadcast, or broadcast distribution enterprise in Canada, the Canadian Radio-television and Telecommunications Commission (CRTC), the regulatory body that governs television and telecommunications in Canada, requires the purchaser to contribute 10 per cent of the gross sale cost of the transaction to a benefits package for the industry. The rationale is to ensure corporations contribute to content production.

There are now approximately 19 different private funds in Canada, each contributing to content genres (e.g. documentaries, drama, new media), with different kinds of contributions (e.g. development loans, grants, equity financing or inexpensive interim financing).

For example, when Canada's largest telecommunications company, Bell, took over the largest private TV station four years ago with a purchase price of CAN\$2.3 billion, \$230 million (£105 million) was contributed back to the independent content creation industry in a variety of programmes, including research, mentorship, development and television production. All benefits packages must be approved by the CRTC so there are safeguards to prevent misuse. The Bell Fund contributes grants to digital content when applied to television. The Bell Fund alone currently distributes CAN\$6 million per year in grants to content production.

### **3.5.4 Korea**

Korea's strategic programmes to promote digital content exports include localisation strategies for promising export content; platform conversion and device optimisation for export; a points system for overseas marketing; scholarships for export of digital content; marketing meetings through GPP (Global Publishing Post); and participation at world-class digital content trade shows.

Korea has also released its digital content strategy, which introduces a series of platforms, services and content forms in a cohesive strategy to encourage investment in three essential networks. The focus is on establishing infrastructure from which digital content platforms, markets and content forms can be created. These include digital content and software solutions, next generation mobile communications devices, home network devices and telematic devices. A key focus for the Korean strategy is the digitisation of government-owned archives, in combination with strategies to encourage their use by the private sector.

### **3.5.5 Australia**

The Australian Government's Department of Communications, Information Technology and the Arts published their strategy document entitled "Unlocking the Potential", Digital Content Industry Vision in November 2005<sup>33</sup>.

Four essential areas are highlighted as measures that will allow the growth of globally competitive Australian companies, help innovation, develop a skilled workforce for the digital content industry and that will assist export of digital content products and services.

The Australian Government is in the process of:

- Initiating an investment forum to examine issues and help develop mechanisms to support investment in digital content:
- Developing a cross-sectoral digital content industry market intelligence network that will advance companies export capacity; and an international trade framework to map key export opportunities:
- Assessing industry based training models and improving linkages between the digital content industry and education: and
- Establishing mechanisms for industry to work with R&D&I institutions achieving rapid access to industry research; and raise awareness and increase utilisation of Government R&D&I and non R&D&I programmes that foster innovation by digital content firms.

### **3.5.6 The Republic of Ireland**

The Republic of Ireland has transformed its industrial landscape into a knowledge economy, turning what was once an agricultural and manufacturing based economy into the fastest growing economy in Europe by a focused strategy to support high technology industry, particularly ICT and the digital content industry. This strategy combined culture and creativity with technology, in developments such as the Dublin digital media district (Digital Hub).

<sup>33</sup> Australian Government, Unlocking the Potential, Digital Content Industry Action Agenda, November 2005

The expected outcome of the overall strategy of Enterprise Ireland, the national industry development agency, is to maximise export sales through the utilisation of applied research, technology and innovation while ensuring economic development is achieved in a regionally balanced fashion. Recommendations included:

- A specialist venture capital fund for the digital content industry.
- Encourage digital content R&D&I at both academic and enterprise level.
- Encourage the industry to protect digital content intellectual property.
- Driving export readiness by implementing productivity and competitiveness improvement projects in more than 300 firms by the end of 2007.
- Reduce Ireland's VAT rate on the purchase of digital content in line with other European Countries ensuring that Ireland is not placed at a disadvantage for enterprise and development.
- Ensure that the output of the education system (primary, secondary and third level) can help meet the current and future skills required to develop and sustain a leading position in digital content industries.
- Creation of enterprise through the development of a Digital Hub in Dublin.
- Public sector to commission a number of state digital libraries to promote to raise awareness of the benefits of digital content.

### **3.5.7 The European Union**

On 1 June 2005 the European Commission issued the strategy i2010– A European Information Society for Growth and Employment, which noted that new content creation, services and business models are driving growth and jobs. The strategy is based on the growth of Western European online content markets being expected to triple by 2008 (with the consumer part growing tenfold) from a current base already accounting for 8 per cent of the European Union's GDP.

In line with the Commission, the European Investment Bank (EIB) recently launched the Innovation 2010 Initiative, announcing that its support for targeted sectors would amount to well over €50 billion (£34 billion) by the end of 2010. This strategy is based on a €17 billion (£11 billion) initiative, launched in 2000, which diversified funding from primarily infrastructure to investment in all phases of the innovation process.

For European Union members, a range of national strategies and investment schemes to promote digital content industries have been in place over the past five years<sup>34</sup>.

<sup>34</sup> Helsinki based Creative Industries Management venture capital fund, Ready4Growth, DreamLab Invest, Culture Finance North-West and the Advantage Creative Fund as profiled in the UK National Endowment for Science, Technology and the Arts 2005 report, Creating Value

## 3.6 The Digital Content Industry in Northern Ireland

The digital content industry in Northern Ireland is embryonic and fragmented, and encompasses a broad range of digital products and services across ICT, animation, gaming, broadband content, mobile content, e-learning, streaming technology and web design. Individual companies have strengths in the use of ICT and small creative content companies exist. However, the local industry has still to make any real impact in international markets and there has been no significant inward investment in this sector.

The UK industry has a reputation for innovation and creativity. It has cultural diversity and a major strength in that English is the lingua franca for the global digital industries. Northern Ireland's companies should exploit these shared strengths<sup>35</sup>.

### 3.6.1 Northern Ireland Company Profile

A number of industry focus groups were facilitated by Invest Northern Ireland in 2006/07. Three company categories were identified and agreed<sup>36</sup>.

- Tier 1: Market leading companies with globally recognised brands. There are no companies currently in this tier in Northern Ireland.
- Tier 2: Export aware companies that are already selling into markets outside Northern Ireland have the potential to achieve growth in these markets. There are estimated to be 40 local companies operating in this tier in Northern Ireland.
- Tier 3: Northern Ireland focused, price driven individuals or companies. There are estimated to be 160+ companies currently operating in this tier in Northern Ireland.

