Overview of Anticipated Trends In the Future Use of Skills In the Audiovisual Industry To 2010

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Executive Summary

The purpose of this report is to report on the expected evolution of the audiovisual sector over the period from 2004 to 2010. The intention is to distil areas of future skills needs and expertise given current trends and drivers of change operating in the industry. This report focuses on providing a qualitative, rather than a quantitative, analysis.

Skillset has been appointed as one of four 'pathfinder' Sector Skills Councils. To this end we have been charged by the Sector Skills Development Agency with producing a Sector Skills Agreement (SSA) for the audiovisual sector. One of the four key components of the SSA is an assessment of current and future skills needs. This report focuses specifically on identifying anticipated future needs to inform our development of an SSA.

The specific aims and objectives of this report are two-fold. First, the intention is to forecast broad developments anticipated for the audiovisual industry based on an analysis of trends and the main drivers of change. This analysis is contained in Sections 3 to 6 which also investigate the skills impact and challenges of those trends. Second, the aim is to anticipate outcomes in the form of scenario generation and to explore the implications for skill needs. This in covered in Sections 7 through to 10, with the final Section 11 exploring the issues which this raises.

There is little available evidence to suggest that old skills will be disgarded, entirely new skills required or new occupations created or dissolved within the next six years. This is in contrast to the video games industry in the 1990s and the interactive media industry in the 1990s where whole new industries were created. Rather there will be changes of emphasis in the skillsets required for certain key occupations. Craft-based or technical occupations, eg, camera, sound, lighting, editing, are set to change the least. The major changes in those areas have, in effect, already happened - principally the paradigmatic shift in switching to digital for shooting, editing and post-production in film and TV, and the establishment of online and mobile technologies and platforms.

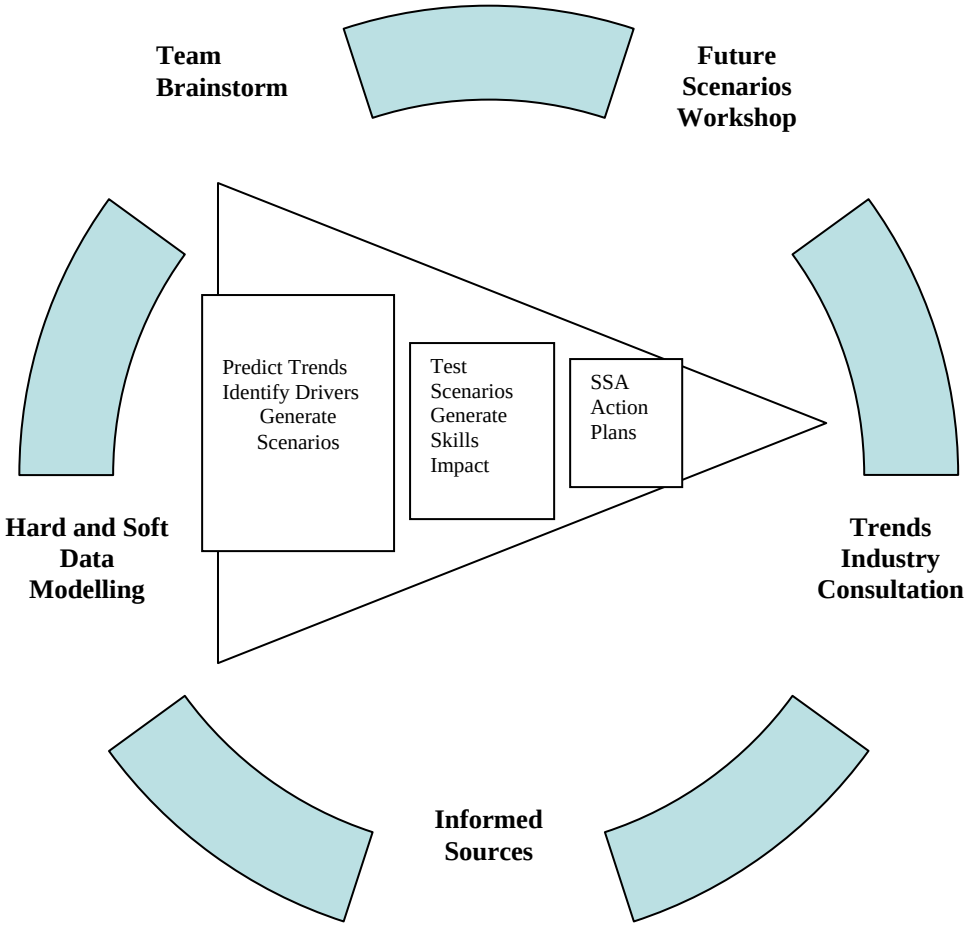
The biggest skill changes anticipated over the period to 2010 are, instead, within the higher level occupations associated with business and creative strategy. This covers a range of occupations concerned with planning, funding, co-ordinating, versioning, aggregating, packaging and selling audiovisual products and services. These include the roles of: producer, business development manager, managing director,

market/audience analyst, scheduler and commissioning editor. It is anticipated that significant changes in emphasis within those roles will be required for the UK industry to fully develop and thrive over the next six years.

Introduction

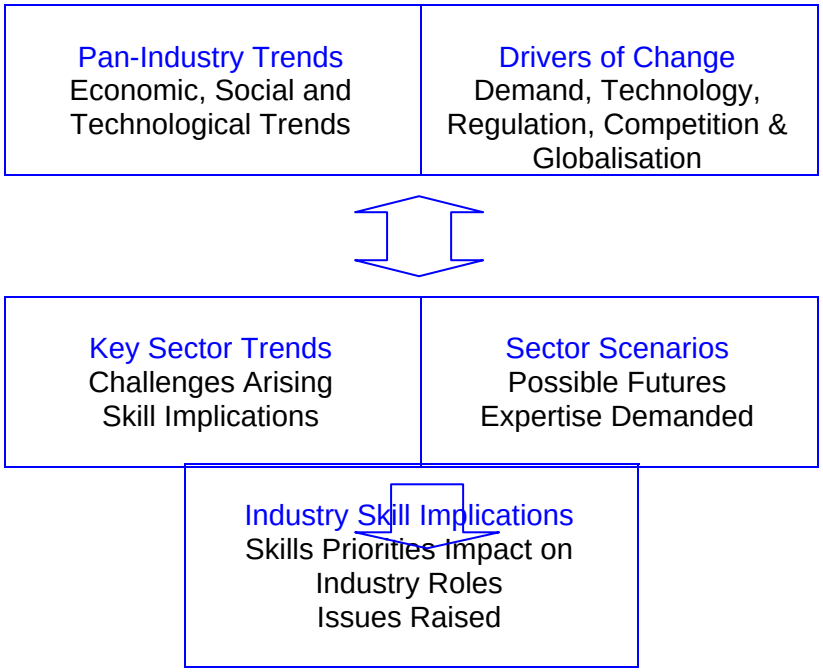
This report explores the future of the audiovisual industry through a focus on three industry sectors: film, television and interactive media. Interactive media is defined to include both the computer games industry and the digital content industry.

There were four key methodologies used in the generation of this report. These were secondary source analysis; team brain-storming; industry consultation; and, workshop discussion. The way in which they interacted to affect the underlying process in the study is illustrated below.



The secondary source material which forms the backcloth of this report was derived largely from three sources. These are: employment and skills related reports; futures perspectives papers and policies; and, industry specific reports and articles. The first include, for example, Skillset's *Market Assessment* and *Audiovisual Industry Census*, the Institute for Employment Research *Working Futures*, and Cambridge Econometrics, *Industry and the British Economy*. Futures papers included: Bournemouth Media School's *Future Reflections* paper, the OECD's International *Future Programme*, and Foresight Future's *Revised Scenarios and Guidance*. Industry specific sources include recent articles in *Screen Digest*, *Screen International*, *Broadcast* and *New Media Age*, reports by Screen Digest and Spectrum Strategy Consultants and future orientated features in the trade press.

A key aspect of this study was the engagement of industry participants including members of Skillset's Board of Patrons and Board of Directors. We would like to thank them and all participants across the UK who gave their time, vision and knowledge to inform this report. Participants in the consultation process are listed in Appendix A. Team brainstorming was an essential part of the study process particularly important in generating the skills outcomes, the key pan-industry trends, the drivers of change and the structure and texture of the scenarios. The way in which those elements of analysis locked together is illustrated below. Pan-industry trends relate to drivers of change which together with key sector trends inform sector scenarios. Both the trends and the sector scenarios distil the final skills analysis. This then provides both an informed perspective on the future of the audiovisual landscape in the UK to 2010.



CURRENT POSITION

1. Industry Characteristics

1.1 Scope and Size

The UK audiovisual industries encompass five main industry sectors: broadcast, film, video, interactive media and photo-imaging. These in turn cover a range of industry activity from television broadcasting, film production, cinema exhibition, and animation to facilities, commercials, video games and photography.

Television broadcasting, for example, includes terrestrial broadcasters (the BBC, ITV companies, Channel 4, S4C and five) and cable, satellite and digital broadcasting, including platform operators who run the distribution networks, and the channel providers who supply the content. Animation provides a variety of content for films, broadcast television, games, corporate production and commercials. Facilities, in turn, supports film production, independent television production and the major broadcasters by supplying equipment and studio hire, post-production and special visual effects services.

The audiovisual industries are in turn a subset of what is termed the creative industries. The latter includes publishing, music, advertising, design and the arts. Of the 1,322,000 total estimated employed in the creative industries, 404,000 are currently engaged in the audiovisual industries (see Table 1 below) and contribute £23 billion (2.3%) to the UK economy (Gross Value Added figure). Audiovisual employment is forecast to increase to 450,000 by 2010[1].

Further, of an estimated creative industries revenue generation of £112.5 billion, £16.7bn is generated by 3 sectors: television and radio (£12.1bn), film and video (£3.6bn) and interactive leisure software (video games industry at £1.0bn). However the audiovisual industries also straddle other creative industry sectors, eg, software and computer services (£36.4bn), design (£26.7bn) and advertising (£3.0bn) and so their economic impact is correspondingly higher than the £16.7bn figure would suggest[2].

Employment Sectors
Animation; Broadcast Equipment Manufacture; Broadcast Radio; Broadcast TV; Cable / Satellite; Cinema Exhibition; Commercials; Computer Games; Corporate Production; Facilities; Film Distribution; Film Pre-production / Development; Films in Production; Independent Sector; Actors / Presenters; Transmission; Videography; Voluntary; Wed Design, CD Rom, Other Interactive Media; Freelancers (other); Photographers; Photographic Processors; High Street Minilabs; In-house Photographics / Processing Staff; Photo Retailers; and, Photo Manufacturers.

Table 1: Audiovisual Industries Employment Sectors
Source: Skillset, *Market Assessment* paper, 2003, p.7

[1] Skillset, *Market Assessment* paper, 2003
[2] DCMS, *Creative Industries Economic Estimates: Statistical Bulletin*, July 2003

1.2 Structure

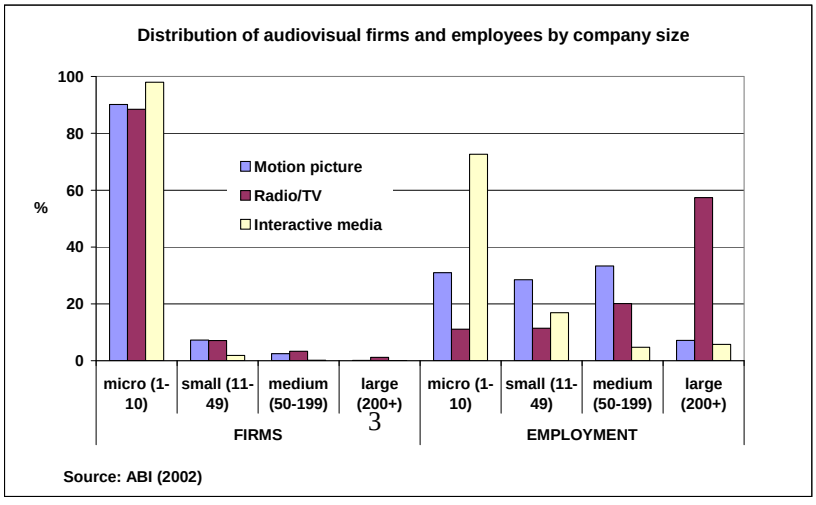
The audiovisual industries are characterised by a small number of large employers and a very large number of SMEs, with a total of approximately 23,000 businesses. Many SMEs have been established as a result of the downsizing of major broadcasters, subcontracting of production, growth in the number of channels and wider applications of audiovisual techniques in a variety of environments. The content-based audiovisual industries have a typically bifurcated industry structure in which a handful of very large (inter) national companies handle the publishing, marketing, distribution and generally the financing, of content; and a far larger number of SMEs, micro businesses, freelancers and sole traders are engaged in the creation, production and development of content.

The latter's dominance of the industry is illustrated in Skillsets' *Market Assessment* report. It is shown by the following statistics:

- the independent TV production sector comprises a small number of large firms and over 1,000 very small firms
- 91 per cent of film businesses have fewer than 10 employees
- corporate production is dominated by firms with 20-25 employees
- in post-production, the majority of companies have 10-15 employees, supplemented by freelancers
- 90 per cent of photo imaging businesses employ less than 10 staff, but one per cent of businesses account for 51 per cent of total employment
- 34,600 freelancers were working at the time of the industry census in June 2002 with an extrapolated additional 50,000 freelancers in the labour pool.

As can be seen in Figure 1 below, this polarised industrial structure is evident in all areas of the audiovisual sector. However, whereas in radio and TV - in which the majority of employees are employed in a few, very large companies - within interactive media, the majority are employed in micro firms. The distribution of employment reflects the fact that the figures only include the online and wireless component of interactive media (rather than computer and video games) which are essentially service-based activities that are not based on the exploitation of content through intellectual property rights. It should be remembered that these interactive media activities are still comparatively new and there has yet to be consolidation on a scale witnessed in other similar professional services markets which has created, for instance, a number of very large marketing communication conglomerates.

Figure 1: Distribution of Audiovisual companies and employees by size



1.3 Growth

Most audiovisual industries are expected to experience growth. Factors responsible include the growth of commercial radio, digitisation in TV and further expansion of interactive media, and a revival in film production activity. In broadcasting alone, revenues are forecast to double to over £11bn over the next decade. Some sub-sectors face more uncertain prospects however. The facilities sector is in transition and facing challenges relating to the downturn in the commercial markets squeeze on production budgets, and foreign competition. Employment has fallen in each of the last 3 years, although the decline was moderated from 2001-02. Other sectors experiencing net job loss in that period included cable/satellite TV and corporate production.

Generally however, healthy employment growth has been experienced by the film, TV and radio industries over recent years. It is therefore not surprising that all key occupations have also experienced growth over the past 5 years, albeit the growth rates are below that for the film and TV industries as a whole over the same period.

With the expansion of programming and channels brought about by the introduction of digital TV expected to continue as the country moves towards analogue switch-off, continued healthy growth in the key occupations within TV is expected for the rest of the decade. However, in line with the large fall off in employment growth in film activities for 1998-2003 compared with 1993-98 (a 15 per cent increase as opposed to a 40 per cent increase), only a modest increase in the numbers of photo and audiovisual operatives is anticipated, and a slight decline in numbers of broadcast associate professionals in film through to 2010 (see Table 2).

Table 2: Employment in key occupations in the audiovisual industries

	1998	2003	2010
Motion Picture & video activities (92.1)			
Broadcasting associate professionals (SOC 3432)	4,502	4,993	4,792
Photo & audio-visual operatives (SOC 3434)	5,152	5,714	6,004
Radio & TV activities (92.2)			
Broadcasting associate professionals (SOC 3432)	28,320	31,409	32,044
Photo & audio-visual operatives (SOC 3434)	4,026	4,465	4,555
TV, video & audio engineers (SOC 5244)	892	1,080	1,470

Source: LFS/Experian 2004

2. Current Skills Development Needs

Skillset's *Market Assessment* report of 2003 provides an overview of the audiovisual industries and their key skills and productivity needs. The report highlights 4 areas: (i) the market pressures facing employers and the impact they are having on the demand for skills across the industries; (ii) the changing skills needs within the industries; (iii) the skills supply available to meet current and anticipated needs; and (iv) the vision for the sector. The document provides a concise overview of the situation in the industries.

The report notes that: *"the general picture in the audiovisual industries is one where the necessary skills are becoming more diverse and wide-ranging. This is partly evident through an imperative for workers to be able to adapt to different specific and technical processes - notably those arising from the diffusion of digital technology. However, there are parallel pressures to develop more and better skills in other areas, eg, related to legislative requirements, or to the development of a successful business. In all areas, a mixture of job-specific and generic skills is required."*

Referring to Skillset's *2003 Workforce Survey*[3], it notes that key industry-specific training needs include: online / web design / interactive media; production; editing; post-production; and camera. The generic skills areas identified were: business skills; IT; management / leadership; and, career advice / development.

Industry demand for those generic skills is echoed in each of the sector skills strategies that Skillset is currently developing. The film skills strategy (*A Bigger Picture*[4]) is complete and both the television and interactive media skills strategies are currently in development. The skills priorities section at the end of this report highlights 7 areas of company skill development. These are: asset exploitation and management; risk management; project management; partnership development; investor relations; marketing and promotion; and, technical expertise. This relates closely to 3 of the 4 generic skills need identified by Skillset's *2003 Workforce Survey* described above as business skills, IT and management / leadership. The importance of those to the future of the film, television and interactive media industry, and their specific sector manifestations, is summarised below in relation to each of the sector strategy reports.

2.1 Film Industry

Developing UK Film Talent[5] was a film skills research project commissioned in June 2002 by Skillset, the UK Film Council and the National Screen Agencies. One of the aims of the research project was to consult with industry and understand the skills, talent and company development needs of individuals and employers entering or within the UK film industry.

[3] Skillset, *2003 Workforce Survey*, 2003
[4] Skillset & UK Film Council, *A Bigger Picture*, The UK Film Skills Strategy, September 2003
[5] Skillset, *Development UK Film Talent*, A comprehensive skills survey of the UK film industry, Final report of the Film Skills Group Research Project, prepared by Hewell Taylor Freed Associates, February 2003

The report focused on the following 10 key themes which were: communicating and informing (industry opportunities); collecting and analysing information (industry intelligence); careers information, advice and guidance at all levels; pre-entry to the film industry (resolving mismatch between education provision and industry need); post entry to the film industry (relevant continuing professional development); business skills; improving diversity in the workforce; digital and new technologies; nations and regions (building a sustainable industry across the UK).; and, finally, investment (industry's understand of Government's skills agenda).

One of key themes in terms of specific skills was the need for business skills in the industry. This was the need to ensure that those just starting out and those already in the industry, often in 'micro-businesses' or self-employed, have the necessary business and management skills to make the most of their creative and technical expertise. A second key theme in terms of this report relates to digital and new technologies. The report noted that the need to keep pace with new technologies is a major retraining issue affecting all sectors of the film industry.

The *Developing UK Film Talent* report laid the groundwork for the UK film skills strategy encapsulated in the 2003 report *A Bigger Picture*. It is a complete training and education strategy for the British film industry.

As the report indicates, three "*golden threads*" run through the strategy. It notes these are:

- the need to encourage and deliver a **more diverse workforce**, both culturally and socially. This is fundamental to the industry's future relevance . It is essential that all sectors become more accessible to currently under-represented groups

- the **nations and regions** of the UK are central to the successful delivery of this strategy. The National and Regional Screen Agencies and Skillset's Approved Training Partners have a vital role to play in developing and nurturing talent and supporting the growth of a UK film industry

- the implications of **new technologies**, as a result of the accelerating pace of change, need to be taken into account so that industry can be in front of, rather than behind, that curve.

This strategy will be implemented over the next few years.

It will deliver:
- an expert film-specific careers information, advice and guidance network
- an integrated approach to skills provision
- industry-approved relevant training and education provision
- a small network of Screen Academies providing creative and commercial skills
- coherently developing skills and talents in priority areas.

In addition, it notes a new emphasis will be placed on support for business, management and leadership skills.

Aspects of the skills development priorities and strategic threads contained in *Developing UK Film Talent* and *A Bigger Picture* are echoed in the television sector report.

2.2 Television Industry

The equivalent report for the television industry has not yet been finalised but is currently in development.

In its preliminary form, the Skillset *TV Skills Strategy*[6] identifies the following key industry issues relating to skills.

The need for:
- improved match between industry need and education provision
- structured and accessible pathways into employment
- clear sign posting to industry standard training and development provision
- flexible skills, talent and company development tailored to industry need
- industry validated careers information, advice and guidance
- high quality intelligence.

Skillset has identified a wide range of training needs reflecting the diverse range of specialist, high-end creative and technical skills employed in the industry. Within these a number of key themes emerge across both generic and industry-specific skills areas. Generic skills gaps include: business skills; commercial awareness; diversity; health and safety; HR skills; IT; management and leadership; and, succession planning. In addition some broader industry specific issues have emerged. These are three fold. The lack of 'industry-readiness' among new entrants; the difficulty in attracting and retaining skills and talent in the nations and regions in the face of the on-going pull from London; and, the on-going pressure to multi-skill.

As with the film industry strategy, it notes that skills gaps around business skills and commercial awareness will clearly have a major impact on the industry's competitiveness. It observes that the need for improved skills in these areas is key within the independent production sector where the consequences of the Communications Act 2003 mean that independents need to understand how to exploit IPR, and be equipped to negotiate mergers, takeovers and distribution deals. Other areas which have been identified as needing greater focus in relation to the independent production sector include:
- business strategy in a multi-channel world
- working internationally
- making independent productions work on multi-platforms
- exploiting formats
- nurturing and exploiting talent in-house
- raising investment from the market
- marketing and branding.

Management and leadership are identified as skills gaps areas across virtually all UK industry sectors. For the television industry, the issue is compounded by the fact that it is a creative industry, attracting people from a creative background who frequently have not had the opportunity or lack the inclination to acquire the skills needed to manage people and businesses effectively.

