Research report: July 2008

NESTA Making Innovation Flourish

Hidden innovation in the creative industries

Ian Miles and Lawrence Green

Hidden innovation in the creative industries

Foreword

Innovation has been a subject of serious academic and policy interest for several decades. The 'creative industries' have been studied for a shorter period of time, but perhaps more intensely. However, we do not understand well the process of innovation within the creative industries, nor how waves of innovation from elsewhere impact upon them. Since they represent a large and fast-growing part of our economy, this gap in our understanding needs to be remedied.

Working with the Manchester Institute of Innovation Research, this research project uses the tools of 'traditional' innovation research to explore, analyse and compare innovation in four sectors that are critical to the UK's creative future: videogames development, product design, advertising, and independent broadcast production. Technology is an important driver of innovation in all four sectors, but much innovation remains 'hidden' – uncounted by traditional innovation indicators. Moreover, the sectors studied display varied abilities to adapt to new technologies and increasing competition.

NESTA seeks to pioneer new areas of innovation research but also to link these firmly to our areas of practical experimentation. The conclusions reached here will inform our future work on both the measurement of innovation in the UK and in the programme development of our Creative Economy Team.

As with all emergent areas of research and analysis, we are aware that this is unlikely to be the final word. We welcome your comments and your views.

Jonathan Kestenbaum
CEO, NESTA

July, 2008

Executive Summary

There have been surprisingly few studies of innovation in the creative industries

How innovative are the creative industries? What new creative products are they producing? How are their methods of production and product delivery different? Are they more innovative in their back-office processes and their relationships with their clients and consumers?

This study uses innovation research to examine the creative industries. Innovation research has for many years been dominated by studies of traditional manufacturing and high-tech innovation. Recent innovation studies have begun to grapple with service sector and organisational innovation; but there have been few studies of creative industries that use such tools and perspectives. Our report reviews and extends existing studies, combining a literature review with some secondary survey analysis, and presents new case studies of four creative industries.

The Community Innovation Survey (CIS) is the single best available source of quantitative information on business innovation in the UK. It is a valuable starting point for our study. The survey asks some revealing questions about innovation, enabling us to examine how creative businesses perform on a range of indicators. For example, our chosen creative industries include some highly innovative enterprises. They are also more likely than firms in other industries to believe that their innovations impact more positively on their business performance.

But levels of innovation vary within the creative sector. In particular, the so-called 'creator' industries – which originate content – are more consistently innovative than content 'distributors'. The CIS reports evidence for distinctive approaches to intellectual property and innovation management, though these findings are neither extensive nor intensive enough to provide a comprehensive view of the creative industries. (They do not extend to cover all creative industries; they do not explore many forms of innovation in depth.) We make some recommendations for future surveys.

Deeper insights can be gained from studying individual firms. We have chosen cases from four industries – videogames, product design, advertising and independent broadcast production. We examine the nature of their innovation, how their innovation processes are managed, and their linkages to wider systems of innovation.

Technological innovation is rife in all four case study sectors

Each case study features many different innovations. Technological innovation in products and processes is common in most

creative industries, with new information technology (IT) and the digitisation of content driving major changes. But the study also uncovers less expected innovations in new business models and product delivery. These findings reflect the 'hidden innovation' experienced across many other industries.

Of particular importance to the creative industries is innovation in the provision of experiences

But the creative industries are different from most others, because their products are fundamentally intended to provoke particular kinds of response from their users. They enable experiences to be co-produced, to greater or lesser extents, with the product's consumers. Innovation often occurs when those producing creative content respond to the experiences of consumers and users, and make changes to their offer as a result.

1. This taxonomy is elaborated on in NESTA (2007).

A good deal of innovation in the creative industries turns out to be hidden

'Hidden innovation' – that which is not recorded using traditional innovation indicators – is common in the creative industries studied:[1]

- Sometimes it is because innovation similar to activities measured by traditional indicators is excluded from measurement. Much activity in creative industries involves research and development (R&D) of new products – though outside product design, it is not usually described in such terms. Such activities may not take place in conventional laboratories. But research into people's tastes and preferences is vitally important in shaping new products and services. Yet it is excluded from R&D surveys and tax credit systems.

- Another form of hidden innovation concerns innovation in organisational forms or business models – this is also very common in our creative industries. The most important developments often involve the users of creative products in the innovation process.

- A third type of hidden innovation, novel combinations of existing technologies and processes, is also common, with creative industries often using existing content for new purposes. TV programmes are repackaged for DVD, mobile phone or online downloads; music is repackaged in a new compilation or made available for MP3 players.

- Finally, there are numerous innovations that take place on-the-job during the creation of new products and which fail to be recognised or replicated. The creative industries demand innovative problem-solving, but many of the new solutions are one-offs. Businesses don't find it easy to reproduce such new approaches, though some technical developments (for example, useful lines of code in videogames) may be systematically archived.

The creative industries are experiencing important changes that require and create opportunities for innovation. These changes include:

- **New technological platforms** – new information technologies, and the associated digitisation of much creative content, are changing the way products are created, delivered and marketed. This is particularly true in videogames development, but is occurring across the creative industries.

- **Consumers** – both individuals and firms are becoming more sophisticated in their tastes and choices. Consumers are sharing their views more readily among themselves and with producers, leading to more co-production of creative products.

- **Institutional changes** such as new regulatory requirements and the globalisation of industries, markets and labour. Many businesses are out-sourcing work overseas or even relocating abroad.

- **New products** are being generated for new markets – for example, entertainment firms moving into educational markets with new types of videogame, or manufacturing firms becoming service providers.

These developments are driving innovation in the creative industries, not least because competitors use innovation to gain market share and enter new markets.

But many creative businesses struggle to formalise their innovation processes

The firms we study find it difficult to manage their innovation processes systematically. Innovation often remains spontaneous or *ad hoc*; creativity tends to involve the ideas of charismatic senior professionals, with little formal R&D. University links are limited for innovation, though graduates provide vital technical skills. However, communities of practice – professional associations and more informal groups – are an extremely important source of new ideas.

We make a number of recommendations for innovation measurement, creative business management and policymaking

Our report suggests a framework for classifying the range of innovations uncovered in the research. We conclude by examining the implications for measurement, management and policymaking.

Measurement: *Better sampling would ensure that innovation surveys are more likely to capture organisations in the creative sectors.* Current sample frames are too narrow, because they exclude industrial sectors where creative businesses are located, and the smaller firms that dominate the creative industries. Similarly, the questions in innovation surveys currently focus on the activities of large organisations and downplay non-technological innovation. These, too, should be more broadly framed.

There is also a strong case for specialised surveys (or further case study work) targeted at creative sectors and firms. Such approaches would cast greater light on their innovation processes than general surveys.

Management: *Firms should focus on acquiring and developing the right skills and capabilities to innovate – especially with the help of their consumers*. Much creative industry innovation is based on 'co-production' with significant input from the client. Networks, partnerships and collaborations are also important sources of innovation. Whilst conventional project and innovation management skills remain important, innovation managers must increasingly demonstrate skills for collaboration with professionals of various types and for engagement with consumers and other firms – skills such as team building, conflict resolution, and problem solving.

Policymaking: We offer three main recommendations. *First, further evidence must be collected into how policy might assist innovation in the creative industries*. Though some research has been undertaken on this theme, more detailed evidence would underpin and guide the policy process.

Second, targeted innovation programmes should be available to the creative industries. The creative industries welcome targeted innovation support where it is provided. Existing, general innovation support programmes are often not relevant to their work. Initiatives such as the R&D Tax Credit scheme do not, as structured, support the sort of innovations undertaken in the creative industries.

Third, knowledge about best practice and new innovations should be more effectively shared with policymakers. New forms of innovation are emerging rapidly. Keeping abreast of these changes is crucial. Ensuring that adequate intelligence gathering systems are in place, and that new approaches inform training and competence-building schemes or targeted innovation support, is central to the future growth and success of the UK's creative industries.

Acknowledgements

The authors wish to express their thanks to NESTA for financial support and helpful editorial and intellectual inputs throughout the process of compiling this report. We are grateful to Sally Randles, Shaun Randles, Sally Gee and Lisa Murray at Manchester Institute of Innovation Research for their invaluable assistance in the generation of interview-based materials. We also extend our thanks to Hasan Bakhshi, Richard Halkett, Michael Harris, Jon Kingsbury, Conor Ryan and David Simoes-Brown for their very helpful comments and suggestions with respect to earlier drafts of this report. Our appreciation is also offered to Simon Bolton of Central St Martins College of Art and Design for his contribution of detailed insights in connection with developments in the design sector. Finally, we offer our warmest thanks to the very many creative sector practitioners who gave so generously of their time in helping us to compile a detailed picture of innovation (and its 'hidden' components) within their industries.

Contents

Part 1: Introduction – the challenge of hidden innovation

What types of innovation are found in the creative industries? What new creative products are they producing? How are their methods of production and product delivery different? Are they more innovative in their back-office processes and their relationships with their clients and consumers? To what extent is creative industry innovation unnoticed or under-reported in standard accounts of innovation in the knowledge-based economy or in Research & Development (R&D) and innovation survey statistics?

We begin by exploring how creativity and the creative industries have been conceptualised in the business and innovation literature. We examine what the Department for Innovation, University and Skills (DIUS) Community Innovation Survey can tell us about their innovation. We review the available literature on innovation in the creative industries, before moving on to our own original case study work in the videogames, product design, advertising and independent broadcast production. Finally, we ask how and why such hidden innovation matters; and we make a series of recommendations for statisticians, policymakers and creative businesses.

Part 2: Exploring innovation in the creative industries

2.1 The creative industries share a number of distinctive features that set them apart from other sectors

The most influential definition of the 'creative industries' was given by the Department for Culture, Media and Sport's Creative Industries Taskforce in 1998 (DCMS, 1998). The taskforce defined them as based upon activities which have their origin in individual creativity, skill and talent, and as having the potential for wealth creation through the generation and exploitation of intellectual property. They identified thirteen creative industry sectors (which can be further disaggregated into either part or whole of over thirty 4-digit SIC[2] industry groups):

- Advertising
- Architecture
- Arts & Antiques Market
- Crafts
- Design[3]
- Designer Fashion
- Film
- Music
- Performing Arts
- Publishing
- Software and computer service
- Computer Games (Interactive Leisure Software)
- Radio & TV

Some creative industries do design or produce physical artefacts. Most often, "the physical work is the vehicle for conveying the idea" rather than playing the purely functional role of an "ordinary economic good" (Throsby 2001, p.104). The value of the artefacts is usually overwhelmingly based on the 'content',[4] their cultural meaning, or the experiences they help create. Many creative industries produce 'information products', and this means that they can often be made available in digital form.[5] Several important issues arise:

Information: goods and services have unusual properties.[6] Most can be consumed repeatedly. This provides opportunities for innovation – digital content may be put together in new ways, through music remixes, new DVD box sets or as internet or mobile phone downloads. But such opportunities also present economic challenges – how do you charge for things that can be easily reproduced and communicated at low cost?

This raises issues for intellectual property rights (IPRs). There is in general limited scope for patenting (except for certain aspects of software, and some developments of technology in the processes of creative firms), but copyright, trademarks and design rights may be invoked. Enforcing IPRs – and establishing their reach in an evolving information environment – is a highly contentious topic. Indeed, the debate is both promoting and being reshaped by technological and organisational innovation.

Experience: many information goods and services require consumers[7] that can understand and process the information provided;[8] and the consumers' experience of creative goods and services is highly informed by their consumption of related

2. The SIC is the Standard Industrial Classification, the statistical framework used to classify economic sectors.
3. There are actually many activities here, with industrial product design being very different from industrial process design; then there is graphic design and many more activities bearing the 'design' label.
4. Many informational goods and services are readily understood as carrying content. But the term does not readily apply to artefacts such as buildings, landscaping, fashion clothing, statues, or well-designed industrial products. In these cases, not all of which are about 'functional' products, the form of the artefact may convey the meaning – rather as in McLuhan's (1964) dictum "the medium is the message". The physical artefact does not just provide a vehicle for carrying meaning as if it were a separate informational product.
5. This means that new information technology is often incorporated into the processes and products of these industries. Much innovation relates to building on such opportunities.
6. Successive consumers can consume the information, which is liable only to decline in value if it is time-based (dependent on news or fast-changing fashion) or relies on exclusive access (prestige products). The meaning of the information to consumers is liable to evolve as successive use is made of it, especially if there is value-added in such forms as, say, critical reviews, commentaries, parodies, etc.
7. We shall use the terminology 'consumers' here, because alternative terms like 'user' and 'client' have their own problems. But we should stress that sometimes the creative service is provided free of charge, and not only by public services or altruistic creators. For example, advertisers and broadcasters may wish the public to experience their outputs, while their paying clients are not consuming these outputs so much as purchasing the service of delivering these outputs to the public whose experience is shaped by the act of consumption of the products. A number of the creative services in this report are actually businesses whose purchasers are other businesses.
8. There are, as always, exceptions to this generalisation: for example, much software is 'embedded' in the equipment it operates, and only requires that other parts of the equipment respond to its messages.

works, prior knowledge, and changing tastes.[9] In this environment, creative products resemble a 'service experience'. Indeed, some commentators argue that the 'experience economy' is a more appropriate term than the 'service economy'.[10]

An experience is 'co-produced', by an interaction between the creative good and its consumer. Even the 'passive' audience to a TV broadcast is choosing how much attention to give to the programme, and interpreting the material presented in terms of their own knowledge and views. Often audiences are actively discussing the broadcast among themselves, and other media – such as videogames or live performances – may demand consumer inputs.

Sometimes things go further, where the 'audience' in effect produces some of the content of the creative product, or where consumers indirectly affect each other's experiences. Gilmore and Pine II (1999) identify four broad categories of experience – entertainment (where consumers typically participate more passively, and their connection with the event is one of absorption); education (requiring more active participation, and again a connection or absorption); escapism (requiring greater consumer participation and immersion); and aesthetic (typically immersive but with limited active participation). Many events combine several of these features; innovation may involve shifting between or adding multiple types of experience.

Services: many creative products are services, and many that are technically goods are used in a service context. Services of many sorts frequently involve performance, where the staff help to create the consumer experience – consider for example hotels and restaurants. One feature of many services is that production and consumption are largely co-terminous: the service is produced and consumed simultaneously, at the same time and in the same place. A theatre performance has this in common with a theme park visit. (But note that there is often a great deal of 'back stage' work and pre-planning underpinning the successful performance, carried out at an earlier time and often in a variety of other places.)

Another feature of services is that many service innovations are easier to copy than more complex technological innovations. A new idea, such as a restaurant's new pizza topping, can be rapidly imitated by another service provider[11] if it proves successful. Once the Independent successfully became a quality 'tabloid', the Times and Guardian quickly introduced their own redesigns (though in this case more technological change and market testing was needed than in the pizza example). A TV programme format or a videogame concept can be emulated, advertisements often seem to 'swarm' around certain themes or styles, and so on. Such imitation is endemic in many creative industries. It may even be overt and presented as a 'tribute', a generic twist, or a parody. But imitation doesn't seem to deter innovation. Most services report that they are less concerned about copying and imitation than manufacturers[12] (Tether et al., 2002), and we shall see later that creative industries are highly innovative, even by standard metrics.

Another feature in common between services in general and creative industries is that many of these share a J-shaped industrial structure – they have a few large, often transnational producers, and a long tail of progressively smaller businesses and microbusinesses.[13]

The literature identifies different classes of services. There are business and consumer services; knowledge-intensive services with high levels of professional work; and more traditional services with high levels of unskilled labour. Within the most innovative Knowledge-Intensive Business Services (KIBS) groups, there are technology-oriented creative activities (e.g. software, engineering design), and those that create more social or psychological effects (e.g. advertising, fashion design).

We can anticipate that the innovation patterns of creative industries will have features in common with those described for other information goods, services, and experience industries and their products.

2.2 Research studies of innovation in the creative industries have been few and far between

Few researchers have applied the insights of innovation studies to the creative industries in general. There are several studies of specific industries – notably videogames production,[14] where a rapidly-growing and technology-intensive industry has attracted attention from management and innovation scholars. Studies of film and TV production also sometimes touch on innovation issues (e.g. Bilton (1999) contrasts an innovative

9. A considerable body of sociological work on taste, much of it inspired by Bourdieu (1984), examines the ways in which this reflects socialisation into different social strata and efforts to acquire and signify status. There is also a rapidly-growing body of work on consumption, some of which asserts that traditional models of taste and high and low culture are being challenged by the rise of 'omnivorous consumers' (for two points of view here see Sullivan and Katz-Gerro, 2007, Warde et al., 2007).
10. Gilmore and Pine II (1999) and Pine II and Gilmore (1998) argue for a shift in the locus of economic activity from producing goods, through delivering services, to creating experiences. Richards (2001, p55) – one of a great many authors applying these ideas to the topic of tourism – goes so far as to assert "services are dead – long live experiences".
11. Or even a food and drink manufacturer.
12. Computer services are a predictable exception.
13. Caves (2000) stresses this long tail, arguing that creators are often unlike other workers in that they have personal investment in their creations, they care about their products. It is suggested that creative professionals tend to find considerable intrinsic value in their work, and are thus prepared to work for low rewards or endure periods of under-employment (perhaps solely to pursue their vocations, perhaps with undimmed hopes of a future breakthrough).
14. Examples include Cohendet and Simon, 2007; Grantham and Kaplinsky, 2005; Tschang, 2007.

independent production sector with more conservative corporate media entities). But innovation and creative industries studies have rarely been brought together in a systematic way. One factor behind this, in all probability, is the predominance of aesthetic issues and consideration of content in creative industries' products.