The challenge is to move companies up the value chain from Tier 3 to Tier 2 and from Tier 2 to Tier 1.

Increasing levels of innovation, export growth and training among Tier 3 businesses and generating new higher growth digital content start ups will assist the development of the sector.

Tier 1 will be addressed in the medium term by attracting FDI and in the longer term will be augmented by high performing local digital content businesses.

Limited data exists on the digital content sector in Northern Ireland. This lack of information is due to the absence of appropriate standard industrial classification (SIC) codes and the difficulty in capturing information from micro businesses.

Information was collated from Invest NI databases, desk research and stakeholder groups. The research indicates that approximately 200 companies are involved in wider digital content production in Northern Ireland. Detailed data was obtained for 40 Invest NI client companies.

The data available for the 40 companies indicates that these businesses had an average turnover of £625,000 in 2006. Sales outside NI were at 50 per cent of turnover and the average annual growth rate for this sample was 13 per cent<sup>37</sup> which is above the circa

<sup>35</sup> Digital Futures - Alliantus Ltd

<sup>36</sup> Industry focused groups facilitated by Invest NI Creative and Design and Trade Divisions 2006

<sup>37</sup> Invest NI client figures

10 per cent average for the fastest growing countries in the sector (see Table 1). All these companies are Tier 2 businesses and have received targeted support from Invest NI to grow sales in export markets, hence the relatively high growth and high percentage exports of the sample.

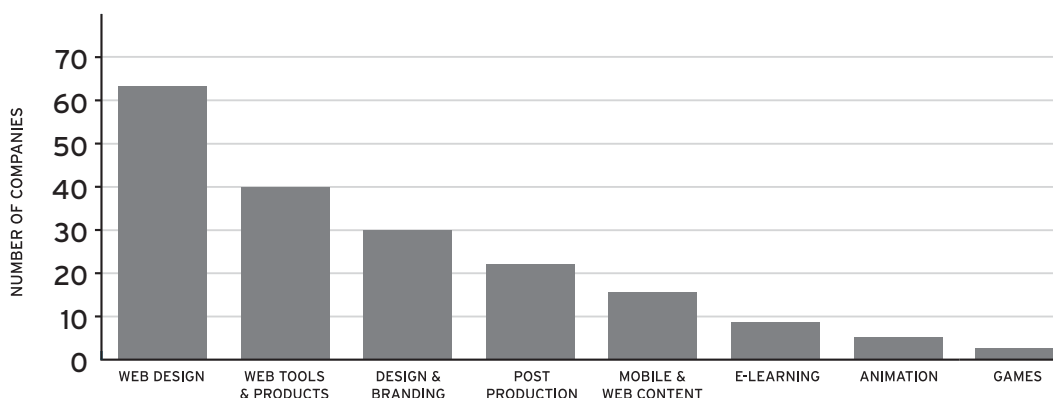
The 40 companies range from businesses employing one person to companies employing 50 people. However, the average company in the sample employs 10 people. This is significantly lower than in other countries. The average number of full time employees in the Australian digital content industry is 22<sup>38</sup>. Indeed, this comparison is more striking considering that most of the remaining 160+ digital content businesses in NI are smaller than the average Invest NI client company.

**Table 2: Northern Ireland Digital Content Industry Profile.**

Number of Companies	Average Turnover	Average Employment	Total Turnover	Sales Outside NI
40	£625,000	10	£25M	50%

Local digital content companies operate in a wide range of sub-sectors as shown below. Those sub-sectors with the largest numbers tend to be locally focused.

**Table 3: Digital Content Companies by Activity in Northern Ireland (sample of 200)**



### 3.6.2 Digital Content and Other Industries

In Northern Ireland many digital content practitioners use their specialist skills and knowledge working within other industries, for example web developers working in financial services or in software development companies. New areas are emerging where games developers are using their skills in e-learning/serious gaming, and 3D imaging technology or streaming media companies are using their technology and content in the medical sector. Digital content applied in this way to other sectors is known as embedded content.

Embedded content, Film & Television, and Music are not included in the above sample of 40 companies. The turnover of the Film & Television sector in Northern Ireland is currently c£20 million. No data is available on the size of the Northern Ireland Music Sector.

<sup>38</sup> Australian Government, Unlocking the Potential, Digital Content Industry Action Agenda, November 2005

### 3.7 SWOT Analysis

The table below is a summary SWOT analysis of the digital content industry in Northern Ireland. A detailed SWOT is available at Appendix B.

**Table 4: Northern Ireland Digital Content Industry Summary SWOT**

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Industry is enthusiastic.</li> <li>• Global ambition.</li> <li>• Talented local skills base.</li> <li>• Some intellectual property exists and a limited number of companies are investing in IP.</li> <li>• Industry recognises that partnerships are key to growth.</li> <li>• Competitive pricing.</li> <li>• 100% Broadband connectivity in Northern Ireland.</li> <li>• e-government is driving new digital content initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>• The industry is embryonic and fragmented.</li> <li>• Lack of indigenous internationally successful companies.</li> <li>• Lack of Foreign Direct Investment.</li> <li>• Industry needs to improve its selling skills.</li> <li>• Industry lacks market intelligence.</li> <li>• Strong local focus.</li> <li>• Limited clustering/networking strategies.</li> <li>• Lack of quality standards.</li> <li>• Reluctance to engage in industry initiatives and lack of mutual support.</li> <li>• Generally low levels of intellectual property.</li> <li>• Low levels of strategic planning.</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Growing global market for digital content.</li> <li>• Clustering, networking, collaboration and mentoring - mechanisms for mutual support.</li> <li>• Knowledge transfer with Universities and FE colleges.</li> <li>• Targeted government initiatives.</li> <li>• Financial and programme support for digital content development.</li> <li>• Increased levels of entrepreneurship.</li> <li>• Increased Foreign Direct Investment in digital content.</li> <li>• Producing and owning intellectual property.</li> <li>• Enhanced skills and training for digital content.</li> <li>• Exporting of digital content.</li> <li>• Public procurement, e-government, Heritage, Tourism.</li> </ul>	<ul style="list-style-type: none"> <li>• International competition.</li> <li>• Lack of business development professionals and appropriately trained graduates.</li> <li>• Lack of private sector investment - market failure.</li> <li>• Limited R&amp;D&amp;I in digital content inhibiting growth.</li> <li>• Insufficient co-ordination among stakeholders and third sector organisations.</li> <li>• Limited government schemes for the support of digital content development.</li> </ul>

# 4.0 The Northern Ireland Digital Content Strategy

## 4.1 Target Sub-Sectors

The Northern Ireland digital content industry is diverse with a broad range of business activity, from web design through to mobile gaming, digital animation and e-learning. If the industry is to grow and achieve success it is important that resources are targeted where they will deliver the maximum impact.