[6] Skillset, *TV Skills Strategy, Consultation Draft,July 2004*

2.3 Interactive Media Industry

The equivalent report for the interactive media sector - Skillset's *Interactive Media Skills Strategy*[7] - is also currently in a preliminary form and is due to be finalised shortly.

Its preliminary finding is that broadly seven trends and issues can be identified which pertain to the interactive media industry.

In summary, these are:

- the industry has a requirement for a broad range of hybrid specialist and general skills and functional flexibility
- new entrants are not fully equipped to meet the needs of the industry
- post-entry skills acquisitions is primarily through self-directed learning, coaching and mentoring
- experience is valued more than vocational qualifications (though most practitioners have degrees)
- there are shortages of experienced practitioners and of individuals with the right combination of skills
- there are gaps in general transferable life, work and business skills
- traditional 'training solutions' are unlikely to work.

Interactive media requires a unique and hybrid set of skills. The Skillset report clusters those unique set of skills around five skill areas. These are: specialist skills; transferable skills; awareness; attitudes and domain expertise. Specialist skills are drawn from drawn from at least two of the design, technical, content and business disciplines, and cover both transient skills and enduring skills. The former include expertise in software packages and platform technologies. The latter include expertise in: design theory, software programming principles; human-computer-interaction; information architecture; game theory; and, creative writing and drawing skills.

On top of these specialist skills, practitioners need more general, transferable, work and life skills including:

- general personal, communication and presentation skills
- time, client and project management
- leadership, people and team-working skills, which includes mentoring skills
- business, financial and sales skills
- research and study skills, which includes the ability to learn new skills quickly
- general ICT skills, and use of internet search engines in particular.

Broadly, practitioners need to have an awareness of:

- the other interactive media skill sets beyond their own specialities
- commercial and marketing requirements, which includes an ongoing knowledge of future technologies
- relevant legal issues, especially relating to copyright and intellectual property
- business issues, including the ability for staff quickly and accurately to gain an understanding of the business needs of clients and how they operate

[7] Skillset, *Interactive Media Skills Strategy, Consultation Draft,prepared by HirschWorks, August 2004*

- users and usability.

Flexibility, adaptability and a willingness to undertake self-development are key attributes of practitioners. This is partly because the industry and marketplace is developing and changing rapidly, but also because of the nature of working practices. These tend to be characterised by: blurring of roles, vague job description, long hours and frequent changes of employment. Lastly, as well as their interactive media skillset, many practitioners will have additional specialist domain expertise including knowledge of a specific subject matter, experience of particular markets and foreign language and cultural understanding.

3. Social, Economic & Technological Trends

3.1 Long Trends

No one can predict the future. However by identifying trends it is possible to inform action and therefore sculpt how the future unfolds. The closer a trend is to the present day, logically the more likely it is to be accurate. There is less room for complex variables to disturb the prediction. It is however useful to attempt to look far into the future, as this opens up our thinking to the possibility of major change - to dislocations and discontinuities. This is routinely practiced by research institutes that specialise in long-term trend predictions. One of them is The Long Bets Foundation. To give you a flavour of the future here are 10 predictions from the Foundation as of July 2004 which are expected to occur anytime from 2010 out to 2163.

PREDICTION	HORIZON
1. A profitable video-on-demand service aimed at consumers will offer 10,000 titles to 5 million subscribers	2010
2. More than 50 per cent of books sold worldwide will be printed on demand at the point of sale in the form of quality paperbacks	2010
3. The Wall Street Journal and New York Times will refer to Russia as “the world leader in software development”	2012
4. A wearable device will be available that will use voice recognition capability and high-volume storage to monitor and index conversations you have or conversations which occur in your vicinity for later searching as supplemental memory	2020
5. The tickets to space travel - at least to the Moon, will be available over the counter	2020
6. Either superstring theory, membrane theory, or some other unified theory describing all the forces of nature will have won a Nobel Prize	2020
7. Commercial passengers will routinely fly in pilotless planes	2030
8. At least one human alive in the year 2000 will be alive in 2150	2150
9. A synthetic computer or machine intelligence will become truly self-aware, ie, conscious	2050
10. There will only be three significant currencies used in the world. More than 95 per cent of the countries in the	2063

world will
use one of them.

Source: Longs Bets Foundation, www.longbets.org, July 2004

But trying to see into the future, even when extrapolating from historical trends, presents a challenge. The American think-tank, the Hudson Institute on Technological Futures, made a series of predictions in 1966 with regard to the take-up of new technologies in the final quarter of the twentieth century. The predictions that happened included: high-speed data processing, mobile phones, real-time financial transactions and robots on production lines. Those that didn't included: chemical agents for improving memory, deep ocean mining and cold fusion power generation. And somewhere in between: personal flying machines, electric cars and magnetic trains.

The closer to the present day the less hazardous the prediction business. Closer to 2010 - the timescale of this study - was a recent report entitled *Britain in 2020*[8] . . Published in 2003, it identified ten key trends covering a range of issues.

They were:

- A bigger, older population
- Different demands - and higher expectations of public service
- A bigger, more flexible and highly trained workforce
- Pervasive information and telecommunication technologies
- A revolution in medicine
- A 'new' economy
- The opportunity of interdependence
- New global responsibilities
- Addressing global climate change
- Increased importance of consumer and social activism.

These ten trends paint a picture of key social, economic and technological parameters which, it is anticipated, will affect the British economy in 2020. A complementary report on *Key UK Trends*[9] provides an overview of the research on some key economic, social, technological and other trends likely to affect the UK in the period 2001-2011. It looked at likely trends in: income, wealth and other inequalities; science, technology and innovation; public ethics; values and attitudes; demography; the labour market' the environment; and, the UK's position in the world.

It identifies 10 trends as follows:

- Demography
- Information and communications technologies
- Health
- Individual attitudes, beliefs and family life
- Housing
- Enduring regional inequalities
- Crime

[8] Forethought, Labour Centre for Policy Research, *Britain in 2020*, discussion paper on Britain in 2020, July 2003

[9] Cabinet Office, Performance and Innovation Unit, *Key UK Trends 2001-2011*, Short Survey of Published Material, June 2001

- Transport and infrastructure
- The environment
- Employment and the national economy.

Of these, it is the economic, social and technological trends that relate most directly to the future of the audiovisual industries. They are examined in turn below.

3.2 Economic Trends

The *Learning from the Future*[10] report by the Learning and Skills Research Centre identifies aspects of the global economy which are changing. It refers to the global economy being structurally transformed since 1970 moving from a 'standardised' to a 'customised' economy. The report identifies six economic dimensions of this modern economy which are affecting the structure, nature and performance of western economies in the early 21st century. These can be summarised as follows.

- Economies of Scale
Greater economic, political, cultural and social interconnectedness between countries is seen to be lowering tariff barriers and other restrictions on trade and capital flows. Economies of scale are being sought in the global marketplace rather than just within national borders. Large global corporations have expanded in size with the value-added activities of the 100 largest transnational corporations haven grown faster than those of countries themselves. Now 29 per cent of the world's largest economic entities are transnational corporations.

- Flexible Specialisation - Mass Customisation
The exploitation of technology to customise products is an area of economic growth. The viability of this depends on economies of scale or new forms of critical mass such as strategic alliances. Companies may collaborate to combine different products in bundles that are tailored to individuals or small groups of customers. Knowledge is seen as vital to the process of customisation.

- Services
The expansion of the service sector and the development of outsourcing abroad is another characteristic of the customised economy. Originally this outsourcing occured in manufacturing, but increasingly it also includes back-office activities within services. Advanced economies have moved into higher value-added, often knowledge-based activities, for which high-skilled labour is needed.

- Horizontal Networks Spread
A further characteristic is the disaggregation of some large businesses into smaller companies and the decentralisation or other organisations. Vertical integration is giving way to horizontal networks, with fewer layers of management and a greater self-management of work by individuals. The number of small firms increased by 50 per cent during the last 20 years (ref). In an economy with high levels of connectivity (eg, a digital networked economy), higher levels of specialisation are possible.

- Human Interactions More Important
The importance of human interactions in many jobs within flexible and specialised production processes is growing. This is introducing a new element of labour intensity into the workplace, which helps to explain why technology has not caused the permanent reduction in employment that some commentators feared. Technology makes possible more complex tasks,

[10] Learning and Skills Research Centre, *Learning from the Future*, Scenarios for post-16 learning, The Tomorrow Project, 2003

which are often beyond the skills of any one person, so that teamwork and collaboration become vital.

- Core Shrinks, Periphery Grows
A final characteristic is the reliance on a smaller core of permanent staff, surrounded by a larger periphery of temporary (including self-employed) workers. This has occured with a greater trend in outsourcing and a desire to cut permanent overheads while also flexibly retaining a range of skills to meet marketplace requirements.

The report notes that towards 2020, vastly improved electronic communications and other recent technologies may well make possible a more radical transformation of society than is taking place now. In the intervening period, the customised economy will continue to evolve, with major implications for the learning and skills sector. The possible developments are summarised in Table 2.

Table 2: Economy Forms & Possible Developments

The standarised economy	**The customised economy**	**Possible developments**
Economies of scale within national economies	Economies of scale within the global economy	Intense competition, managed by consolidation
Standardised production - mass consumption	Flexible specialisation - mass customisation	'It must fit me' values - managing choice
Manufacturing	Services	Experiences
Organisations are vertically integrated	Horizontal networks spread	More radical outsourcing, dispersed employment
Human interactions are secondary at work	Human interactions are more important	Skills shortages intensify
Large labour market core, smaller periphery	Core shrinks, periphery grows	Labour market core grows as supply tightens

Source: Learning and Skills Research Certre, *Learning from the Future*: Scenarios for Post 16 Learning, The Tomorrow Project, 2003, p.10

3.3 Social Trends

The BBC in its 2004 publication *'Building public value: Renewing the BBC for a digital world*[11], the corporation identifies 6 aspects of societal change in the early 21st century. It recognises the link between the social change and the media industry noting that *"broadcasting has always both reflected and led changes in society*", and *"the complex interaction between broadcasting and society will continue into the next generation".* Here are six social trends its identifies in summarised form (Table 3).

Table 3: Summary Social Trends

Social Trend	**Aspects of Trend**
Plurality & Diversity	Increasing diversity & plurality. Generation differences more pronounced. Traditional deference towards 'authority' evaporated: replaced by service expectation. Family structure radically changing: single and extended families replaced traditional nuclear. By 2020, single person household types will be the dominant model accounting for 40 per cent of households
Multicultural Nation	UK becoming mature multicultural nation. Between 1991 and 2001, the ethnic population of the UK grow by 54 per cent, compared with 4 per cent for the total UK population.

[11] BBC, *Building Public Value*, Renewing the BBC for a digital world, 2004

	Ethnic minorities now represent just under 8 per cent of the overall population and are projected to grow as rapidly over the next decade, particularly in urban areas. This is spread unequally though the UK
Nature of Demographic Engagement	General election turnout fell from 72 per cent of the electorate in 1972 to 59 per cent in 2001. Young people in particular turning away from traditional politics: estimated just 39 per cent of 18-24 year olds voted in 2001. But people heavily active in issues that affect them: blood sports, Iraq war, rural community issues etc.
Interest in Self-fulfilment	Recent evidence that people attached greater importance to personal fulfilment than solely earning money: 42 per cent of adults name self-fulfilment as a key goal. But access to learning opportunities and motivation to take them up remains highly unequal amongst social groups
Global Influences	UK becoming more open to global influences. In 1980 at least 48 per cent of Britons believed that the UK could gain 'something or a lot' from Europeans and Americans. By 2000 this figure reached over 75 per cent. Number of people taking flights abroad have increased 73 per cent over the last 10 years. New instability introduced into international environment with issues of terrorism, global economy, trade and the environment now heading the global agenda.
Value of Localness	Despite more global outlook, people still value localness. UK adults feel need for community involvement which over tow thirds think it is important to retain local differences, such as accent and food. Political control has moved to new democratic institutions in Scotland, Wales and Northern Ireland, while English regions are looking to elect their own assemblies.

3.4 Technological Trends

Various technologies have the potential for significant and dominant global effects within the next few decades. Primary among them are: information and communications technology; biotechnology; environmental technology; nanotechnology and material technology.

A recent report *The Global Technology Revolution,* sub-titled *Bio/Nano/Material Trends and Their Synergies with Information Technology by 2015*[12], focuses on three of those technologies and their synergies with a fourth, information technology through to 2015. It looks at the growing effect of multi-disciplinary technology across all dimensions of life: social, economy, political and personal.

Technology Themes

Genomics, Therapies and Drug Development, Biomedical Engineering, The Process of Materials Engineering, Smart Materials, Self-Assembly, Rapid Prototyping, Buildings, Transportation, Energy Systems, New Materials, Nanomaterials, Nanotechnology, Integrated Microsystems & MEMS, Molecular Manufacturing and Nanorobots.

[12] Anton, P. S., Silberglitt, R., & Schneider, J., *The Global Technology Revolution*: Bio/Nano/Materials Trends and Their Synergies with Information Technology by 2015.

The key technology theme which this directly relevant to this report is information technology and its underlying them digitisation. *The Global Technology Revolution* summarised the potential impact of information technology to 2015 as follows.

Continued Explosion

Photonics, bandwidth, computation
Universal connectivity
Ubiquitous computing
Pervasive sensors
Global information utilities
Nanoscale semiconductors: smaller, faster, cheaper
Natural language translation & interfaces

E-commerce dominance
Creative destruction in industry
Continued globalization
Reduced privacy
Global spread of Western culture
New digital divide

Source: Anton, P.S, Silberglitt, R, & Schneider, J, *The Global Technology Revolution*, 2001, Extract from: Table S.1 The Range of Some Potential Interacting Areas and Effects of the Technology Revolution by 2015

Written in 2001, the *Key UK Trends*[13] report predicted that by 2005:

- figure of 450 million regular internet users globally in 2001 will have grown to 2 billion
- several billion domestic appliances and other machinery are likely to be connected to the internet through the use of automated wireless technologies
- digital television is expected to be in use by 15 million UK subscriber homes
- because of the spread of digital TV, up to 50 per cent of internet access may be though non-PC devices
- computer memory with average memory access time of one nanosecond will be in use.
- artificial intelligence, virtual reality and advanced 'data mining' technologies will allow organisations to assimilate data and solve problems well beyond the range of today's machines.

This now seems slightly optimistic for 2005. It reflects the fact the impact of technology is often over-estimated in the short-term and under-estimated in the long term. But such developments by 2008 do not seem improbable.

The actual realisation of these possibilities will depend on a number of factors, including local acceptance of technological change, levels of technology and infrastructure investments, market drivers and limitation, and technology breakthroughs and advancements. Since these factors vary across the globe, the implementation and effects of technology will also vary. Nevertheless, the overall revolution and trends will continue through much of the developed world.

[13] op cit. 9.

4. Impact on Audiovisual Industry

4.1 Pervasive ICT

The *Britain in 2020*[14] study notes that the future will see *"increased reliance on ICT especially in business, medicine, industry and leisure".* At the moment, 6.5 per cent of UK GDP is spent on ICT - the second highest in the world. The Office of the E-Envoy notes that 80 per cent of UK businesses have a website, while the government itself has a target of putting all government services to citizens and to businesses online by 2005[15].

ICT and interactive media will become more central to the delivery of education and training. The next decade will become a 'a time for experimentation' as educators explore the application of these technologies to enhance the learning experience and reduce the unit cost of education, responding to both the increasing participation in further and higher education and to further opportunities for lifelong learning.

These technologies will also be more pervasive in daily life generally. The *Key UK Trends: 2001-2011*[16]. report notes that multi-media and communications technologies, including the internet, mobile phones and digital television, are likely to have become entrenched as an integral part of daily life in the UK over the next five years. How this currently looks within the home environment is illustrated below in Figure 2.

Figure 2: Media Technology in the Home 2002

Children's (10-14) Bedroom			Living Room	
Terrestrial TV	63%		Terrestrial TV	93%
Radio	63%		Video	81%
Video	31%		Radio	62%
CD	27%		Multi-channel TV	41%
Other games	20%		CD	32%
PS2	13%		DVD	27%
Internet	10%		Internet	10%
DVD	10%			

Note: Corresponding figures for Adults' bedroom: 52% terrestrial TV, 51% radio, 25% video; for Study: 14% internet; for Dining Room, 11% radio; and, for Kitchen: 18% radio and 11% terrestrial TV.
Note: only includes technologies with at least 10% 'room penetration'.

Source: Daily Life survey 2002. Adapted from in *Building Public Value: Renewing the BBC for a digital world*, Section 2: Changing media in a changing society, page 54, Figure 7.

[14] op cit. 8
[15] Office of the E-Envoy at www.e-envoy.gov.uk, July 2004
[16] op cit. 9

And how it is predicted this will affect the television industry, for example, can be illustrated as follows.

TV Viewing in 2014

A rough guide to what the future world will look like and the kinds of gadgets and gizmos that will be at our disposal

- **Interactive plasma screens throughout the home - even in the toilet**
- **Programmes instantly downloadable for viewing on PDAs with personalised endings**
- **Active viewing** replaces passive viewing: interact with the Grand Prix
- **Navigation** of content is as important as the content itself. Think Amazon.com but with TV programmes. The King is dead. Long live the King
- No more remote controls. Appliances are **voice activated**
- Personalised **virtual presenters** replace the EPG
- **Napster-like** file sharing of programmes means you can borrow programmes from your friends
- **Branded** programmes offers the possibility of Levi's TV
- Viewers watch small **bite-sized** programmes - such as highlights or previews of pop promos - on their mobile phone before heading home to watch the full thing via on-demand broadband video
- The mobile phone becomes the **digital home controller**
- Communications devices are blended seamlessly into our clothes and bodies to build a **personal area network (PAN)**
- An increased **choice** of viewing device and method means less choice of programmes.

Source: Webster, Howard, 'It's broadcasting, but not as we know it', *Broadcast*, 9 January 2004

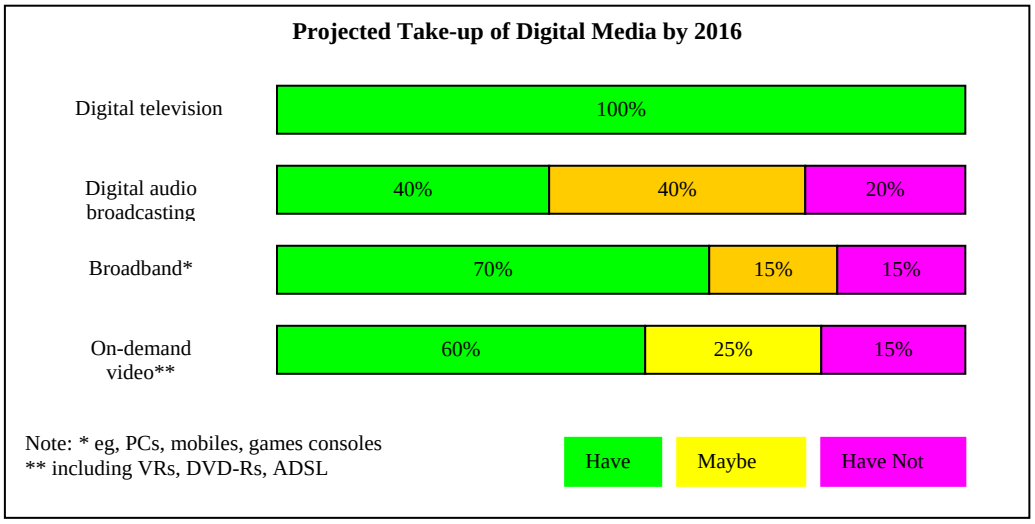
4.2 Digitisation & Cross Platform

The growth of cross-platform products is closely related to two other developments in the audiovisual industries: the increasing pervasiveness of media, and the convergence of functionality within one piece of audiovisual equipment. The introduction of wi-fi networks and large plasma screens playing end-to-end television at airports, stations, restaurants and pubs increases the pervasiveness of media presence in everyday life. The projected take-up of digital media by 2016 is illustrated in Figure 3 below. Increasingly too, mobile phones are PDAs, gaming consoles and cameras - and will become radios - as well as telephones. Digital home entertainment equipment will increasingly combine TV, PVR, DVD player, CD player and radio.

Creating related products for cross platform distribution is evident in the television and games industries. With the development of broadband

and television brand extension to the web, broadcasters like Channel 4 have pioneered broadband products like 4Broadband. This is mirrored in the film industry. It uses cinematic exhibition increasingly as a marketing 'window' for its product. Largely revenues are derived from subsequent television distribution, video rental/sales and increasing from DVD. Over the next five years this will 'cascade' further, initially with broadband-lite film clips and previews, over PC and mobile platforms. One might imagine that favourite film scenes will follow downloadable ring tones as the next cool 'must have'.

Figure 3: Projected Take-up: Digital Media



Source: nVision, Changing Lives, BBC Estimates in *Building Public Value: Renewing the BBC for a digital world*, Section 2: Changing media in a changing society, page 51, Figure 5

4.3 Outsourcing

Outsourcing applies to different types of commercial relationships between purchasers and suppliers - co-sourcing, subcontracting, partnering, joint ventures, third-party contract and facilities management - where an aspect of the business is supplied by a separate external company. High value core functions are usually retained in-house with 'commoditised' functions out-sourced where this is economically viable. In the last 10 years, functions like call centres, manufacturing and IT support have been increasingly out-sourced from UK companies to businesses abroad.

The possibility of business processes higher up the value chain being outsourced is a threat to the sustainability and intrinsic economic value of domestic businesses. Speaking in connection with post-production in the UK, Puttnam noted that if there isn't sufficient investment in the necessary talent, then digital film work could be outsourced to territories that combine a far lower cost base with comparable or even better skills[17]. He commented: *"Think of the way India has invested in the ICT sector and gained a competitive advantage - you don't need that much imagination to see the same thing happening in digital*

[17] Puttnam, David, *The Impact of Digital Technology on the Film Industry*: Opportunity of Threat?, speech to the CASS Business School on 2nd June 2004

effects".