There have been few attempts to explore aesthetic and content innovation using the methods of innovation research

One exception is Stoneman (2007). While noting that the creative industries sometimes engage in traditional technological innovation, he also notes more unusual features of their innovation. He characterises their aesthetic innovations as 'soft innovation' and distinguishes two aspects of such soft innovation:

- Innovation in "products that are themselves largely aesthetic in nature (e.g. music, books, film)… to be found particularly in those industries sometimes called the 'creative industries'". This may involve new products and new ways of producing products.[15]

- Innovation "in industries the output of which is not aesthetic per se but functional…. This might cover for example new designs of cars, new food products, redesigned electrical products etc. This has been largely ignored in the past because the TPP [technological product or process] definition has emphasised functionality…" Such product differentiation has tended not to be regarded as innovation. But Stoneman suggests that at least some of this work may fruitfully be viewed as innovative activity.

Some of Stoneman's examples involve creative and cultural products – the creation and launch of new books, CDs, theatre productions, movies or advertising promotions; others reflect aesthetic components of 'functional' products – new clothing lines, ranges of furniture, designs for motor vehicles, food products. He also cites as 'soft innovations' the development and launch of new financial instruments, which may have neither technological nor aesthetic components at their core.

Another exception is Handke (2004a, b) who sees creative industries as characterised by 'content creativity' – a concept close to Stoneman's 'aesthetic innovation'. Handke contrasts this with 'humdrum innovation' or traditional technological innovation. His surveys have shown how creative industries can be interrogated about their production of new content – for example, music companies can be asked about the release of new CDs as well as about innovation in the production process. However, this does little to assess the extent of innovation. For instance, there may be some aesthetic novelty in the re-release of an album with a new cover (a minor design change in conventional innovation analysis), or in a new compilation of old tracks, even though these outputs might be far less significant in cultural terms than a completely new piece of work.

Both authors point towards innovations involving content, aesthetics or experience. They see no insuperable obstacles in measuring such innovations, though it may be harder to measure the extent of such innovation. Stoneman notes that the standard Oslo Manual[16] definitions, mainly oriented to technological innovation, largely rely upon functionality as a way of identifying the significance of innovations. Both he and Handke propose that market impact would be a useful readily available metric for measuring the significance of aesthetic innovations.[17]

Economic significance is important, but not all economically significant things are priced. Some highly significant new ideas or processes are provided free of charge – such as the ideas behind the World Wide Web, or some of the more creative Web 2.0 content. Market-based measures of economic significance may also be a poor guide to cultural impacts – at least to those impacts that provoke shifts in cultural products and creative activities. Artistic pioneers whose ideas triggered new styles or genres may reap fewer rewards than those who pick up and popularise these ideas (consider the case of 'street fashion'). While it is harder to assess the diffusion of an idea than that of a major new technology, an assessment of the uptake of a novel approach may be a better reflection of its cultural impact and creative significance.

Another question is how such measurement could allow us to develop the sort of distinctions used for more conventional technological innovation – such as the extent to which an innovation is radical or incremental, or whether it is new to a firm or new to the market. The few studies of creative sector innovation that have attempted to assess artistic impact (for example, Galenson, 2006) have typically dealt with long-established works (allowing their impact to be assessed through their coverage in standard references and textbooks.)

15. Although just what constitutes novelty, or how much novelty there is, are not straightforward issues.
16. OECD (2005), downloadable from: http://www.oecdbookshop.org/oecd/display.asp?sf1=identifiers&st1=922005111P1
17. The Community Innovation Survey (based on the Oslo Manual) does contain questions about such topics as the share of turnover contributed by new products and processes.

Innovation analysts and social researchers have understandably shied away from making aesthetic judgments. No doubt this is in part because of the numerous cases of pioneering works that were very poorly received on their debuts; of 'revolutionary' artistic movements that never attracted followers or audiences; and of fashionable styles and products that were soon forgotten. Often, it is only with hindsight that we can make definitive judgements, but we can still explore ways of complementing measures of market impact with ways of enquiring about the novelty and influence of creative products and the ideas behind them.

Innovation in the creative industries goes way beyond the aesthetic and content

Aesthetic innovation is far from being the only form of innovation in the creative industries. Our case studies reveal many aspects of innovation that have less to do with new creative content than with other features of the production and delivery processes, and of the products themselves.

Other recent authors have recognised this. Chris Voss,[18] for example, suggests that there are five important design areas in which innovation may be created in experiential services:

- physical environment
- service employees
- service delivery process
- fellow customers
- back office support

Unusually, his studies explore the sources of information for innovation in these cases: he concludes that the collection of customer insights forms an important part of the design process, and that 'experiential innovations' are typically driven by the customer rather than technology. In a complementary approach, Pine II and Gilmore (1998) identify a set of principles for the design of experiences – which could equally be strategies for innovation:

- theming the experience
- harmonising impressions with positive cues
- eliminating negative cues
- ensuring the integrity of the customer experience
- mixing in memorabilia
- engaging all five senses

In a study of creative industries similar to those covered in our report, NESTA (2006a) focuses less on 'product innovation' than on creative approaches at the strategic and organisational level of businesses. Five important areas of innovation are singled out:

- innovating into new markets (e.g. moving from clothing to construction, from entertainment to education)
- disrupting the value chain through digital technologies (by cutting out existing distributors and retailers)
- building on diversity (drawing on ethnic minorities and global cultures)
- moving from being IP (Intellectual Property) producers to IP owners (generating ongoing revenues from their creative content, for example by enabling material to be used in a wider range of commercial formats)
- collaborating to compete (co-production of new ideas with customers, enabling the development of competitive new products)

Green, Miles and Rutter (2007) also focus on the types of innovation pursued in creative industries, drawing on the project's preliminary case study work. They draw on an approach proposed by den Hertog (2000) for conceptualising service innovation. His solution is not to classify different types of innovation (e.g. service, process). Rather, den Hertog identifies different dimensions along which innovations can be characterised – service concept, delivery, user interface and technologies. While some innovations might emphasise just one of the dimensions he discusses, many would combine several. Thus a new service concept might require a new technological solution.

Green et al. add process innovation to den Hertog's list. Process innovation may or may not require new technology – an artist may adopt a new way of applying paint to canvas, or a theatre producer a new way of organising backstage work in a dramatic production.

Green et al. suggest that in creative activities, there is much 'everyday problem solving', leading to a series of small innovations that shape the final creative product.[19] Such 'on

18. For example, with a focus on innovation, See Voss and Zomerdijk (2007).
19. This is perhaps more truly 'humdrum' than Handke's use of the term.

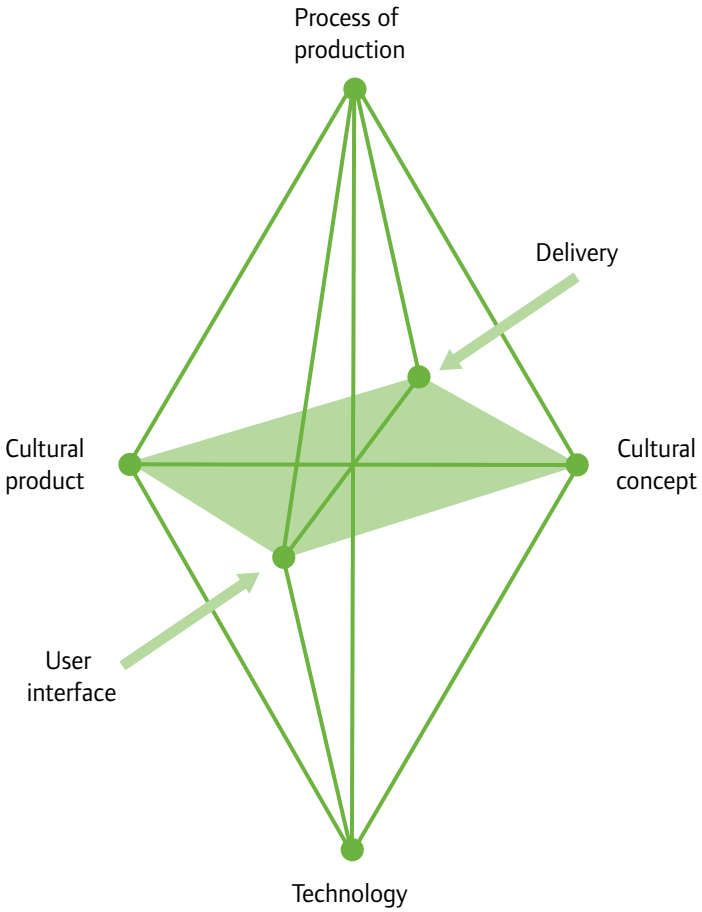
the job' innovation is also very common in many professional services. But it is missed in innovation surveys and ignored in case studies of new products and processes. This may reflect the fact that new ways of doing things are typically the product of practitioners, rather than the result of innovation activities or R&D work.

Figure 1 presents the 'diamond' framework which Green et al. use to capture the six dimensions they identify as important in their case study research. They argue that four of these six dimensions (those constituting the horizontal plane in Figure 1) are particularly prominent in the creative industries (although they might also be important for creative production in all sectors). The four dimensions are seen as being where 'hidden innovation' is likely to be common within the creative industries.

These four dimensions are described as:

- **Cultural Product** – the product that carries the cultural meanings and information content (a film, videogame, stage performance, sculpture, or set of design specifications). This partly overlaps with the idea of technological product innovation, though some new elements may have little to do with new technology.
- **Cultural Concept** – the information 'content' of the product, such as characters, narratives, representations of tangible objects or less tangible ideas.[20]
- **Delivery** – how the product is made accessible to consumers.
- **User Interface** – how the consumer interacts with the product to gain the experience that is the outcome of the creative activity.[21]

Figure 1: The diamond of innovation in the creative industries



Source: Green et al. (2007).

20. The distinction between the first two categories may be blurred, as the distinction between form and content is particularly problematic for many creative products. If form is seen simply as the physical vehicle of the product, which carries the informational content, when the form can be tied to a particular class of artefacts – CDs or DVDs for example – then the distinction may work reasonably well. But such artefacts are highly standardised in technical terms, so that variations in content rarely impinge on these technical features. The same may be less true for products in print media, and even less so where craft and more traditional artistic works are involved. Innovations in the latter may be hard to define as either form or content innovations.
21. We avoid saying 'intended outcome' here, since the intentions of producers and consumers may be very different – for example where the creator deliberately sets out to challenge and provoke an unsuspecting audience, or where the consumer treats a product as kitsch. Outcomes may be different from what either party had envisaged when entering into the process. This is a feature which creative products share with many services.
22. However, two different classes of concept are being presented as notionally similar in the diamond: the site of innovation – product, process, delivery, user interface, etc.; and the nature of innovation – whether it involves technological change, new work organisation, etc.
23. The CIS4 survey form was sent to over 28,000 UK enterprises with ten or more employees; with 16,446 responses, the response rate was 58%. The survey form can be downloaded at: www.berr.gov.uk/dius/innovation/innovation-statistics/cis/cis4-qst/page11578.html
24. Although some questions do ask whether particular innovations have been undertaken.
25. The exception among service sectors is financial services (see Tether et al., 2002). In many areas of the economy, and for some types of innovation, the focus on larger firms may be less of a problem for innovation analysis than would seem to be the case at first sight. This is because, contrary to a popular belief, smaller firms typically report undertaking innovations less often than do large firms; Tether et al. (2002) document this for services firms across Europe using CIS2 data

The other dimensions of innovation are to do with the technologies employed, and the organisation of production; these are closer to aspects of conventional innovation research.

This approach goes beyond the simple contrast of aesthetic or soft innovation with conventional product and process innovation.[22] After examining our case studies, we will suggest an approach that builds on Green et al., Voss and NESTA's ideas, to grasp a wider range of the elements of innovation. As with Green et al.'s and Voss's approaches, this synthesis should apply to creative products from all sectors. But we believe it is particularly helpful to examine creative industries to clarify what needs to be extended in our accounts of innovation. Our analysis of 'hidden innovation' in the creative industries may then cast light on innovation in other parts of the economy.

The idea of 'hidden innovation' has been elaborated in an eponymous NESTA report on this theme (NESTA, 2007). Four categories of hidden innovation are suggested:

1. Innovation that is the same or similar to activities that are measured by traditional indicators, but which is excluded from measurement.

2. Innovation without a major scientific/ technological basis, such as innovation in organisational forms or business models.

3. Innovation created from the novel combination of existing technologies and processes.

4. Locally-developed, small-scale innovations that take place 'under the radar' and are therefore unrecognised or accounted for.

In Chapter 8 we shall discuss how examining the creative industries throws light on these categories of innovation, and on how they may be studied and measured.

2.3 Creative industries in CIS4

The Community Innovation Survey is a valuable source of quantitative information on innovation in the creative industries

Before embarking on our case studies, we will consider what information about the creative industries can be gleaned from the main available source of statistics on innovation. The Community Innovation Survey (CIS) is conducted every four years by EU member states; CIS4, undertaken in 2005, asked questions about the three years from 2002-04.[23]

The CIS focuses mainly on enterprises and their innovation activities and expenditures. It does not examine any specific innovations in connection with these innovation activities and expenditures.[24]

Like most other surveys, CIS4 is based on sectoral classifications – so it is not a good guide to creative *activities*, as opposed to creative *industries*. Advertisers, designers and other creative occupations within sectors that are not dominated by their creative activities are effectively invisible – and their innovative activities are likely to remain hidden. The survey does let us focus on those sectors whose main products are creative ones such as advertisements or designs.

The CIS4 exclusively addresses private sector firms with ten or more employees. This means that sectors with large numbers of very small and micro-businesses (which may employ two or three people) are under-represented. Such small businesses are common throughout most creative industries and service sectors.[25]

The economic sectors covered are sections C-K of the Standard Industrial Classification (SIC 2003). The sample excludes extractive industries – agriculture, forestry, fisheries, etc.;[26] the public sector (along with private or charitable community, health and education services, etc.); personal services; and some other activities such as those of business, employers and professional organisations.[27] A more serious omission for present purposes is SIC division 92, Recreational, Cultural and Sporting Activities – within which 92.1 is motion picture[28] and video activities; 92.2 radio and TV activities; 92.3 other entertainment activities (including artistic and literary creation and interpretation,[29] live theatrical presentations, etc., together with arts facilities, fairs and amusement parks, and much else).[30]

CIS results suggest that the creative industries are innovative relative to the rest of the economy

A Department for Trade and Industry analysis (DTI, 2006) suggests that CIS4 samples around two thirds of the creative industries in the UK as defined by the DCMS. The analysis includes all of the firms sampled in the industry sectors covered, even though only some firms within these industry groups are likely to be 'creative'

(noting the interesting exception of certain technology-based services). Furthermore, there is some evidence that technological innovations from large firms in manufacturing sectors tend to be the 'bigger', more radical innovations as compared with those from smaller firms (Tether et al., 1997). Whether this would be expected to apply to the sorts of creative product and organisational innovations produced by firms in creative industries is however, a question for investigation. We should also draw attention to the survey of small and medium size enterprises conducted by IFF (2008) for the Department for Business Enterprise and Regulatory Reform (BERR), which indicates rather high levels of innovation being reported in their large sample.

26. Some 'creative' activities are underway in these, as in practically all, sectors of the economy. For instance, even in very small firms, people may create their own advertisements, signage, decorations, slogans, entertainments, etc.

27. Business and employers organisations may be significant sources of innovative information for some firms and sectors. There may be some associations among these that play roles in diffusing innovation, setting standards, etc. in creative industries.

28. ICM's (2006) survey asks: "Has your business ever developed a new product or service in order to generate greater commercial return?" 58% of firms in the film business answered "yes" to this question (which is admittedly vaguer than CIS's request for information about the last three years). This percentage is above that for the creative industries as a whole, including those sectors included in CIS4.

29. A case study work found that one of the top industrial design firms examined was formally located in this part of SIC 92.3.

30. Also featured here, and missing from CIS4, are 92.4 (news agency activities); 92.5 (libraries, archives, museums, etc.) – clearly relevant for a study of the wider cultural industries; 92.6 (sporting activities); and 92.7 (other recreational activities such as gambling and betting). Most of these sectors are active in terms of applying new technologies.

in DCMS terms. Despite these problems,[31] the results are indicative:

- Forty per cent of the enterprises are based in London and the South East, and the workforce has a high proportion of graduates – notably science and engineering graduates. (This largely reflects the prevalence of certain technology-based sectors in the sample.)

- These creative industries tend to operate at a more national (34 per cent) and international level (14 per cent Europe, 29 per cent Rest of World) than the rest of UK industry, with only 24 per cent reporting that their largest markets are regionally or locally based. Corresponding figures for other UK industries are: 30 per cent UK markets, 10 per cent Europe, 18 per cent Rest of World, and 44 per cent local/regional markets.

- These creative businesses are highly innovative (69 per cent report innovation activity, compared with 56 per cent of other UK enterprises). The proportion is even higher in some regions – over 75 per cent of creative firms in Yorkshire & Humberside, Northern Ireland and the South East report innovation activity.

- Creative industry enterprises attribute over half of their turnover to their product innovations.

- Over a fifth of creative businesses report having co-operation agreements for innovation – nearly twice as many as other industries, where co-operation is much rarer.

- Creative industries report that product-orientated innovation effects are strongest, with improved quality of goods or services being the most important.