The key growth areas identified in the research presented in section 3.3.1 were:

- Digital Animation;
- Mobile & Web Content;
- E-learning / Serious Gaming;
- Console Gaming;
- Film & Television; and
- Music.

The film & television and music sub-sectors already have strategies in place drafted by the Northern Ireland Screen Commission (NI Screen) and the Northern Ireland Music Industry Commission (NIMIC) respectively.

The Northern Ireland Digital Content Strategy will complement these existing strategies.

In relation to gaming, the global **console gaming** market is growing, however, the cost of entry into this market and competition from emerging countries is high. In Northern Ireland we are unlikely to be successful in developing an indigenous console gaming industry without significant FDI.

**Mobile and web based games** will be included in the “mobile & web content” sub sector and represents an area with potential for Northern Ireland as does serious gaming linked to e-learning.

The sub-sectors to be targeted by this strategy are therefore:

- Digital Animation
- Mobile & Web Content, and
- E-Learning/Serious Gaming

## 4.2 Key Issues

Consultation with the industry and stakeholders in relation to the sector SWOT analysis (Table 4 and Appendix B) and international benchmarking (section 3.5), has led to the identification of five key issues that need to be addressed if we are to build the foundations for the growth of the Northern Ireland Digital Content Industry. These are:

- Leadership;
- Investment;
- Skills and Training;
- Research & Development & Innovation; and
- Internationalisation.

Each key issue is discussed in more detail in sections 4.2.1 to 4.2.5 below. The key issues and proposed actions are then developed further by the 'Road Map', referenced in section 4.4 and presented in Appendix A, which identifies proposed implementation responsibilities and timescales.

### 4.2.1 Leadership

#### Issues

- Leadership and strategic direction in the digital content sector are lacking.
- The digital content industry is evolving and there are many groupings, stakeholders and organisations with an interest in its development. A co-ordinated approach is required to ensure that all organisations and stakeholders move forward in a coherent manner.
- In particular, it is important that the following four organisations involved in digital content convergence work together to develop the Northern Ireland digital content sector:
  - Momentum
  - The Northern Ireland Screen Commission
  - Northern Ireland Music Commission
  - Skillset

Momentum is the Trade Association representing Northern Ireland's Information Communications and Technology (ICT) industry. Momentum is in the process of broadening its remit to help support the growth of digital content and will include digital content representation on their board.

The Northern Ireland Screen Commission (NI Screen) is the lead organisation in developing the film and television industry in Northern Ireland. As of 1 April 2007 it has broadened its remit to include support for the development of digital content.

The Northern Ireland Music Commission (NIMIC) is the sector body responsible for the development of the local music industry. NIMIC's remit is to provide strategy and services towards accelerating the development of a sustainable music industry in Northern Ireland.

Skillset, the Sector Skills Council for the Audio Visual Industries, is the lead agency at a UK level in respect of skills development for the broadcast, film, video, interactive media and photo imaging industries. In January 2007, Skillset published a Sector Skills Agreement (SSA) for Northern Ireland encompassing its full sectoral remit. Skillset works with its NI Skills Panel to develop and implement the SSA. The membership of Skillset's NI Skills Panel is drawn from industry and stakeholders thus ensuring the widest possible consultation on skills issues.

### **Proposed Actions**

- An Industry Advisory Panel (IAP) should be formed to oversee the development and implementation of the Northern Ireland Digital Content Strategy.

The IAP will be industry led and membership will initially be drawn from industry and Invest NI with additional stakeholder engagement as deemed appropriate by the IAP. However, the primary vehicle for stakeholder engagement will not be through the IAP but through the Industry Action Groups described below.

- Initially, three Industry Action Groups (IAGs) reporting to the IAP, should be formed to focus on co-ordinating action in the key areas of:
  - Investment;
  - Research & Development & Innovation; and
  - Internationalisation.

The IAGs will be industry led but their membership will be drawn from both industry and stakeholder groups.

- In addition, the Chair of the IAP will sit on Skillset's NI Skills Panel and Skillset will form a Digital Content Industry Action Group in the key area of Skills & Training. This Action Group will report into Skillset's NI Skills Panel. Its membership will be industry led and agreed by Skillset and the IAP Chair.

In this way Skillset's SSA and The Northern Ireland Digital Content Strategy will be fully integrated.

The need for additional IAG's will be reviewed as the strategy develops i.e. there will be a requirement to periodically form an IAG to review and update the strategy to ensure its continued relevance and impact.

- Terms of reference will need to be established for these various groups and a communications strategy developed to ensure that the wider industry and stakeholders are kept informed and engaged.