Perhaps this is an even larger issue for the interactive media industry. In theory, the international nature of the internet, coupled with the ease of modern communications, creates opportunities for foreign competitors to provide services to UK clients. US companies have always dominated the IT and internet industries, and will continue to compete in European markets. In addition, the practice of outsourcing development work to (cheaper) foreign partners in regions such as India and Eastern Europe will become more widespread. As these economies develop more expertise, they will be able to compete for a larger share of work higher up the value chain. In practice, however, such projects can be difficult to manage, and this may limit the extent to which foreign competitors represent a serious threat.

4.4 Rising Economies

Rising economies such as China and South Korea may become increasingly influential particularly in relation to internet and mobile technologies and therefore the growth of the interactive media marketplace. China, for example, is the single largest mobile phone market in the world, with more than 270 million subscribers[18]. Consequently the country is expected to exert a huge influence over the future development of 3G technology, with around 20 per cent of the world's mobile phone users based there. And South Korea, for example, has seemingly come from nowhere to lead the international league tables for broadband connectivity. It outstrips the US, Japan, Germany, France, Britain and the Scandinavian countries in terms of broadband penetration and broadband capacity. In early 2003, almost 70 per cent of homes had broadband connections compared with about 5 per cent in Britain. Koreans are said to spend about 22 hours online each month with 10 per cent of economic activity is related to IT - one of the highest in the world[19]. The speed with which South Korea positioned itself as a leader in broadband connectivity worldwide is a salient reminder of the nature and strength of global competition.

4.5 Employment

The *Key UK Trends: 2001-2011*[20]. report notes that the UK economy is expected to continue growing at its recent average rate of 2-2.5 per cent per annum until 2006. This growth, and a parallel expected growth in productivity, will come through the acquisition of new labour skills, greater specialisation and the application of new technologies. The most recent Institute for Employment Research (IER) study[21] identifies a general trend towards faster employment growth in high level occupations - managers and professionals - but also an estimated 1.9m new jobs in associate professional and higher technical occupations by 2012, with strong growth in the culture, media and sports occupations. In sectoral terms, the IER report highlights the continuing

[18] Darling, Andrew, '*Hanging up'* New Media Age, 3 June 2004
[19] Watts, Jonathan, '*World's first internet president logs on'*, The Guardian, 24 February 2003
[20] op cit.9
[21] Institute of Employment Research, *Industry and the British Economy*, Vols 1 & 2, 2003

growth of employment in interactive media, as it is part of its broader ICT sector classification which they see as generating 300,000 new jobs in 2012.

The *Key UK Trends: 2001-2011* report notes that by 2005, it is likely that IT literacy will be regarded as an essential prerequisite for skilled employment. Increasingly IT fluency is required in production, editing and transmission or distribution activities particularly in radio, television, animation and commercial production. It is especially important in photo-imaging where digital imaging technology, database and search technologies, the growth of the internet and e-commerce and has transformed the business. For in addition to the consumer market, this business supplies images to advertising agencies, designers, newspaper, film studios and publishers.

4.6 Demographics

Demographics affect no only the complexion of the audience and related programming and product choices, but also the composition of the workforce and related skills patterns.

Employment in the audio-visual industry is skewed towards younger people - in film over 40 per cent of workers are in their 20s, and in radio and television a similar share are in their 30s. The concentration of younger workers also reflects the growing importance of new digital technologies in these industries (especially in interactive media) with which younger people are more familiar. In addition, it reflects the number of people who move out of the sector into other forms of employment as they get older, either through choice or necessity[22].

The present composition of the existing audiovisual workforce, combined with the changing nature of the labour market from which new entrants are going to come, has significance implications for future skills needs. First, the industry workforce is out of step with demographic change; skewed towards white, young (male) people, in a context of an ageing, more ethnically diverse population in which growth in key occupations will be driven by women. Second, industry will need to redress these imbalances or suffer from a shrinking talent pool and risk commercial gains associated with the new demographics.

4.7 Diversity

Section 3.3 above noted six aspects of societal change in UK. Two are particularly relevant here: greater plurality and mores towards a more multicultural nation. In the audiovisual sector, multi-channel and digital TV, for example, is well placed to cater for such diversity and take advantage of the importance of lifestyle, leisure and well-being in people's lives.

Linked to this diversity, three broad trends in consumer tastes can be identified which will affect the audiovisual industries. First, a more visual and immersive culture which favours what might be termed ‘more intuitive modes of thought’: interactive media technologies will

[22] op cit.1

both feed-off and drive this trend. Second, a continuing demand among consumers to have a greater level of personalisation, which has been dubbed the 'it must fit me' world which interactive media technologies make much more possible. Third, relating to wider economic trends, the blurring of work/leisure time through increasingly flexible working patterns, and different lifestyles, leading to a decreasing salience in the concept of the 'peak time' viewing slot in broadcast schedules.

5. Sector Trends & Skills Challenges

This section moves to the very specific and immediate perspective of each of the industry sectors, ie, film, television and interactive media. It is based mostly on literature published within the last 24 months, on information from the trade press within the last 12 months and on views expressed by consultees during the consultation period in June and early July 2004. It identifies what those in the industry perceive as the current trends in each of the sectors and provides texture around possible interpretations of industry impact over the next six years.

Each section is prefaced by a series of recent headlines from the trade press primarily from *Screen Digest*, *Broadcast* and *New Media Age*. These headings encapsulate the flavour of the trends that follow. There are five to ten trends identified for each sector which are summarised initially. Full details appear in Appendix D. The interactive media section is split into two, the first part covering digital content - distributed over PC, mobile and iTV - and the second on the games industry.

5.1 Film Trends

Recent Film Industry Headlines

'US major production and release costs soar'
'Half of all European screens are multiplexed'
'Blockbuster ditches VHS in favour of DVD'
'Triple-figure growth rates for DVD recorders'
'Kodak unveils d-cinema operating system'
'World first: Singapore gets first all-digital multiplex'
''MPA launches anti-piracy rewards programme'
'Access speeds still key barrier to film downloads'
'Universal adds digital watermarks to movies'

- Key Film Trends -

- Attracting inward investment becoming more competitive
- Rising production and marketing costs
- Continuing development of multiplexes
- Increasing market penetration of DVD and demise of tape
- Sustained concern over DVD piracy
- Rising concern over illegal downloading
- Continuing digitisation of production processes
- Emerging d-cinema impact on distribution and exhibition.

It is anticipated that most of the change in the film industry over the next few years will be in the distribution and exhibition parts of the industry value-chain. The primary impact here is technological - increased DVD penetration and the demise of tape especially over the next three years; online film distribution as a nascent development, possibly in the period 2007 to 2010; and, the increasing adoption of digital cinema, again more probably with its largest impact over the later 2007 to 2010 period.

While DVD recorders continue to thrive in the technologically advanced Japanese market, consumer electronics figures suggest that the format is still in its infancy in the USA and most European territories but, with rapidly falling DVD hardware prices, this is set to change. Given the continued prospects for strong volume growth worldwide, coupled with high margins, it is predicted that DVD will become the single most important film income source by 2010. But this development brings with it increasing concern with large-scale industrialised piracy. At the moment this usually finds its source in large duplication plants in countries such as China, Thailand, Malaysia, Pakistan and Russia. This has focused the industry's energies on the development of sophisticated security systems to stem this piracy.

The DVD may however ultimately be complemented, or even overtaken, by film downloading from the internet. When download time accelerates, illegal online copying will become one of the major challenges to the film industry. As mass roll-out significantly in excess of 5Mbps is likely to take some time, the film industry has time to adjust. This represents a window of opportunity to develop legal, paid-for downloading services that are likely to be the most potent weapon in combating illegal file-sharing.

The other key technological development in the industry is the emergence of digital cinema - or d-cinema. This means the digitisation of the distribution and exhibition processes with the disappearance of film 'prints' and their replacement with digital files transmitted via cables and satellites to local cinema servers. This will not directly affect the production process, nor the craft skills that are central to it, but rather film scheduling or programming and the relationship between individual cinemas and their audiences. One of the key benefits of this digitisation is the ability to programme more flexibly in the cinemas and the reduction of distribution costs associated with film print production. This development is still very much in its early adoption phase.

In the meantime the mature production and post-production dimensions of the industry will come under increasing competition - increasing global competition. A key challenge for the UK's film production base over years to 2010 is to retain its competitive advantage in the face of international competition. This competition will come particularly from Australia, Canada and Eastern Europe, and in the longer term, from South East Asia. In terms of post-production expertise, the market will also become more competitive. Given that it is likely more of the routine post-production work will be out-sourced to other countries in the future, particularly those in South-East Asia such as Korea, the challenge for the UK is to retain high-end work and therefore lucrative market share.

5.2 Skills Challenges: Film Industry

A series of industry challenges are generated by those trends. Each of those challenges has skill implications. For example, exploiting e-VOD and commercial online/mobile possibilities requires skill in brokering and developing partners; retaining high-value post-production requires promotion and marketing skills plus craft skills in post-production techniques, particularly around special-effects, animation and editing; and, sustaining domestic talent levels requires quality training and development in script-writing, cinematography, production; and, film editing. Above all, the challenges demand an attitude of mind which is open to lateral thinking and fresh approaches to novel industry possibilities, eg, partnering with technology companies which may never, previously, have been part of the industry value-chain.

- Film Challenges Arising from Trends -

- attracting inward investment
- sustaining domestic talent levels and increasing financial returns
- retaining/enhancing financial incentives to support production
- planning beyond the DVD boom for the next revenue stream
- planning for next strategic move beyond multiplex saturation
- exploiting e-VOD and commercial online/mobile possibilities
- embracing advantages of d-cinema
- implementing effective anti-piracy strategies
- retaining high-value post-production

- Skills Implications of Challenges -

- sustaining and engaging domestic talent base
- advocacy of film industry credentials to government
- strategic vision and talent for contained risk-taking
- developing and implementing d-cinema business models
- sculpting partnerships with technology companies
- understanding of encryption and anti-piracy technologies
- fluency in end-to-end digital production technologies
- project management outsourcing routine post-production
- fluency with online streaming technologies and e-payment.

This leads to various levels of impact on the film value-chain as follows:

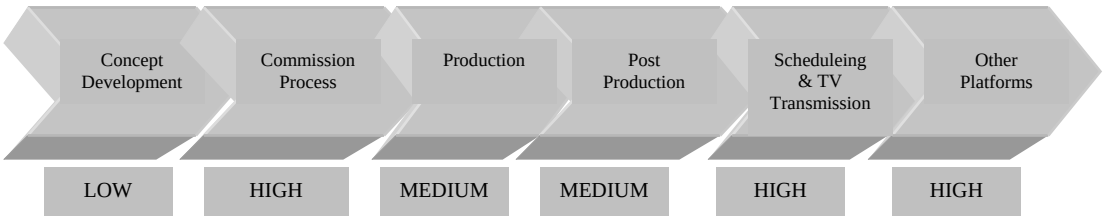


Figure 4: Levels of Impact Superimposed on Film Industry Value Chain

5.3 Television Trends

Recent Television Industry Headlines

'Ofcom sets out UK digital completion plan'
'UK passes 50 per cent digital TV milestone'
'Pay-per-view and video-on-demand (surge) in Europe'
'Broadband users 'defect' TV and ad breaks'
'C4 moves up to rights revenue'
'RDF chief reveals aim to sell or float indie by 2007'
'BSkyB explores tapeless future'
'UK iTV market continues to grow'
'Channel 4 and Five in further talks'
'Discovery offers pay-per-view broadband'
'TV loses out as broadband takes people online for fun'

- Key Television Trends -

- Digitisation of Production and Distribution
- Multi-Channel & Audience Fragmentation
- Emergence of Broadband TV
- Diminution of Advertising Revenues
- Rights Redistribution
- Emergence of Super Indies
- Corporate Mergers
- Re-Interpretation of PSB

A number of these trends are already affecting the television industry quite significantly. These are: multi-channel and audience fragmentation; diminution of the advertising revenue; rights redistribution; and, the emergence of super-indies. These trends will continue to have an effect on the industry most noticeably in the period from 2004 to 2007. The re-interpretation of public sector broadcasting is more likely to have an impact around the discussion of ITV licenses in 2005 and BBC Charter Renewal due in 2006. The trend towards of corporate mergers will, it is anticipated, have most impact around 2006 - 2008 with the digitisation of production and distribution stretching from 2004 to 2010, now with analogue switch-off being forecast for 2012.

Together with the introduction of pay-TV, the digitisation of programme distribution has accelerated the development of the multi-channel TV from about 5 to 10 channels in the late 1980s to about 400 now. Roughly the same amount of viewing has been dispersed over a greater number of channels leading to a per-channel and per-programme drop in audience ratings. It is predicted that this audience fragmentation will begin to erode the concept of peak viewing. This has been linked to the diminution in advertising revenues - also affected by the introduction of personal video recorder (PVR)

technology - and the consequent challenge to broadcasters dependent only on advertising revenues for income.

This fragmentation has been further accelerated by the impact of the internet, especially when this is combined, as it increasingly is, with broadband connectivity. Related to this are the moves by broadcasters towards embracing broadband. Channel 4, Discovery Networks International and NTL, for example, all launched a broadband 'channel' in 2004. Over the next five years, more of these initiatives are expected with the development of programming assets across broadband networks.

One of the key features of the 2003 Communications Act was the Codes of Practice it introduced. These mean that independent production companies ('indies') will be able to retain more programme rights, particularly with regard to secondary markets. The new codes affect how broadcasters and indies do business and could see the indie sector receive a boost of more than £100 million investment over the new few years from venture capitalists, banks and financiers, as indie companies begin to acquire intrinsic asset value.

The 2003 Communications Act also paved the way for takeovers of UK broadcasters by foreign companies, subject to a public interest test. According to the BBC, it is likely that by 2010 substantial parts of UK broadcasting will be owned by large global companies. In addition to possible European or American merger and acquisition activity in the UK, there is the nearer prospect of greater consolidation amongst UK companies themselves. This is being driven, in part, by the growing need for economies of scale to reach audiences in a cost-effective way.

5.4 Skills Challenges: Television Industry

These trends give rise to a series of challenges demanding skills around the following: programme innovation, deal structuring, investor relations, cross-media understanding, fluency in IP issues, and, extended scheduling skills moving across channels (multi-channel), across platforms (multi-platform) and across time (promoting audience 'adherence' across time-fixed and time-shifted viewing). Trends and challenges are summarised as follows.

- Television Challenges Arising from Trends -

- retaining audience share in multi-channel environment
- fending off corporate predators, embracing competitive friends
- retaining rights and cashflowing production
- enhancing and balancing commercial revenue mix
- supporting innovation in climate which is risk-averse
- adapting to end-to-end digital
- promoting cross-platform synergy and coherence
- evolving the traditional advertising model.

- Skill Implications of Challenges -

- supporting risk-taking and programme innovation
- balancing innovation with sustaining schedule familiarity
- partner 'courting', deal structuring and timing instincts
- nurturing financial investor and potential sponsor relations
- understanding dynamics of cross-media promotional campaign
- fluency with IP rights and legal issues surrounding ownership
- IP and creative asset security in digital environment
- synchronising dynamic of scheduled & time-shifted programme
- understanding beyond 'multi-channel' to 'multi-platform'.

This leads to various levels of impact on the TV value-chain as follows:

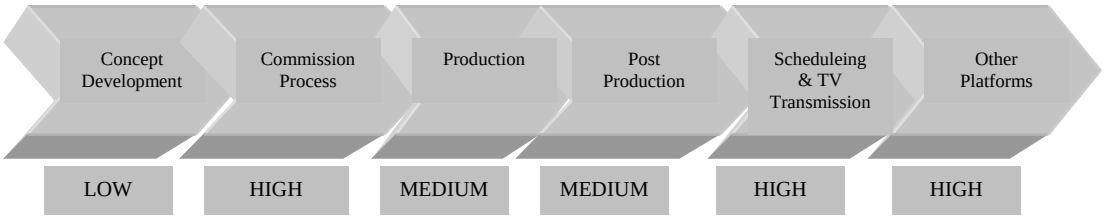


Figure 5: Levels of Impact Superimposed on TV Industry Value Chain

5.5 Interactive Media Trends

Recent Interactive Media Industry Headlines

'Mobile multimedia broadcasting era begins'
'Microsoft unveils new development platform XNA'
'Games publisher fear of innovation causing glut of sequels'
'Broadband content to reach $1.8bn by 2007'
'Getting wi-fi to fly'
'New games technology might bridge formats'
'Seeing beyond the SMS: Killer Content on 3G'
'Major FMCG brands begin streaming TV ads online'
'China to crackdown on online game piracy'
'UIP and Warner Bros first to iTV ads for trailers'
'Pocket Group offers cult TV and film clips for mobiles'
'C4 and RealNetworks close to broadband content deal'
'Steady rise predicted for mobile video services'
'UK named second most e-ready country'
'Disney to launch mobile content aggregation brand'

- Key Digital Content Trends -

- Market Penetration of Broadband
- Rich Media Online Integration
- Evolution of iTV
- Business Model Evolution
- Deepening Mobile Connectivity
- Outsourcing Commoditised Services
- Specialisation and Consolidation

- Key Games Industry Trends -

- Increasingly hits-driven market
- Massively increasing scale of projects
- Progress to mass-market for games consoles
- Development of next generation platforms
- Consolidation continues for gaming publishers
- New market segments: online, mobile & wireless gaming

Broadband connectivity will continue to deepen (more connections) and broaden (faster connections) during the period to 2010. This will enable the integration of rich media into online sites and the extension of network gaming online. It is anticipated that the development of iTV will continue its evolutionary progress at a 'slow burn' rate, at least for the next two to three years. Significant outsourcing of commoditised services, specialisation and consolidation in the digital content sector will not occur, it is anticipated till later in the period - towards 2006/07.

Meanwhile, the first three of the games industry trends - increasingly hits-driven market, massively increasing scale of projects and progress to mass market for games consoles - are already quite well embedded in the industry but will become more noticeably through to 2007. This also applies to consolidation amongst games publishers. The development of next generation platforms will have the largest industry impact most probably immediately pre- and post- market introduction so from about 2005 to 2007. The significant development of new market segments will take some time. The key driver will be the availability of cheap broadband connectivity and improved hardware. Improving the experience of online-enabled game play will be a key focus for the games industry through to 2010.

The major change in computer and video games technology through to 2010 will be the launch of the new generation of home games consoles that are expected to debut in late 2005 or 2006. They will be much more powerful than the current 128-bit machines, enabling the games industry

to push closer to achieving photo-realistic graphics and enable innovation in gameplay and genres. This will undoubtedly have an impact on games budgets. The rising cost of games development combined with the mass-market status of the industry continues to result in greater consolidation at the publishing end of the business. Like the music and film industries, the video games industry appears to be moving towards domination by a small number of large, multinational companies.

A similar sort of consolidation is envisaged in the digital content industry although this is about 10 years behind the games industry in terms of sector maturity. A certain amount of merger and acquisition activity will take place though in the short term though. This is likely to involve players from outside the current sector as marketing communications conglomerates, media companies and computer services firms look to buy skillsets and customer accounts.

The way in which broadband connectivity rolls out across the UK and across different platforms will closely affect the dynamics of the digital content industry over the next six years. Internet connectivity speeds 10, or even 20, times the current domestic standard are predicted by 2010. The impact on the television industry is already evident. Entertainment has become the main reason for people going online in the evenings, with broadband starting to erode TV consumption in the home. Trials are currently taking place with phones configured to receive digital terrestrial television transmissions, which would make it possible to broadcast digital television to phones. As mobile voice revenues reach maturity, a wave of new mobile services are poised to take off, with operators investing in rich media content and the infrastructure to support it.

5.6 Skills Challenges: Interactive Media Industry

What then of the impact on skills? There are three aspects to this: first on development skills; second on technical skills; and third, and most significantly, on business skills.

In development terms one of the key areas will be in graphic design extending this skill into photographic and the craft end of the photo-imaging industry. Greater machine and games engine power will provide greater scope for photo-realistic graphics in gameplay. Skills associated with the conceptualisation of game design and genre will evolve, and individuals with an understanding of both film script / narrative and game progression will find new opportunities to employ their skill mix. This will also apply to online design where, it is anticipated, individuals combining a media production background with a website design capability will be in demand.

Individuals with particular technical expertise will need to evolve this with the introduction of the next generation console platform and associated high-level technical specifications. Similarly a deeper technical understanding will be required in website design and development with rich media integration and more sophisicated e-commerce or backend functionality. Another area of technical

expertise is in digital security and anti-piracy technologies and am ability to built systems cost-effectively which seamless integrate this functionality.

The greatest impact thoug hwill be in the area of business skill requirements. These range across the following: managing the integration of traditional media and emerging technology cultures within one company; presentational skills related to company promotion to potential investors; the management of IP; the management of product development and market entry for company presence in new market segments; brokering deals, and, partnership development.

The challenges and the resulting areas of skill needs are summarised below.

Interactive Media Challenges: Mobile, PC & iTV

- effective digital security and anti-piracy measures
- vaible business models for online consumption
- IP expertise and digital rights management
- blending media and technology cultures
- cross-platform commissioning expertise
- reducing number of different proprietary systems
- maximising brand stretch across platforms at minimal cost
- blending new and traditional media industry cultures.

Interactive Media Challenges: Computer Games

- developing industry reputation and profile as 'serious' industry
- accessing finance to cashflow development
- developing more mature relationship with financial sector
- acquisition, creation, retention and protection of IP
- development of business and management expertise
- developing closer relationship with licensee holders
- planning migration to next generation platform
- developing competitive presence in new market segments.

Combined Skill Implications of Interactive Media Challenges

- maximising asset and data security in pan-digital environment
- fluency around IP and digital rights management
- developing online revenue streams and i-advertising strategies
- maximising benefits of converging industry cultures
- developing cross-platform commissioning competence
- advocating more mature image for games industry
- promoting relationships with city investors
- strategic vision and enterpreneurialship to open new markets
- developing partnerships with broadband streaming, mobile, wireless and network integration technology firms
- nurturing relations with license holders and asset managers.