- These creative businesses are also more active at protecting their innovations than other firms.[32] The DTI Paper suggests that this could partly reflect their greater levels of originality.

- These creative businesses also face greater barriers to innovation (not unexpected, since more innovative organisations in general report higher barriers). Qualified personnel are harder to recruit than in other industries; but regulatory impediments are less frequently encountered.

Wilkinson (2007) also examines creative industries in CIS4.[33] He concludes that the creative industries perform well on all the innovation indicators, with some 78 per cent of firms (in his definition) undertaking regular innovations – a higher proportion than any of the other broad industry categories considered. He also examines results for 'wider innovation', drawing on CIS4 questions about changes to corporate strategy, marketing, management and organisational structures. Firms in the creative industries emerge as more likely to undertake such change than those in other industries. The results suggest that creative industry firms are more likely to introduce new products and processes[34] and to change and adapt their structures and approaches. This, as Wilkinson notes, may be important for making the most out of product and process innovations. Other results include:

- Firms in the creative industries attribute 52 per cent of their turnover to new or improved products, compared with 40 per cent for firms in other industries. 'New to market' products – as opposed to those innovations which are 'new to the firm', but already available in the market – account for almost twice as much of creative industry turnover than for other industries.

- Creative industry firms are more likely to view intellectual property – including copyright and patents – as important for protecting innovation.

But there are significant differences across types of creative business

One limitation of these two studies is that they treat creative industries as a whole, and elide differences between sub-sectors. It is quite possible that the trends cited are features of specific sub-sectors rather than the whole industry.

The DCMS Evidence Toolkit (2004)[35] provides one way forward. This classifies creative industries into six groups, depending on whether they are involved in *Creation, Making, Dissemination, Exhibition/Reception, Archiving/Preservation*, and *Education/ Understanding* activities.[36] Our analysis suggests that the CIS4 sample includes 1,093 'creators',[37] followed by 568 'makers'[38] and 359 'distributors'.[39] There are only five 'exhibitors'; and the other two groups are not represented in the sample.[40] It is notable that the 'creators' and 'makers' are dominated by engineering, software, and manufacturing activities. This goes some way toward accounting for the discovery by the DTI and Wilkinson that

31. Additionally we would note that Publishing and Reproduction are included, but not Communications (though some delivery of electronic content via telecommunications is an activity very like publishing); Research and Development is excluded (though it does feature in some DCMS definitions).
32. This applies to every category of IP considered: Confidentiality agreements; Copyright; Trademarks; Patents; Secrecy; Registration of design; Lead-time advantage on competitors; and Complexity of design.
33. Unlike the DTI report, Wilkinson weights sector data according to the share of these industries that DCMS considers creative.
34. It has been common practice to refer to the CIS questions about product and process innovation as 'technological innovation' (though the precise formulation does not necessarily imply this – for example many service quality improvements could easily have been achieved without technological change), and the 'wider innovation' questions as about 'organisational innovation'. Several authors have contrasted sectors in terms of the reported incidence of the two broad categories (e.g. Schmidt & Rammer, 2006; Miles, 2008), noting a strong relationship between the two forms of innovation at a sectoral level (i.e. sectors reporting more of one type will also report more of the other type); but also reporting that services sectors in general tend to place relatively more emphasis on the wider, organisational innovations (technology-based services like computer services are an exception).
35. See also NESTA (2006a).
36. We propose adding some additional industries to the list in the Toolkit. R&D services can be located in creation, and are in our analysis; we also include Public Relations (which involves both creation and dissemination of messages); and Market Research (some of its work resembles R&D, and the industry creates analyses, concepts and reports). Telecommunications services can be experimentally classified as distribution, though much of their activity will have little to do with creative content (in contrast, say, to publishing, printing, and retail of media). Further work might also allocate some sub-sectors of industries to different groups – for example, in SIC 74.4 Advertising, 74.40/2

patents are considered important in the creative industries.[41]

The creative industries emerge from analysis of the CIS4 data as more oriented towards business markets than other firms.[42] Analysis of data on graduate employment shows high proportions of science and engineering graduates in the engineering and software firms, while other 'creators' are liable to feature more 'other graduates'. Some commentators suggest that the share of professionals in the workforce of a sector indicates its innovation propensity, and may even be a better indicator of innovation efforts than R&D for services sectors. If so, the creative industries are likely to be particularly innovative.

We also identify some other results from our analysis of CIS4 for our four creative industry groups:

- Overall, all four creative industry groups are more likely to have both technological and wider innovations than enterprises in general. But 'distributors' are less innovative than other creative groups, reflecting very low frequencies of innovation in the 'trade' and 'retail' creative groups (partly offset by high frequencies in telecommunications).

- Those 'creators' involved in technology development are particularly innovative in most classes of innovation.

- Almost all creative groups feature higher shares of combined innovation (both 'technological' innovation and 'wider innovation')[43] than of either technological or wider innovation alone.[44] 'Distributors' most closely resemble the rest of the economy in this respect.[45]

- All creative industries report roughly similar (high) levels of product innovation.

- The creative groups – especially the 'creators' – are more prone to undertake wider innovations than firms in general. Across the economy, changed Marketing Concepts or Strategies are most common, followed by new Organisational Structures, Corporate Strategies and Advanced Management Techniques. The creative industries broadly follow this pattern, with somewhat more stress on changing organisational structures. The 'creators' are most prone to undertake each form of wider innovation. Most of those reporting wider innovation have undertaken two or more of such innovations – with over 20 per cent of 'creators' having undertaken at least three out of four of these innovations.

- Most of the creative industry firms which undertake technological innovation consider that their innovations have positively affected: the quality of their goods or services; their value-added; their market share or entry to new markets; their range of goods or services; and their flexibility of production or service provision.[46] A majority of the innovative 'makers' consider that their innovations have been moderately or highly important for reducing costs and increasing capacity. Given that the creative industries have higher than average levels of innovation, the implication is that their innovation is having particularly striking effects.[47]

There is much more scope for exploring CIS4 – the other questions it asks are worthy of analysis, and more detailed industrial classifications can be examined. Our findings demonstrate that, despite its obvious limitations, it is a useful resource for studying at least those creative industries covered.

Our results illuminate many aspects of creative industries' innovation. They confirm that creative industries are innovative, and that their innovations go well beyond technological innovations. They also allow us to anticipate that, in our case studies, we will find substantial differences across different types of creative industry.[48]

(Planning, creation and placement of advertising activities) does involve creation, while 74.40/1 (Sale or leasing activities of advertising space or time), appears to be either dissemination or exhibition, as is 74.40/9 (Advertising activities not elsewhere classified) since it is largely exemplified in SIC manuals in terms of distribution and display activities.

37. Three industries here are well-represented, each featuring over 200 firms: Engineering Consultancy and Design, Other Software Consultancy and Supply, and R&D in natural sciences. Other industries in the 'creator' category include Architecture; Advertising, Photography, Market Research and Public Relations, and social science R&D.

38. The only 'maker' industry with over 200 firms featured is 'Printing not elsewhere classified', and the other industries featured are mainly involved in the manufacture of media-related goods, and publishing and printing.

39. The largest 'distributor' industry is telecommunications, with over 175 firms; most other cases are in wholesale or retail sectors dealing mainly with media.

40. These figures would change somewhat if we reallocated parts of advertising as suggested in footnote 38, and if telecommunications were not to be included as a distributor.

41. Our analysis indicates that it is the 'creators' that are particularly keen on IPR techniques, especially confidentiality agreements, secrecy and copyright; the technology-oriented 'creators' – unsurprisingly – emphasise patents more than other firms.

42. The importance of business sales for creative industries has already been highlighted by researchers such as Freeman (2007) and Bakhshi, McVittie and Simmie (2008).

43. Strictly speaking, the survey tells us that both forms of innovation are underway in the same firm, not that they are actually combined in the same process of change. Those 'creators' with a technology focus, incidentally, are the group with most emphasis on combined innovation.

44. Technology-only innovation is somewhat more prevalent than wider-only innovation in most groups.

45. Both in terms of overall incidence of innovation, and in displaying a fairly low incidence of technology-only innovation.

46. The question of impacts is not asked of 'wider innovation'.
47. It would be possible to explore some impacts of innovation further using CIS4, for instance by exploring the proportion of sales related to new products, and whether there is a relation between the reported novelty of the innovation and the perceived impacts, in the various creative sectors. On this theme, Wilkinson (2007) does report that creative industry firms attribute more of their turnover to new or improved products than do firms in other industries, with 'new to market products' being particularly prominent (accounting for almost twice as much of creative industry turnover than for other industries).
48. We can note here that our case study industries are all largely 'creators', and also that they are not all captured in CIS4. Broadcasting is excluded, for example, together with parts of the videogames industry that are not classified as software activity; and we find some design firms located in industries that are not included in CIS4. Only advertising seems to be completely unproblematic.
49. A more detailed statement of the methodology deployed in construction of the cases (and in the study more broadly) appears in Appendix A. A list of companies interviewed during the case development process is included in Appendix B.
50. This case study was prepared primarily by Jason Rutter.
51. An extended overview of the sector can be found in the Interim Report developed in connection with this project (Green et al., 2007). Further details relating to the size and dynamics of the sector (and to operating contexts and challenges) are available in NESTA (2006a).
52. Also known as computer games, and entertainment software, among other labels.
53. Middleware, in this context, is software with component-based architecture developed by a third party company which offers a set of tools to streamline the game development process. Common middleware packages in the games industry include RenderWare (used for creating 3D environments), Havok (a 'physics engine' to allow interaction between objects) and FMOD (controlling audio playback across platforms). Many games development companies also develop middleware tools of varying complexity which are not commercialised outside the firm.

Part 3: Innovation in the videogames industry

3.1 Introduction – innovation practice in four creative industries

This section presents the first of four sector case studies. Each has been constructed by combining desk research with an extensive programme of interviews (involving industry practitioners, executives, trade representatives and commentators) and sector workshops. The evidence collected is organised around four separate headings:[49]

1. The context and operating conditions in which innovation takes place.
2. The drivers for innovation.
3. The different forms of innovation that are evident.
4. The management and organisation of the innovation process.

3.2 Overview of the industry[50]

This first case study focuses on the videogames development sector,[51] a subset of the broader and rapidly developing videogames industry[52] that includes game publishing, marketing, retail and 'middleware'[53] companies.

There are three types of videogames development company, defined by their relationship to games publishers

- An *in-house developer* is part of a videogames publishing company, or wholly owned by one. It produces exclusively for that publisher.
- *Third-party developers* are contracted by a publisher to produce games on a title-by-title basis.
- *Self-publishers* are studios that develop games without publisher support. This category includes producers of specialist or niche games including factual and web-based games. Many companies producing games exclusively for web-based distribution fall into this category.

There are parallels in industrial structure between videogames development and the development of feature films

For independent developers, the production process is similar to that found in the creation of feature films. Development studios will work up an idea for a game which will then be pitched to a publisher through a 'design document' and working prototype. Publishing agreements are often negotiated for specific global regions, though console games often need agreement from each territory before they can proceed to development. During early stages of the process, the developer takes the financial risk (through speculative activity with some resemblance to R&D). When publisher interest is secured, publishers will negotiate terms, milestones, payment and transfer of IP with the development studio. Once terms are finalised, the development company dedicates full development teams to work on the game.

Games developers mainly produce games for personal computers (PCs) and games consoles (e.g. the Sony PlayStation, Nintendo Wii and Microsoft Xbox). Games are also produced for mobile phones and personal digital assistants (PDAs), and for websites and digital TV, as well as games arcades.

Games development brings together all the elements of games production from the initial idea and design through to the final version of the code (which is usually marketed and distributed by a videogames publisher). The industry comprises a range of specialisms including games production, games design, games development, level design, audio design, art and testing. With the exception of the simplest games, the production process usually involves complex project management.

The industry relies on a workforce with a wide range of technical skills
Each game project involves producers, games designers, level designers, sound engineers and composers, actors[54] and testers. Despite a strong emphasis on computing and technical skills, music, art and animation are also vital.

The industry is young enough that many of its key figures were previously teenage enthusiast programmers ('bedroom coders') who went on to establish small companies. However, most new professional employees come from computing or mathematics degree courses (though there are over 170 courses at 47 UK universities dedicated to games design). Only 12 per cent of the industry's employees are women (Skillset 2006), and their involvement is largely concentrated on art and design and public relations functions (Krotoski, 2004).

The UK remains one of the world's leading centres for videogames development[55]
Unlike the USA, the UK has retained a strong independent sector alongside companies owned by international publishers.[56] The UK games development industry has a strong heritage of entrepreneurial activity, which has allowed its companies to place themselves within niche markets and rapidly exploit new game ideas.

The UK also has an established record of attracting international publishers and developers such as Sony, Microsoft and Linden Lab. While most games hardware is designed and manufactured outside the UK, exceptions like the EyeToy (produced for the Sony PlayStation 2 and PlayStation Portable) demonstrate the UK's ability to exploit technical innovation successfully.

3.3 Developments, trends and the innovation context

The videogames industry underwent a period of major structural change in the 1990s
Since its origin in the late 1970s, the electronic games value chain has become global, extended and complex (Readman and Grantham, 2006). Driven by increasingly powerful PCs and consoles, a specialised development sector emerged by the early 1990s. Major developments during the 1990s included: the growing role of console manufacturers in shaping games production; the growth and development of independent publishers; an increasing division of labour in games development; the emerging power of retailers to control access to consumers; and, increased crossover with other cultural goods (as in film, TV and book tie-ins).

There has been a tendency for publishers to establish their own development operations – either through organic growth or by acquisitions
Many developers note that the past decade has been one in which considerable flux and change has been witnessed in their industry: some report that operating conditions have become difficult and increasingly unpredictable. Publishers have also been increasingly keen to establish their own development operations (or to acquire development firms). The absence of a strong or strategically robust response from UK developers has resulted in: (a) greater power accruing to publishers; and (b) a majority of larger development firms falling into foreign ownership (or at least dependence upon foreign-owned publishing operations).

Development costs have skyrocketed
Costs of development have also increased sharply (especially so as new and more sophisticated generations of consoles have appeared on the market). Access to development funding has become increasingly difficult to secure. Moreover, the competitiveness of UK developers has been eroded as Asian and Eastern European development houses (often offering very sophisticated design and programming capability) have entered the market (NESTA 2006a).

The operating context and competitive environment for the games development industry has also been affected by: the changing relationship between developers and

54. Actors are needed for video or speech, or to capture motion in the development of character models.
55. The UK has historically been the third largest producer of videogames (UKTI, 2006), but there are suggestions that this position has slipped to fourth (French, 2007).
56. The European Leisure Software Publishers' Association (ELSPA) finds that eight of the top twenty games companies in the UK remain independently owned.

publishers; shifts in labour supply and training; and a new system of regulation for gaming content.

Risk-averse publishers and the difficulties of anticipating market demand for games makes life difficult for developers
Development studios frequently suggest that publishers are risk-averse, taking on games that most easily fit into existing markets. Games that defy existing genres (e.g. First Person Shooter, God Games, Sports Simulations) are notably difficult to place successfully within the market.

Demand drives innovation within the games industry, but difficulties in forecasting demand can also hinder innovation. This can mean that innovative games may not be commissioned, or that games without an established track record are most likely to be cancelled when revenues are tight. Some games have apparently got as far as the submission of final code before the release was cancelled by the publisher as it was thought that the games would be too expensive to market.

A game's financial success is heavily dependent upon its marketing, and the standardisation of games genres has affected this significantly. Standardisation has enabled easier packaging, display and sales of games by non-specialist retailers. Supermarkets now sell games, for example, but will only carry a small selection of popular titles rather than the back catalogue available in independent retailers. Games developers believe that this will reduce the shelf life of games (and the period during which high retail prices can be charged), which may increase the attractiveness of innovative titles for publishers.

Knowledge transfer between universities and videogames developers tends to be one-way
Many games development studios report that they have developed strong and ongoing relationships with local universities. However, some practitioners feel that knowledge transfer within these relationships is often one way, with companies increasingly supporting games development courses at universities. Key figures provide guest lectures; companies offer advice on the relevance of training content and provide placement for students; and developers advise on the content and shape of the games design curriculum.[57]

Nevertheless, the relationship between the videogames development community and university science researchers is underdeveloped. Games developers and HEI-based researchers and teachers could profitably foster better strategic partnerships with each other. The industry could turn to universities for knowledge transfer or as a source of R&D, though industry professionals currently complain that it is too hard to locate appropriate research expertise within large universities.

Regulations have helped to fashion the industry's development
The Pan-European Game Initiative (PEGI) has provided a self-regulatory rating system for games which supplements the British Board of Film Classification (BBFC) rating system that is applied to games with significant video content. The system provides an age rating system (similar to films) which marks the appropriateness of game content for various age groups (currently 3+, 7+, 12+, 16+ and 18+). This system is now recognised by Electronic Point of Sale (EPOS) systems in supermarkets, although it does not carry the regulatory weight of film classifications.

In the UK, games with significant video content are regulated by the BBFC. This compulsory framework makes it illegal to supply younger consumers with games that are only certified for older age groups. This process could have had a significant potential impact on the UK games industry, as exemplified by the BBFC's initial decision to refuse a certificate to Manhunt 2 (developed by Rockstar Games). Protection of minors is bound to be an increasingly important issue for games publishing in the future, especially with the linking of games with social networking and user-generated content.

3.4 Drivers of innovation

User-driven demand for new titles has been a stimulus to technological and gameplay innovation
The videogames development industry is driven by novelty, rapid turnover of titles and successive generations of technology. It owes much to the development of new game platforms overseas. And it must reflect consumer demand for new titles as well as increased levels of technical sophistication and gameplay innovation.