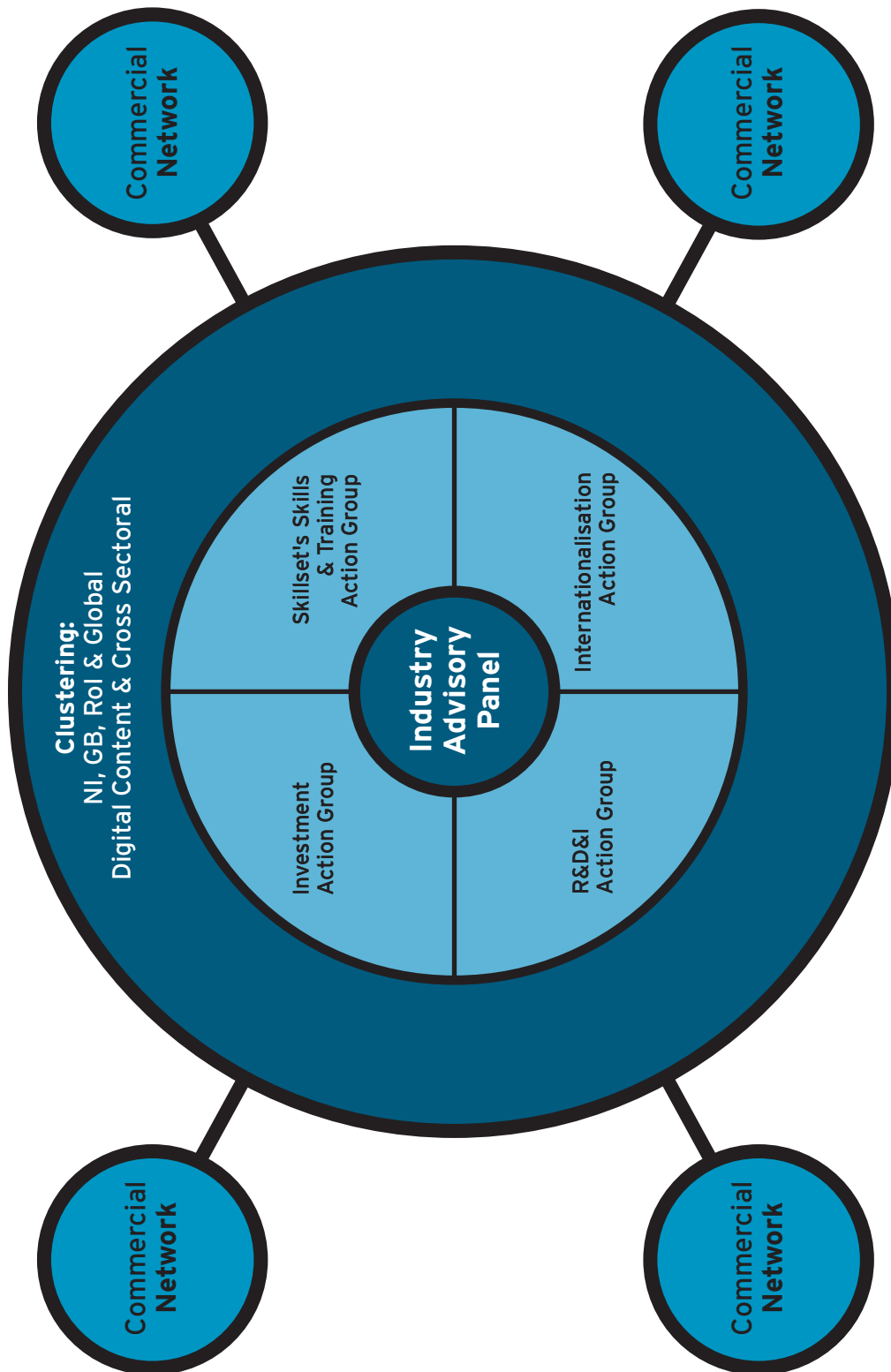
- A facilitator should be appointed to co-ordinate the work of the IAP and IAGs and to develop clusters and commercially focused networks.
- Momentum will broaden its remit to enable it to become the focal point for digital content companies that are not from a film and television background.

There is significant potential for collaborative projects between such digital content companies and film & television companies and it will be important that Momentum and NI Screen work closely together to maximise this opportunity. It will also be important to engage with the Northern Ireland Music Industry Commission given the importance of music to the digital content industry.

Implementation of the Northern Ireland Digital Content Strategy presents an opportunity for industry and stakeholders to move forward in a coherent manner.

Figure 1 sets out the proposed implementation structures.

Figure 1: Northern Ireland Digital Content Strategy - Implementation Structure.



## 4.2.2 Investment

### Issues

- There is a need for significant investment in Tier 2 digital content companies if they are to move up the value chain to Tier 1. The Northern Ireland digital content industry is experiencing market failure in attracting venture capital and other private investment. Higher levels of private investment will be required if the industry is to develop and grow.
- Northern Ireland's Tier 2 digital content companies are not investor ready.
- Targeted support will be required to enable more Tier 3 companies to become Tier 2 enterprises and to enable Tier 2 companies to achieve their global potential.
- There are not enough quality business start-ups in the key areas identified as growth opportunities, namely digital animation, e-learning/serious gaming, and mobile & web content.

### Proposed Actions

- An Investment Action Group should be initiated, to bring together venture capital groups, business angels, banking institutions, government, and industry. This group should examine the above market failure and consider possible solutions.
- The Investment Action Group should develop initiatives targeting Tier 2 digital content companies to assist them to better understand private equity and to become investor ready.
- Invest NI will provide targeted support to Tier 2 companies to support them to fulfil their global potential.
- Invest NI, in partnership with our enterprise partners, will target Tier 3 companies with the potential to develop their capabilities and move up the value chain in export markets.
- In partnership with its enterprise partners, Invest NI will develop initiatives to increase the number and quality of new business start-ups in the digital content industry.

## 4.2.3 Skills & Training

### Issues

- Strategy development and related core skills such as project, resource, and financial management are areas that need to be strengthened if the industry is to realise its potential in external and global markets.
- Northern Ireland needs more business development professionals with experience in digital content and more graduates with the right skills.
- Demand for specific skills will increase as the industry grows. A lack of skills will lead to companies not having the capabilities to compete globally and it will also prove difficult to attract FDI projects to Northern Ireland.

- Training within digital content companies is generally undertaken in an ad-hoc manner. There is a need for a more strategic approach.
- There is a lack of knowledge of strategies for the protection and sharing of intellectual property (IP) within the digital content industry (e.g. Digital Rights Management (DRM)), and this is inhibiting the exploitation of digital assets.

#### **Proposed Actions**

- Skillset will form a Digital Content Industry Action Group in the key area of Skills & Training to ensure that the skills and training needs of the Northern Ireland digital content sector are addressed in the wider context of Skillset's interactive media skills strategy.
- In addition to Skillset's ongoing labour market research on the NI skills base, research needs to be undertaken to identify the skills requirements of foreign companies in the target sub-sectors as a first step towards creating a skills pool that is attractive to digital content FDI.
- Invest NI will promote its business development programmes to Tier 2 digital content companies in the context of their strategic development needs.
- Promote awareness of IP protection and DRM and provide specialist training, advice and guidance to support the industry.