This leads to various levels of impact on the interactive media value-chain as follows:

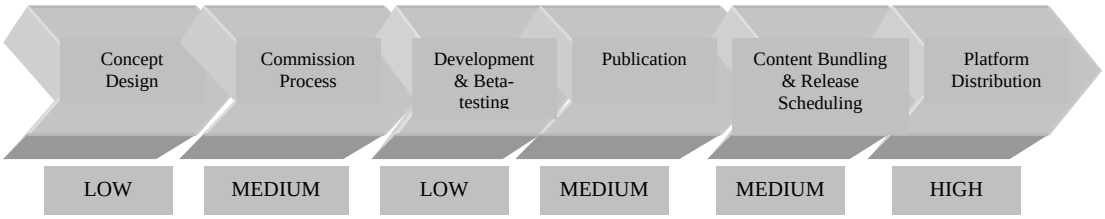
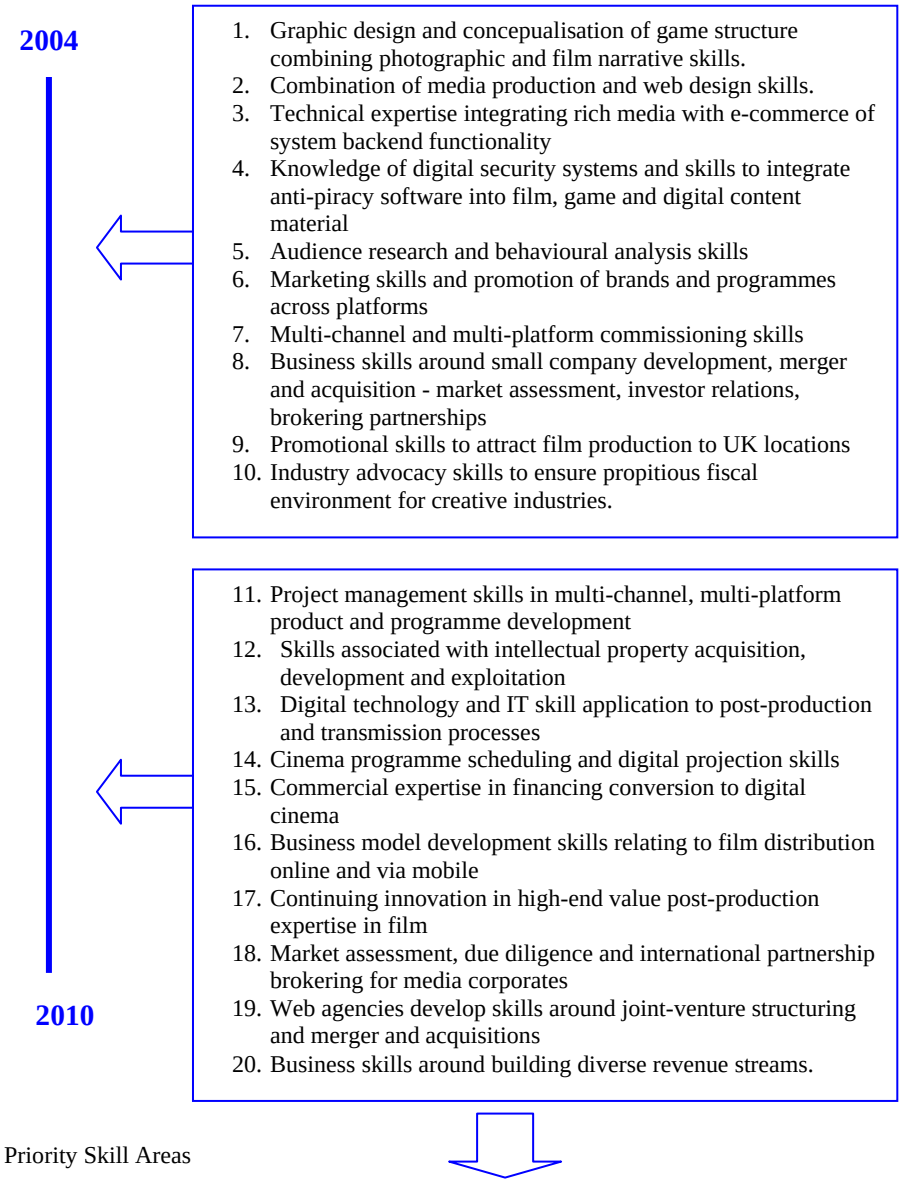


Figure 6: Levels of Impact Superimposed on TV Industry Value Chain

To conclude this section, the following diagram links the six year time period with 20 key skillsets which arise from the trends and challenges faced across the three industry sectors. These 20 key skillsets generate seven priority skill areas.

Figure 7: 20 Key Skillsets: Sustaining Industry Competitiveness, 2004 - 2010



Priority Skill Areas

Asset Structuring, Exploitation & Management	creative conception, commissioning, scheduling, business model development and IP management
Risk Management	diversifying revenue streams, digital security system management and industry advocacy
Project Management	commissioning and executive production of cross-platform, cross-channel programming and project assets
Partnership Development	joint-venture structuring, international partnership brokering, and, merger and acquisition activity
Investor Relations	commercial expertise and attracting industry investment
Marketing & Promotion	audience research, market assessment, brand promotion, cross-platform promotion and locations

	marketing
Technical Expertise	digital technology & IT application to post-production and transmission technologies.

KEY INDUSTRY CATALYSTS

6. Drivers of Change

In its Working Futures report[23]., the Institute of Employment Research (IER) observed that there have been major changes in the structure of employment across all developed economies over the past 50 years. This has been the consequence of a complex mix of interdependent factors.

The IER identifies those as including:

- technological change
- productivity growth
- international competition
- globalisation
- specialisation and sub-contracting
- economic growth and the large increases in real incomes
- dramatic shifts in patterns of expenditure.

The report comments on the impact of these factors as summarised in the following table. The IER observed major changes in the past 50 years. Its remit was generic to the economy looking at how those factors affected employment structures.

[23] op cit. 21

Technological change	Especially information and communications technology (ICT), has affected both the products and services made and delivered as well as the way they are produced. This has had major implications for industrial employment structure, as well as resulting in increased demands for IT skills across a range of sectors and occupations
Productivity growth	Is key to maintaining competitiveness and long term sustainable economic growth
International competition	Has been a key feature of recent structural change with many industries failing t keep pace with developments in other countries or to combat the cost advantages of low wage producers from abroad.
Globalisation	Has become a major factor in recent years with many companies operating across international boundaries. This can both accentuate and moderate the forces of international competition depending on the location choices made by such companies.
Specialisation and sub-contracting	Including extension of supply chains is also a key factor with both international and domestic dimensions to it. Many functions including higher level activities such as design, research and development have been hived off from the mainstream activities of many producers.
Economic growth	And the associated increase in real disposable incomes have had a significant effect on patterns of expenditure.
Dramatic shifts : expenditure patterns	Have also been influenced by technological change. Personal services, associated with tourism, leisure and the media, and health and education services have been particularly important for consumers.

Against the backcloth of those historical factors, this section identifies and elaborates on five key drivers of change specific to the audiovisual industry. Each of these drivers can be seen to underlie the sector trends identified earlier (Section 5). These are the factors affecting this industry in the here and now in 2004 that will be key in shaping its future.

These drivers are:

- demand
- technology
- regulation
- competition
- globalisation.

6.1 Demand

There are a range of factors that are generating the strong demand for audiovisual products and services. Two are particularly fundamental. One is the link between the industry and economic growth and rises in disposable incomes in particular. Since 1980, the disposable income of UK households has risen from £390 billion to £726 billion, an increase of 86 per cent. It is forecast to continue to rise through to 2010 to £885 billion[24]. Second, the introduction of new technologies in the sector - whether this is a new storage format such as DVD, a new games platform, an entirely new communication channel in the case of the internet, or the greater range of programming and channels made possible by digital TV - has unlocked latent demand in the domestic market. Media consumption now dominates leisure time in the UK accounting for an average of 53 hours a week in 2000 and predicted to rise to 60 by 2010[25]. Key features of the demand driver can be summarised as follows.

Demand Dimension	Demand Features
➢ consumer markets	- increase in disposable incomes fuels consumption - new technologies unlock latent demand - media consumption dominates leisure time - TV viewing static: increasing time on interactive media - continued growth in cinema audiences
➢ international markets	- strong record in international co-production - strong export demand for UK AV industries
➢ consumer demographics	- ageing population: over-60s outnumber under-18s - over 65s are biggest consumers of TV and radio - under-35s biggest cinema goers - population becoming more ethnically diverse - household structure more diverse
➢ consumer tastes & values	- demand for personalisation and more niche markets in a pluralistic market - decreasing relevance of 'peak time'
➢ corporate markets	- business and government strong drivers of demand for interactive media - interactive media important delivery platform for education and public services.

6.2 Technology

The *Britain in 2020* study[26] predicted *"industry transformation as ICT is exploited and as new technologies are applied and developed"* and *also "accelerated growth of global media industry*". These two developments are closely related. The trajectory of change that ICTs are underpinning is the move to an end-to-end digital value chain in the TV and film industries. This though is not an issue, of course, for the

[24] Office of National Statistics, *General Household Survey* and Experian's own forecasting model
[25] Screen Digest/ABN Amro, *Mediaphile 2010: A 25 year Analysis of UK Consumer Media, Communication and Entertainment Spend*, 2002
[26] op cit.8

‘born digital’ interactive media industries. Convergence and anti-piracy technologies will underlie all industry developments.

Key emerging technologies which will drive change in all the audiovisual industries through to 2010 include: wireless technologies; server hardware and software, 3G & 4G mobile technologies; time-shifting technologies; next generation gaming consoles; and, compression and connectivity technologies. An underlying theme to these emerging technologies is the increasing take-up of broadband connectivity which is predicted to grow as rapidly in the next decade as the internet did in the past. Currently, nearly four million UK homes have broadband access. In a recent report linked to digital futures, the BBC anticipated the number of homes with broadband connection would rise to between 15 and 20 million by 2016[27]. It also expects seven in ten homes to be able to schedule their viewing and listening at a time that suits them by 2016.

Technology Dimension	Technology Features
➢ convergence	- integration of functionality in one device - integration of content propositions across platforms
➢ anti-piracy	- growth in piracy prevention technologies - positive consumer & legislative approaches
➢ digitisation of value chain	- digitisation of TV production processes and distribution - introduction of e-cinema and d-cinema - DVD is fastest growing new home entertainment format ever superceeding video tape market
➢ interactivity & participation	- gradual evolution of interactive TV - introduction of 'participation TV' encouraging audience involvement through complementary channels - interactive advertising slow to grow but gathering pace with introduction of new i-advertising channel - iTV route for mass access to public services - moderated future iTV growth given proprietary platforms
➢ time-shifting technologies	- PVRs revolutionise viewing habits transcending advertising slots and channel schedules - advent of TV or film over internet connections - PC video on demand - opens market to telecoms providers, ISPs etc.
➢ next generation technologies	- research underway for next generation of internet infrastructures, protocols & technologies - next generation gaming platforms on horizon pushing limit of photo-realism and innovation in game-play and genre - further expansion of gaming market into online, mobile and wireless gaming.

6.3 Regulation

[27] op cit 11

All of the established audio-visual industries are subject to major government regulation and intervention. This is due to the fact that they are not just an important industrial sector but also a major plank of our collective culture. In terms of public expenditure, the BBC licence fee, for instance, represents the UK's largest single source of public funding for culture.
As such, the audiovisual industries are unsurprisingly subject to a range of regulation:

- technical - eg, broadband standard and spectrum allocation
- commercial - eg, competition regulation, quotas for independent programming
- content - eg, age ratings for films, production quotas for domestic TV programming and for particular TV genres.

In addition to the audiovisual specific regulation, the nature of the industries means that other more generic legislation and regulation also affects the sector. This includes areas such as the Obscene Publications Act, but also privacy, advertising regulations and data protection.

The key development in the last three years has been the establishment of Ofcom, a converged 'super-regulator' formed through the amalgamation of five previously separate regulatory bodies reflecting the convergence in the industry across the media, technology and communications industries. Ofcom's responsibilities encompass licensing, mergers and competition issues, as well as content regulation and complaints procedures.

Its 2004/05 plan identifies four key aims:

- encourage evolution of electronic media and communication networks
- support the need for innovators, creators and investors to flourish via promoting competition
- foster plurality, inform and protect citizen-consumers, and promote cultural diversity
- service the interest of citizen-consumers.

As such, it will continue to drive change and innovation in the audiovisual industry well into the foreseeable future.

Regulation Dimension	**Regulation Features**
➢ Communications Act	- establishment of Ofcom as convergent 'super-regulator' from five previously separate regulators - relaxation of ownership restrictions - change in programme rights ownership - changes in PBS obligations for commercial TV broadcasters
➢ BBC Charter Renewal	- assessment of continuation of licence fee and possible redistribution of part to fund other channel PSB - online presence and development strategy re-assessed
➢ analogue switch-off	- aim to drive innovation in TV industry - auctioning off the freed-up spectrum capacity - near universal take-up of digital TV prerequisite - Ofcom report with recommendations to accelerate

	process
➢ financial incentives	- variously structured tax incentives from UK Treasury - UK Film Distribution Programme underwriting wider release of new British films with commercial potential - UK Film Council Digital Screen Network scheme supporting introduction of d-cinema
➢ internet legislation	- relevant legislation relates to e-commerce, data protection and electronic communications: also generic copyright laws and Obscene Publications Act - Home Office E-Crime strategy being introduced relates to data theft, fraud, hacking, viruses etc - in content terms Ofcom advocates self-regulation code as exists with UK computer and video games industry.

6.4 Competition

The competitive dynamics of the three industries are obviously very different, and are shaped by very different regulatory and policy environments. However, as section 4.5 on globalisation below makes clear, the one common feature of the recent competitive landscape of TV, film and interactive media has been the rise of multinational media, technology and entertainment conglomerates.

The two most prominent examples of this recent trend are AOL/Time Warner and Vivendi Universal. The impulse behind both mergers was the seemingly lucrative possibilities for exploiting a range of content (movies, music, TV, games) across a range of different distribution networks (the internet, satellite and cable TV networks, mobiles etc.). In addition to exploiting hoped-for 'synergies' between the different divisions within these media and technology corporates, the mergers were in some senses also defensive. Significantly, both mega-mergers date from the first half of 2000 - the height of the TMT (Technology, Media, Telecoms) bubble - and were fuelled largely by an exchange of share capital rather than hard cash.

Although the TMT bubble burst, and synergies proved difficult to realise, this hasn't diminished the underlying pressure for consolidation at an international level. According to the BBC *Building public value* report[28], Viacom and Disney, for example, have already stated their interest in acquiring existing media assets in the UK. This ambition is not limited to television and radio broadcasters, but also includes companies like Microsoft. As indicated in Section 2.3, Microsoft has further ambitions in the games industry through the development of its software development platform XNA.

Within the UK itself, there is increasing competition for audience share in the television world. The UK media industry has become more concentrated in all parts of the value chain in the last decade. In 1993 there were 15 independent regional ITV companies and today only four remain. With the introduction of new Codes of Practice in terms of rights ownership, this has changed the competitive position and negotiating power of independent production companies and has lead to the emergence of 'super indies'. Meanwhile in the games industry

[28] op cit 11

much of the current competitive dynamics revolves around the introduction of new proprietary hardware platforms and the continuing rise of game development costs and therefore production risks.

Competition Dimension	Competition Features
➢ consolidation	- only four independent regional TV companies remain with the newly-merged ITV plc controlling 92 per cent of ITV's revenue - merger of larger independent production companies, as in the recent creation of Ideal Wark Clement from the merger of Ideal World and Wark Clement - mergers and acquisitions are likely to give rise to increased consolidation in interactive media sector, with several large players potentially emerging to dominate much of the industry - consolidation in cinema ownership linked to continuing rise in blockbuster movies
➢ regulatory environment	- potential for foreign ownership by takeovers from global operators like Viacom and Disney - regulatory changes could result in the purchase of ITV or Channel 5 by foreign media companies or Sky
➢ publisher domination	- global super-publishers will continue to dominate games industry leaving developers more exposed as a new generation of technologies adds further pressures - increasing size will prove necessary in interactive media agencies to handle increasing scale and complexity of projects integrated with wide business processes
➢ production & post-production base	- competitive pressure on the UK as the prime production base for foreign produced, non-domestic films - low-end post-production work likely to migrate abroad: London must remain competitive as leading centre for post-production
➢ independent TV production quotas	- BBC Charter renewal may extend quotas for independent production - PACT calling on the government to impose a 50 per cent external production quota on the BBC - half of which would be safeguarded for independent programme suppliers, plus outsource more of its online content.

6.5 Globalisation

The UK has been an exponent of free trade and has one of the most open economies in the world. According to the UK government, one in four jobs are linked to foreign business with exports accounting for 25 per cent of GDP while the UK is also the second largest global investor[29]. The UK's audiovisual industries already have a strong record of exporting and international working deriving enormous benefit from the global importance of the English language, now a second language for one billion people worldwide.

[29] PM Strategy Unit, *Strategic Audit: Discussion Document*, 2004

A continuation in the process of global market liberalisation through to 2010 is likely to see:

- the open-up of more service sectors in economies across the globe - potential markets of the UK's interactive media sector
- an increasing proposition of GDP being derived by trade
- better educated global consumers and potentially greater media consumption as this is linked to literary and education
- the continued increase in the role of global institutions, with the World Trade Organisation (WTO) likely to expand to cover investment, competition policy and standard setting.

However continuing globalisation is also likely to bring:

- better educated competitors with greater access to the UK's domestic market
- a further increase in outsourcing of services abroad.

Globalisation Dimension	**Globalisation Features**
➢ Greater interdependence	- regional international trading blocs, including EU, and global governance mechanisms, such as WTO and IMF, taken increasingly key role in process of globalisation through trade - established of euro currency and accession of 10 new member EU states given interdependence further impetus
➢ Liberalisation & international trade	- the UK has one of the most open economies in the world - market liberalisation and growing numbers of educated consumers is growing an already strong export and co-production market for UK audio-visual industries - global nature of English language underpins exports and international working in the UK audiovisual industry
➢ Anti-capitalism	- development of anti-capitalist sentiments and anti-globalisation movements due to perceived inequalities in trading policies pursued by G8 and multinational companies - possible barriers to exports and/or curbed inequalities from anti-globalisation sentiments
➢ Instability	- rise of well-organised, international terrorist and criminal networks - global effect of 9/11 and US reaction, conflicts in Iraq, Afghanistan and Middle East fuel instability and economic uncertainty
➢ Outsourcing	- UK faces increasing outsourcing of key services abroad: audiovisual industry is not immune - increased competition to UK games developers from a range of regions abroad - international co-productions in TV likely to increase in some genres as costs continue to rise - increased outsourcing of aspects of ICT and online

system development and integration.

SCENARIOS

7. Industry Scenarios

In the light of those drivers of change and the associated industry trends, what might the audio-visual industry look like in 2010? This section generates nine scenarios to answer this. The first three refer to the film industry, the next three to television and the final three to interactive media.

Scenarios are not designed to predict the future. Rather their aim is to describe possible futures, as a way of conceptualising emerging trends and exploring some of the alternatives which could lie ahead. Each scenario may be interpreted in both a negative and a positive way, depending on which perspective you choose, ie, that of a global player or a micro-enterprise; an emerging publisher or a consolidating agency; a small independent or a super-indie, a consumer or a citizen etc.

Each scenario has been built from two key assumptions associated with each of the five drivers of change identified in Section 6. This generates a set of scenario characteristics. The essence of the scenario is captured in the boxed summary at the top left of each page and in the dimensions of change diagram at the top right.

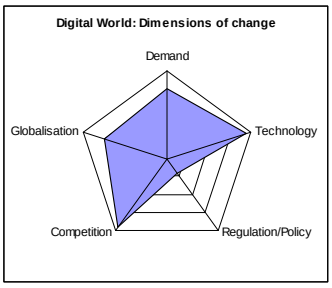
As well as a sectoral view - film, television and interactive media - a pan-industry perspective can also be generated from these scenarios. The first three of each focuses on the impact of technology, the second on creativity and the third on commercial activity. The skill implications of both the sector views and these pan-industry perspectives will be explored in Section 8.

Impact of Technology	Impact of Creativity	Impact of Commercial Activity
1: Digital World 4. Digital Mania 7. Future Interactive	2. Sustainable Independence 5.Originality Returns 8. Developer Stability	3.Global Competition 6. Corporates Rule 9. Consolidation

SCENARIO 1
DIGITAL WORLD

Digitisation saturates the film industry value-chain opening new markets worldwide.

In this scenario, the international competitive landscape of the industry is changed dramatically by the disruptive influence of digital technologies. The UK benefits from an expansion of new content possibilities - delivered digitally - which are eagerly grasped by the audiences.



Scenario Characteristics

. e-cinema and d-cinema offer more flexible business models and open up new audiences
. online ordering and consumption of VOD the norm complementing DVD revenue streams
. industry learns from music napsterisation and revenue model established at start
. market in anti-piracy software and encryption technologies thrives
. mobile, PC and console viewing provides fresh revenue stream
. production and post-production market in digital capture and effects thrives.