The release of new generations of gaming technologies, such as Wii and DS interfaces

57. An example of this multi-stakeholder approach to games development training is the new Games Republic Academy which supports three Masters courses (at the University of Bradford, University of Hull and Sheffield Hallam). This has been developed with funding from the Regional Screen Agency, Screen Yorkshire, and the Yorkshire trade alliance, Game Republic, with additional funding from the Rockstar, Team 17 and Sumo Digital development studios.

and controllers such as EyeToy and Buzz, can trigger significant innovation both in content development, and in the search for new applications that utilise the enhanced functionality embedded in 'latest generation' consoles.

Equally, the avid videogaming fan and consumer base (one that now stretches across several generations and is increasingly internally segmented)[58] provides an extraordinary stimulus to innovation: the success of a new title or genre can bring immense rewards. Indeed, consumer demand for increasingly complex games and sophisticated interfaces constitutes a major driver for innovation. Publishers and games developers have also increasingly recognised the sophistication, intelligence and potential of their customers: users are much more involved in the games and console development process. 'Ideas harvesting' and user-testing programmes are an important and embedded element of the contemporary development environment,[59] and developers are starting to permit the insertion of user-generated content into their games.

At the same time, technological innovations have spurred wider forms of innovation in videogames development

Much of the impetus for innovation in the videogames development industry derives from developments in technologies – more powerful and high-speed chips have made it possible to enhance the gaming experience significantly, and have added new features to gaming consoles. The rapid penetration of broadband and the inclusion of browser/connectivity options with contemporary consoles reflect innovation and constitute important drivers for further development.

Online gaming and the roll-out of online components of gaming (digital distribution of games and add-ons) offer myriad opportunities for further development and are thus important innovation drivers. Improvements in technology and software development processes have also facilitated innovation in the games development process by accelerating development times or enabling more sophisticated graphics and gameplay features without the need for major new coding resources.

Another key driver for innovation resides in the innovative exploitation of existing Intellectual Property

While licensing and the allocation of rights can sometimes be complex, games developers, publishers and copyright owners recognise the commercial potential of tie-ins across platforms and media.[60] This is resulting in significant innovation across media and platforms.

Regulatory pressures have stimulated innovative technical solutions

Concerns about the nature of some videogames content and access by children are leading to pressure for certification, regulation and access controls. This is prompting innovation. New 'technical fixes' are helping to manage and restrict access, and continuing parental concerns are likely to drive such innovation further. With the growth of online gaming, it is also likely that there will be new pressures to regulate contact between players of online games.

But it is not just parents who want to regulate content. Games industry insiders worry about piracy and theft of IP. Whilst some protective legislation is in place, piracy remains a major threat to profits. Development firms, publishers and IP owners are likely to seek further protection of their interests through regulation and innovative technology-based solutions.

3.5 Types of innovation

Innovations in this sector extend well beyond those that are focused primarily on the creation of game content.

Innovations in hardware technologies present opportunities for UK games developers

The games industry continues to operate hardware technology cycles of approximately five years. While it is often assumed that new generation consoles quickly kill the market for the previous version (e.g. Higson et al., 2007), sales patterns do not support that view. Titles for previous generation platforms are usually produced – and sell – several years into the lifecycle of the new console.

The rapid evolution of platform technologies offers potential for UK developers to innovate, but developers must acquire the skills to exploit the capabilities (and software libraries) of successive generations of games machines. These technical innovations tend to be strongly driven by the new technologies and are linked to issues such as increased complexity of characters and environments (and a continuing shift towards increased 'realism'). They also provide opportunities to exploit processing

58. The segmentation of markets has impacted on the activities of developers. Fragmentation and increasing variegation of the gameplaying community implies increased opportunity for the development and targeting of games and genres for specific demographic groups (female, older and younger users etc.)
59. There are important resonances with widely recognised Web 2.0 characteristics here – as noted in other cases in this research, user inputs and the exploitation of users as a source of ideas for innovation are an important driver and support for product innovation.
60. Multi-platform and cross-media/platform tie-ins are perceived to permit optimised exploitation of IP and reduction or spreading of risk. Common games tie-ins include those with sports events and personalities, films, television shows, music performances, and media celebrities. Whilst many players in the games industry are eager to secure involvement in tie-in arrangements, pressure from other sectors is an important factor in promoting collaborative exploitation of IP.

power to develop increasingly sophisticated artificial intelligence for non-player characters and for more complex in-game physics (e.g. controlling the movement of a car around a track or handling collisions in a racing game).

The associated rise in development costs has prompted the use of middleware companies
Such developments imply associated development costs, as increased complexity pushes up development time and resources required. Attempts have been made to manage the increased overheads through the use of middleware – computer software that connects software components or applications.

There are two sources for middleware within the games development industry – in-house and third-party – and there are tensions with each. Firms such as Rebellion rely as little as possible on third party middleware (representatives believe that as middleware is commonly developed for specific platforms or technologies, it rarely offers innovative performance).

But the use of middleware solutions brings its own problems for developers too
While middleware may seem to offer a cost effective solution, the limited versatility of certain packages can increase costs when attempts are made to apply it to a range of projects. Furthermore, as middleware takes control of certain processes – managing physics or certain types of rendering or facial animation – problems can arise when developers cannot modify these elements without access to the source code. This can lead – as with one Rebellion title – to new games being delayed by the hardware manufacturers due to bugs in the middleware rather than in-house coding. Debugging can add to production time cost and hinder efficient management of the project.

Third-party middleware also locks development projects into a technology for the duration of the title's life, often requiring the purchase of middleware licences to develop sequels for popular game titles. Some development studios see this as an unacceptable risk, given that a middleware company may cease trading or be purchased by another company (as when EA bought Renderware).

In consequence, many games development studios also develop their own middleware tailored to their specific development profile and projects. This software acts as a toolbox (or set of components) upon which the developers draw. The investment in developing such software in-house is seen by developers such as Blitz Games Studios to be necessary to ensure control over the development process. In practice, however, most companies use both in-house and third-party middleware.

Some UK houses have developed a reputation for gameplay innovation
The evolution of software and hardware technology does not easily correlate to innovation within gameplay. An example of such innovation is *Bratz – Forever Diamondz* developed by Blitz Games. Blitz has developed a strong reputation for games based upon existing characters (including Barbie, Disney, Action Man, Spongebob Squarepants and Bratz). However, developing a game based on dolls can involve extensive content innovation that goes well beyond the original IP contained in the Bratz cartoon. Although the Bratz franchise provides characters for the games, for instance, the games designers must adapt the characters for their audience, with a game world for the dolls to inhabit, activity themes and in-game tasks.

Developers are increasingly exploiting the opportunities for interactivity through online gameplay
The latest consoles all have broadband capability. So most major game releases also have online elements. Players can post scores on online leader boards, buy add-on elements to games (such as new cars for a racing game) download updates or play against other gamers in real time. These elements not only offer added value for gamers, but also generate extra revenue and enable consumers to input into content innovation.

The games development sector has also demonstrated innovation in the marketing and delivery of its products. Such innovation has been visible in a number of forms, outlined below.

Electronic distribution of games is beginning to offer an alternative to the developer-publisher model
Although file sizes for games are generally much larger than those for music or text-based products, the growth in broadband access makes it less likely that downloads will be interrupted or take an unacceptably long period. This growth in broadband access has been accompanied by new payment mechanisms, digital rights management and anti-cheating mechanisms.

Electronic distribution has also opened new opportunities for developers to publish their own games. The attraction for developers of self-publishing is that it allows them to retain full control (and value) of their game's intellectual property instead of signing it over to the software publisher.

Some UK developers have succeeded in moulding their offer to new games audiences

Demographically, the 'hardcore' market for videogames is growing older. The Interactive Software Federation of Europe (ISFE) reports that the average age of a gamer is now 29 in Europe compared with 15 just a decade ago.

Publishers want to broaden the appeal of games beyond young men. So they are developing 'casual' or 'lifestyle' games which are less combat-based, easier to learn and require less time.

In March 2007, Kuju Entertainment re-branded its Brighton studio (employing 100 staff) as Zoë Mode, using a logo in the style of a female signature and young female player. The studio has concentrated on developing games using new types of game controllers such as the EyeToy and SingStar, as well as mobile games for the PlayStation Portable (PSP).

New markets for casual games are also being developed online through King.com and Pongo.co.uk, where gamers play simple games against each other (these are often based on traditional board games such as Scrabble or Monopoly.) Although this is still a new market with relatively low adoption rates,[61] it is expected to grow significantly through the use of mobile phones. However, whilst development costs are low in comparison with other gaming formats, problems persist with delivery, interoperability across handsets and networks and these act as a barrier to innovation in this type of games market. UK mobile developers also face the problem of adapting to separate markets across Europe.

There are significant instances of business model innovation

Being still heavily based on the developer-publisher relationship, the games industry still relies on unit sales. This is especially true for the console market.

However, new business models are being adopted. The most visible is where players pay a monthly subscription for unlimited game play time in an environment with many other players. This is known as the Massively-Multiplayer Online Game (MMOG) market. Whilst the UK lacks a strong indigenous presence in this market, some foreign MMOG companies have established a UK presence, and games are being developed indigenously for future release.

Models based on revenue generation through advertising and pay-per-play are also being used. 'Advergames' usually promote a particular product, company or political perspective and tend to feature a company's new product prominently. Some are provided with breakfast cereals; others are played online at the company's website or made available for download. They can be linked to viral marketing campaigns, with the games used to spread product and company awareness by word of mouth, email and blogs.[62]

3.6 Management and organisation of innovation

The UK remains an attractive location to develop videogames, but out-sourcing is increasingly common

There is some debate regarding costs associated with games development in the UK. Whilst the UK was viewed as a cheaper location for development than the US in 2005 (according to UKTI, 2007b, American production workers earned 9 per cent more than their UK counterparts in 2005), it now appears that the UK has the highest average salaries for developers (GIC, 2007). Nonetheless, the UK remains an attractive location for development, with the sector owing much of its competitiveness to its smaller, more agile development teams.

However, out-sourcing of development work to studios outside the UK, notably India and Russia, is increasingly commonplace in the videogames industry. Out-sourcing enables UK companies to compete on price by taking advantage of lower cost inputs. It is being used by some companies to manage production and project cycles, and to alleviate problems with over-commitment of company resources, enabling timely delivery of final and interim milestones. Out-sourcing also allows development studios to cut their total costs while retaining contracts and management of games projects within the UK. Off-shoring allows UK games companies to produce specialist games, such as those relying on Korean artwork.[63]

61. M:Metrics (2008) indicate that only a few per cent of phone owners download games. This figure does not seem to be growing substantially: increased numbers of users and repeat purchases are needed for the market to take off. While more smartphone users download games, there is much free and pirated content available for these users.
62. There is also a growth of online gaming services (which currently fall outside the working definition of the games industry offered above) which are based upon a commission/fee revenue structure. Websites such as King.com provide a service where gamers can compete against each other for cash prizes. This is managed by each player placing a stake on the game and the winner taking the pot minus a fee taken by King.com.
63. To take one example, Dundee-based studio Realtime Worlds has a Korean office which enables development of its contemporary-themed massively multiplayer games All Points Bulletin (APB) to connect more closely with Korean culture. This is perceived to be important if the game is to have appeal in the large Korean online gaming market. For its previous console game Crackdown, the company out-sourced work to two sites in North America, two studios in Russia and one in England. Such an approach permits enhanced management of costs and skills, but requires the acquisition of additional project management and communications capabilities on the part of the developer (and thus the importation of a new resource overhead).

But with the obvious cost advantages from off-shoring comes potential costs
In the short term, there are two particular concerns for the UK videogames development industry:

- Control over code: As with music (NESTA, 2006a) piracy is a major economic concern for the industry. Loudhouse and Macrovision (2005) estimate that for every 100 legal games sold, 43 are downloaded illegally on peer-to-peer networks. Broadening the distribution of cultural products increases the possibility of the product being copied.[64] This is a problem for the games industry, not just because of direct copying of games at various stages of development, but because access to games code means that digital rights management built into the game can be reverse engineered.

- Control over process: While development companies put into place management procedures to work with development companies overseas in a manner similar to those used for managing in-house projects, there is a risk associated with working with new companies, especially if they are outside established networks of national legal frameworks. Interviewees talk of cases where work has been out-sourced to companies outside Europe and which have either gone bankrupt or disappeared with code and advanced payments.

64. This is one reason why copies of films are transported in the UK using only registered couriers, as part of an industry security scheme.

Only the largest developers have formal R&D strategies
Larger games development companies often have their own R&D strategies. They dedicate resources to them once they have established themselves within a market and achieved a relatively stable size. In such cases, employees are dedicated to R&D projects or work on them when there are gaps between commercial products.

These R&D projects tend to develop new generic or multi-purpose tools to support future projects. These tools lead to process innovation and streamlined development, thus reducing costs.

In some cases that R&D is taking UK developers into less traditional areas
Blitz is notable in that it has extended this form of R&D to involve expertise and potential markets outside games development. Using funding from the Technology Strategy Board, the company has worked with medical practitioners to develop computer-based training to develop triage skills. The goal of the games development company is to develop realistic human avatars which model the physical characteristics of a range of medical conditions, recreating attributes such as skin pallor or flushing, realistic breathing and sweating. Beyond the immediate medical application, Blitz intends to bring this knowledge back into games – for example creating more believable, emotionally engaging characters.

But even in these companies there is little evidence of rigorous measurement of how much is being spent on R&D
None of the companies interviewed during this research had a rigorous method for measuring R&D expenditure or estimating the return from this activity. While the last decade has seen an increasing use of management tools such as Prince 2 and Agile in the UK games development industry, measuring R&D is not seen as an economic imperative by most firms. Even studios with a dedicated R&D team and an associated budget feel that R&D cannot practically be separated from the inventive and innovative processes which are part of the routine practice of problem-led development and creativity.

Firms are aware of the R&D tax credit, but don't understand its reach and how it is accessed
Blitz's TSB-supported R&D was unusual. HM Treasury's tax relief on R&D is complex to navigate and currently may not support everything a games company believes is innovative. The scheme focuses on technology, for example, whereas many companies, such as Blitz, innovate in production workflow, process and animation techniques. However, TIGA, the games development trade organisation, has recently been promoting R&D tax credits to its members.

So, development studios are aware of the R&D Tax Credit and its potential relevance; however, there remains some confusion about how it is administered and any potential benefits. The smaller companies in particular find the 'administrative overhead' too large to take advantage of the scheme – many believe that the paperwork would either involve taking a member of staff away from a project or employing someone to take on the role.

A particular concern is how R&D activities can be identified separately from other spending

Larger studios (200+ employees) are unsure about how individual R&D elements can be separated from other work and what activities count as R&D for tax purposes. This is especially the case where several individuals are engaged in development activities. Some studios have begun to exchange experiences of the scheme, with one studio having successfully counted a percentage of staff time as R&D without having to measure individual activities. In addition to publicising the availability of tax credits, TIGA is aiming to build a framework to support best practice for studios that wish to apply.

The combination of technical, creative and management factors prominent in the videogames development industry, along with its project-based approach, often obscures innovation. Developers and studio managers interviewed describe innovation not as an extraordinary aspect of games development, but something inherent in the routine process. It does not sit above standard manufacturing or production processes; it involves solving current problems on projects rather than developing new commercial opportunities in their own right. Innovation is more commonly a rational response to continual change in the industry. It addresses demands that stem from new hardware or software, and the creative demands associated with new games projects. Such content, design, process or artistic innovation is part of the 'normal' process of developing video games, and so remains hidden from traditional analysis.

Part 4: Innovation in the product design industry[65]

65. The authors wish to express their gratitude to Simon Bolton of Central St Martins College for his valuable insights concerning the design industry and helpful comments on earlier drafts of this chapter.
66. The terms 'Product Design', 'Product and Industrial Design' and 'Product Design Consultancy' are used interchangeably throughout this text.
67. There is an ongoing debate concerning definition of the term design: Heskett (2002, p.3) suggests, somewhat cryptically but helpfully, that "Design is to design a design to produce a design" (Heskett, 2002, p. 3). This can be interpreted to imply that the aim of design is to create an intermediate output (drawing, blueprint etc.) that is then deployed in the production of a final artefact/system etc.
68. Accurate data relating to relative employment levels in in-house design teams and design consultancies are not readily available. Industry commentators suggest that more than 50% (and possibly up to 90%) of UK design activity is undertaken in-house.
69. Design Council, 2005. These figures relate to design consultancy in general, not just the 'product' sector.
70. Ibid. A broader definition will identify a larger number (for example, if 'engineering design' consultants are included in the product design category, then this will swell the recorded number of product design firms). A further complicating factor concerns the activities of design firms: some are engaged fully in product design whilst others are only partially engaged (and are thus active in either connected fields of design or non-design business).

4.1 Overview of the industry

The product design industry covers a very broad group of activities

Product design[66] is a subset of the design industries, a grouping that includes interior, product, packaging, furniture, web and digital media, graphic, spatial, apparel and fashion design.[67] Within the sector, independent design consultancies sell their services to design buyers in the UK and abroad. They sometimes also sell to companies with an in-house team when the latter require specific competencies or skills. In-house design teams tend to work solely for a particular company or brand.[68]

Product designers design the artefacts (the tangible goods, devices, equipment and gadgets etc.) that we use in our daily lives as consumers and workers. They certainly design more than 'consumer goods': much of their effort concerns the design of industrial, commercial, medical and defence artefacts or instruments – for example, their work can be found in aero engines, commercial printers, EPOS terminals, medical equipment and food processing machinery.