### **4.2.4 Research & Development & Innovation**

#### **Issues**

- The digital content industry needs to develop and retain its own intellectual property<sup>40</sup>. This will lead to faster growth and greater wealth creation and will open up global markets.
- Current government schemes designed to support the development of digital content are limited when compared to those available to support the development of technology.
- Industry and education do not consistently collaborate in the development of digital content projects. This is restricting the transfer of knowledge between academia and industry.
- The industry is fragmented and collaboration between companies is not the norm. There is a lack of mutual support within the industry and a reluctance to engage in industry initiatives. There are limited clustering initiatives to support emerging groups working in similar or complementary niches.

#### **Proposed Actions**

- A Research & Development & Innovation (R&D&I) Action Group should be formed to bring together industry and stakeholders to examine the current provision of support for digital content IP development and to work towards addressing gaps in the current provision.

<sup>40</sup> IP in the digital content industry is normally quite different from IP in, for example, the engineering industry. In the latter IP is typically a technological innovation protected by a patent, whereas in the former IP could be an animation character protected by copyright. 'Bob the Builder' is therefore IP and generates global revenues of c£50m per annum

- Establish effective mechanisms for knowledge transfer between our research centres and the digital content industry to fast track potential R&D&I opportunities.
- Increase the number of Knowledge Transfer Programmes (KTP) involving the digital content industry and actively promote its use as a best practice tool.
- Support the development of commercially focused digital content networks and seek to engage the complete supply chain from content creators, to infrastructure providers (e.g. BT, Virgin Media) and broadcasters/publishers (e.g. BBC, ITV, C4, Google) to maximise the potential for success.
- Work with the Northern Ireland Screen Commission to identify and develop opportunities for digital content companies to partner with film and television companies and vice versa.

#### **4.2.5 Internationalisation**

##### **Issues**

- There is a lack of global success among digital content businesses in Northern Ireland. Firms are tempted to chase a local market that is already oversupplied.
- Companies lack market intelligence and are seeking assistance with targeting new export opportunities and entering and sustaining a profitable presence in new markets.
- Start-up companies are often inexperienced, poor at selling themselves and daunted at the thought of competing in export markets.
- The fragmented nature of the local industry is limiting the potential for digital content exports.
- There is no significant FDI in the digital content sector in Northern Ireland to strengthen the industry.

##### **Proposed Actions**

- Form an Internationalisation Action Group to support the development of an export culture in the digital content industry through export workshops, initiatives and programmes targeted at first time and experienced exporters in the industry.
- Ensure that export marketing and FDI skills provision is addressed by Skillset (c.f. section 4.2.3).
- Provide a market intelligence resource to assist in identifying new export market opportunities.
- Initiate best practice visits to trade shows and conferences specific to the digital content sector. This will help the industry to build its market intelligence and appraise up-and-coming developments in the digital content industry.
- Support the development of commercially focused digital content networks with export potential.

- Actively develop international collaboration between companies in terms of trading partnerships and R&D&I projects.
- Initiate international participation in clustering activities.
- Initiate cross sectoral clustering. There are opportunities for specific digital content clusters to piggyback on export initiatives with relevant industrial sectors for example the film and television sector and the medical imaging sector.
- Develop a comprehensive digital content FDI sales brief and target strategically significant FDI.

### 4.3 Targets

The digital content industry in Northern Ireland needs to develop rapidly if it is to realise its global potential in the areas of digital animation, mobile & web content, and e-learning/serious gaming.

The strategy presented in this document aims to achieve a number of key targets in the three years to 2010. Given that the Northern Ireland Industry is starting from a relatively low base, more ambitious targets are proposed over the period than the 6 per cent to 10 per cent growth expected for emerging countries (Table 1):

- Increase the turnover of local Tier 2 digital content companies by 50 per cent (equivalent to 15 per cent per annum).
- Increase export sales of local Tier 2 digital content companies to 60 per cent of turnover.
- Secure 20 established digital content companies accessing Invest NI support for the first time.
- Promote 30 new digital content start-ups in the key areas of digital animation, mobile & web content, and e-learning/serious gaming.
- Of the 30 new digital content start-ups, generate 6 high growth start-ups.
- Secure one high quality digital content FDI project.

A target based on the number of jobs created has not been included as the focus of development in the digital content sector needs to be on wealth creation rather than job creation if it is to be successful in attracting the private sector investment needed to support its growth.

## 4.4 Road Map

The Road Map presented in Appendix A addresses the key issues for the development of the Northern Ireland digital content sector as identified in section 4.2. It sets out proposed actions, responsibilities and timescales. The proposed actions are designed to deliver the above targets.

Whilst the core strategy is not expected to change significantly in the medium term, the road map addresses tactical issues and as such will be an evolving document subject to ongoing change.

It will be a key responsibility of the Industry Advisory Panel to ensure that the strategy and the road map are continually updated in response to the opportunities and challenges that will arise in the rapidly changing global digital content industry.

## 5.0 Conclusion

The digital content industry worldwide is growing faster than traditional industries. Growth rates of up to 10 per cent per annum<sup>41</sup> are predicted in emerging countries over the next three years. The Northern Ireland digital content industry will be left behind if it cannot at least match these growth rates.

Countries such as Australia and Korea have recognised the need to develop their digital content industries and have allocated the necessary finance and resources to ensure that they achieve the desired growth. The UK government also recognises digital content as an opportunity and is “working to create the right environment for the creation of innovative broadband content.”<sup>42</sup>

The Northern Ireland Digital Content Strategy identifies the key issues facing the industry as leadership; investment; skills and training; research & development & innovation; and internationalisation. The strategy proposes a framework to provide a co-ordinated approach to address these issues by engaging industry, government, third level education, research institutes and other stakeholder groups.

Invest NI and its government partners will work to develop a vibrant and successful industry focusing on entrepreneurship, innovation and the internationalisation of the sector.

The Northern Ireland Digital Content Strategy brings with it a degree of risk as this is a relatively young and emerging sector. It is important however, that we take a calculated risk in developing this sector so that the opportunity presented is not lost to the Northern Ireland economy.