Underlying Drivers of Change

Demand
. VOD generates a new wave of demand for blockbuster, independent and art-house films
. alternative content in digitally-equipped theatres surprisingly creates a specialist niche market with both audiences and sponsors

Technology
. digital technologies and equipment reduces production costs by 10 per cent with quality gap between digital video and high-end cameras almost negligible
. access to high-end computing facilities on-demand over broadband connectivity offers a new economical way to enhance productivity

Regulation/Policy
. industry players offer an imaginatively packaged and priced film download service while pursuing a rigorous anti-piracy policy
. UK Film Council Digital Screen Network is a highly effective market intervention to support d-cinema development in the UK

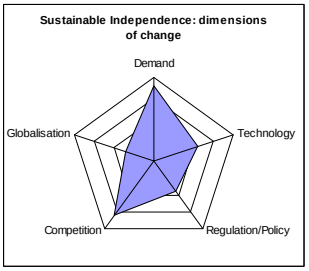
Competition
. global technology companies offer portfolio of digital services and products including compression technologies, anti-piracy, server technology and encryption: become partners with existing cinema owners to convert cinemas to digital exploring different business models
. new products and services generated by digital technology and broadband augment consumer spend at cinema and on DVD/video: as predicted, this hits $90bn worldwide by 2007

Globalisation
. DVD player penetration worldwide grows to 75 per cent and bonanza continues with increasingly ingenious approaches to exploiting back catalogues and in emerging developing markets: VOD grows to three times size of video rental with much higher margins for industry
. London increases its competitive standing in post-production vis a vis Los Angeles and New York.

SCENARIO 2
SUSTAINABLE INDEPENDENCE

Independents market-place re-emerges and film investment returns are healthy.

In this scenario, technology changes are less radical and do not result in major market discontinuities. The key driver is greater demand for domestically-produced films, supported by a sympathetic regulatory/policy environment.



Scenario Characteristics

. buoyant TV advertising revenues means UK producers, sales agents and distributors re-emerge
. UK broadcasters supportive of industry and co-invest in production so sustaining distribution
. tax regime film-friendly with government support of soft money
. return on investment on low-budget films matches industry norm
. multiplex experience peaks and straight-to-DVD becomes part of the distribution mix
. broadband distribution a reality offering diverse film diet to a diverse audience.

Underlying Drivers of Change

Demand
. TV broadcasters seek more film from European distributors to fill schedules with more buoyant TV advertising market
. increasing audience diversity drives demand for a 'beyond the multiplex' experience

Technology
. digital production offers the opportunity of reducing production costs for low-budget British films
. digital distribution and exhibition creates new audiences for UK film production: becomes easier to access and present niche films and to fine-tune exhibition to meet local demand

Regulation/Policy
. Government support for ‘soft money’ caps at 35 per cent of budget
. Government provides film-friendly fiscal environment increasing tax relief to 20 per cent for British films with budgets of up to £20m

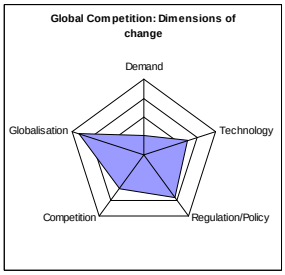
Competition
. distributors exploit complementary films websites and ‘favourite scenes’ mobile video service to create valuable new sources of revenue
. marketing budgets grow with digital distribution and the elimination of print costs

Globalisation
. UK attracts increased inward investment providing editing houses, studios and location filming for producers based abroad
. UK independent production companies re-emerge now with more commercial films: re-emergence possible as European TV advertising revenues become more buoyant: large continental broadcasters in Germany, France and Spain also benefit in turn supporting sustainability of UK independents.

SCENARIO 3
GLOBAL COMPETITION

Competitive pressures increase all round in the film industry.

This scenario paints a pessimistic picture. Digital technologies undermine the film industry through illegal file sharing, the majors increase their domination of the market. There is little or no counter balance to these trends in either sources of demand or supportive government policy.



Scenario Characteristics

. major companies domination of multiplex circuit continues as digital exhibition introduced
. there is a danger of independent British films being squeezed out of the market
. broadcaster and government support of the industry wanes
. Hollywood studios production and marketing costs continue inexorable rise
. UK production and post-production fail to attract significant inward investment
. film industry plagued by piracy and remedies are only partially effective.

Underlying Drivers of Change

Demand
. rising Hollywood marketing spend sustains and expands demand for Hollywood blockbusters across all age demographics
. fragmentation of audiences across TV channels exerts a downward pressure on costs for the broadcasters leading to a static demand for films

Technology
. digital exhibition finds new audiences and a market niche in screening sports and music events in cinemas but they prove insubstantial as a new revenue stream: film exhibition remains dominant
. increasing sophistication of digital effects achievable with next-generation computing technology but also drives up production costs

Regulation/Policy
. anti-piracy legislation and industry action fails to stem piracy and potential investment returns are undermined
. disillusioned government cancels tax relief entirely

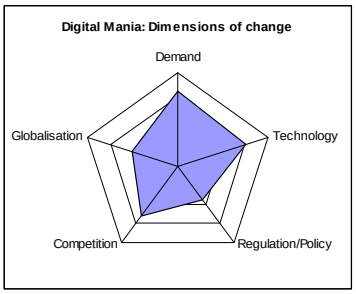
Competition
. advantages of low-cost location filming in emerging economies, including China, Russia and India, outweigh innate UK advantages and more filming drawn away
. UK is seriously challenged to retain its pre-eminence in high-end post-production work

Globalisation
. developing film markets are an increasing source of demand for Hollywood product leading to a greater dominance of the global cinema market
. Hollywood drives the move to digital distribution and exhibition in order to enable easier same-day worldwide release of major titles.

SCENARIO 4
DIGITAL MANIA

Television audiences vote with their feet and head for interactivity.

This scenario represents a significant fragmentation of the existing TV landscape. It is based on the combination of step change in broadband infrastructure and services; the continual up-take of digital TV; and, the emergence of competitively priced PVR services offering viewers an escape from the 'tyranny' of the schedule.



Scenario Characteristics

. TV's overall share of audience leisure time declines
. non-linear experience of media becomes more popular than linear
. self-scheduling becomes a familiar concept to audiences
. continuing proliferation of channels pressurises programme investment
. spot advertising revenues continue downward trend
. channel branding and programme promotion costs soar.

Underlying Drivers of Change

Demand
. 16-25 year olds lead trend towards leisure time focus on PC rather than TV
. increasing diversity of audiences combine with a desire and expectation for interactivity and choice to drive audiences to niche and on-demand broadband/TV services

Technology
. PVR technology reaches 50 per cent of households with 70 per cent of viewing in those homes being time-shifted and watched with advertisements skipped
. time-shifting technologies become ubiquitous as broadband and digital TV become near universal and DVD players are supplanted by affordable DVD/hard disc PVRs

Regulation/Policy
. government policy in liberalising competitive access to wholesale broadband capacity has driven take-up of local server networks in the home
. Freeview and Freesat have driven the digital TV take-up and digital switch-over happened in 2009

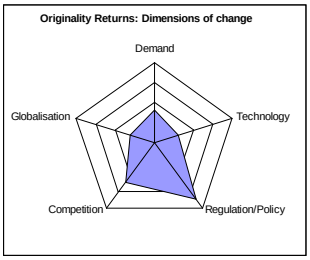
Competition
. all broadcasters have a complementary broadband channel: joint venture with a video streaming or network technology company is a typical arrangement in this space
. Sky leads where others follow in reducing operating costs and increasing commercial activity in order to enhance programme marketing budgets

Globalisation
. premium content owners (eg, sports / film) selectively decide to make their content available online directly to a global audience so bypassing pay-TV operators
. the proliferation of channels proves unsustainable and niche channels transmute to specialised on-demand services and/or streaming bite-size services delivered as daily updates or weekly instalments.

SCENARIO 5
ORIGINALITY RETURNS

Linear is good and TV originality and innovation are in demand.

This scenario is driven by regulatory changes that are successful in re-invigorating the UK TV industry to provide the 'citizen-consumer' with higher quality and more imaginative programming.



Scenario Characteristics

. PSB re-defined to stress quality, innovation and originality
. audiences rescued from format-fatigue with injection of innovative programming
. indies and broadcasters share rights in a way that sustains both business sectors
. merger activity produces economies of scale and creates risk capital
. concept of advertising expanded beyond spot and other revenue streams flourish
. compelling cross-platform media products expand the existing marketplace.

Underlying Drivers of Change

Demand
. over 45's are now 43 per cent of the population and are largely uninspired by TV interactivity
. audiences reward risk-taking with viewer loyalty and audience levels remain 10 million plus for top-rated programming

Technology
. 50 per cent of consumers have access to technology at 2MB connectivity or above: together with sophisticated compression technology this allows full-screen, full-motion video in real time
. TV programming is now regularly trailed on mobile phones with selective first showing of programmes on broadband channels

Regulation/Policy
. BBC licence fee is top-sliced, re-distributing some portion of the fee on a competitive basis to the other PSB channels - in return for specific PSB programming commitments including originality
. Ofcom raises indie quota to 40 per cent: BBC and ITV in-house production reduced as a consequence: simultaneously it relaxes rules around advert-funded programming

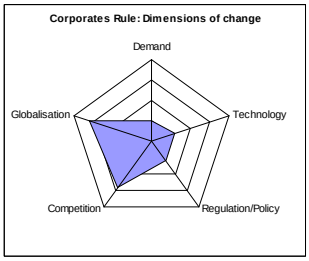
Competition
. amidst an increasing fog of offers, the virtues of coherent scheduling and trusted TV brands re-emerge and terrestrial broadcasters gain from this
. broadcasters adjust to some loss of rights revenue through new terms of trade, while indies are required to be more resourceful to cashflow programme development including seeking innovative relationships with advertisers

Globalisation
. television sales in foreign territories becomes an even more sophisticated business as 'programmes' become more like cross-platform 'products'
. producers seek to develop trading relationships and co-production deals with emerging economies, particularly China.

SCENARIO 6
CORPORATES RULE

TV marketplace prospers and is dominated by corporates and global players.

This scenario assumes increasing consolidation in the global entertainment / technology space, including the domestic market where the possibilities for international ownership and greater consolidation, as embedded in the Communications Act, are realised.



Scenario Characteristics

. 5 super indies begin merger negotiations to create a new broadcaster
. C4 and C5 merge creating C4.5 competing with BBC, ITV & Sky
. role of PSB becomes critical in retaining minority and non-populist programming
. American & European media companies make TV acquisition bridgehead in UK
. imported programming increases reducing space of new programming
. global media and technology companies enter joint ventures.

Underlying Drivers of Change

Demand
. viewers still demand linear channels with a mix of high quality entertainment, factual programming and drama
. marketing and branding spend of corporates does the job in retaining viewer loyalty but comes at a cost to original programming budgets

Technology
. digital switchover has been postponed until 2012 with the penetration of digital entertainment platforms in the home slower than expected
. video mobile never achieves the critical mass predicted by the pundits

Regulation/Policy
. monopoly regulations and foreign ownership rules are relaxed and pendulum swings towards safeguarding the rights of the consumer over those of the citizen
. public service obligations remain with the BBC and C4.5 while ITV is released from its PSB requirements

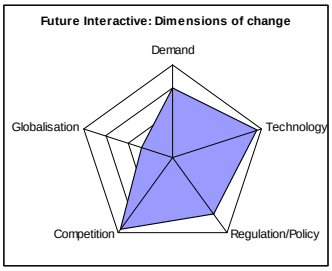
Competition
. smallest and some of the most inventive indies go to the wall driven out by superior negotiation power and reach of the super indies
. new structures are found to enable the BBC's commercial arm to operate more flexibly and commercially abroad so competing effectively with the global players

Globalisation
. ITV is bought by a foreign media company and demand for ITV commissioned independent production falls
. Microsoft looks to extend its reach beyond computing and into media and enters a joint venture with Disney.

SCENARIO 7
FUTURE INTERACTIVE

Multi-channel, cross-platform interactive media products become the norm.

This is the most radical of the three interactive media scenarios, requiring major changes in technology, competition, regulation and demand. As such, it will require a trigger of some kind, probably a major shift in the competitive landscape, combined with a sympathetic, market-led regulatory regime.



Scenario Characteristics

. linear TV audiences decline and migration to non-linear accelerates
. producers and marketeers become inventive in developing cross-platform products
. demand for online integration of rich media and deep commerce accelerates
. foreign acquisition of key gaming development talent contained
. new markets open up in mobile and over networks for casual and female gamer
. new gaming/entertainment platforms provide next surge of revenue and demand for product.

Underlying Drivers of Change

Demand
. TV linear media consumption reduces by one third (to 37 per cent) and non-linear content consumption doubles (to 28 per cent)
. demand for rich content integration across platforms and environments thrives

Technology.
. by 2010 2MB broadband connectivity is now the norm with 5-10MB on the horizon at premium price: 3G is universal and operators have begun 4G roll-out
. 75 per cent of households are '5 gizmo' households having PVRs, PCs, digital TVs, mobile phones and DVD players

Regulation/Policy
. Ofcom pursues liberalisation of telecoms market by forcing separation of BT wholesale and retail (in return for BT retail providing content), which provides a spur to the market, and sticks to its ‘hands-off’ policy in interactive content regulation
. industry standards established around digital security and asset management

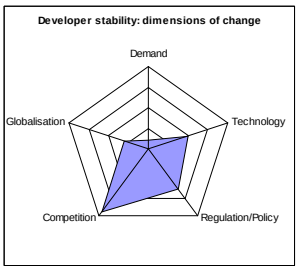
Competition
. seismic shift in the interactive landscape caused by the merger of Sky and Vodaphone: the new converged conglomerate subsidises the roll-out of technologies to speed take-up of content and services
. new media agencies become subsumed within technology and communication conglomerates in order to produce cross-platform applications of the scale and sophistication that have become the norm

Globalisation
. commoditised processes increasingly outsourced, frequently abroad: creative, client relationships and added-value processes remain in-house
. major media companies form joint ventures with global technology companies.

SCENARIO 8
DEVELOPER STABILITY

Interactive media matures with key publishers and agencies emerging.

In this maturing market scenario, the balance of power shifts towards third parties and independents, with the emergence of new business models and supportive government policy.



Scenario Characteristics

. full-screen, full-motion video and audio streaming on PC, mobile & console commonplace
. penetration of e-government and broadband commerce drives demand for d-product
. financial community support emergence of UK-owned international games publisher
. merger and acquisition activity accelerates in new media agency space
. content business models established with active digital rights management
. digital encryption and asset security is well developed.

Underlying Drivers of Change

Demand
. government and corporates double their e-investment and spread it across all platforms
. UK e-commerce market continues to expand reflecting US growth: forecast for US e-commerce to reach $100bn by 2006 became a reality

Technology
. greater stability and inter-operability for developers lowers barriers to entry - through greater use of standardised protocols and languages, eg, java, XML and their successors, and the arrival of a standardised development environment, eg, Microsoft's, for the range of proprietary platforms - consoles, mobiles, iTV
. Wi-Fi networks are ubiquitous but home broadband levels off at around 80 per cent

Regulation/Policy
. TV culture of payment for content now fully migrated to online
. government unveils new innovation strategy, key to which is providing games / media / technology companies with a beneficial tax environment for industry R&D: also changes public sector procurement procedures to be more accessible to SMEs

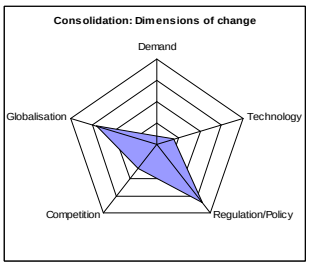
Competition
. digital encryption keeps 'pirates' at bay allowing satisfactory return on investment
. independents prosper through mergers, lower barriers to entry, government support and better rights management, aided by the growth in specialist digital rights intermediaries: these intermediaries give them favourable access to capital markets

Globalisation
. improved capitalisation and size of domestic companies fends off foreign buy-outs - for now
. technology companies offering infrastructure hardware diversify into digital security solutions.

SCENARIO 9
CONSOLIDATION

Foreign competition and spiralling costs threaten interactive media industry.

This scenario is the most conservative and stays closest to a number of current trends, in particular towards consolidation in the games industry and agency market. The scenario is largely driven by an intensification - and internationalisation - of this competitive dynamic. This is combined with more interventionist regulator responding to a succession of consumer concerns.



Scenario Characteristics

. corporate client market holds static while consumer market shrinks
. cheap games development skill base in emerging markets undercuts UK talent
. UK roll-out of next generation mobile and broadband capacity sluggish
. intellectual rights and licenses become even more valuable
. barriers to entry increase as game production costs rise
. costs increase and investment falls as industry complies with new and increasing regulation.

Underlying Drivers of Change

Demand
. slow domestic broadband growth means that proprietary consoles, wireless, handheld and iTV remain the key consumer entertainment platforms, dominated by well-known brands and established industry players
. business demand evolves for a more sophisticated online presence with diverse revenue streams

Technology
. 3G doesn't materialise with significant market penetration until 2008
. standard broadband capacity hovers at 0.5MB with less than 50 per cent coverage into 2007

Regulation/Policy
. Ofcom becomes interventionist in regulating games and all other forms of interactive content after increasing public concerns related to adult and violent content and the possibilities of using digital networks for fraud: this creates greater uncertainty, greater costs and slows investment
. government-backed research programme is launched into health and environmental effects of mobile phone handsets and masts after lobbying from consumer and environmental groups

Competition
. increasing computer processing demands, longer lead times and the necessity to acquire premium licenses means that game development costs rise exponentially: returns are concentrated in an ever smaller number of titles
. many small independent games developers are forced out of the market as barriers to entry rise: remaining UK games publishing capacity is acquired by US and Japanese market leaders

Globalisation
. increased competition in games development from South East Asia and east European countries where companies benefit from lower costs and inward investment incentives
. international competitors acquire a significant share of the UK's new media agencies: those owned by European parents become regional offices for continental HQs, but US-owned agencies benefit from becoming pan-European HQs.

8. Scenario Skills Impact

This section looks at the demands generated by the nine scenarios explored in Section 7 above. It does this in terms of the industry capability which each scenario would require, should it materialise, and the specific impact on skillsets and expertise which this would have. Section 8.1 summarises the impact of each scenario and Section 8.2 examines the conclusions of the industry workshop which discussed the associated skill needs.

8.1 Scenerio Skill Implications

Creative skills are fundamental to the industry, and will remain so, as this is an inherently creative industry. The emphasis in this analysis is though on commercial and technology skills. This is because these will affect the industry most dramatically. The trends anticipated over the next six years are a result of the drivers of change - demand, technology, regulation, competition and globalisation - none of which will specifically affect the nature of the creative assets - what film genre is in vogue, whether reality TV will still be popular or whether a new games license will create a cult following. No particular change is anticipated in actual production or intellectual property creation - except in so far as it is affected by available technology tools and platforms.

Scenario 1: Digital World

Digitisation saturates the film industry value-chain opening new markets worldwide.

This scenario generates demand for and expertise in:

- niche films and events in d-cinema complexes encouraging innovation in exhibition scheduling
- lower cost digital technologies and equipment which increasingly became industry standard
- access to remote high-end computing facilities on-demand with seriously broad broadband connectivity
- inventive packaging for film download services offering viable alternatives to illegal downloads
- digital transmission and secure server technologies for cinematic exhibition
- new major players in the distribution and exhibition marketplace offering technical solutions
- DVD player equipment and inventive exploitation of back-catalogue assets
- high-end, competitive and sophisticated domestic post-production services.

Scenario 2: Sustainable Independence

Independents market-place re-emerges and film investment returns are healthy.

This generates demand for:

- innovation in cinematic experience: different packaging of different filmic experiences
- fluency in digital production technologies and processes
- business understanding of digital distribution and exhibition
- inventive packaging and marketing of d-cinema film schedules
- partnership development with mobile technology companies
- commercial exploitation of selected scenes from films
- marketing and promotional skills in attracting inward investment
- more commercial British films which combine popular appeal with creative sophistication, and the creative skills that underpin it.

Scenario 3: Global Competition

Competitive pressures increase all round in the film industry.

This generates demand for:

- Hollywood blockbuster movies across all age demographics and across new emerging world markets
- increased promotional effort by independent UK film-makers to secure exhibition presence and television distribution
- films as the exclusive audience experience in cinemas since alternative content fails to take off
- sophisticated and high-cost digital effects funded out of larger film production budgets
- industry lobbying to re-instate tax relief or equivalent fiscal incentives
- imaginative and inventive ways of stemming piracy where

traditional approaches have failed
- low-cost location filming in emerging economies.

Scenario 4: Digital Mania

Television audiences vote with their feet and head for interactivity

This generates demand for and expertise in:
- sophistication in interactive interface design
- cross platform products that promote and retain audience brand loyalty
- understanding of audience behaviour mixing linear experience with interactivity
- innovation in programme and channel branding in a highly competitive environment
- partnership development with digital technology companies
- cost-effective programme marketing
- partnership development with complementary brands for online product distribution
- rigorous business assessment of viability of digital channel portfolio.

Scenario 5: Originality Returns

Linear is good and TV originality and innovation are in demand.

This generates demand for:
- risk-taking in programme-making, format development, scheduling and promotion
- imaginative re-invention of existing formats or genres
- editorial qualities, narrative development, coherent scheduling and linear creativity
- programme previews and programme trialling on mobile phones and other non-TV screens
- direct relationship between indies and advertisers
- trusted brands and the familiarity of popular returning series
- sophisticated approach to foreign programme sales
- enterprise in developing trading relations with emerging economies.

Scenario 6: Corporates Rule

TV Marketplace proposers and is dominated by corporates and global players.

This generates demand for:
- deal-making around merger and acquisition activity
- blending two distinct and different company cultures on merger
- corporate knowledge on whether and when to merge or acquire
- accommodating foreign ownership structures and cultures
- marketing and branding expertise in a highly competitive environment
- preserving and nurturing cultural identity, ideosyncracy and eccentricity
- greater reach and negotiating power from smaller indies
- generating and sustaining production economies in a static

market
- vibrant independents in a sector which is dominated by corporates.

Scenario 7: Future Interactive

Multi-channel, cross-platform interactive media products become the norm.

This generates demand for:

- short TV, games and filmic 'episodes' ideal for mobile, console and PC screening
- maturity of online and mobile content charging models
- partnership deals between mobile technology and content creation companies and between ASP / online networking companies and content rights owners
- clarity on rights ownership over different layers of potential asset exploitation
- procurement management of lower-value functions outsourced abroad
- cross-platform propositions of scale and sophistication
- interface design and seamless system integration capability
- industry standard around digital security and asset management.