As a result, product designers are often required to be multi-skilled

Many product designers are formally trained in 'design schools' where several disciplines, notably visual arts, ergonomics, engineering, marketing, management and business are brought together (Design Council, 2005). Their key skills are in 'making things that work reliably, efficiently or as intended', 'making things with visual appeal for the intended consumer', and 'making things that will sell in target markets'. Designers need to combine their aesthetic and artistic talent with an understanding of engineering and physical sciences, and an appreciation of the culture, values and preferences of business clients and consumers of their products.

When innovation research was focused primarily on manufacturing R&D, 'design' warranted little more than a footnote. However, there has been a growing appreciation of the importance of design for UK firms. Design is now recognised as an important contributor to business competitiveness, especially in the low-technology businesses and SMEs that dominate the UK economy (Cox Review, 2005; DTI, 2005).

The UK design sector is fragmented, with large numbers of SMEs

The UK design industry comprises over 4,000 firms, with an annual gross income of £4 billion, including £500 million from overseas.[69] Most recent surveys indicate the existence of between 600 and 1,300 Product Design consultancies in the UK, with the difference in these figures being explained largely by non-congruent approaches to defining design activity.[70]

In the early 1980s, the design scene was dominated by a 'big five' group of consultancies – BIB, AID, Pentagram, Conran and DRU. However, by the late eighties, a major shake-up had seen the birth of many smaller and medium-sized consultancies as many senior designers left the 'big five' to practise independently in an expanding market.

Employment in the sector has more than doubled since then. And both the technologies and the skills required have changed dramatically. The inception of 2D, followed by 3D Computer Aided Design (CAD) has

transformed the design process and the interaction between designers and clients.

The sector is supported by four main trade and professional associations
The design sector is supplied with technologies, hardware and software by a range of suppliers. It is supported by four main trade and professional associations – the Design Business Association, British Design Innovation, the Design Council and the Chartered Institute of Designers. Government agencies have an important role in promoting the industry and establishing the socio-political, economic and legal environment in which the companies operate. The sector is also served by a fairly extensive trade press.

Design activities mix technological and aesthetic knowledge
The sector is characterised by its blending of technology and aesthetic knowledge and its complex links to industrial clients. Client companies often see design as a secondary activity to innovation. But it is arguably a sector that has facilitated and driven innovation for many client organisations, and experienced and generated significant internal innovation in the face of technological development and globalisation.

The UK continues to be seen as a global hub for design, but that position is viewed as vulnerable to increasing competition from overseas
Industry insiders believe that the UK remains a major global hub for industrial design, only matched by New York for its importance. However, this position is threatened by the migration of manufacturing and support industries to the Far East. Though innovation is helping to maintain the UK industry's position, there are little public data about the innovativeness and innovation investment of product design businesses. The small size of many agencies means their activity is rarely captured in surveys such as the Community Innovation Survey.

4.2 Developments, trends and the innovation context [71]

The product design sector experienced major structural changes in the 1990s
Throughout the 1990s, a number of agencies aligned themselves with specific sectors and niches (for example, medical instruments, transportation and telecommunications). While such specialisation remains, the recent economic slowdown is making generalism fashionable again, with many design consultancies attempting to enter their competitors' niche markets.

The late 1990s also saw the rise of the 'informed client' – design buyers and design managers, who became established as (client-based) intermediaries in the design procurement process.[72]

At the same time, there was a massive migration of manufacturing to the Far East. Product designers found themselves increasingly dealing with producers operating in remote environments. Some consultancies re-located or opened Far East branches to smooth the transition and explore emerging opportunities. However, many suffered as relatively inexpensive overseas design services emerged alongside the Far East manufacturing operations.

As a result the importance of smaller but leaner design businesses has increased sharply
Many UK design firms are now considerably smaller than they were five or ten years ago (certainly in terms of the numbers that they employ). At the same time, more design firms have entered the market.[73] Many companies have traded hierarchical for 'flatter' structures; and there is a clearer focus on 'core activities'.[74]

Almost three-fifths of product design consultancies are very small businesses with no more than five employees; a medium-sized design company may have between six and ten employees; and the larger companies will typically have fewer than 50 workers. More than 70 per cent of firms have ten or fewer employees and only the largest product design companies employ more than 50 people. Among the few large companies are IDEO, Sagentia, PDT, PDD, DCA and Seymour Powell.

One consequence has been to boost the pool of freelancers providing specialist design services
Most design consultancies rely heavily on the services of freelance designers and complementary service providers, particularly in London and the South East. Few contemporary agencies can afford the overheads associated with retaining a pool of designers, CAD technicians, model makers, researchers and ergonomists etc.

71. An extended overview of the industry and trends therein appears in Green et al. (2007). Further information relating to developments in the past decade can be found in NESTA (2006a).
72. Some interviewees indicate that this had some negative impacts on their business – 'informed clients' can allegedly be 'difficult and demanding' clients.
73. A clear and important trend is visible here: as incumbents have shed employees, some of those former employees have established their own companies or have swelled the ranks of freelance designers.
74. Though there are some notable exceptions to this general trend – PDD and Kinneir Dufort constitute important cases in point.

There is a widespread perception that the supply of design graduates exceeds the number of jobs available

Labour supply to the UK design industry – at least in terms of quantity – is not seen as a problem. UK universities and colleges operate hundreds of design courses and produce thousands of design graduates annually: the Higher Education Statistics Agency (HESA) recorded 60,000 students enrolled on over 150 design courses at undergraduate or postgraduate level in 2005-6.[75] Unfortunately, there are few career opportunities for such graduates and only a small proportion will enter the design profession.[76]

Design industry practitioners suggest that there are four key trends that are shaping their industry and the context for innovation:

- migration and re-location of manufacturing industry
- intensification of competition and the entry of competitors from parallel disciplines and new territories
- changes in the nature of relationships with clients
- shifts in consumer demand and buyer preferences

Each of these factors is addressed in much greater detail in the sections below. However, it is worth briefly considering each of these issues in turn.

The continued migration of manufacturing towards lower cost countries is shaping the product design industry

The migration of manufacturing industry from the UK – a process that has been underway and accelerating throughout the past three decades – has impacted dramatically on the UK design sector. As noted above, for many designers it has implied interaction with clients and production facilities located many thousands of miles away.

It has also intensified competition as new design industries have emerged to service emerging manufacturing hot-spots. Though it represents an expensive high-risk strategy for design consultancies – and has been pursued mainly by larger firms – establishing a presence in these hotspots can offer firms the chance to exploit new opportunities in indigenous and export markets, and to get closer to the point of manufacture. This can also allow them to develop concurrent engineering arrangements and generate new business.

Where this strategy has been adopted, some design companies report significant success. A substantial minority indicates a rolling reduction in their UK/European operations to focus more on business in Asia and beyond.

Globalisation has also been associated with an internationalisation of the product design client base

The contraction and tightening of domestic markets is a widely reported trend in the design industry.[77] In an effort to overcome the domestic squeeze, a number of agencies have sought business opportunities in a wider range of territories. Many have expended significant effort on attracting new business overseas – either with or without an overseas base.

Those agencies that have adopted a strategy of internationalisation report positive results. They frequently connect their success with the strong reputation and kudos associated with UK design. Many overseas clients are also reportedly eager to sell into relatively affluent European markets and are thus keen to recruit UK designers. They see the designers as well-attuned to Western consumer preferences and well-acquainted with Western regulatory requirements.

Product designers are being increasingly called by their clients to provide intelligence on future market trends

A major reported trend since the late nineties has been a growing focus on future trends – designers increasingly seek intelligence about emerging needs and the shape and dynamics of future markets.

Much greater resource has reportedly been applied in an effort to identify and plot innovation drivers, and to understand how intelligence derived from driver scanning activities can be deployed in the product and brand development process.

As a result, front-end research is seen increasingly as a staple activity for designers

'Front-end' research into technological and materials development, market evolution, and consumer preferences is now a staple of the design industry operation. It helps to inform innovation processes and activities, and their timing, within client organisations.

75. See http://www.hesa.ac.uk/dox/dataTables/studentsAndQualifiers/download/subject0506.xls
76. Whilst there is little statistical evidence to substantiate this claim, it is one that is made frequently (almost unanimously) by senior practitioners in the design industry. Direct entry to the design industry is possible for only a small number of elite design graduates; however, more graduates reportedly find roles in design-buying or design-related functions in UK industry and retail.
77. This trend should not be overstated however – many agencies report that business in the UK remains generally strong and that some niches have demonstrated encouraging growth.

Some designers also indicate that more has been done to understand consumers from an 'emotional' perspective throughout the past decade. Before the late nineties, user research was confined largely to issues of functional ergonomics; more recently it has focused on user lifestyles and aspirations. New research programmes have been designed to yield insights into client motivations, attitudes and purchasing preferences.

In the past five years, this research has been broadened to encompass client responses and reactions to new materials, and there are moves to understand how materials (and their various properties) might be used in the creation and strengthening of brands.[78]

4.3 Drivers of innovation

Product designers have responded to the challenges that they confront with significant and widespread innovation
While shifts in the structure, size and distribution of the industry have taken place over the last decade, much innovation has been taking place within consultancies as designers have responded to new opportunities and the new trends described above.

Some of the major factors driving and shaping innovation reflect internal changes within the design sector; others reflect changes in the wider business, commercial and competitive environment. This is reflected in our case study work, as we shall now illustrate.

Product design consultancies have had to adapt their relationships with UK manufacturing clients who are increasingly shifting their own operations to low cost centres overseas

The re-location of manufacturing to the Far East has had a big impact. Some agencies report shifts in the nature of relationships with UK-based clients as the latter move their operations east and begin to source services – including design – in these territories. The advantages of co-locating design and manufacturing have long been recognised and design clients are now benefiting from reduced design costs in low-wage economies.

Many product designers perceive the 'commoditisation' of design as an important threat
Many agencies report that the value of design has long been under-estimated by some design clients (senior managers often see design as a cost rather than an input with potentially significant strategic value). Many also report that product design is now perceived widely as a 'commodity' input – an input of limited value that can be accessed easily and inexpensively from an expanding range of suppliers in a crowded and highly competitive market. Some designers argue that their industry's slowness in 'professionalising' has amplified this perception.

The most successful design businesses are those that stress the strategic benefits of design to their clients
Devising an appropriate response to the challenge of commoditisation may not be easy, but some designers argue that the trend requires greater confidence and stronger articulation of the strategic benefits of design for client organisations. Moreover, they argue for a fundamental re-positioning of design services at a higher level in the value chain.

78. The white plastic and aluminium that is associated with the Apple brand is an interesting case in point here.

Clients are reported to be increasingly 'savvy'
Designer practitioners say that clients have become far more demanding and more 'savvy' purchasers of design services. Professional design buyers are aware of increased competition and some reportedly use this to keep fees down and to demand the speedier delivery of a broader range of alternative designs for each brief.

Some designers attribute these changes to the availability of CAD and internet technologies, as they have heightened expectations of the rapid generation and transmission of drawings. There is broad agreement that more sophisticated and more demanding design consumers are triggering innovation, particularly in deploying internet technologies and improving client relationships.

The domestic market has become more crowded as universities and colleges continue to churn out large numbers of design graduates
Whilst the UK remains a global hub for design, domestic competition appears to be increasing markedly. Hundreds of design graduates enter the labour market and design sector annually from 150+ product design courses at UK universities and colleges. Whilst only a few will

enter an established design consultancy, many will establish themselves as 'designer-makers' or 'sole traders' adding to the industry's very 'long tail' of micro businesses.

Easy access to the internet gives new entrants greater visibility. However, established firms believe it also crowds the market and confuses clients in an already competitive environment. Moreover, several universities – eager to generate cash and to provide a visible career route for graduates – have established their own commercial design consultancies (often operating on advantageous terms with 'free' premises and high levels of business support). Such consultancies promote themselves aggressively and have been reported to have undercut incumbents in some regional and niche design markets.

Beyond the domestic scene, global competition for product design business has never been more acute. The emergence and rapid growth of increasingly high-quality design sectors in China, Korea, Taiwan and India – key manufacturing locations for UK and international firms – are providing a strong challenge to British designers.

There is a noticeable feeling of 'vulnerability' across large parts of the sector

Established designers also feel that increased competition is leading to volatility and vacillation in demand for design services. An unpredictable inflow of new entrants and a fairly high failure rate has made it more difficult for design agencies to plan future activity.

Whilst a uniform flow of business has never been guaranteed for UK designers, some report that business cycles have become significantly less predictable and that more dramatic 'ebbs and flows' have required an innovative approach to business structuring and strategy.[79] In particular, alignment of capability and capacity with unpredictable demand has forced the adoption of more flexible practices and employment patterns (including, for some, the pursuit of business beyond conventional geographical or 'served segment' boundaries).

Some agencies have also attempted to reduce their dependence on client commissions, and thus on the vagaries of a volatile market, by diversifying in the development and distribution of their own products.

4.4 Types of innovation

As discussed above, much academic work and industrial commentary concerning innovation focuses on a binary distinction between its 'product' and 'process' forms. However, this distinction conceals much interplay; broad categories and characterisations can mask a very complex picture. Our case study work revealed the existence and evolution of many forms of innovation in the sector.

The UK's product design sector undertakes a wide range of innovation activities that are not captured by the usual product and process innovation taxonomies

Many new forms and ways of working are evident. There appears to be a major trend towards 'networking', where agencies no longer rely on in-house expertise for a full range of functions (prototyping, model-making, ergonomics, research) but contract out such work when necessary.

The contracting of freelancers has increased sharply as teams incorporating the requisite skills are built around specific projects. Indeed, many consultancies seem to have swapped large, in-house teams for a 'lean' and 'fleet' approach, where strategic partnering provides them with the necessary competencies and capacity.[80]

As with many instances of organisational innovation, some of the shifts in the product design sector have been driven by, and depend on, new technologies. Opportunities for remote working and electronically-mediated co-working have certainly contributed to the re-structuring of workflow. More importantly, they have made out-sourcing to freelancers much easier.

New technologies promote novel systems for establishing electronic, 'real time' relationships with clients

The creative deployment of new technologies is permitting designers to establish electronically-mediated relationships with partners and clients (often played out in online 'client zones'). It is also facilitating greater levels of co-evolution and co-production of design.

Furthermore, technology appears to be assisting designers in overcoming barriers associated with time and distance as drawings and designs can be transmitted instantaneously across the globe at any time of day or night.

79. This assertion, based on analysis of interview material, appears to contradict some recent macro-economic evidence that UK business cycles have become less volatile over time. One possibility is that volatility in business cycles may impact on the product design sector more dramatically than on others. The extent to which this applies is an issue for further exploration. Recent work on the creative sectors in London (Freeman, 2007) does suggest a connection between served markets and levels of output and employment volatility. The sectors that report strong business-to-business links appear to experience greater volatility than those that primarily serve the domestic/household/business-to-consumer sector.

80. Despite this generalised trend towards downsizing, there is some evidence that larger agencies in particular have recruited specialist strategists and 'human factors' researchers including ethnographers and anthropologists.

The internet also provides an electronic 'shop window' and many designers put significant effort into having a high profile – and frequently highly sophisticated – web presence. Where style, fashion, creativity and usability are important hooks for potential clients, a well-designed website provides designers with an opportunity to establish their credentials and demonstrate their track-record and capability.

However, innovation in interfacing, marketing and delivery is not solely connected with new technologies and electronic networks. Pressure from clients to produce a greater number of alternative 'versions' for each brief (at ever increasing speed) is leading to ever-more innovative means of managing and organising workload.

Many design businesses are attempting to reposition themselves higher up the value chain

As design is viewed increasingly as a 'commodity', many UK agencies are engaged in business model innovation: whilst 'design' remains a core activity for most UK agencies, higher value activities such as brokering, strategy, brand and identity consulting are emerging as an attractive focus for some businesses or as a lucrative premium service for others.

Most agencies are seeking to increase the value of their business activities and many are innovating to establish differentiation, enhance profitability and ensure survival in an increasingly competitive market.[81] Innovation is also evident in the evolution of licensing, royalty, IP and shared risk and reward strategies.

Some product designers are engaging in significant product innovation, expanding their product offer into new areas

Whilst design agencies are widely believed to support their client's innovation activities by realising their product ideas, some UK designers are applying their expertise and knowledge of consumer preferences to develop their own range of products.

Given the brokerage role of many consultancies – where they source and coordinate the people needed to take a product from conception to manufacture – some are identifying clear opportunities to market their own products. Some agencies are creating spin-out companies to manage the manufacture and distribution of their own novel (sometimes branded) designs and products, as varied as espresso makers and toilet brushes.

Classifying the different types of innovation presents challenges as they are inter-related

Whilst the list above is not exhaustive, it does capture the main types of innovation that are reported to be underway in the product design sector. It is also clear that the categories of innovation outlined above are not mutually exclusive. There are many overlaps and there is a complex relationship between the various types: for example, new business models predicated on the inception of licensing arrangements connect closely with the shift in some agencies towards the development of 'in-house' brands and products.

4.5 Management and organisation of innovation

It is striking how little of this innovative activity is recognised as such by designers

Surprisingly little of the innovation activity sketched above would be recognised or reported as such by design practitioners. For many, organisational innovation is seen as either routine or a response to environmental change. It is part of 'normal business'. Interface and delivery innovation is frequently portrayed as service improvement (a feature of work in the design business that is unavoidable if competitiveness is to be maintained).