41 PwC, Global Entertainment and Media Market by Region, 2006

42 Prime Minister’s Strategy Unit/DTI, “Connecting the UK: The Digital Strategy, March 2005

# Appendix A

## The Northern Ireland Digital Content Strategy Road Map

<b>LEADERSHIP</b>		
Proposed Actions	Responsibility	Timescale
<b>Leadership Structures</b>		
An Industry Advisory Panel (IAP) should be formed to oversee the development and implementation of the Northern Ireland Digital Content Strategy.	Invest NI	January 2008
Initially, three Industry Action Groups (IAGs) reporting to the IAP, should be formed to focus on co-ordinating action in the key areas of: <ul style="list-style-type: none"> <li>• Investment;</li> <li>• Research &amp; Development &amp; Innovation; and</li> <li>• Internationalisation.</li> </ul>	Invest NI	January 2008
Skillset shall form a Digital Content Industry Action Group in the key area of Skills & Training.	Skillset	February 2008
A terms of reference will need to be established for the industry action groups...	IAP / IAG's / Skillset	March 2008
A communications strategy will be developed to ensure that the wider industry and stakeholders are kept informed and engaged.	IAP	April 2008
A facilitator should be appointed to co-ordinate the work of the IAP and IAGs and to develop clusters and commercially focused networks.	IAP / Invest NI	April 2008
It is proposed that Momentum, the Northern Ireland ICT Federation, broadens its remit to enable it to become the focal point for digital content companies that are not from a film and television background.	Momentum	March 2008

<b>INVESTMENT</b>		
Proposed Actions	Responsibility	Timescale
<b>Investment Action Group</b>		
An Investment Action Group should be initiated, to bring together venture capital groups, business angels, banking institutions, government, and industry.	IAP / Investment Action Group	March 2008
This group should examine the market failure in relation to private investment in the local digital content industry and consider possible solutions.	Investment Action Group	June 2008
The Investment Action Group should develop initiatives targeting tier 2 digital content companies to assist them to better understand private equity and to become investor ready.	Investment Action Group	June 2008
<b>Business Development: Tier 2 &amp; Tier 3</b>		
Invest NI will provide targeted support to Tier 2 companies to support them to fulfil their global potential.	Invest NI	Ongoing
Invest NI, in partnership with its enterprise partners, will target Tier 3 companies with the potential to develop their capabilities and move up the value chain in export markets.	Invest NI	Ongoing commencing April 2008
<b>New Start-Ups</b>		
In partnership with our enterprise partners, Invest NI will develop initiatives to increase the number and quality of new business start-ups in the digital content industry.	Invest NI	Ongoing commencing April 2008

<b>SKILLS &amp; TRAINING</b>		
Proposed Actions	Responsibility	Timescale
<b>Skillset</b>		
Skillset will form a Digital Content Industry Action Group in the key area of Skills & Training so as to ensure that the skills and training needs of the Northern Ireland digital content sector are addressed in the wider context of Skillset's interactive media skills strategy.	Skillset / IAP	February 2008
<b>Foreign Direct Investment</b>		
Research needs to be undertaken to identify the skills requirements of foreign companies in the target sub-sectors as a first step towards creating a skills pool that is attractive to digital content FDI.	Invest NI	April 2008
<b>Strategic Development</b>		
Invest NI will promote its business development programmes to tier 2 digital content companies in the context of their strategic development needs	Invest NI/ Skillset	Ongoing
<b>Intellectual Property</b>		
Promote awareness of IP protection and DRM and provide specialist training, advice and guidance to support the industry.	Skillset / Invest NI	September 2008

<b>RESEARCH &amp; DEVELOPMENT &amp; INNOVATION</b>		
<b>Proposed Actions</b>	<b>Responsibility</b>	<b>Timescale</b>
<b>R&amp;D&amp;I Action Group</b>		
A Research & Development & Innovation (R&D&I) Action Group should be formed to bring together Industry and stakeholders to examine the current provision of support for digital content IP development and to work towards addressing gaps in the current provision.	IAP / R&D&I Action Group	Commencing January 2008
<b>Knowledge Transfer</b>		
Establish effective mechanisms for knowledge transfer between our research centres and the digital content industry to fast track potential R&D&I opportunities.	R&D&I Action Group	September 2008
Increase the number of Knowledge Transfer Programmes (KTP) involving the digital content industry and actively promote its use as a best practice tool.	R&D&I Action Group / Invest NI	Ongoing commencing May 2008
<b>Networking</b>		
Support the development of commercially focused digital content networks and seek to engage the complete supply chain from content creators, to infrastructure providers (e.g. BT, Virgin Media) and broadcasters/publishers (e.g. BBC, ITV, C4, Google) to maximise the potential for success.	R&D&I Action Group	Ongoing commencing June 2008
Work with the Northern Ireland Screen Commission to identify and develop opportunities for digital content companies to partner with film and television companies and vice versa.	R&D&I Action Group	Ongoing commencing June 2008

<b>INTERNATIONALISATION</b>		
Proposed Actions	Responsibility	Timescale
<b>Internationalisation Action Group</b>		
Form an Internationalisation Action Group.	IAP / Internationalisation Action Group	January 2008
Support the development of an export culture in the digital content industry through export workshops, initiatives and programmes targeted at first time and experienced exporters in the industry.	Internationalisation Action Group / Invest NI	Ongoing commencing April 2008
Ensure that export marketing and FDI skills provision is addressed by Skillset.	Internationalisation Action Group	Ongoing commencing May 2008
<b>Market Intelligence</b>		
Provide a market intelligence resource to assist in identifying new export market opportunities.	Internationalisation Action Group	April 2008
<b>International Best Practice and Collaboration</b>		
Initiate best practice visits to trade shows and conferences specific to the digital content sector.	Internationalisation Action Group / Invest NI	Ongoing commencing April 2008
Support the development of commercially focused digital content networks with export potential.	Internationalisation Action Group / Invest NI / Momentum	Ongoing commencing June 2008
Actively develop international collaboration between companies in terms of trading partnerships and R&D&I projects.	Internationalisation Action Group / Invest NI	April 2009
Initiate International participation in clustering activities.	Internationalisation Action Group / Invest NI	April 2009
<b>Cross Sectoral Clustering</b>		
Initiate cross sectoral clustering. There are opportunities for specific digital content clusters to piggyback on export initiatives with relevant industrial sectors for example the film and television sector and the medical sector.	Internationalisation Action Group / Invest NI	Ongoing commencing September 2008
<b>FDI</b>		
Develop a comprehensive digital content FDI sales brief and target strategically significant FDI.	Internationalisation Action Group / Invest NI	April 2008

# Appendix B

## Northern Ireland Digital Content Industry SWOT Analysis

Primary and secondary research has identified the following factors, impacting on the Northern Ireland digital content industry.