Scenario 8: Developer Stability

Interactive media matures with key publishers and agencies emerging.

This generates demand for:

- small, flexible and dynamic young companies bringing energy to the market
- greater use of standardised protocols and languages with standardised development environment
- deep broadband connectivity and an array of connected digital entertainment platforms
- sophistication in development and implementation of digital encryption technologies
- specialist digital rights intermediaries who act as industry brokers and advisers
- end-to-end digital security solutions as a new market niche
- SMEs have access to same public sector tendering opportunities as corporates
- e-content and e-commerce solutions.

Scenario 9: Consolidation

Foreign competition and spiralling costs threaten interactive media industry.

This generates demand for:

- implementing economies in production and operating budgets
- continuing brand recognition in a static marketplace
- risk management as developments costs rise exponentially
- partnership development to increase co-production partners and spread cost
- active IP management and enterprise in structuring licensing arrangements
- diversification by games developer companies into other

sectors
- brokering novel partnerships with foreign companies to reposition in the market
- generating diverse and complementary revenue streams online.

8.2 Scenerio Workshop Themes

As indicated in the Introduction, one of the mechanisms for industry involvement was the Future Scenarios Workshop which took place in July 2004. Participants were sent a briefing paper in advance detailing the nine scenarios are presented in Section 7 above. Discussion at the workshop was focused on three scenarios: Scenario 2: Sustainable Independence (a film industry scenario with a creative impulse); Scenario 4: Digital Mania (television industry scenario with a technology slant); and, Scenario 9: Consolidation (interactive media industry scenario particularly influenced by commercial activity). Participants were invited to identify any new skills that might be required, any old skills that would become redundant, and any 'killer' skills that would emerge.

Key comments for each scenario were as follows.

Film: Scenario 2

- public policy is the key here with a film-friendly policy environment key to this dynamic
- a 'killer' skill would be the creation and management of digital images at all stages
- important skill is the ability to learn, be flexible and evolve existing skills to a new level
- entrepreneurial skills are fundamental in deal making, and business skills key in project management, production planning, film finance structuring and international sales
- need to augment domestic talent flow to meet demand - for writers, directors, producers and particularly editors - and to ensure consistency of quality: also that a wide net is cast to engage diversity and the best talent
- new market requirements with wired and wireless broadband, eg for short film clips generating a new distribution niche.

Television: Scenario 4

- senior decision-makers need to take programming risks if programming innovation is to thrive, but current system is risk-averse
- pressures on programme budgets mean that multi-skilling will increase
- skills around 'labelling' and 'sign-posting' (navigation) of programmes likely to increase to accommodate increased time-shifting and self-scheduling
- greater demand for rights expertise related to programmes and products 'stretched' over different platforms
- concept of brand expansion will become important and marketing of programmes cross-platform
- editorialising of products will need to be an evolving skill - 'advertorials' and product placement will probably become more prominent forms of programme revenue as traditional advertising diminishes
- marketing might be regarded as a 'killer' skill - cutting through the 'noise' of promotion and media saturation will be important
- scheduling skill needs to evolve - straddling the concept of a

fixed broadcaster-controlled schedule and audience self-scheduling on a PVR - combined with internet and mobile media distribution.

Interactive Media: Scenario 9

- key skill is understanding the dynamic of multi-channel and multi-platform mix
- knowledge of specific software packages and programming languages is really a transitionary skill: the temporary need for such will rise and fall as hardware and software systems and standards evolve
- need skills around understanding consumer behaviour: what consumption patterns characterise each medium and how can products be developed which capitalise on the synergies between and amongst these distinctive features
- project management and procurement skills will become more important as aspects of the industry are commoditised and out-sourced
- if foreign competition and spiralling costs threaten the industry, as in this scenario, skills around managing existing customer relations, company promotion, achieving production economies (careful project management) and delivering value become even more important.

Overall the workshop industry participants noted that very few, if any, current skills would be redundant by 2010. They anticipated that all the basic craft and business skills associated with the audiovisual industry would remain as relevant in six years time as they are today. Also unless an entirely new industry sector was created - like the games industry in the 1980s or the internet in the 1990s - then the creation of an entirely new skillsets was also unlikely. The development of the internet, for example, created entirely new job titles like website developer, information architect, interface designer and e-commerce systems integrator. As far as participants could discern no entirely novel industry sector was likely to appear in the next six years.

It is probably instead that the current skillset will evolve and mature with certain skills becoming more dominant than others. All participants agreed that the industry and the technologies underlying it would become more sophisticated and a more complex skillset would be required from any one person. This happened to a degree in the 1990s with low budget productions, for example, where producers had to multi-skill and also become directors, camera operators, sound recordists and editors. This move was facilitated by technology and obliged by competitive pressures driving down production costs. Similarly in the 2000s, the role of commissioning editors, for example, will become more complex as they commission a series of creative assets designed for a multi-channel, multi-platform world and move away from the concept of commissioning a single, self-contained TV programme.

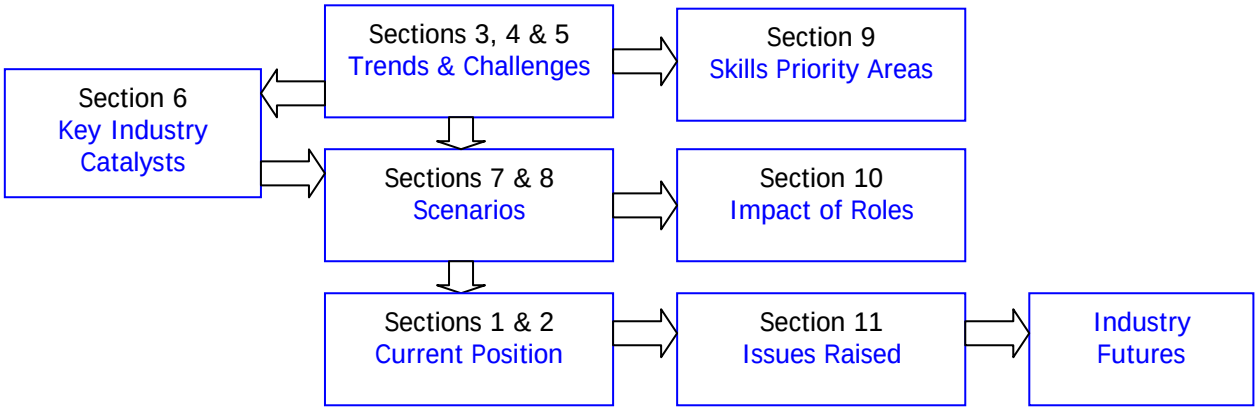
So instead of old skills being replaced by new skills, existing skillsets will evolve - old skills will present themselves in new guises. They will become more sophisticated with certain skills becoming more dominant

that others. Those more dominant skills are highlighted in the Section 9 below.

SKILLS IMPLICATIONS

The final section of the report draws together the skills implications of the anticipated changes in the audiovisual industry. It builds on the Trends and Challenges analysis and on the Scenarios to draw out the skills implications. It does this in two ways. First, Section 9 identifies priority skills areas and second, Section 10 looks at their occupation impact. Finally Section 11 reflects on the conclusions of the report and the issues it raises.

The way in which these sections relate together and their relationship to earlier parts of the report is illustrated below.



9. Priority Skill Areas

In order to distil trends and challenges, this report looked at three areas. These were: first, social, economic and technological trends; second, the impact of these trends on the audiovisual industry; and third, the specific sector trends this generated and the skills challenges which arise. This section is based on the distillation of the end of the trends and challenges analysis

That distillation was graphically represented in Section 5, Figure 7 which generated seven priority skill areas. Each of those areas is explored below in summarised form. They are presented here as 'company skills' which may be embodied in one individual or may be dispersed over a team. This is complemented by a discussion around individual capabilities, including key personal attributes, which are need to underpin creative and commercial success in the audiovisual industries.

Company Requirements
Asset Exploitation and Management
Risk Management
Project Management
Partnership Development
Investor Relations
Marketing and Promotion
Technical Expertise

Individual Requirements
Collaborative Skills
Hybrid Skills
Multi-skilling
Self-directed Learning
Personal Attributes

9.1 Company Skills Requirements

Asset Exploitation and Management

Creativity, flair and innovation are fundamental elements of a thriving economy in the 21st century. However the economic wealth embedded in this creativity and innovation cannot be realised unless this intellectual property is wisely managed and shrewdly exploited. This requires an understanding of copyrighting, trade marking and patenting procedures, of licensing and franchising practices, and of the legalities surrounding these procedures and practices in different territories worldwide. It also involves high-level negotiation skills, since deals have to be agreed on sharing the rights to assets which are intangible, and the value of which is highly variable and uncertain. Multi-platform content distribution, growing technological ubiquity and increasing industry regulation will require companies to have a strong understanding of legal and related issues, in particular concerning intellectual property rights and digital rights management, privacy and security.

Risk Management

Risk management will become as increasing important skill over the next five years. This applies whether it is in managing increased games production budgets, managing development across multi-platform products or wisely allocating increased marketing budgets. The audiovisual industry will never entirely rid itself of risk - not should it, as it is an intrinsically creative industry. But it can learn how to manage it more effectively. Any investor, whether it is a shareholder, a city analyst, an advertising company, a publisher / broadcaster or a co-producer, will want to see sound risk management mechanisms in place. The trick is to find mechanisms and attitudes of mind which identify the risks in advance, lay out means by which they can be minimised and continually monitor risk exposure to contain it. These include skills around: managing talent; sound concept research; engaging co-production arrangements to spread risk; quality control; and, insurance management. An element within it is project management.

Project Management

Perhaps more of a procedural skill than IP exploitation, project management is as fundamental to a productive and competitive industry as the management of intellectual assets. Without sound project management, production economies cannot be achieved and the industry cannot remain competitive. The quality of project management skills is closely linked to the development of industry reputation - the ability to deliver on time to budget in a professional way. To have ideas and talent is one thing, but to be able to shape and sculpt them into a viable proposition and then deliver the proposition successfully to a commercial client is quite another. Skills around project management include: assignment scoping; project structuring; client liaison; resource deployment; team management; financial scoping; budgetary management; quality control; and, schedule management. This requires both a detailed operational understanding and a wider management brief. With greater production complexity over multi-channels, multi-platforms, and greater financial risk, especially around computer games and interactive media production, sound project management skills are central to industry competitiveness.

Partnership Development

Engaging emerging digital technologies in production and/or distribution will increase in importance over the next five years. This will include harnessing emerging technologies for the complementary distribution of media assets using traditional channels (eg, broadcast, cinematic release, games publishing) and combining them with new channels (eg, broadband, DVD, mobile) to market. This demands new creative forms and a variety of complementary technical skills across software development, interface design, navigation techniques and search technologies. For example, this will be the case in exploiting e-VOD, in exploring commercial online/mobile possibilities, in engaging broadband streaming technologies and in online network gaming. A quick way to acquire those skills is though partnerships and joint ventures with digital technology companies. A key dimension of this skill is seeking out compatible partners through networking and tapping into industry intelligence, understanding partner ambitions, negotiating compromises and helping to structure a deal that has fair and equitable returns for all parties. A large part of partnership brokering is about networking, nurturing relationships and taking the commercial initiative.

Investor Relations

A specific form of partnership development is in the cultivation of investor relations. Developing investor relations with City institutions has previously only been required by the relatively few large commercial companies operating in the broadcast industry. However the audiovisual industry engagement with financial institutions is changing. This is for two reasons. These are mentioned in the sector analysis in Section 5 under television - the 'emergence of super indies' - and under games industry - the 'massively increasing scale of projects'. The exploitation of IP is the key to the development of cashflows by which both developers and publishers can invest in future growth. However, in order to fund development and to build IP ownership, significant investment is required.

In the independent television and radio production sector, super indies are now attracting capital from business angels and venture capitalists. In the games industry, beyond investment from within the industry, or government

bodies, the main options for financing growth centre on the financial community: private equity (venture capital, business angels); public equity (including AIM for smaller companies); and, banks (loans, guaranteed loans, completion bond). Both games developer and publishers have historically had difficulty communicating with and gaining the support of the financial community. The challenge for the games industry in particular is to develop skills around image promotion and the courting of city investors.

Marketing and Promotion

When a jaded audience has hundreds of channels to choose from, attracting attention, creating impact and promoting difference - cost-effectively - becomes both a necessary and a highly-prized skill. In a multi-channel, media-rich world, effective product promotion becomes a more critical skill for commercial success. Similarly in a more competitive environment. So, for example, continuing to attract lucrative film production and post-production work to the UK will demand more accomplished promotion and assertion of capability and talent. Marketing skills revolve around: consumer research, campaign strategy formulation, creative design management, media buying and production team liaison. Promotional skills include: brand development, cultivating audience / consumer relations, reputation development and effective networking skills.

Technical Expertise

The employment of technology in the production and distribution of programmes and products has always been an essential part of the audiovisual industry. So whether that's transmission networks, production technologies, game engines or projection equipment, in-house technical expertise has always been a requirement for companies in this industry. The nature of that technology is however changing and this will impact on the skillsets required for technology related occupations. Broadly there is a move from 'nuts and bolts' to 'bits and bytes' which will be largely complete by 2010. So, for example, in the television industry the move from transmission based on tape to an environment based on disc, or solid-state technology, is already well under way. The games industry - though 'born digital' - will have to expand its technical expertise, beyond games engines, animation software and rendering techniques, to online software and mobile technologies. As a company skillset, technological expertise will figure more highly over the next five years.

9.2 Individual Skills Requirements

In addition to company skills, a set of individual skills can be identified. These will be particularly crucial in defining personal employability and in enabling companies to remain competitive in the marketplace.

Collaborative Skills

These point to the increasing importance of generic 'soft' skills - verbal/communication and planning skills, team-working, inter-personal and problem-solving. In all industries these are important because they are a central point of competitive advantage. They are particularly important in the audiovisual industries where teams work closely, creatively and intensively on

a specific programme, film or game, over a limited production period. As scheduling and budgetary pressures increase in order to contain financial risk, so the importance of effective planning, efficient team work and smooth collaboration also increases.

Hybrid Skills

This is about combining specialist and generalist capabilities. It does not necessarily imply being a polymath having equal competence across a range of disciplines. Rather it is the ability to combine specialist skills with a high-level conceptual knowledge. It is a mindset which has a breadth of vision. It is the person who can not only competently deliver on the immediate role to which she or he is allocated, but who also has an understanding of the conceptual and cultural points of reference of other team members. It is the person who may be a specialist programmer but who also understands different programming languages and the broader systems architecture, and indeed how such an architecture relates to efficient production and product marketing. It therefore combines cross-disciplinary awareness, flexible attitudes and high-level conceptual knowledge.

Multi-skilling

In 2001, the Skillset Audio Visual Industries Training Group[30] also made reference to the importance of multi-skills, specifically *"a combination of technical, creative and business skills (which) cut across traditional professional and training demarcation lines"*. It implies combining a range of skills that traditionally belonged in different job categories. So during the 1990s and with downward pressure on programming costs, especially in satellite and cable channels, we see one person combining the hitherto separate roles of producing, directing and editing. It is not only about having the right skills, but also having the right combination of skills with the right level of experience across a range of functions. Historically employees of small companies have always, of necessity, had to multi-skill. As competitive and regulatory pressures increase, this demands more accomplished skills to be held by one individual or company across technical, promotional, financial and human resource management requirements.

Self-directed Learning

In order to sustain competitive advantage, both nationally and internationally, there is a demand for high levels of skills and an ability to exploit them. This is particularly the case when low-cost, competent economies abroad begin to offer competitive outsourcing opportunities - be that Eastern Europe, India or China. As globalisation becomes more extensive, so competition on the global stage increases. The trick is to retain high-value jobs in the UK. This requires a continuing investment in innovation, but also in the skills of the workforce. With an industry dominated by freelancers and small businesses, the responsibility for this development belongs largely with the individual. The individual therefore looks for cost-effective ways to achieve this, through networking and colleague know-how and from personal research, seminars and short courses. Self-organisation and self-education are therefore important attributes. This is particularly the case with highly transient but highly valuable skills, where the market need for the skill has often been

[30] Skillset/DCMS, Audio Visual Industries Training Group, *Skills for Tomorrow's Media*, September 2001

transcended before the formal education and training systems are in a position to deliver.

Personal Attributes

Particularly as the audiovisual industry is a creative industry, mere 'competence' at a particular task is not sufficient - excellence and innovative flair are highly prized. Amongst labour market researchers, skill is conventionally defined as 'the ability to perform a task to a pre-defined standard of competence'. In the creative industries, the connotation of 'task' seems too restrictive - often what people perform is not so much a task as a role. Hence the importance of both skills and attributes and the difficulty of disentangling them from one another.

In an industry dominated by freelancers and small businesses, self-promotion and self-management are important qualities that enable individuals to compete. Beyond these qualities, there is the need for an attitude of mind which embodies success. It is this attitude of mind that will enable individuals and companies to sustain a high level of performance and a competitive edge. A cluster of personal attributes describe this attitude of mind. These are: flair, confidence, capability, ambition and vision. These are intrinic qualities that make the difference between the potential to be simply 'good' and the potential to be 'really great'. They are often closely associated with leadership skills. They may not all reside in one person equally, but are the ideal attitudinal underpinnings of a truly competitive company.

10. Skill Impact: Industry Roles

Changes in occupations are often used as proxies for changes in skills for the purposes of forecasting. However, using occupations as a proxy to forecast skills is only good at picking up skill changes when these result in a *change* of occupation. The difficulties arise when there are changing skill needs *within* occupations, and this is most likely to happen due to technical change[31]. One of the conclusions of the Future Scenario Workshop (Section 8.2) was that there is little available evidence to suggest that the audiovisual industries are about to undergo such dramatic change within the next six years. It is unlikely then that whole categories of new occupations will be created, as was the case with games in the 1980s and interactive media in the 1990s.

There will however be changes of emphasis in skillsets required in key occupations. A key conclusion of the trends and challenges analysis, and in turn of the scenario mapping, is that the craft-based/technical occupations within the industries (e.g. camera, sound, lighting, editing) seem set to change the least. The major changes in these areas have, in effect, already taken place - principally the paradigmatic shift in switching to digital for shooting, editing and post-production in film and TV, and the establishment of online and mobile technologies and platforms. The only clear exception here is in filming for theatrical release where the period through to 2010 is likely to see a greater use of new high-end digital cameras as replacements for 35mm cameras and digital projection equipment.

In terms of the numbers of people employed in craft/technical areas, the implications are that cost pressures and/or further technological developments are likely to see a continued intensification in the use of labour. This has already been witnessed in, for example, the rise of multi-skilled production teams in independent TV companies, the use of middleware and code libraries in games, or the increasing automation of broadcast transmission. Obviously, the implications this trend has for the absolute

[31] Haskel, J and Holt, R., 'Anticipating future skill needs: can it be done? Does it need to be done?', paper prepared for the Skills Task Force, 1999

numbers of jobs in these areas will also depend on the growth rates of the constituent industries.

The biggest skill changes over the period to 2010 are, instead, set to occur within higher level occupations associated with business and creative strategy, as the previous section on skills priorities indicates. This covers a range of occupations concerned with planning, funding, co-ordinating, versioning, aggregating, packaging and selling audio-visual products and services.

The reasons as to why these occupations are likely to see the key skill changes in the sector through to 2010 arise largely from the imminence of a genuinely multi-channel and multi-platform *distribution* environment, coupled with increasingly complex and segmented consumer and business markets.

These occupations are:

- Producer
- Business Development Manager
- Managing Director / CEO
- Market / Audience Analyst
- Commissioning Editor
- Scheduler
- Project Manager
- Distribution, Marketing and Sales Executive
- Business Affairs Executive
- Media Buyer and Planner
- IT Systems Manager.

This specific occupations are derived from the priority skill areas. The bottom part of Figure 7, Section 5 is reproduced here. The key occupational impact of each priority skill area is shown with the priority skill areas on the left-hand column and the key occupations which each will affect on the right. Most occupations appear opposite more than one priority area.

Priority Skill Areas	Description of Skill Area	Key Occupational Impact
Asset Structuring, Exploitation & Management	Creative conception, commissioning, scheduling, business model development and IP management	Commissioning Editor Scheduler Producer Business Development Manager Business Affairs Executive
Risk Management	Diversifying revenue streams, digital security system management, IP management and industry advocacy	Managing Director Business Development Manager IT Systems Manager Business Affairs Executive
Project Management	Commissioning and executive production of cross-platform, cross-channel programming and project assets	Commissioning Editor Project Manager Producer
Partnership Development	Joint-venture structuring, international partnership brokering, and merger and	Managing Director Business Development

	acquisition activity	Manager
Investor Relations	Commercial expertise and attracting industry investment	Managing Director
Marketing & Promotion	Audience research, market assessment, brand promotion, cross-platform promotion and locations marketing	Market / Audience Analyst Distribution, Marketing & Sales Media Buyer and Planner
Technical Expertise	Digital technology & IT application to post-production and transmission technologies.	IT Systems Manager Project Manager

Four of these occupations are selected for illustrative purposes - producer; managing director, market/audience analyst and commissioning editor. The four paragraphs below describe how the emphasis in these jobs will need to change in response to the trends and challenges identified.

- Producer -

It is anticipated that the following five areas of a producer's job will change the most: selecting, developing and structuring ideas to create media assets; managing IP ownership; securing the necessary finance; managing contractual negotiations; and, ensuring the production is delivered satisfactorily within the time and budgetary constraints. Two of those are selected for illustrative purposes.

Selecting and developing ideas for production is likely to become a larger part of the job. The skills of selecting ideas will rise in importance because of the increased sensitivity to judging what risks to take and how innovative to be. This will also be the case because productions will increasingly be multi-platform, and so producers will need to consider what ideas lend themselves to multi-platforming and what do not. Senior producers may also need to think more about the attitude of sponsors, and indeed the potential for sponsors or advertisers in assessing programme ideas.