However, deliberate and strategy-driven shifts in business and revenue models are more readily recognised as innovation, as is the development of new products. The work of designers is inherently bound up with problem-solving: where such problem-solving is undertaken on behalf of a client, it is associated with innovation. However, where it relates to a consultancy's own business positioning or service delivery problems, it is more likely to be perceived as business development activity.

Although in some cases the changes are more or less deliberate than in other cases

Innovation within the product design sector can be characterised broadly as evolutionary, though it is not always reactive. Many design agencies are actively engaged in horizon scanning and in the identification of opportunities for innovation that will benefit themselves and their clients. They reportedly devote at least some of their time to

81. It can be argued that diversification is not connected solely with competitive positioning – some commentators suggest that diversification and the targeting of higher value activities constitutes a response to increasing sophistication in the design process and client-side integration of marketing and new product design functions.

developing innovative solutions to both clients' problems and their own challenges.[82]

Product development and product innovation (often undertaken as part of a client's brief) tend to have the character of formal R&D. Where innovation is organisational or process oriented, it tends to be *ad hoc* and managed by agency principals: such innovation is often directed at dealing with perceived threats in the domestic and broader business and economic environment.

Product designers have managed these changes in myriad ways

The management of innovation is closely tied up with more general strategic responses of the design industry to the pressures and forces sketched above – particularly those associated with globalisation and re-location of manufacturing activity.

Our conversations with designers indicate several key approaches to dealing with these changes,[83] sometimes involving innovation themselves, and often bearing on the innovation process more generally. These include, briefly:

- *Downsizing* – many agencies have divested expensive in-house capability in favour of out-sourcing for certain functions and specialisms, and contracting-in freelance expertise as required. As we have seen, many active agencies are now considerably smaller than five or ten years ago.

- *Networking* – the extent of the shift to a network form of organisation in UK product design is dramatic. Only a few of the largest agencies have retained a multi-capability and multi-function operation; the vast majority participate in partnering and contracting arrangements to secure requisite capacity and capability.

- *Development of 'own brands' and products, and of new business and revenue models* – several consultancies report a move away from complete dependence upon client contracts:[84] in-house development of shelf-ready products is perceived to represent a useful means of using spare capacity, providing protection against intensive competition, and levelling-out peaks and troughs in business.

- *Differentiation* – as a result of intensified competition, many UK consultancies are striving to achieve enhanced differentiation. Some report an effort to capitalise on expertise, connections and accrued capabilities to: (a) create a distinctive identity; (b) establish themselves as niche or specialist suppliers; or (c) evolve a high-value or unique offering that is of strategic importance to potential clients (for example, network brokering, consumer research, or brand consulting).

- *Primary research* – some (often larger) agencies have engaged in self-funded primary research (for example, relating to forward needs in the healthcare sector) and foresight and scenario development work as a means of: (a) raising their profile and visibility; (b) enhancing credibility in target markets; and (c) underpinning future design and product development activity. Research outputs may also have a commercial value in niche markets and are a useful tool for 'proving need'.

- *Niche focus and development* – some designers note that specialisation can provide a degree of protection against increased competition: it is not unusual to see smaller agencies focusing effort on a specific client sector (for example, medical instruments, catering equipment or agricultural and off-road vehicles). However, this strategy is not without risk as niche markets often become vulnerable to encroachment from competitors.

- *Targeting higher-value business* – a strategy of value-chain re-positioning is clearly favoured by some of the more well-established agencies (though is not unique to these groups). Fearing increasing commoditisation of design, some agencies are eager to position themselves at a higher level in their clients' value chain (by providing knowledge-based strategic services rather than commodity inputs). Many indicate that their work has become more strategic, with branding and identity development a growing part of the sector's work.

- *Accessing support* – support initiatives from DTI, Regional Development Agencies and the Design Council etc. (e.g. SMART awards) have been broadly well-received in the design sector. When times are tough or where re-positioning is sought, support from official agencies is welcome and often highly valuable. While none of the design companies we spoke to relies on state or agency support, some suggested

82. For example, many agency principals report that whilst much the larger part of their everyday work consists in responding to the needs of clients, some portion of effort is regularly given over to trend analysis and formulation of business development strategy.

83. It should be noted here that there is much overlap and interplay between types of response. Readers should also note that several approaches can be blended at any given time (depending upon location, conditions, capabilities and capacity, and availability of resources): many of the UK agencies contacted in the course of our work indicate that they have pursued many or all of the listed pathways – in various combinations – over the past 5-10 years.

84. Commercial confidentiality means that it is not possible to cite specific examples here.

that support initiatives can be useful where business development or change processes are in play, or during a market downturn.

There is some awareness of the R&D tax credit among practitioners – more so than in some of the other creative sectors studied – but there is little knowledge about what formally constitutes R&D for tax purposes and how it is demarcated from other development activities. There is also the general perception that the application process for the tax credit is unwieldy and burdensome.

Many of the strategies outlined above – and in the section relating to developments and trends – can be connected to some degree with the types of innovation discussed (though there is clearly some overlap across categories). Internationalisation and multi-territory location strategies are connected strongly with business model innovation, as are the development of niche focus, the targeting of higher-value business, and the roll-out of 'own brand' strategies.

The reported shifts towards downsizing (focus on core capability) and networked forms of organisation provide evidence of significant organisational innovation. Moves towards the development of 'own brands' and 'own products', engagement in primary research, and re-orientation of services around higher-value business reveal a substantial degree of product innovation (though primary research activity is also connected with interface innovation and the desire to 'get closer' to clients by understanding their future business and opportunities).

Part 5: Innovation in the advertising and communications industry

5.1 Overview of the industry

The UK's advertising industry is the largest in Europe by some way

Advertising and Communications is a relatively large and well-established industry in the UK, and many UK-based advertising agencies enjoy an international reputation with some having a global client base.[85] In its turnover and value-added, the UK's advertising industry is far more significant than any other in Europe. Advertising is also the third largest of the UK's creative industries (behind 'Software and Computer Services' and 'Television and Radio Broadcasting').

The UK advertising industry has approximately 12,000 firms (Frontier Economics, 2006) with a total turnover of £18bn. Gross value added is calculated at a little over £5.1bn, while 95,000 people are employed directly by UK-based advertising companies. The industry is fairly concentrated, with the largest 4 per cent of firms accounting for around 80 per cent of turnover; the leading four and eight firms contribute 18 per cent and 28 per cent of the total respectively.

Medium-sized firms are also important in the advertising sector in terms of both employment and turnover. Such firms accounted for more than 40 per cent of employment in 2005 and almost 50 per cent of turnover (proportions well above the creative industries' average).

Its main activities are the creation of advertising content, the management of advertising campaigns and media buying

The sector's main activities are: first, the creation of advertising content and the planning and management of advertising campaigns (sub-activities here include market and consumer research, strategy development for brand and products, and the creation of adverts for transmission or placement across a variety of media); and, second, media buying, (contracting, negotiating and leasing of advertising time and space).[86] Our case study focuses mainly on organisations involved in the first set of activities, though some larger 'full service advertisers' both create campaigns and place advertisements.

The main actors in the advertising industry include commissioning bodies, creative agencies, media buyers and media owners. The purchaser of advertising services (the commissioning client or an agent acting on its behalf) usually contracts with a creative agency. Such agencies frequently offer a menu including research, content creation, copy writing, brand development, campaign planning and media buying.

While the advertising contractor focuses solely on 'creative' components of the process, a 'media buyer' will find appropriate space in the print or broadcast media, outdoor display, transport, cinema, direct mail or internet for the adverts. The buyer negotiates with media owners (or direct mail operators) to secure advertising time and space at an acceptable cost.

5.2 Developments, trends and the innovation context

The advertising sector is also undergoing major structural changes

As with most UK creative industries, the advertising and communications industry has witnessed significant structural changes

85. Exports account for approximately 12% of turnover for the UK advertising industry and are split reasonably evenly between EU and non-EU purchasers.
86. We should note that the largest share of advertising industry turnover is connected with 'sale or leasing of advertising space or time'. Statistical sources vary, but Eurostat (SBS, 2003) indicates that around 65% of advertising turnover in the UK is generated in connection with such activities. Only around 7% of turnover is generated in connection with 'advertising design', though another 13% is generated in connection with 'full service advertising' (and a further 3% by 'direct marketing' activity). These proportions accord reasonably closely with the views of communications practitioners, most of whom suggest that about 10-15% of turnover is generated at the 'creative end' of the advertising industry (i.e. campaign and content development).

throughout the past decade. Some have been generated within the sector as managers and advertising practitioners have jockeyed to enhance the competitive positioning of their companies; others by industry responses to shifts in the business, regulatory and operating environment; and yet more by social and cultural trends and technological developments.

These shifts are complex in their overlaps and interactions, and far-reaching in their implications and the responses that they have elicited from stakeholders in the advertising community. We offer a reasonably detailed sketch of key developments and trends to provide some background to the discussion of innovation drivers, types and management that follows.

A marked trend has been industry consolidation

Consolidation within the UK industry has been a marked feature of the advertising landscape.[87] Significant merger activity has followed attempts by traditional communications companies to acquire the assets and capabilities that permit them to do business in digital environments.

Shifts in demand towards multi-media campaigns have favoured agencies with scale

Whilst 'pure digital' represents an important sector of the advertising market, a generalised shift in favour of multi-media campaigns implies that competitive agencies must be equipped to launch campaigns across both traditional and digital channels. Beyond the push for digital capability, some merger activity has reportedly resulted from the integration of 'above the line' and 'below the line' agencies.[88] Current evidence supports the view that integrated agencies will be better able to prosper in the evolving communications environment.

The need to achieve geographical spread has also increased consolidation

The need to achieve geographical spread is driving many mergers and acquisitions. Many UK agencies are eager to secure the advantages of network capability: the ability to run a business across local hubs and to co-ordinate and 'localise' multi-region and international campaigns is of increasing importance (especially where global brands are concerned).

Company size is also positively associated with reputation, solidity and credibility, and with a perceived ability to: deliver full-service packages; leverage skills and capabilities; and, most significantly for our study, undertake innovation and product development. Larger UK advertising agencies claim that their smaller counterparts are frequently forced to operate in 'reactive mode', with limited access to the resources that support innovation.

This process of consolidation has at the same time been accompanied by off-shoring of non-core functions

Interestingly, the trend towards consolidation is focused firmly on the acquisition of core assets (particularly digital capability). There has also been a counter-trend towards the out-sourcing and off-shoring of non-core functions. UK advertising operators of all sizes report that they have been able to exploit a large and inexpensive pool of labour outside the UK and that this has assisted in cutting costs and improving value for clients.

Out-sourcing of non-core activities (such as routine research and campaign monitoring) to UK specialist operators is widespread; some agencies actively prefer UK suppliers. This preference is said to reflect nervousness about the efficiency and reliability of overseas providers.

Digitisation has had profound consequences for the way that consumers access content

Rapid diffusion of digital technologies and the internet have impacted massively on the advertising industry and on the behaviour (and communications expenditure) of clients. Funding is increasingly being diverted from 'conventional' channels to digital media.

Web-based advertising, email, mobile telephony and digital television have become the media of choice for many clients and campaigns. Targeted website messages, direct email and SMS texts allow fine-grained targeting of potential consumers and ready access to the attractive professional and teenager customer groups. Such advertising is often seen as relatively inexpensive and effective compared with print media or direct mail.

The proliferation of television channels has been associated with audience fragmentation

The proliferation of TV channels over the past decade has also delivered major new challenges and opportunities for advertising and

87. Consolidation has been particularly evident in the 'media buying' segment of the industry – reports suggest that large media buyers are able to secure more advantageous deals from media operators/ owners than their smaller counterparts. However, it is also true that much consolidation has been witnessed in media ownership: a diminishing number of owners (including US-based global corporations such as Time Warner, News Corp, GE, CBS and Disney) control the larger part of the media industry.
88. The distinction between 'below the line' (BTL) and 'above the line' (ATL) advertising is not always clear-cut. However, ATL is usually taken to refer to advertising that is channelled via media such as television, radio, magazines and newspapers, decorated vehicles and street hoardings. The term BTL is used to refer to advertising that is more directly targeted at specific individuals (i.e. via direct mailshots, email, face-to-face distribution of in-store literature and brochures etc.) ATL is held to be more appropriate where intended audiences are diffuse, large and only partially defined. BTL is commonly understood to be more efficient where target audiences are tightly-defined, bounded and finite.

communications agencies. An explosion in the number of available channels has fragmented television audiences.

A parallel expansion in the number of delivery platforms has created both challenges and opportunities for the sector
This explosion has been accompanied by a parallel expansion in delivery platforms and novel ways of accessing broadcast content. Time-shift viewing through TiVo or Sky+ has allowed viewers more easily to skip adverts. But advertisers can also direct viewers to additional material on their websites.

The evolution of Web 2.0 has also presented a challenge to advertisers. Whilst many regard it as a resource (a source of information on cultural trends and emerging product preferences), it is also a problem insofar as it diverts users from more conventional broadcast technologies and forms of advertising consumption.

Together, channel and platform proliferation have triggered much thinking within the advertising industry about appropriate modes of communication and message delivery. Many senior advertising practitioners argue that integrated, multi-platform campaigns are the only way forward for their clients.

There is a feeling that the advertising industry is returning to core public relations principles
Closely related to the issues raised above, some within the advertising industry believe their sector has returned to its roots. Since modern advertising emerged from the Public Relations (PR) movement (the latter an industry organised around the delivery of finely-tuned messages concerning the products, activities, brands and image of firms and organisations), they suggest that there is a pressing need to return to the principles of PR and focus on the communication of tailored messages to individuals.

They note that the various recent changes have greatly increased 'system noise' which means that advertising messages, brand identities and product characteristics are easily disregarded. At the same time, potential consumers are far more sophisticated and sceptical in the way that they relate to advertising content.

Thus, if advertisers are to deliver for their clients, they must give more consideration to:

1. The construction, tenor and packaging of messages.

2. The core characteristics, preferences, and behaviours of target consumers.

3. Identification of the most appropriate mix of channels for transmitting such messages to their intended recipients.

So, if intended message recipients are more likely to consume content online, for example, then this reality – and its implications for the construction of messages and campaigns – should be uppermost in the minds of advertisers.

5.3 Drivers of innovation

Drivers for innovation in the advertising and communications industry are linked closely with the trends described above. The changing face of technology is a major, perhaps critical, innovation push factor. However, industry insiders believe that shifts in the competitive and demand environment and changes in the UK's economic, social and demographic profile are also helping to stimulate innovation.

Technological change, and IT in particular, has been a major driver for innovation
The ascendance of digital media is highlighted unanimously in practitioner interviews as a force for innovation. (However, the 'shift to digital' is just one component of a complex mix of technology-related trends and should not obscure the importance of parallel and connected developments).

The internet has become a part of business, social and cultural life: for many people (especially the young), the internet is the key medium for seeking and gathering information, interacting with friends and peers, buying, selling and sharing, social networking, and engaging in leisure and cultural pursuits.

The evolution of Web 2.0 networks and applications in the last three years has deepened and extended the range of such activities and introduced myriad opportunities for the uploading and sharing of user-generated content (e.g. YouTube, MySpace and Facebook).

Digital television and the roll-out of multi-channel systems have had major implications for broadcasting. In particular, they have

changed the consumption of broadcast content and have fragmented television audiences. Together with timeshift technology, they have re-defined viewing behaviours among large sections of the public.

New online platforms for accessing content have taken off
Beyond television, further important shifts have been witnessed as new platforms for transmission and consumption of cultural content (e.g. mobile television, online access to broadcast content) have come on-stream.

Taken together these factors have triggered a substantial degree of innovation in the advertising industry. Perhaps most importantly, advertisers have been eager – or obliged – to develop novel mechanisms and strategies to address increasingly diffuse audiences.

However, technological development is not simply a 'push' factor: digital media present their own opportunities for innovation. Almost all practitioners are trying to exploit the potential of digital markets and environments. For example, innovation connected with enhanced and more finely-tuned targeting of potential consumers is reported widely. So too is allocation of resources to improve the richness of the consumer experience on digital media, and the delivery of tailored and context-dependent advertising content.

Many, frequently larger, communications companies are also evolving and using tools to assist them in Web 2.0-oriented research activities (notably, recognising signals that point to emerging cultural trends and consumption behaviours), and in generating feedback about the reception and performance of promotional campaigns.

Digitisation has made direct marketing to consumers easier
Direct marketing has been another important area for innovation. Such advertising has moved from direct mail shots (which remain important) to digital environments, with clear advantages in cost, speed, focus and coverage. Email can also offer greater technical sophistication: messages can elicit instant responses or provide links to websites.

Several agencies have tried to enhance advertising messages with novel and rich multi-media experiences for customers. Games, downloads, trials, 'walk-throughs', 3D models and Virtual Reality presentations are increasingly being incorporated into campaigns and are a focus for significant innovation.

Regulation has, again, motivated innovation in some areas as well as constraining it in others
Although privacy regulation in digital environments has limited the scope of advertisers to some extent[89] – especially in 'below the line' operations – it has also provided fertile ground for innovation. Advertisers have innovated to work around both policy-inspired restrictions and the filters and spam controls that are frequently applied by institutional and individual web users.

Much innovation activity has also reportedly been applied by marketers and advertisers in efforts to harvest the contact details of potential consumers.

Digitisation has also stimulated organisational innovation as businesses reconfigure their practices to take advantage of the new opportunities
Beyond innovation relating to generation and delivery of advertising content, many agencies also report involvement in organisational innovation as they reconfigure operations to establish or integrate digital divisions, activities and offerings within their firms.