### 1. Current Strengths

#### **Enthusiasm**

- Many NI companies recognise that there are immense opportunities.
- Some companies have global ambitions and are hungry for success and some are capable of competing internationally with the right support.
- There is an enthusiastic, talented local skills base producing creative ideas with good commercial potential.

#### **International**

- Some companies have developed strong intellectual property and experienced management teams capable of trading internationally.

#### **Business Networks**

- Many industry leaders realise that partnerships are key to growth in export and global markets.

#### **Intellectual Property**

- Successful companies are investing in new product development and are seeking to develop IP.

#### **Cost-Base**

- There is currently a lower cost base relative to mainland UK and pricing is competitive.

#### **Connectivity**

- Northern Ireland has achieved 100 per cent broadband connectivity.

#### **Government**

- Through the Department of Business Enterprise and Regulatory Reform, Government is encouraging Regional Development Agencies (RDA) and Devolved Administrations (DA) to implement initiatives to promote high quality content in business, learning, public sector and community<sup>44</sup>. The DETI Broadband Content Initiative is a good example.

<sup>44</sup> Cabinet Office and Department of Trade and Industry, Connecting the UK: the Digital Strategy, April 2005

## **2. Current Weaknesses**

### **Embryonic**

- The industry is embryonic and fragmented and not as well developed as in the rest of the UK or ROI.

### **Training and Skills Development**

- Training is generally carried out ad-hoc, when the need arises. Digital content companies in Northern Ireland tend not to think ahead and structure training and skills development as part of their business development plans.

### **Lack of Global Success**

- Northern Ireland currently lacks indigenous companies competing successfully in international markets, as exemplars that others can follow.
- There is a lack of FDI to raise Northern Ireland's sector profile and strengthen the digital content sector.

### **International and Export**

- Young companies are often naïve and can be overwhelmed by immediate success in export markets.
- Local digital content businesses are poor at selling themselves.
- Companies lack market intelligence and are unsure of how to achieve success in external and export markets.
- The digital content industry is fragmented and this is limiting export opportunities.
- International companies would find it difficult to recognise the capabilities of some local companies because their websites are difficult to find and do not clearly explain their unique strengths.

### **Local Focus**

- Companies are tempted to diversify (or dilute) their offering to take more of a shrinking home market rather than taking their core competence to new markets.
- The home market is oversupplied resulting in strong price competition.

### **Collaboration**

- Indigenous companies need to know the capabilities of their peers and how to collaborate on skills and technology.
- No clustering strategies exist for emerging groups working in similar niches.

### **Quality**

- The local industry has not engaged to ensure that international standards are accepted and implemented across the industry.

### **Industry Direction and Support**

- At present the industry is struggling to find leading companies across sub-sectors.
- There is a reluctance to engage in industry initiatives and a lack of mutual support. (Moral support from peers for those who try but don't make it is vital in an industry that is led around the world by entrepreneurs).

### **Intellectual Property and Digital Rights Management**

- The industry has a low level of knowledge about commercialising and managing IP and digital rights management (DRM).

### **Strategic Planning**

- Digital content businesses need a greater awareness of business strategy skills and related core skills such as financial planning<sup>45</sup>.

### **Benchmarking**

- The industry in general does not use benchmarking as a measure to drive business growth.

### **Private Investment**

- The Northern Ireland digital content industry has not been successful in attracting venture capital, business angel and other private investment for content production, development and distribution.
- The local and national venture capital market has limited knowledge of investing in digital content companies and their products.
- Higher levels of private investment are needed at an early stage of development.
- Northern Ireland has relatively low levels of investment in digital content development due to a market failure of private investment and lack of appropriate support programmes.

### **Research & Development & Innovation**

- Support for early stage content development in Europe (including UK and ROI), is not available under mainstream Government schemes.
- There is a lack of programmes and support mechanisms to seed innovative digital content projects at prototype and proof of concept stage.
- There are low levels of industry engagement with the universities and colleges on developing world class digital content.

<sup>45</sup> Creating Growth, NESTA Research Report, How the UK can develop world class creative businesses, April 2006

### 3. Potential Opportunities

#### **Growing Market**

- The global market for digital content is growing. Areas such as digital animation, computer gaming, mobile content, web content and e-learning all present opportunities.
- Mobile operators around the world are hungry for new digital content as they seek to differentiate their services from other fast networks. Technology will sell new handsets to the early adopters but to obtain mass market appeal, new and innovative content will be needed.
- New forecasts predict that web and mobile content revenues will grow to \$67 billion by 2010. However, the window of opportunity is small. For example, the larger games publishers are already making moves to dominate the mobile games area.
- Opportunities in the growing international content markets such as animation, mobile & web content, e-learning and gaming/serious gaming need to be exploited. Connected industry opportunities such as medical, military and security should be explored.

#### **Intellectual Property**

- Digital content businesses need to move from offering a service, to developing and owning IP<sup>46</sup>. This will assist in driving growth, particularly in export/global markets.
- 'Service' work can help fund this.

#### **Develop Clusters/Collaboration/Mentoring**

- Development of clusters can help the exploitation of niches, for example health, education, military and security<sup>47</sup>.
- Although each digital content sub-sector has few players, collectively there could be strength in increasing expertise, sharing complementary skills, and new ideas generation.
- Global markets can be profitable. Collaboration between international and local partners will be required to secure routes to market and to obtain credibility and scale.
- Those with industry expertise can act as mentors and exemplars to new businesses.

#### **Government Initiatives**

- Companies could successfully trade internationally with targeted assistance.
- Support for digital content development would encourage entrepreneurship, innovation and creativity.
- Targeted support for skills and training would ensure the right people are available.