Securing the necessary finance may become more difficult and hence require higher skills. This is as a result of a rise in partner 'courting', more complex deal structuring and the need to be more sensitive to timing issues. In addition, senior producers may be expected to play more of a role in nurturing financial investors. Managing contract negotiation may become more important because of increased attention being paid to IP rights and IP protection. However, it is also possible that the issues will become so demanding that specialists will emerge to take over the task. In terms of product delivery, if increased cross-media promotional campaigns make timing rather more sensitive than it currently is, then the need to bring productions in on schedule may rise. So planning will become even more crucial than at present.

If the producer is freelance, then the occupational standard around managing and marketing her or himself will rise in importance. This involves skills around self-management and self-marketing and the need to show awareness around issues to do with risk, sponsorship, multi-platforms and IP rights and protection. Essentially freelance producers will increasingly need to display success in these areas in order to secure contracts.

- Managing Director -

The job of managing director in all the audiovisual industry sectors will change over the next five years. These changes are already evident and likely to mature sooner, for example over the next 24 months, than later. The creation of Ofcom and the key features of the 2003 Communications Act (see Regulation as a driver of change in Section 6) have set the scene for the development of more strategic skills at this level.

Managing directors of independent radio and television production companies - particularly the so-called 'super-indies' - will become more occupied than before with three issues: first, how programming rights might effectively be exploited; second, how company growth should be structured and financed; and third, what new partnerships should be forged, for example with advertisers, sponsors and/or digital technology companies.

This demands that managing directors themselves, or their company employees, understand how asset ownership can grow company value; how investor relations should be cultivated and promoted; and, what form financial partnerships might take whilst retaining editorial independence. As with managing directors or CEOs of games companies, indie MDs must consider how to fund project and company development, for example whether to engage business angel or venture capital and/or to pursue the growth route of strategic partnership, joint venture or merger and acquisition. Skills around partnership brokering, assessment of potential partner viability, market valuation, bid positioning and investor relations all come into play here.

These issues also face the MDs of corporate broadcasters but in a slightly different form. The 2003 Communications Act paved the way for takeovers of UK broadcasters by foreign companies, and not only media companies but also technology companies. A key strategic skill here is in corporate positioning, shareholder relations, valuation assessment and revenue control. It will also demand an understanding of the key players, industry dynamics and partnership potential of companies outside the traditional media industry, especially those involved in niche software development and technology companies operating globally.

- Commissioning Editor -

One of the key roles of the commissioning editor is to commission programmes which build audiences, are consistent with the broadcaster brand image and enable advertising and sponsorship revenue streams to be built around the programme. This requires close collaboration with the channel controller, scheduler, the media buyer and the channel marketing department.

The key skill need of the job which will change over the next few years will be a requirement to understand the programming possibilities, the business models and the industry dynamics of other distribution channels. These will be primarily the second generation of internet and digital communication technologies. In the period from 2005 to 2015, broadband speeds of up to 10Mbps, 4G technologies, wireless environments and rich media websites will provide innovative opportunities in a digitally maturing marketplace. One of the impacts on broadcasting in this period will be a more complex commissioning process with a consideration prior to commission of which segments of which programming assets will work in which complementary

distribution channels.

- Market / Audience Analyst -

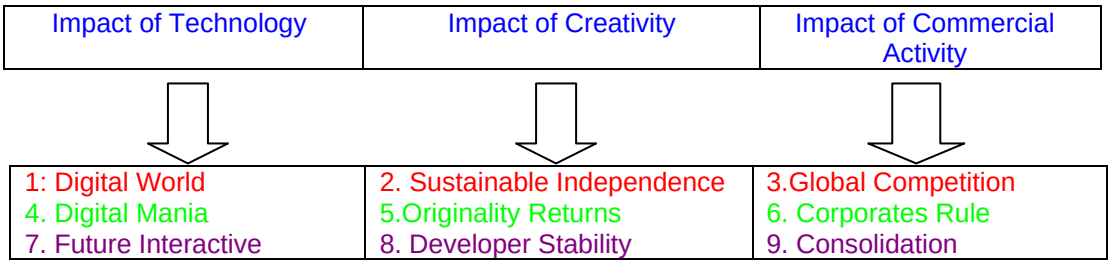
This job will become more strategic in the audiovisual industry and its current emphasis will change. This will be reflected in two key areas.

Analysts will need to be more involved in developing new markets than was the case in the past They will need to work closely with business development managers and managing directors to assess market potential. Intelligence on past audience behaviour and anticipated consumer developments will become even more critical to business decision-making. Media in all its forms in increasingly pervasive. How a consumer or audience member reacts to a company's existing brand, products and programmes will be more influential than in the past.

Analysts will also need to understand and interpret the intricacies of audience behaviour across different platforms in subtler and deeper way than before. The number of devices over which we can 'consumer' media continues to grow and the way in which we interact with them is becoming more complex. Figure 2. 'Media technology in the home' in Section 3 shows the increasing penetration of platforms and therefore gaming or media channels currently available in the home including the internet, DVD, games consoles, multi-channel TV, radio, video and CD. The introduction of PVR technologies, the move towards media distribution on mobile phones and the rise of broadband will further complicate the picture of audience behaviour and market expectations.

The above four paragraphs have summarised how the emphasis in these jobs will need to change. However, the precise character of the skill changes required within these occupations will be contingent on the future trajectories of the three industry sectors which were explored in the scenarios in Section 7. And no one, of course, can predict which trajectory will dominate. However a range of possibilities can be identified.

As well as a sectoral view - film, television and interactive media - a pan-industry perspective was also generated from the scenarios built in Section 7.. This pan-industry view is derived from focusing on technology (scenarios 1, 4 and 7); on creativity (scenerios 2, 5 and 8) and, on commercial activity (scenarios 3, 6 and 9). This can be shown diagrammatically as indicated at the beginning of Section 7.



The table below illustrates the influence of the three scenarios in determining how different skill requirements will be needed in differing quantities depending on which scenario group occurs. This is done with reference to the four occupations described above.

	Technology	Creativity	Commerce
Managing Director	Developing business models based on economies of scope across multi channels and platforms, requiring an in-depth knowledge of a wide range of markets Ability to source investment from capital markets and joint venture and partner with technology players	Entrepreneurial skills to the fore in developing independent SMEs, establishing partnership working and relations with investors and intermediaries Knowledge and skills of rights ownership and exploitation needs to be widespread	Business models based on economies of scale, requiring skills associated with consolidation: mergers and acquisition, MBOs and corporate restructuring Emphasis on financial and project management for cost control purposes
Market/Audience Analyst	Greater use of psychology and ethnography to understand individual behaviour and supplement demographic segmentation Large increase in quantitative research through analysis of micro data from PVR logs and web and mobile stats, combined with standard audience research data	Less emphasis on quantitative market/audience research due to renewed focus on creativity and innovation Activities concentrate instead on driving the R&D process through in-depth qualitative research regarding values, identities and lifestyles	Importance of developing metrics for identifying ROI and enabling performance-based management and assessment Brand awareness research and market testing and re-versioning of products routine
Producer	Creative and commercial understanding of migrating content across different channels/windows to ensure that each version is mutually re-inforcing Ability to negotiate and maintain relationships with a multitude of commissioners,	A greater emphasis will be required on the ability to develop concepts and treatments which lead to original (rather than license or format-based) IP Skills in raising funding and investment from a wider range of	Development of long running formats and franchises linked to high profile brands and licenses, to maximize exposure, reduce unit costs and generate revenue sharing opportunities Close collaboration with production manager to ensure maximum intensity of resource use

	funders and sponsors	partners and exploiting favourable fiscal incentives	
Commissioner	The ability to develop brand/channel strategy based on IP delivered across multiple platforms will be key A more in-depth understanding of the demographics and user/audience behaviour of each channel/platform will be key	A premium skill will be the early identification of new talent and new market niches, balancing this with skills in risk assessment Understanding of corporate strategy, in particular new regulatory duties and requirements, will also be key	Ability to leverage brand value, through building rosters of successful long running series, formats and genres A stronger understanding of production will be required as broadcasters/studios/publishers look for greater control of the production process to reign-in costs

11. Issues Raised

The main picture which emerges from this analysis is that the audiovisual industries are likely to experience significant changes, and significant increases, in skill needs over the next decade and beyond.

The industry itself is very aware of this. In the past other industry sectors, notably manufacturing, failed to recognise the need to raise their average skill levels significantly. They consequentially lost markets and market share to low priced competition from abroad. This is not the position with the audiovisual industry and is a major reason for optimism regarding its future.

Even so, awareness alone is not enough: the sector and the wider skills development system (including formal education, workplace-based learning, community education) need to respond to the challenge in appropriate ways.

There is not much risk that the industry will not respond at all: it is highly commercially minded and very much driven by change. There is more of a risk that the response will come through a process of people in the industry simply extending their skills through self-development on the job, without any process of formal recognition of skills development, and without any consideration of the need to promote equal access to the emerging opportunities.

Such a development would be likely to generate vicious and virtuous circles within the industry, with those in initially strong labour market positions raising their skill levels through the challenging and career-enhancing work that they get, while those who start from a lower base find themselves gradually slipping further and further behind. The same would happen at the company level. And in both cases, reputation-effects and branding would strongly reinforce these tendencies.

The likelihood of such a pattern developing is reasonably high, since the bulk of the increases in skill demand are at the higher end of the employment market and are non-technical – both factors that tend to promote informal non-accredited patterns of skills development. The resultant structure would, however, be open to criticisms on grounds of equity, efficiency and sustainability alike. The audiovisual industry would continue to prosper. However it would be reliant on a narrow base of super-competitive individuals, organisations and enterprises, with a rather larger periphery of people and companies struggling and never quite succeeding.

Another factor that makes this scenario reasonably likely is that entry barriers into the industry will be low, for two reasons. Firstly, because of technological progress, much of the technology will be cheaper to acquire and easier to master than used to be the case. Second, the government's commitment to providing education and learning to the whole post-16 age group, and in particular the expansion of higher education, will generate large numbers of young people receiving qualifications that relate to - or appear to relate to -

careers in the audiovisual industries. And since the demand for audio-visual output will continue to rise, many of these people may well be able to make a living in the industry - just not a very good one.

There is here a strong analogy with the problems that have traditionally beset the hospitality sector. This has a small number of companies with excellent reputations employing very highly skilled people and making attractive returns. But hospitality is also characterised by many people entering it and setting up small businesses, not achieving the success that they hoped for, unable to compete in skill terms, but continuing to struggle on largely because the demand for the sector's services is so strong, and because there are large numbers of people willing to work for relatively low wages.

There are, therefore, some basic questions that the industry needs to ask itself:

- Should the anticipated increase in skills be focused on those entering the industry, or on those already in it, or both, and how widely spread across the industry should it be?
- Can the skills be taught, or must they be acquired through experience and self-development?
- Can the skills be formally appraised, and accredited qualifications awarded?
- Who should fund the investment in skills?
- Who should receive the rewards from skills enhancement in the industry?

The challenge for the industry will be to find ways to invest in skills that combine the desirable operation of market forces with a commitment to enhancing opportunities. The latter is not only, or even mainly, about open access to the industry - it is about the development of objectives standards and competency measures for the various emerging skills identified.

For this to happen many initiatives need to occur. Three, which seem crucial, are identified here for illustrative purposes.

- The skills discussed here, such as risk management and partnership development, need to feature in every part of the learning system – not to the same extent and in the same way, but as part of the common language and architecture of the audiovisual industries. That will be true in terms of foundation degrees, first and higher degrees, job descriptions and occupational standards, and external quality accreditation. A single way of conceptualising these skills needs to develop across the sector.
- Second chance opportunities need to be provided to people already working in the sector, to allow them to significantly increase their skills in these areas, where they are currently not up to best practice. This might involve for example bursaries

that give the opportunity both to study and to work in the best companies – though individuals should be expected to make at least some contribution to the costs themselves, since they will share in the financial returns from their own skills enhancement.

- The skill areas identified here should be the subject of in-depth academic research, partly just to raise their profile but much more so to gain a clearer idea of what they really involve, which elements contribute most to organisational and individual success, which aspects are part of a company's unique competitive position and which are generic, and so on. This might, for example, involve a joint research programme between one or two of the film academies and one or two business schools - or indeed law schools for the management of intellectual property rights.

Initiatives such as these should help the audiovisual industry to make the best of the new environment that it is facing, and to achieve enhanced growth that is sustainable, equitable and commercially very successful.

Appendices

Appendix A. Consulting Team

The consulting team comprised 7 individuals:

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Addween Sacha, Senior Analyst, Experian Business Strategies

Appendix B: Acknowledgements

Skillset would like to thank its Board of Patrons for contributing their views during the consultation:

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Dawn Airey, Managing Director of Sky Networks, BSkyB
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Peter Bazalgette Chairman, Endemol UK
Lord Melvyn Bragg, Broadcaster
Greg Dyke
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Sue Thexton, Macromedia UK
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Iain Tweedale, BBC Wales
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Michele Wright, Working Title

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Appendix D. Sector Trends in Detail
Film, Television & Interactive Media Industries

- Film Industry -

- Attracting Inward Investment Becoming More Competitive -

The UK's competitive advantage as a production base for shooting international films has been a combination of four factors: the skills base; the size of the labour market; the number of facilities; and, the English language. The key challenge for the UK is in retaining this competitive advantage in the face of international competition particularly from Australia, Canada and Eastern Europe, and in the longer term, from South East Asia.

In terms of post-production expertise, the market will also become more competitive. At present, UK-based post-production companies such as Framestore and Cinesite are amongst the world leaders in digital effects. It is precisely because of that expertise that the Hollywood studios often choose to place the whole of the post-production phase of their films in this country, even when they are actually shot on far cheaper locations, such as Romania, Hungary or Morocco. But given that it is likely more of the routine post-production work will be out-sourced to other countries in the future, particularly those in South-East Asia such as Korea, the challenge for the UK is to retain high-end work and therefore lucrative market share.

As a consequence, investment in skills across the film production sector, but notably in the highly skilled area of film crafts, becomes increasingly vital for a nation to retain its competitive advantage.

- Rising Production and Marketing Costs -

This relates particularly to the major American film studios. Over the past 20 years, the cost of producing and marketing studio movies has increased over 5 times, while the total US theatrical box office has increased less than 3 times[32]. This leads to an increasingly risk-averse and 'hits-driven' business accelerating the gap between film hits and misses. The cost of producing and marketing a film rose 15 per cent for members of the Motion Picture Association of America (MPAA) to an average $102.9m in 2003[33]. Advertising alone accounted for 89.2 per cent of the total marketing expenditure.

To some degree, this rise in costs has been driven by the rising cost of creative talent. But the increase has also been caused by the costs of using digital technology to create complex special effects, for example in films such as The Day After Tomorrow and Van Helsing.

The result of placing greater significant and therefore marketing expenditure on opening weekends has had a major impact. For example, The Matrix Reloaded, fourth-ranked film in 2003 in the US, pulled in 32.6 per cent of its total in the first weekend alone, the highest opening in 2003 and the second highest ever. Some see this as a portent of things to come with the logical conclusion of this development - same day release worldwide - transcending the typical existing pattern of staged releases in different territories.

- Continuing Development of Multiplexes -

Latent consumer demand has been unlocked over the last 20 years through investment in the construction of new multiplex cinemas across the world. In many territories this has resulted in a rationalisation in the number of cinema sites but an increase in the number of screens with improved quality. This has reversed the long-term trend of declining cinema-going that reached a low of 54 million UK admissions in 1984 but recovered to 176 million in 2002, the highest in 30 years[34].

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[32] Screen Digest, '*Studio Movie Revenue Growth Outpacing Costs*' , April 2003, p.126
[33] ibid
[34] Screen Digest, '*Global Cinema Exhibition Markets*', October 2003

There were around 12,600 multiplex screens in the whole of Europe at the end of 2002, representing about 44 per cent of the entire screen count in the continent. Within two to three years from now, it is likely that half of all screens in Europe will be housed in multiplex complexes. Although the peak of multiplex building has certainly passed (2,000 multiplex screens were opened in 1999), this remains active[35]. There is also scope for introducing more flexible and diverse programming with the introduction of digital exhibition, since physical prints of a film no longer need to be shipped to cinemas around the country.

- Increasing Market Penetration of DVD and Demise of Tape -

In Europe in December 2003, divisions of several major studios, including Warner, MGM, Buena Visa and Fox acknowledged that they had been formulating an 'exit strategy' from VHS. Blockbuster is phasing out sales of new VHS product in its stores in the US to make way for DVD. By the end of 2003, it had already eliminated new VHS sales in approximately two-thirds of its nearly 4,600 US stores. The move was in response to declining VHS sales[36].

While DVD recorders continue to thrive in the technologically advanced Japanese market, consumer electronic sales figures suggest that the format is still in its infancy in the USA and most European territories. Screen Digest noted that rapidly falling DVD hardware prices have helped boost DVD take-up in Europe well beyond expectation. During 2003, the number of European homes with a DVD player rose to over 50 million (34 per cent). Screen Digest predicts that by the end of 2007, DVD will account for 93 per cent of spending on video software[37].

- Sustained Concern Over DVD Piracy -

Given the continued prospects for strong volume growth worldwide, coupled with high margins, it is predicted that DVD will become the single most important film income source by 2010. DVD is especially valuable to the studios because it offers a much higher margin than video rental, and even more than the lucrative pay-television deals. This medium has boomed over the last three years with plenty mileage left for back catalogues reissues and market penetration into emerging economies.

Consequently, the industry is increasingly concerned with large-scale industrialised piracy of DVDs that usually finds its source in large duplication plants in countries including China, Thailand, Malaysia, Pakistan and Russia. The MPAA estimates, for example, that piracy costs the US motion picture industry over $3 billion annually in lost revenue worldwide and $646 million in Asia[38]. Meanwhile in the UK, the seizure of pirated discs increased 10 times between 2001 and 2003 to approximately 1.5 million discs. Increasingly technologies are being devised by the world's major consumer electronics and computing companies to combat copying. This is a growing demand for products that are designed to stem piracy. New high-definition DVD recordable formats, such as Blu-Ray, should become widely available in the next two or three years, leading to even greater improvements in quality and increased storage. However this development could also make it easier for pirates to create pristine copies of product.

- Rising Concern Over Illegal Downloading -

The DVD may however ultimately be overtaken, in part, by film downloading from the internet. The impact of the internet on the music industry has already been graphically demonstrated by the original Napster and its more recent re-incarnation. At present the long downloading times for film - hours - due to constricted bandwidth, create an effective barrier to either legal or illegal downloading on any scale. But when download time accelerates, illegal online copying will become one of the major challenges to the film industry. As with digital switchover in film distribution and exhibition, the development of the business model for online distribution is lagging significantly behind the development of the technology. As mass broadband roll-out significantly in excess of 5Mbps is likely to take some time, the film industry has time to adjust. This

[35] Screen Digest, '*Half of all European Screens are Multiplexed*', November 2003
[36] Screen Digest, '*Blockbuster ditches VHS in favour of DVD*', April 2004
[37] Screen Digest, '*Triple-figure Growth Rates for DVD Recorders: Format still in its infancy in the West*', April 2004
[38] Screen Digest, '*MPA launches anti-piracy rewards programme*, March 2003, p.69

represents a window of opportunity to develop legal, paid-for downloading services which are likely to be the most potent weapon in combating illegal file-sharing.

- Continuing Digitisation of Production Processes -

Digitisation has already transformed many aspects of the film business. The emergence of digital technology at the low budget end of the market, for example Digital Video cameras, has lead to a reduction in production costs. This is encouraged by initiatives such as the UK Film Council's New Cinema Fund which supports the production of innovative, low-budget films. However whereas this has lead to a reduction in costs at the low end of production, it has lead to an increase in costs at the high-end due to the additional costs associated with digital effects.

- Emerging d-Cinema Impact on Distribution and Exhibition -

D-cinema is still very much an early adoption phase. By the end of 2002, there were an estimated 161 digital cinema installations at 143 locations around the world, with half of those in the US[39]. The seven major studios have created Digital Cinema Initiatives (DCI), a group which is designed to create industry standard for digital. Their work is complemented by that of the European Digital Cinema Forum (EDCF) which brings together leading European participants with interests in digital cinema. The key barrier to the take-up of digital has been the costs of installing digital projectors in cinemas, and the failure of the industry to agree as to who would bear those costs. Although the technological change is actually made to the cinema exhibition facilities, it is actually the distributors who stand to reap the largest financial gains since they will no longer have to pay for the costs of striking prints.

In developing territories, where levels of sunk investment in analogue exhibition facilities are not as high, this factor is likely to be less influential in determining adoption. Hence, outside the US, the lead is being taken by developing markets such as China, which currently has 64 digital screens and has plans to reach 500 by the time of the Beijing Olympics in 2008[40].

In the UK, the Film Council is using its Lottery based subsidy to help finance the costs of creating a digital screen network across the UK. This strategy envisages a 'virtual network' of up to 250 screens, located in approximately 150 cinemas. Every full-licensed cinema is eligible to join and in return for the Film Council's financial contribution towards the equipment, cinemas in the network will set aside a percentage of playing time for more specialised programming[41]. As noted above, one of the key benefits of digital technology is the ability to programme more flexibly and the reduction in distribution costs associated with film print production.

- Television Industry -

- Digitisation of Production and Distribution -

Over the next 10 years it is anticipated that the move from analogue to digital through the whole TV production and distribution system will be complete. This is evident from the moves towards a tape-less production system and in the drive towards analogue transmission switch-off.