The effort to develop sophisticated databases and associated management tools has been at the heart of much innovation in the advertising industry
According to practitioners, the 'right database' is a crucial resource and source of competitive advantage in the contemporary communications market.

Considerable investments have been made in the design of database software and systems. This is especially true of profiling and data interrogation tools, and software that tracks responses to live campaigns. Such development work is sometimes undertaken in-house, but more often involves external IT consultancies developing bespoke applications.

As with other creative sectors, technological development has implied that remote co-working has become a feasible and attractive mode of operation
Advertisers increasingly develop and display their ideas within private, web-based client zones. More importantly, they are able to provide real-time feedback and analysis of campaign performance and audience reaction data via electronic networks. They can

89. The imposition of heavy penalties for 'spamming' etc. has severely restricted opportunities for email-based direct marketing.

then adjust campaigns in the light of early responses.

Indeed, enhanced communication between advertiser and client and the development of more intimate working relationships is claimed as a major benefit of web-based communications and represents an area in which further innovation activity is forecast. It is another area of considerable investment.

Equally important to advertisers as a stimulus to innovation has been the impact that structural changes have had on their clients
The transformations in the business, technological and socio-cultural environments that have impacted on advertising agencies have impacted on their clients too. As clients have accommodated changes in their operating environments and markets, the nature and extent of their demand for advertising and communications services has also changed.

Some key facets of this change and their role as a driver for innovation in the advertising sector are examined below.

Clients' advertising budgets have shifted away from terrestrial TV to digital media
With the growth of digital media, a growing proportion of businesses' advertising budgets has shifted from terrestrial television channels towards digital channels and other digital media.

Some advertisers report that they have been able to anticipate and ride the crest of this new wave, innovating to develop appropriate services and packages to reflect shifts in demand. However, others have found the shift to be a steep (and ongoing) learning curve with investments in 'cultural renewal', digital capability and internal reorganisation.

Multi-platform campaigns have become more desirable as a result
The increasingly capricious nature of consumers and their less predictable viewing behaviours have made multi-channel and multi-platform campaigns more desirable. Such campaigns (an innovation in their own right) require both sophisticated coordination and the packaging of content to ensure that it is right for the platform or channel concerned. While such medium-sensitivity is not a novel concept,[90] it has required substantial re-consideration (and investment in innovation).

Clients are more discriminating in the quality of the service they receive and the nature of the relationship they have with advertising suppliers
A further spur to innovation has been the changing relationship between advertising suppliers and purchasers. Whilst most agencies report that they have enjoyed close and long-term relationships with their clients, such relationships are increasingly seen as highly valuable links that should be extended wherever possible. After all, retention is less resource-intensive than competing for new business.

Innovative use of IT has been important in addressing their needs
Innovative use of new IT is one means of cementing such relationships. Hence the growth of online client zones, where clients help develop and reinvigorate campaigns.

Some advertising agencies are pushing the boundaries by offering themselves as 'innovation partners'
Agencies that assist strategy development in client and partner organisations promote themselves as 'innovation partners' and market their ability to 'read' demand signals, lead new product development, and integrate the latter with marketing and advertising functions.[91]

This re-positioning appears to have been fairly successful and some industry commentators suggest that advertising agencies are now taken very seriously as key strategic partners by their clients. The emergence and increasing importance of the 'advertising planner-strategist' function within advertising has seen some agencies assert increasing influence on brand strategy development, new product design, packaging and channel-to-market strategy within their client organisations.

The pressures from more demanding clients to reduce costs have been another important driver for product and organisation innovation
One of the most commonly reported demand-related drivers for innovation is a client-inspired push to minimise costs. Many practitioners say that 'cost minimisation' has become crucial for clients impacting both on agency revenues and the advertising production process. Where clients have maintained their advertising budgets over recent years, they reportedly expect greater returns and enhanced value from their investments in communications.

90. Conventional campaigns have frequently required integration across different forms of media (street hoardings, radio, magazines, direct mail, television etc.).
91. Strong parallels with developments in the product design industry are evident here, and point to efforts within both sectors to: (a) diversify activities; and (b) exploit perceived capabilities.

In any case, most clients are said to be actively seeking to reduce advertising expenditure (whilst expecting the same quality of service), often as a result of more intense competition in the retail market.

For advertisers, pressure on budgets requires more efficient delivery of results. This has led to the innovations we have described both in the advertising product and in the organisation of the creative and delivery process, including electronically-mediated direct mail messages. Tighter funding has also led to diversification and integrated packages.

The fragmentation of audiences has placed a premium on advertising agencies tracking and understanding the implications of socio-demographic change
As noted elsewhere, the changing profile of the UK population, with associated shifts in preferences, aspirations and lifestyles, has impacted heavily on the commercial activities of firms and service provision in both the public and private sectors.

Increased segmentation of markets by gender, age, ethnicity, region, culture, income and class have driven innovation in advertising as industry practitioners have striven to keep abreast of change and exploit the opportunities for niche marketing and more finely-tuned consumer targeting.

Such innovation has helped to map change (understanding, recording, plotting and analysing segmentation patterns), profile consumers, and develop new products to reflect fragmenting demand. It has also helped to fine-tune the messages for these different markets.

The digital revolution has also brought new online clients with advertising needs
A final but not insignificant demand factor is connected with the expansion of the digital economy and the entry of new players into the digital environment. The 'shift to digital' sketched elsewhere has not simply provided new opportunities for advertisers to exploit new channels and platforms. It has also heralded new businesses, many of which require advertising services. These companies are often highly innovative and demand a brand image and marketing campaign to match.

A search to differentiate themselves from competitors has also driven advertisers' innovation activities
Whilst few practitioners say they are worried about new entrants or the internationalisation of markets – some even see the latter as an opportunity rather than a threat – consolidation in the sector means that larger agencies have similar full-service, multi-region and multi-channel capabilities.

Given this, and the claim of smaller and medium-sized agencies that they too are equipped for major and demanding campaigns, a differentiation strategy has become a pressing concern across the industry.

A reputation for innovation features in the differentiation strategies of some advertising agencies
Agencies have different views about the value of a reputation for innovation when attracting clients. Some see reputation and brand as more important than 'innovation pedigree' for generating business. However, others believe that a reputation for innovative campaigns and an innovative approach to the delivery of high-value and cost-effective product can be attractive to potential clients.

But this can be problematic where clients are perceived to be risk-averse
Communications practitioners who try to raise their profile through innovative methodologies and approaches often, however, find themselves up against conservative and risk-averse clients who prefer tried and tested approaches to more experimental campaigns.

Nonetheless some of the largest agencies are in effect positioning themselves as 'innovation labs' for their clients
Beyond the deployment of a reputation for innovation capacity as a component in competitive strategy, one or two of the largest UK communications agencies are starting to develop their innovation capability in a very direct sense. As part of the effort to broaden their service offering to clients, they have established 'innovation laboratories'. These laboratories – essentially a form of co-innovation facility – assist clients in exploring business and product development opportunities. They then link such exploration with marketing and advertising programmes.

5.4 Types of innovation

In common with product design, much innovation activity is not perceived as such by advertising professionals
Our interviews with advertising practitioners showed that the industry is characterised by high levels of innovation activity. It is also evident that such activity can be found in many forms, locations and guises. Perhaps as a result of this diversity – or perhaps reflecting an industry mindset common to other creative sectors – the effort and expenditure dedicated to innovation is rarely regarded as investment in innovation per se. Instead, many industry professionals describe their innovation activity as product or organisational development, or characterise it as creativity undertaken on behalf of clients in the course of campaigns.

Despite this definitional confusion, we believe that such activities can be conceptualised and classified as innovation along the lines that are frequently applied in parallel service (and for that matter industrial manufacturing) sectors.

Much innovation in advertising is focused on the development of novel content and the creation of new client-oriented products[92]
An important area of activity is the creation of 'contextual content'. When consumers click through advertising-oriented web pages, the content displayed will be personalised to their perceived preferences and assumed characteristics. Some practitioners say that such content can be configured to optimise message impact (and even induce a 'purchase impulse').

Another key area for content innovation is the delivery of a multi-media and 'rich' experience for the advertising consumer
Web technologies and digital platforms mean that it is now possible to create highly rich content packages that can be channelled across a variety of devices and media. Some advertisers are inviting consumers to 'explore and play with brands' in online environments to stimulate and exploit user-generated innovations.[93]

Advertisers have developed tools to assist clients to better understand their customers' behaviour
Creation of novel products has also received much attention – advertisers report that they have been generating tools to assist clients in: (a) developing a better understanding of consumers (for example, through 'client auditing' systems); (b) planning marketing and channel strategies; (c) evaluating the success of campaigns and advertising investments; and (d) configuring product development activities.

Broad-based consultancy services have in some cases become an important part of the advertising agencies' offer
Beyond the evolution of such tools, we have seen how practitioners are developing broad-based consultancy packages. Examples include advice on '360 degree' or media-neutral advertising strategies (predicated on enhanced consumer targeting rather than platform/channel selection).

Technological advances have permitted substantial and important innovations in market research and scanning
This is a field where progress has been supported massively by technological advances. As noted earlier, Web 2.0 systems are perceived to provide fertile ground for the harvesting of: (a) signals with respect to market development; and (b) clues to the evolution of consumer aspirations, preferences and demand patterns.

The generation of up-to-date intelligence and sophisticated analyses of consumer preferences and behaviours is a crucial activity for advertisers. Many report that they have invested heavily in the creation and development of database technologies.

Profiling of consumers through complex data-mining techniques and technologies is another important field of endeavour, offering opportunities for innovative matching of brands and products with life-styles and aspirations. Profiling also provides opportunities to develop innovative products based on the recognition (and creation) of desire.

Technological innovation more generally has supported the effective migration of large chunks of advertising activity into the digital domain
A large part of advertising activity has migrated into the digital domain. Indeed, electronic marketing is now the dominant form in many market and product segments. Rich content and multi-media, cross-platform experience has become standard for campaigns in several product classes, and innovation continues as advertisers seek increasingly subtle means of influencing behaviour and communicating ever more compelling messages.

92. It should be noted here that much of the innovation relating to product and content is heavily reliant on technological developments.
93. A number of organisations (including the BBC and Procter & Gamble) have established websites that invite consumers to experiment with product and content development tools, and to 'get inside' and manipulate 'brand DNA'. These organisations are eager to learn from experimentation with user-generated innovation, and to include consumers' ideas in the R&D process, developing these into marketable products where this is feasible.

There have been marked process and organisational innovations in recent years, particularly at the client interface
Email and collaborative electronic working spaces have made it easier to keep clients updated. Beyond routine communications, some agencies also offer to assist clients in activities such as business development and product-line planning. Where agencies have secured deeper relationships (and client buy-in) at the strategic planning level, significant benefits are claimed: shared understandings and expectations (with respect to the 'possible and desirable') are achieved from the outset, and agencies are frequently able to avoid the resource-intensive process of competitive pitching. Moreover, longer-term relationships are often forged and a platform for co-innovation work can be established.

Some practitioners also report that they are afforded a more profound opportunity to engage with a client's brand and values, and with its R&D and marketing functions. This engagement is said to facilitate greater understanding of the client's future business prospects and options for beneficial market positioning. It can also prepare the ground for mutually beneficial co-development work.

Technological change has also facilitated the delivery and management of advertising campaigns through innovative project management tools
In addition to enhancing everyday supplier-client interactions, developments in technology have supported both process innovation within advertising practices, and innovation in the delivery and management of advertising campaigns. Sophisticated project management tools have ensured that the coordination of time-critical campaigns has become less exposed to risk, and that (frequently geographically distributed) partners are able to monitor and shape project trajectories with limited impediment, friction and delay.

Further innovation has been witnessed with the introduction of real-time project tracking and evaluation technologies. As indicated elsewhere, these technologies permit detailed monitoring of customer responses to advertising projects and offer the possibility of timely intervention where campaign performance is judged to be sub-optimal.

As is the case with many industries, advertising has witnessed a strong trend towards experimentation with out-sourcing and off-shoring of activities and functions
Whilst client (and industry) conservatism has limited the extent and form of such activity, some practitioners point to increasing use of 'smart-shoring' techniques. Smart-shoring – the UK-based development, testing, modularisation and preparation of processes prior to export and subsequent off-shore operation – is an evolving phenomenon that enables UK advertisers to overcome the resistance of clients to novel approaches.

For many UK advertisers, out-sourcing or off-shoring of some components of the campaign development process is essential, in maximising value-added.

The integration of the digital and conventional sides of the advertising business constitutes one of the most significant examples of organisational innovation in the sector
Many agencies expect to launch campaigns across all relevant media, and some suggest that digital media – internally fragmented as they are – will be the key environment for a growing proportion of communications programmes.

Most large communications companies and an increasing number of smaller agencies have recruited or appointed a head of digital campaigns within the past few years.

Further organisational innovation has seen the integration of 'below' and 'above the line' divisions. This trend has allegedly hardened as increasing numbers of agencies recognise the necessity of designing cross-format campaigns for environments where a large proportion of target consumers are increasingly difficult to access via traditional media.

Training in support of process and product innovation constitutes a further area of organisational development in advertising
Some senior advertising executives have recognised the need for upskilling in the digital professions:[94] indeed, the acquisition of digital assets and innovation-facilitating capabilities constitutes a priority for many agencies.

However, some within the advertising industry believe that their professional body, the Institute of Practitioners in Advertising (IPA), has not provided sufficient relevant and contemporary professional qualifications programmes. Individual agencies have had to arrange their own skills programmes,[95] leading to a piecemeal approach across the sector.

94. Core areas for skills development include: database design, management and interrogation; rich content development; download systems management; and cross-media linking.
95. Training appears to be designed to assist agencies with three key aspirations: first, facilitating competitive positioning in evolving and attractive fields; second, enabling effective deployment of database, data-mining and tracking technologies; and third, improving retention of key staff.

Smaller agencies certainly appear to recognise the value of training, but some report that its cost can be prohibitively expensive. Where this is the case, innovative solutions have involved the recruitment of skilled individuals from outside the communications sector, or the organisation of self-training and 'skills cascading' schemes.

5.5 Management and organisation of innovation

It is possible to identify both diversity and commonality in approaches to the organisation of the innovation and product development process in the advertising sector. Whilst diversity partly reflects differences in firm size, it also points to real differences in orientation with respect to the management of various elements of the innovation process.

Our interviews with practitioners and executives have indicated that innovation management in the advertising sector is concerned mainly with:

1. Sourcing and processing ideas
2. Allocation of resources
3. Project leadership and management
4. Project evaluation and knowledge capture

An overview of each is provided below, alongside a discussion of the main approaches to management reportedly adopted in relation to each.

The sources of ideas for the different forms of innovation in advertising are many and varied
Most sources for new ideas mirror those found in other service industries. They are reported to include: interaction with clients, suppliers and competitors; board level visioning; media and horizon scanning; market research and trend tracking; data-mining and consumer profiling; agency-internal brainstorming; attendance at industry conferences, exhibitions and 'awards' events; and, importing personnel from competitor agencies.

Whilst most agencies reportedly derive innovation principally through interaction and co-development work with clients, a significant proportion say that internal sourcing – especially that connected with ideas-generation involving agency leaders – is what matters most.

Though many agencies claim to regard their personnel as a key source of innovative thinking (and some say that innovation-oriented thinking is a 'required' characteristic), few incentivise innovation beyond small 'prizes'. Critics argue that an offer of partial IP rights might be more productive.

Mechanisms for innovation are rarely formalised – a common theme in all the sector case studies
Processing of ideas for innovation appears to be relatively casual and *ad hoc*, and mechanisms for the selection of new ideas are rarely formalised – a common theme in all the sector case studies. Some agencies report that senior members of management teams are expected to filter ideas, but there seems rarely to be any formal process or 'criteria set' to guide this work (other than reasonable expectation of 'bottom-line' benefits).

In larger agencies, the identification of a promising idea is usually followed by the construction of a business case and its presentation at board level. With software and hardware investments – often stimulated by innovation or a cue for it – decisions on budgets and specification are usually the responsibility of senior managers (in consultation with technology suppliers and IT personnel).

Most agencies claim emphatically that they do not operate with a dedicated budget for innovation
Nearly all agencies indicate that innovation activity is funded solely from specific project budgets (and that innovation – where this occurs – is usually undertaken on behalf of a particular client). For some agencies, this presents a problem as few clients are willing to support experimentation and trialling of new methods during the course of campaign development (thus resources for innovation are heavily circumscribed).

However, the absence of dedicated budgets is not always the problem. Larger agencies frequently report the allocation of funding to support research and development programmes, and the commissioning (or authoring) of software to support market research, data-mining, profiling and project delivery activities. The failure to recognise allocation of development funding as 'investment in innovation' probably reflects

a general reluctance within the sector to define development-oriented work in terms of innovation activity.

Responsibility for development of ideas is almost invariably placed in the hands of a project 'champion' who assembles project teams, often on an *ad hoc* basis
The champion is usually a head of the business group or a senior manager with an interest in the field and links with partners who might be required to supply complementary assets.