<sup>46</sup> Creating Growth, NESTA Research Report, How the UK can develop world class creative businesses, April 2006

<sup>47</sup> Midas Initiative, Digital Content Markets on the island of Ireland challenges and opportunities for SME's, 2005

## **E-Government**

- The Prime Minister has set information technology (IT) professionals in government the mission of 'ensuring that IT supports the business transformation of government, so that better and more efficient public services are achieved'.

## **Education and Training**

- When compared with most other regions, Northern Ireland's geographical size means that it should be straightforward to co-ordinate and address skills needs at university, further education and secondary education level.
- A co-ordinated approach will generate the skills required to deliver world class digital content and FDI.

## **4. Potential Threats**

### **International Competition**

- Prices are continuing to fall as the cost of technology drops and more development occurs overseas.
- Digital content businesses are unable to respond effectively and on a scale that ensures their continued growth in the face of international competition<sup>48</sup>.

### **Skills and Training**

- Experienced people are in short supply; many are only skilled in one area. Some have technical skills but lack design capability and/or business acumen.
- The difficulty of finding the right calibre of people from education is a common theme.
- As a general rule companies cannot find senior technical staff, project managers or designers with more than five years' experience in the locality as many people take their talents offshore (UK and ROI).
- Business development professionals with the required technical and sales skills are also in short supply.

### **Private Investment**

- Businesses find it challenging to develop digital content projects. This is due to the difficulty in finding private sector, and venture capital investment funds to support digital content projects. This will be an ongoing threat to this strategy's implementation if this market failure is not addressed. The industry needs some quick wins.
- The local industry needs to be mentored in attracting early stage finance. This will give them the confidence to develop, manage and exploit IP. Attracting further equity based investments in the company, not simply in specific projects, will help build industry capacity<sup>49</sup>.

<sup>48</sup> Creating Growth, NESTA Research Report, How the UK can develop world class creative businesses, April 2006

<sup>49</sup> Midas Initiative, Digital Content Markets on the island of Ireland challenges and opportunities for SME's, 2005

**Evolving Technology**

- The digital content industry will rapidly evolve. Technology can be a great leveller and provide new opportunities as generic tools drop in price. However, the outlay in some areas is still considerable, and never more so than when a platform change occurs.

**Funding Content Development**

- Enterprise growth in digital content will be inhibited until development funding is secured.
- Low levels of industry engagement with education including universities, colleges and associated research facilities including ECIT and SARC will restrict potential growth and the transfer of knowledge between academics and the local industry.

**Co-ordination**

- Insufficient co-ordination among stakeholders and third sector organisations with an interest in digital content will result in an ineffective approach to sector development and implementation of strategy. If each body vigorously pursues its own agenda it will dilute the overall impact.

# Appendix C

## Bibliography

1. OCED, Digital Broadband Content, Strategies and Policies, May 2006.
2. Deloitte, The Trillion Dollar Challenge, Principles of Profitable Convergence, 2005.
3. PwC, Global Entertainment and Media Market by Region, 2006.
4. DATAMONITOR, Broadcast TV to Mobile, December 2005.
5. FACTIVA 2006 Article, Irish News, Cartoon Makers are animated by success, 22nd August 2006.
6. FACTIVA 2006 Article, The Hindustan Times, Animation industry gets serious about Bollywood, 28th August 2005.
7. FACTIVA 2006 Article, Belfast News Letter, Taking a bite out of monster market, 2nd August 2005.
8. Anticipating Content Technology Needs (ACTeN), E-Content Report 6, 2004.
9. Invest Northern Ireland, Annual Client Data Returns for 2005. (All 200 companies are not Invest NI clients therefore some of the figures are estimates based on figures returned by companies of a similar size).
10. Invest Northern Ireland, Digital Media Sector Action Plan, September 2005.
11. Research and Innovation Systems in Production of Digital Content, in The Creative Industries Cluster Study, Vol 3, 2004. [www.cultureandcreation.gov.au/cics](http://www.cultureandcreation.gov.au/cics)
12. Australian Government, Unlocking the Potential, Digital Content Industry Action Agenda, November 2005.
13. Alliantus Limited - Industry sources, 2005.
14. Cabinet Office and Department of Trade and Industry, Connecting the UK: the Digital Strategy, April 2005.
15. Creating Growth, NESTA Research Report, How the UK can develop world class creative businesses, April 2006.
16. Midas Initiative, Digital Content Markets on the island of Ireland challenges and opportunities for SME's, 2005.
17. UK National Endowment for Science, Technology and the Arts 2005 report, Creating Value.
18. Digital Content Business Cluster in Finland, 2006.
19. Learning Business Cluster in Finland 2005.

20. Strategy for the Digital Content Industry Ireland 2003.
21. Small Screen Global Vision, The Netsize Guide, 2006 edition.
22. Exploring Corporate Strategy, Johnson and Scholes.
23. Deloitte, TMT, Trends and Predictions, A focus on the Media Sector, 2006.
24. Deloitte, TMT, Trend Predictions, A focus on the telecommunications sector, 2006.
25. Deloitte, Eye on the future, How TMT advances could change the way we live in 2010.
26. New Zealand, The Digital Strategy, Creating a Digital Future, May 2005.
27. Unlocking Creativity, A Creative Region, DCAL.
28. Invest NI Corporate Plan 2005-2008, a strategy for being Entrepreneurial, Innovative and International.
29. Future skills requirements of the international digital media industry: Implications for Ireland - FORFAS, July 2006.
30. UKTI - Global Partnership Initiative [www.uktradeinvest.gov.uk](http://www.uktradeinvest.gov.uk)
31. Broadband Northern Ireland, Fully Connected, Department of Enterprise Trade and Investment.
32. Broadband Content Business Case, How broadband content can aid the delivery of Regional and Devolved Administrations Economic Strategies - DTI (now The Department of Business, Enterprise and Regulatory Reform), November 2004.
33. Effective Content, Government Content and Services for a Connected World - DTI (now The Department of Business, Enterprise and Regulatory Reform), September 2006.
34. Connecting the UK, The Digital Strategy, DTI (now The Department of Business, Enterprise and Regulatory Reform), April 2005.
35. Working together for growth - The Lisbon Strategy i2010, February 2005.
36. Prime Minister's Strategy Unit/DTI (now Department of Business, Enterprise and Regulatory Reform), "Connecting the UK: The Digital Strategy, March 2005.

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