In the spring of 2004 both the BBC and BSkyB announced their intention to move to a tape-less production environment. The BBC plans to have this move to an entirely tapeless IT infrastructure completed by 2010[42]. This will oblige all the BBC's suppliers to adapt their businesses in the same digital direction. BSkyB's purchase of Sony's XDCam disc-based production equipment and its automated robotic playout system marks an equally fundamental shift[43]. This is a critical part of the move from a transmission system based on Digital Betacam tape VTRs to an environment based on

[39] Screen Digest, *'Digital cinema rollout likely 'within one year''* March 2003, and, *'Singapore gets first all-digital multiplex*, April 2004
[40] ibid.17
[41] UK Film Council, *Three Years On: A consultation on our funding and policy priorities, April 2004 - March 2007*, October 2003, and www.ukfilmcouncil.org.uk
[42] Hilton, Kevin, *'Tape has had its day'*, Broadcast, 14 May 2002
[43] Dacey, Rick, *'BSkyB explores tapeless future'*, Broadcast, 30 April 2004

disc and/or solid-state technology.

In September 1999, the government announced its desired intention for analogue broadcasting to end sometime between 2006 and 2010 - though it now looks as though it may be nearer 2012 - with the twin objective of driving innovation in the TV industry (not just broadcasters but also manufacturers), and auctioning off the freed-up spectrum capacity. By the end of 2003, over 50 per cent of UK households had digital TV, giving the UK a leading position in the digital TV market[44]. Near universal take-up is required before analogue switch-off can take place and the government is promoting this, for example through its 'Digital TV Action Plan' and Ofcom's 'Driving Digital Switchover'.

- Multi-Channel & Audience Fragmentation -

Together with the introduction of pay-TV, the digitisation of programme distribution has accelerated the development of the multi-channel TV from about 5 to 10 channels in the late 1980s to about 400 now. Roughly the same amount of viewing has been dispersed over a greater number of channels leading to a per-channel and per-programme drop in audience ratings It is predicted that this audience fragmentation will begin to erode the concept of peak time. In a fragmenting media world it will be harder to attract large audiences to programmes. Throughout the 1960s, '70s and '80s, audience ratings for the most popular programmes were often over 20 million. Audiences of 10 million are now rare. This fragmentation has been further accelerated by the impact of the internet, especially when this is combined, as it increasingly is, with broadband connectivity. There are nearly 4 million household broadband connections in the UK at the moment[45] and this could easily treble by 2010. Audience fragmentation has important implications for programme quality. By spreading the same revenues over a growing number of services, it is putting a strain on quality and range in both television and radio. Though most analysts expect advertising revenue to continue to outpace the economy as a whole, this will not be sufficient to compensate for the huge growth in media competition.

- Emergence of Broadband TV -

Related to this are the moves of broadcasters towards embracing broadband. In February 2004, Discovery Networks International, for example, launched a UK pay-per-view and subscription broadband service giving viewers access to up to 20 hours a month of new content via Discovery Select and Discovery Home & Lifestyle at discoverybroadband.co.uk. People using this test-bed service can either pay-per-view or by subscription via BT Click and Buy. Channel 4 has recently relaunched its 4 Broadband service and, late in 2003, the BBC announced plans to put part of its vast archive online. AOL offers a comprehensive broadband entertainment package including Premiership highlights. Shortly afterwards, NTL introduced a 'family of channels' offering a selection of 15 TV packages. Targeted at NTL's broadband subscribers, this combines education, entertainment and music content. Over the next five years, expect to see more of these initiatives and the development of television programming assets across broadband networks.

- Diminution of Advertising Revenues -

Audience fragmentation and the introduction of PVR technologies - enabling viewers to record programmes while exclude adverts - has challenge the position of broadcasters dependent only on advertising revenues for income. Channel 4, for example, is directed affected by this but no more than Five or ITV. The advent of pay channels has led to a steady fragmentation of television audiences, making what was previously the advertisers' favourite medium seem less attractive. No one should underestimate the scale of the task facing all channels as they try and increase, or even retain, audience share as more and more channel choices become available.

At the RTS Cambridge Convention in 2003, Spectrum Strategy Consulting created five different models to predict what shape British television is likely to find itself in by 2010[46]. In all but one of these scenarios C4 sheds share and revenue. Like other

[44] Reevell, Philip, *'Digital TV passes the tipping point*, Broadcast, 9 January 2004
[45] Ofcom, *'The Ofcom Internet and Broadband Update'*, 2004
[46] Spectrum Strategy Consulting, '*The End Game: Winners and Losers in the Digital Decade'* Scenarios notes press briefings, for Royal Television Society, Cambridge Convention, September 2003

broadcasters, it will probably be required to broaden its revenue base through interactive , subscription, brand extension etc. Linked to a recent report by Wanadoo[47] on the erosion of TV viewing through broadband consumption, it was noted: "*Advertisers need to take notice of this now, because not only is broadband the fastest-growing medium in the home, it's the only one that allows 100 per cent advertising presence all of the time."*

- Rights Redistribution -

One of the key feature of the 2003 Communications Act was a change in rights ownership. The Act established Codes of Practice which embodied most of the changes suggested in the Programme Supply Review. PACT lobbied for this on the basis that independent producers were structurally disadvantaged in negotiating with broadcasters over programme rights as those broadcasters were, effectively, abusing their market power and acting anti-competitively. The new Codes of Practice mean that independent production companies will be able to hold on to more programme rights, particularly with regard to secondary markets. PACT has also called on the government to impose a 50 per cent external production quote on the BBC - half of which would be safeguarded for independent programme suppliers. Indies would then be able to compete with other external producers such as Granada, SMG TV Productions and Fremantle[48].

The new codes of practice affecting how broadcasters and indies do business could see the indie sector receive a boost of more than £100 million over the next few years from venture capitalists, banks and other financiers. Lack of ownership in intellectual property rights in the independent sector has discouraged City investment for the past two decades. As a result, significant growth is expected among the indie sector, through this could lead to a reduction in development funding as broadcasters receive less income from programming.

- Emergence of Super Indies -

These codes of practice now reverse the previous policy of automatically surrendering all rights. Independent production companies are now in a position to accumulate intrinsic value and have developed a corresponding ambition. Wall-to-Wall chief executive, Alex Graham, for example revealed his ambition to double the size of his £15.5 m indie, which could take the form of an acquisition or merger[49]. This has given rise to the term 'super-indie'. It has also sparkled a wave of collaboration among smaller indies keen to improve their profit margin and negotiating power. For example, Quickfire Media, Testimony Films, Icon Films, Available Light and Tigress Productions have set up a group called Bristol Independents Group and plan to sell programme rights collectively and co-produce major shows. With improved stock markets for media companies, there is bound to be considerable corporate activity for some time.

- Corporate Mergers -

The UK and global media industry is consolidating faster than ever driven by a growing need for economies of scale to reach audiences in a cost effective way. The UK's large commercial broadcasters are under commercial pressure from audience fragmentation. The newly-merged ITV is responding with an aggressive programme of cost-cutting involving rationalisation of production outside London: a reduced presence in Manchester and Southampton and the closure of production bases in Nottingham and Kent, with implications for the regional range and diversity of UK broadcasting. Partly as a reaction to this, various other media groups has entered discussions to assess potential re-positioning. Channel 4 executives and representatives from Five shareholders, United Business Media (UBM) and RTL, have reportedly held preliminary discussions about a possible merger, though this is only one of many options. UBM and RTL are keen to bolster their sales offering in the face of a single ITV by merging with another player.

Beyond internal UK corporate activity, there is the prospect of foreign buying in UK television. The Communications Act paves the way for takeovers of UK broadcasters by foreign companies, probably by a European or an American company., subject to a

[47] New Media Age, *'TV loses out as broadband takes people online for fun'*, 3 June 2004
[48] Broadcast, *'Pact calls for reform of BBC production*, 23 April 2004
[49] Broadcast, *'RDF chief reveals aim to sell or float indie by 2007'*, includes reference to Wall to Wall, 30 April 2004

public interest test. Viacom, Disney and Clear Channel, for example, have already stated their interest in acquiring media assets in the UK. As indicated recently by the BBC[50], this interest is not limited to television and radio broadcasters - for example, Microsoft plans to enter the world broadband market, aiming to position its Windows Media Center as the media hub for the home. According to the BBC, it is likely that by 2010 substantial parts of UK broadcasting will be owned by large global companies.

- Re-Interpretation of PSB -

The changes to PSB definitions were outlined in April by Ofcom when it published the first phase of its review of public service broadcasting. Ofcom's report showed that the old definition of public service broadcasting (PSB) no longer strictly applies in a multichannel era as traditional public service output is edged out of peaktime. ITV may be freed from some of its PSB requirements costing the broadcaster around £400m a year. Ofcom is due to discuss ITV's licenses in 2005. It could mean redefining PSB stressing quality, innovation and originality over specific genre obligations.

This is linked to the BBC Charter Review due in 2006 and its future funding. While many commentators see the license fee as a secured revenue for the next charter period others are opening up discussion around complete reform of the way the BBC and public service broadcasting is organised and funded. This is linked to discussions around the possibility of 'top-slicing' the license fee, dispensing a part of it to other broadcasters to fund their PSB obligations. Any significant changes around BBC funding would undoubtedly have a major impact on the whole ecology of UK broadcasting.

- Interactive Media Industry -

Digital Content Trends

- Market Penetration of Broadband -

There are two dimensions to this market penetration. First, the increasing take-up of broadband connectivity and, second, the broadening capacity of that connectivity. The UK Broadband Stakeholder Group report in 2003[51] noted that UK broadband connectivity had grown rapidly through 2003 from one million to three million subscribers, equating to c.12 per cent of the UK's 24.4 million households. In 2003 the chief executive of BT set a company target of one million broadband subscribers by mid 2003 and five million three years later. In turn, the Britain in 2020 study[52] predicts internet connection 10 to 20 times faster than today (from 0.5 to 5 to 10 Mbps). Ian Pearson, BT futurologist concurs predicting that broadband access speeds as high as 20Mbps will be achievable by 2010 over existing copper-based DSL connections[53]. Pearson predicts that fibre networks will be the next big thing for consumer broadband.

- Rich Media Integration Online -

The last five years have seen the increasing integration of audio and video into website design and delivery. As audio is far less demanding of bandwidth than video, it was the first to develop as an online offering and led to the phenomenon of music downloading and file swapping - famously, or infamously, in its Napster incarnation. As broadband capacity deepens and compression technologies improve this is extending to video, from short part-screen 30 second clips to full-screen 30 minute TV programmes.

Entertainment has become the main reason for people going online in the evening, with broadband starting to erode TV consumption in the home, according to research by Wanadoo. Its 'Fishbowl 2' study[54] found that UK broadband users are cutting their

[50] BBC, '*Building public value: renewing the BBC for a digital world,* 2004, pp.57-8
[51] Broadband Stakeholder Group, '*Third Annual Report and Strategic Recommendations'*, January 2004, www
[51] op cit. 8
[52] McAuliffe, Wendy, '*What tomorrow brings'*, New Media Age, 1 April 2004

[54] op cit 46

TV viewing by 2.1 hours a week, using the time to go online. In part perhaps anticipating this, Channel 4 broke new ground in 2003 when it launched its 4 Broadband Channel. This was positioned as a factual and entertainment 'channel' offering video clips and programme segments available. The BBC in turn pioneered a radio presence on the web not just offering a transmission channel for its output but also an archive facility - archiving all radio programmes for a week after transmission. The corporation is currently exploring the possibility of a similiar temporary archive for its television output seen as the UK's first version of television-on-demand. These developments point the way towards greater integration between media companies and digital technology companies and the possible merger of new media agencies with independent TV production companies.

- Evolution of iTV -

Around five years ago iTV was expected to become a major growth area, but the anticipated boom failed to materialise. This was due to a number of constraints including the use of proprietary systems, low set-top processing power, interface design challenges and slow and expensive development. Instead of a boom, iTV has undergone a gradual evolution, as programme makers, developers and technology providers have learned more about the medium.

Despite early system constraints, the UK is Europe's leading iTV market, with 84 interactive services on offer as of July 2003[55]. The BBC has been instrumental in driving iTV developments especially with services related to sports, major events and flagship programmes (eg, Wimbledon, Walking with Beasts). With the number of digital TV homes continuing to rise across Europe, platform operators and broadcasters are increasingly looking to enhance that content offerings with interactive functions. Interactivity, and particularly interactive advertising, is a potential area not only for creative expression but also for revenue generation - a complement to traditional 'spot' advertising. This thinking may lie behind ZipTV's recent launch of an advertising channel on Sky.

- Business Model Evolution -

Digital rights management (DRM) is about managing intellectual property in a digital world. IP underpins many of the world's leading economies and will become even more important in a digital one. Leading economies increasingly generate revenue around the exploitation of intellectual property. Lack of effective DRM lead to the opportunity for free downloading of music and the creative assets inherent in it. Richer media has had more time to consider its DRM position and learn from the original Napster experience. A recent survey by the Association of Online Publishers[56] showed that over 80 per cent of publishers will be charging for online content. Revenue models established in the TV world - subscription, sponsorship and advertising - are likely to migrate online. Credit cards are of course the payment mechanism for e-commerce. However the key difficulty arises from micro-payments where no effective online payment model exists.

Microsoft signed a DRM alliance with Disney in February 2004. Microsoft's decision identifies three main areas of joint focus to enable effective rights management. These include: the creation and secure delivery of high-definition digital content; the acceleration of digital content flow to consumers over networks and to devices; and, ensuring the seamless flow of secure content between devices, either wired or wireless. What's important about this deal is the range of content it could cover, as Disney's operation covers most parts of the media space, including film, TV and music. This is a portent of deals that are likely to be struck between media companies, technology businesses and telecommunication companies.

- Deepening Mobile Connectivity -

In 2002, the number of mobile phone subscribers in Europe overtook the number of fixed line subscribers. By the first half of 2003, the average penetration in European countries was 83 per cent and the UK had 50 million mobile phone users[57]. Further growth in subscribers in Europe is likely to be minimal as the market reaches

[55] Screen Digest, *'Interactive TV in Europe'*, September 2003
[56] Armitt, Claire, *'Four in five publishers to charge for online content'*, New Media Age, 5 February 2004
[57] Netsize, *'Developing the Multimedia Mobile Market'*, 2004

saturation.

But as voice revenues reach maturity, a wave of new mobile services are poised to take off, with operators investing in rich media content and the infrastructure to support it. Video services will reach a third of mobile users in Western Europe by 2007, predicts Frost and Sullivan[58]. Their research indicated that take-up will be fairly steady over the next few years, but not rapid due to the number of subscribes with video-capable handsets and other issues including billing, image quality and device capabilities. However, Frost forecasts the market will take off in 2007 once video telephony services are introduced and quality improves. 3G subscribers in Western Europe, including France, Germany, Italy, Spain, Sweden and the UK, currently number 600,000. Research firm, Analysys predict that this will rise to 27 million by the end of 2005[59]. Trials are currently taking place with phones configured to receive digital terrestrial television transmissions, which would make it possible to broadcast digital television to mobile phones. Realistically this is looking further out towards 2010.

- Outsourcing Commoditised Services -

The Interactive Media Skills strategy report[60] recently produced in consultative form for Skillset indicates that technology will become more sophisticated but software solutions will become increasingly commoditised and hence cheaper. Commoditised processes, especially technical development and production, will increasingly be outsourced, frequently abroad, for reasons both of cost and best practice: ideally creative, client relationships and added-value processes will remain in-house. The practice of outsourcing development work to (cheaper) foreign partners in regions such as India and Eastern Europe will, it is anticipated, become more widespread. As these economies develop more expertise, they will be able to compete for a larger share of work higher up the value chain. This will, though, require good procurement and project management skills from the commissioning clients or from interactive media companies themselves assuming a sub-contract arrangement.

- Specialisation and Consolidation -

The Interactive Media Skills strategy report also indicates that polarisation will occur between a small number of large companies and a large number of specialist companies through industry consolidation. Currently the majority of companies in the interactive creatives services market are small and micro-businesses, and the industry also supports a large number of freelancers and sole traders. The top 100 UK agencies in 2003 employed 40 staff on average, but most of these companies are larger than the industry norm[61]. It is anticipated that the majority of companies will remain small and focus on specialist services, market niches, technology development or specific creative styles, with collaboration and partnerships being prevalent.

In the next few years, consolidation in the market is highly likely, primarily driven by mergers and acquisitions. Increasingly size will be necessary to handle the increasing scale and complexity of interactive projects that will be ever more integrated within wider business processes. Consolidation will result in a smaller number of large companies dominating more of the market then at present, with smaller agencies relying on specialist skills and niches, and partnering-up as sub-contractors with larger companies. Merger and acquisition is also likely to involve players from outside the current sector as both marketing communications conglomerates and computer services firms look to buy skillsets and customer accounts.

Games Industry Trends

- Increasingly Hits-driven Market -

The computer games industry is becoming ever more hits driven. The (then) trade magazine, Computer Trade Weekly, estimated that of the 3,000 games reported to have been released in the UK in 2000, the top 99 titles (3.3 per cent) accounted for 55 per cent of sales. This trend is exacerbated further as the games industry become

[58] New Media Age, 'Steady rise predicted for mobile video services', 22 April 2004
[59] Armitt, Claire, *'3G subscribers up but real rise not expected till 2005'*, New Media Age, 6 May 2004
[60] Hirsch, Jonathan, *Interactive Media Skills Strategy, Consultative Draft*, Skillset, August 2004
[61] New Media Age, *Top Interactive Agencies 2003*

more mass market, and the power of marketing budgets or recognised titles is strengthened. In 2004, the movement is towards even more extreme polarisation. Also, the majority of sales for a title will usually occur within the first three months following their release, reducing the amount of time publishers have to recoup their investment. Related to this phenomenon is the increasing dependence of the industry on licensing intellectual property from other entertainment sectors in order to derive recognition value and drive sales. The market is heavily influenced by titles based on movie and TV properties, football associations, motor car manufactures, toy ranges and sports personalities, although the biggest selling titles are sequels of original titles. Clearly this association comes at a cost both in terms of the cost budget and financial risk. But in a global market, it is these franchises which can make the difference between success and failure.

- Massively Increasing Scale of Projects -

Developments in console technology, processing power and vastly increased storage capacities are enabling the creation of increasingly complex gameplay and large quantities of realistic graphics. Games are becoming more lavish and cinematic, setting a standard which consumers are now beginning to expect. Whilst this increases the potential for computer games to appeal to the mass market, the resource required to produce games with such high production values has significantly increased. The average development budget for a premium console title is generally now over £3 million - at least 10 times the equivalent a decade ago - and requires a team of at least 40 people working for 18 to 24 months. UK teams tend to be smaller than US teams and much smaller than Japanese projects, such as Metal Gear Solid, are reported to have cost in excess of £15 million with a team of over 60 people.

- Progress to Mass-market for Games Consoles -

Consoles are beginning to attain mass-market levels of penetration with over 150 million consoles in the key US, European and Japanese markets: games consoles have already reached mass-market penetration levels in Japan (c.70 per cent) and the US (c.50 per cent)[62]. Intense competition between the latest generation console platforms has lead to hardware price cuts, making them more appealing to the mass market and thus broadening the gaming audience. Sony's PlayStation 2 (PS2), Microsoft's XBox and Ninendo's Gamecube all currently retail at less than £150. The enormous storage capacity of the delivery media of this new generation of consoles (4.7Gb for PS2 and Xbox, 1.5Gb for Gamecube) and their improving graphic capabilities allow the creation of games with very high production values - high quality, very realistic sound and graphics. This provides more realistic and engaging user experiences, again broadening their appeal.

- Development of Next Generation Platforms -

The major change in computer and video games technology through to 2010 will be the launch of the new generation of home games consoles that are expected to debut in late 2005 or 2006. They will be much more powerful than the current 128-bit machines, enabling the games industry to push ever closer to achieving photo-realistic graphics and enable innovation in gameplay and genres. However the enhanced capabilities of the new consoles will come at a price - namely that the current difficulties experienced by much of the development community, related to the increased human and financial resources required to develop a game, are likely to be magnified many times over. In facing this challenge the industry is already developing a range of technological solutions. Most ambitiously, Microsoft is launching what it terms XNA. This is a software development platform that will standardise the tools that games developers currently use across Windows, XBox and Windows Mobile platforms. The intention is to make the development process more streamlined and less expensive. The development and ownership of a single software format for games hardware may be the company's ultimate goal.

- Consolidation Continues Amongst Gaming Publishers -

The rising cost of games development combined with the mass-market status of the industry continues to result in ever greater consolidation at the publishing end of the

[62] Spectrum Strategy Consulting for the DTI, *'From exuberant youth to sustainable maturity: Competitive analysis of the UK game software sector'*, Main Report, 2002

business. Like the music and film industries, leisure software appears to be moving towards domination by a small number of large, multinational companies. The vast majority of sales are controlled by a small group of global 'super-publishers', including a dominant Electronic Arts. However, because of the overall market, increasing opportunities for smaller publishers are also expected - especially those with unique propositions in product and marketing terms.

- New Market Segments in Mobile, Online and Wireless Gaming -

Other confirmed changes in platforms in the period through to 2010 are in the handheld market. Having more or less had the market to itself for over a decade, Nintendo and its current GBA (Gameboy Advance, handheld) will face competition from Sony's new PSP (PlayStation Portable): in Japan from the beginning of 2005, and in the US and Europe from summer 2005. Two further areas of games technology that are expected to change significantly over the next 6 years to 2010 are online and mobile games.

Mobile games are considered to be a potentially lucrative area for handset manufacturers and network operators alike. Spectrum Strategy Consulting project the value of the mobile games market in Europe, the US and Japan to grow from £73m in 2001, to over £1.4bn by 2005, with the UK contributing five per cent of this initially, growing to nine per cent by 2005[63]. Spectrum also project growth in iTV gaming with networked multiplayer gaming predicted to be a key driver of consumer take-up in the longer term. Online gaming has also largely been an extension to single-player games but also offers a potential new revenue model in the form of subscription-based gaming. Online games are definitely seen as technically inferior at the moment due to bandwidth limitations. The key driver then will be the availability of cheap deep broadband connectivity and improved hardware. Improving the experience of online-enabled game play will be a key focus for the games industry through to 2010, though rolling out such a multiplayer system is very risky and hugely expensive.

[63] ibid. 61.