Usually, the champion will assemble a development team with an appropriate skill set. Its size and constitution will vary according to the nature of the project but can include clients, creatives, art directors, business development managers, researchers, technicians, campaign planners, client handlers, consultants, media buyers/placers, and administrators.[96] Teams are almost always assembled on an *ad hoc* basis with representation from project-relevant functions, and R&D divisions appear to be almost entirely absent in the advertising business.[97]

Few agencies report any problems with an *ad hoc* team-based approach to the execution of innovation projects, though one indicates that a 'disruption-based' approach to team construction can be fruitful. Its representatives believe that fixed teams – even in a creative industry such as advertising – can breed 'comfort' and 'bounded thinking': removing individuals from the familiar surroundings of their regular team and placing them in an 'innovation team' can be a challenge to those concerned, but one that frequently stimulates creative thinking (and can even rejuvenate faltering careers!).

In another allusion to the problems and benefits associated with 'innovation team' working, one agency reports that creatives can sometimes be limited by their concept of 'the achievable': where there is a failure to understand the levers and tools of innovation, a project's progress can be slowed significantly.

The agency in question found that when it tried to integrate its digital and conventional operations, misaligned perspectives and differences in modes of operation led to considerable pain and a highly protracted process. Though the organisation is generally highly successful and clearly innovation active, thoroughgoing organisational innovation was experienced as a very difficult process with some undesirable knock-on effects.

Few advertising agencies claim to evaluate their innovation effort or capture associated learning on a systematic basis
Alhough most advertising practitioners and agency managers appear to recognise that innovation takes place within their organisations – and that at least some resource is allocated to development work (however it is labelled) – few indicate that the outcomes of development projects are evaluated in any systematic way.

Moreover, few allude to any efforts to capture the knowledge generated in connection with the pursuit of innovation.[98] Some find the notion of evaluation attractive but say that 'getting on with business' must come first.

This appears to be recognised by a number of advertising professionals, and is seen as a source of concern for the industry
Despite the widespread failure to recognise the benefits of evaluation, some agencies report an interest in project-related learning, and a small number have invested seriously in the establishment of an evaluation system.

For those that profess an interest in evaluation, attention and profile in the press and trade is a useful proxy indicator of success. Similarly, industry awards signify success and confer very valuable kudos and profile.

However, some within the industry want these awards to move beyond rewarding creativity alone: they argue that the effect of a campaign on a client's 'bottom line' is crucial and that creative inputs should be linked to project objectives and outcomes (i.e. outcomes in terms of awareness generation, market share, profitability, sales and margins).[99]

Indeed, agencies that place a high value on evaluation – whether in relation to campaigns or innovation projects – strongly agree that clear objectives should be in place and that related metrics should be agreed by all parties.

A representative of one major agency suggested that the establishment of relevant success, performance, profile and impact metrics would be a positive development for the industry (both in improved reputation and increased client confidence) and that this might stimulate further innovation.

96. A small number of companies contacted in connection with this study indicate that team members are matched with projects via a process of 'CV auditing' – such companies profess to a proactive approach to innovation and a desire to ensure that the 'right' team members (i.e. those with appropriate interests, client connections and knowledge) are allocated to individual development projects.
97. There are a few notable exceptions here. One major agency reports the publication of a book concerning shifts in UK culture and their impacts on consumption trends. The book is aimed at raising the profile of the agency and demonstrating its credentials and knowledge of markets to prospective clients. The exercise of planning and conceptualising the work, researching and collating material and organising for production of the publication is likened to an R&D process.
98. The failure to systematise efforts to capture knowledge from project development is somewhat strange: many advertising agencies indicate that they have 'review systems' in place with respect to their campaigns and that learning with respect to 'what works' is considered highly valuable.
99. Some commentators suggest that it is possible to 'monetise' the contribution of communications (and that this highly positive step is one that has been encouraged by the IPA's 'Advertising Effectiveness' Awards). Indeed, it is clear that in communications – as in the design sector – there is growing support for the inception of some form of evaluation system that prioritises the contribution of advertising inputs to a client's bottom line.

Part 6: Innovation in the independent broadcast production industry

6.1 Overview of the industry

The broadcasting sector is the second largest of the UK's 13 creative industries
The UK television and radio broadcasting industry includes some 4,700 businesses and employs more than 73,000 people. With a combined turnover of more than £18bn and a contribution of £7.1bn gross value-added, the industry constitutes the second largest creative sector in the economy (Frontier Economics, 2006).

Broadcasting embraces a vast range of activities, the most significant of which are programme commissioning, content production, broadcasting (and scheduling), and signal transmission.

We concentrate our case study on the independent production sector
As we are most interested in the creative end of the broadcasting spectrum, we focus our study on the independent broadcast production sector. The sector is concerned with the development of broadcasting content for TV and radio broadcasters in the UK and abroad. It has been a fast-growing and successful sector over the last two decades. There are approximately 2,000 firms in the industry. While many of them are small or very small enterprises,[100] the industry has its share of larger organisations with a global reputation for the quality of their programmes.

6.2 Developments, trends and the innovation context

The broadcasting sector has grown markedly over the last 20 years. The source of much of this growth can be traced back to the promotion of 'viewer sovereignty' in the Peacock Report (1986) and subsequent efforts to introduce greater competition and flexibility of production into the sector (though this process of liberalisation has been quite gradual).

The regulatory environment has played a particularly important role in the evolution of the industry
Three important measures have impacted on the rise of the independent content production sector: first, the creation of an internal market within the BBC; second, the inception of an auction process for the allocation of Independent Television (ITV) franchises; and, third (and most notably), the requirement placed on major terrestrial broadcasters to purchase one quarter of their programming from external sources (Deakin and Pratten, 2000).

The industry is experiencing a large number of coincident structural changes
A climate of intensifying competition drives innovation in the industry. However, this climate is itself shaped by other factors, some familiar from our study of advertising, including new technologies and digitisation of broadcasting, a movement towards multi-channel television formats, the inception of new channels and platforms, new ways of 'consuming' broadcast content and new forms of consumption behaviour. The sector also faces a changing regulatory environment; it must respond to the manoeuvring and strategising of advertisers, and the positioning of broadcasters and infrastructure providers.

Clearly then, there is a complex mix of factors that have the potential to impact on the

100. An accurate figure for the number of active UK production firms is not currently available. The Producers Alliance for Cinema and Television, PACT (the trade body for the production sector) has a membership of approximately 700. However, PACT does not claim to represent all UK independent producers. Kemps, an online production services directory, lists approximately 2,000 independent companies in the UK: this figure is probably a reasonably accurate reflection of the true size of the sector.

environment in which independent production companies work, and many opportunities for interplay between them.

Digital broadcasting has been an important trigger for innovation

Preparations for the analogue switch-off of broadcast signals in the UK (scheduled for completion in 2012) are moving ahead rapidly. 85 per cent of UK homes already had digital television receiving equipment by mid-2008,[101] a shift accelerated by reductions in the retail price of flat screen and plasma televisions and consumer eagerness to replace 'dated' Cathode Ray Tube-based receivers.

The arrival and rapid take-up of digital television (following a faltering start) has brought widespread access to multi-channel viewing. Perhaps the most important factor here is the availability of Freeview (more recently complemented by Freesat), a free-to-air service that has delivered a multi-channel viewing experience to many households at little cost.

Whilst the 'major' terrestrial channels are available via Freeview, much of the appeal of the new system resides in its ability to provide variety and choice – many new 'digital only' radio and television channels are available via the BBC, and other broadcast providers have moved to populate Freeview with both mass appeal and relatively niche content.

In the radio broadcasting sphere, take-up of Digital Audio Broadcasting (DAB) has been less impressive, though it has grown significantly over the last year – 22 per cent of homes had invested in dedicated DAB equipment by mid-2008[102] – while consumption of digital radio broadcasts via digital television equipment appears to be rising steadily (with an estimated 35 per cent of adults accessing radio in this way).

In recent years there has been a major expansion in the availability of web-based radio

The availability of internet-based music and radio services is not a new phenomenon, but the past five years have witnessed a major expansion in web-based radio broadcasting. The BBC's extensive and content-rich web operation, for example, offers listeners the opportunity to access radio material broadcast on its main channels for up to seven days following original transmission[103] (an availability window that is sometimes extended): listeners are able to use the service in conjunction with the BBC's proprietary software 'iPlayer'. Some niche digital radio operators, such as Emap's The Jazz, migrated their programming from DAB to web-based radio.

'Podcasts' have grown in popularity markedly since their mass market arrival some five years ago: these allow users to download radio content onto personal music players (for example, iPods and MP3 devices).

Delivery of television via the internet (Internet Protocol Television or 'IPTV') is forecast by some commentators to constitute the 'next big thing' in the evolution of broadcasting. Several IPTV services are already in play and the idea here is that broadcasters are able to deliver content 'on demand' to service subscribers/users via either television receiving or (broadband-enabled) computing equipment. Virgin Media, BT Vision, Channel 4 and Tiscali are already well-established in the IPTV market and now provide on-demand services across most of the UK. The presence of these providers – most with extensive business interests outside the broadcasting sphere – points to significant convergence in the broadcasting, media, communications and leisure services space.

101. 'The Nations and Regions Communications Market' (Ofcom, 2008).
102. Ibid.
103. The BBC's service is known as 'Listen Again'.

Taken together these developments are putting pressure on traditional broadcasting models – they highlight the importance of multi-platform and multi-media delivery of content

Beyond the arrival (and apparent early success) of independent providers, there is a general feeling within the sector that the traditional broadcasting model has reached the end of its life. The focus for many is multi-platform operation and much effort is now invested in the generation and configuration of content that will have appeal and relevance across all key delivery channels. In the words of one senior broadcasting insider: *"the traditional broadcast model is going out of the window [what is important is…] being able to work out how content being produced will work on different media"*.

Accompanying the growth in digital broadcasting has been a reassessment of advertising models

As we have already seen in the previous chapter, the rise of digital broadcasting and internet take-up is forcing the advertising industry and its clients to reassess where they run their campaigns. The proliferation of television channels is fragmenting viewing audiences, and internet use and other leisure

pursuits could dilute TV viewing figures in the UK significantly.[104]

Of course, this development worries advertisers who fear that television-based advertising could reach a diminishing audience. Whilst allocation of funding to television-based advertising campaigns has held up well in the decade up to 2005 (according to Advertising Association data from 2006, total advertising expenditure in televisual media rose from £3.2bn to £4.4bn from 1995-2005), there are clear indications that significant re-allocation is underway.

The internet provides myriad opportunities for direct contact with advertising targets and web-based direct mailing has received a significant boost in funding. Whilst expenditure on television-based advertising is expected to grow in the coming five years, almost all growth is expected to be directed to multi-channel rather than traditional operations (PricewaterhouseCoopers, 2004).

Alongside shifts in the allocation of funding for advertising, some practitioners have seen impacts on their business as a result of the regulation of food advertising during programming aimed at younger audiences.[105] Some channels have exited the children's entertainment market entirely and others have significantly reduced their children's programming.

Industry practitioners point to a number of other structural developments impinging on independent production

Whilst channel proliferation, shifts in advertising practice and growing use of the internet are central themes, there are many other factors and trends that increasingly impinge on the activities of independent broadcast content producers.

HDTV – there is a growing demand for High Definition Television (HDTV) content (one that is driven by consumer demand and the increasing availability and affordability of HDTV-ready receivers). This shift is requiring increased investment in hardware and software required for high definition (HD) content. Investments can be very costly – especially in the case of Computer Generated Imagery (CGI) technologies – and rapid technological obsolescence is a growing problem. Moreover, whilst there is generalised demand for HD product, some independent producers claim that HD is not appropriate for all genres. It is claimed that HD material can appear too 'stark' for certain programmes – including some dramas – and further investment is required at post-production stage to 'tidy' or normalise a completed edit to meet viewer expectations.

Out-sourcing – many practitioners say that a broad pool of highly skilled technical workers is available in emerging and technologically advanced economies. Many such economies have strong, often subsidised, indigenous film and broadcast industries with spare, and relatively inexpensive, capacity (for example, Brazil has a large pool of expert CGI technicians). Beyond advantages associated with direct reduction of costs, some UK producers have started to use overseas providers as a way of limiting risks contingent on currency fluctuations (for example, out-sourcing contracts are now often awarded to operators in dollar-pegged locations and payments are made in the currency used by the final client).

Audience fragmentation – this is commonly reflected in a general reduction of budgets for individual programmes. However, channel proliferation does not always imply reduced audiences – according to some independent producers, strong brands like *Deal or No Deal* and *X Factor* will always achieve strong ratings. Whilst producers view fragmentation as an important opportunity for more varied content – and many are trying to create the next 'big concept' – others suggest that blockbuster brands reduce opportunities for the placement of novel content in the schedules of major channels (especially where large numbers of slots are dedicated to 'winning' shows).

Audience research – although audience research has always mattered to broadcasters, content producers and advertisers, increasing fragmentation has added greater urgency to efforts to generate more sophisticated and detailed understandings of audience segments and their preferences and consumption behaviours. Indeed, increasing resource is being dedicated to the mapping of current and future audience attitudes and needs, and the intelligence generated by such work is being plugged-in directly to the content creation and production process. As competition for audiences and the effort to engage and retain viewers intensifies, a profound and nuanced understanding of their needs, expectations and viewing habits is becoming ever more necessary.

Accelerated production – whilst digitisation of the content production process has delivered

104. This does not appear to be the case at present – data from BARB indicate that average weekly viewing hours have increased by approximately 10% over the past decade (see http://www.barb.co.uk/viewingsummary/weekreports.cfm?RequestTimeout=500&report=total).

105. It is important to note here that broadcasting in the UK is one of the most regulated of the creative industries (in terms of which organisations can broadcast what content, when, from what sources, under what conditions and via what platforms, media and parts of the spectrum). Content production is certainly affected by the general parameters of broadcasting regulation (both favourably and negatively – moves to ensure that major public broadcasters source at least a proportion of their content from independent providers has given a major boost to the industry), however, some forms of regulation are designed to apply more specifically to the independent production sector and these have frequently stimulated and shaped innovation in the sector.

universal benefits, it has also presented new challenges: some independent producers complain that demand for rapid delivery has reached barely tolerable levels and planning for through-flow of work has become increasingly difficult.

Regional issues – the partial re-location of the BBC is expected to have a major impact on the organisation of content production in the UK. Some independent producers expect more opportunity and influence for Northern-based broadcasting-sector firms. However, others expect there to be limits to such shifts – if real change is to be achieved, provincial producers must secure improved access to commissioning broadcasters, and an end to the 'London club' that allegedly dominates the broadcasting industry. Some Northern-based producers argue for further legislation to ensure that both ITV and the BBC procure a certain proportion of content from outside London, and that such work is delivered by independent producers.

Regulation and risk – according to independent practitioners, broadcast content development is a high-risk venture, and this is one reason why so many broadcasters have out-sourced to independent producers. It has allowed broadcasting organisations to reduce their own exposure and simultaneously apply pressure on costs. However, recent developments over the rights to broadcast content have led to some re-consideration of this arrangement. In 2005, PACT secured reversion of ownership rights to the content producer within five years (rather than fifteen years under the previous regime). As a perverse consequence, some broadcasters are starting to return production to in-house facilities as this affords enhanced control of medium-term income streams.

Industrial consolidation – there is evidence that larger independent producers are acquiring their smaller counterparts to exploit the latter's talent and stock of ideas. Consolidation also offers greater purchase, visibility and competitive edge in an increasingly competitive marketplace.

Reorganisation at major channels – broadcasting industry insiders say the past year has been one of great flux and nervousness for the sector as a whole, and the major broadcasting channels in particular. Channel 4 has sought to secure its funding base through increased contributions from the public purse, the BBC has reduced commissioning in the face of reorganisation and redundancy, and some channels (especially Channel 5) have experienced significant churn among senior staff. These factors have created major problems for independent producers, reducing their ability to forecast demand.

6.3 Drivers of innovation

The drivers for innovation in the independent production sector – as reported by industry practitioners – are fairly diverse. Many informants pointed to the complex interplay of stimuli for innovation activity and innovative products.

The importance of a clear differentiation strategy in a marketplace that is characterised by intensifying competition is highlighted by many broadcasting practitioners
Three key factors – frequently combined in the development of such strategies – are singled out.

First, *cost* is a major concern for most content producers (and their clients). Pressure on programme budgets has contracted cash-flows within the sector and many independent agencies have innovated to cut costs. Technology has helped, enabling some producers to deliver high-quality content without the need to outsource important (and expensive) components of the production process. Where such delivery is possible, producers report that they are able to differentiate themselves on the basis of price (and that this can be attractive to cash-strapped clients).

Second, some independent producers report that *'capability and talent'* are important differentiating factors. Many have invested in the development of niche capability and talent (for example, application of CGI in small-screen documentary-making). This has contributed to their unique profile in the production community.

Third, a number of regionally-based producers see *geographical location* as a positive differentiating factor. Location outside the capital makes them more approachable and accessible to regionally-based clients. It also reportedly assists producers in attracting and retaining key personnel and minimises the 'poaching' of staff that is more common in London. Whilst location is not on its own an obvious driver for innovation, some producers report that their niche focus or regional

expertise can be attractive to commissioning broadcasters.

As in all the creative industries analysed in the current study, competitiveness more generally is identified as a crucially important driver for innovation. Unique expertise and experience is valued most highly with a capability to 'deliver beyond the client's expectations' prized as a means of raising profile and reputation and securing future business. The aspiration to achieve enhanced competitiveness is cited by most independent producers as a driver for innovation and product development. Some invest heavily to bolster niche expertise and technical capability (as facilitators of innovation), whilst others focus more closely on the generation of innovative concepts and content.

Opportunities to co-develop content with the broadcasters are seen by independent producers as an important driver for innovation

Practitioners report that opportunities to get involved in the co-development of content with major broadcasters, producers or directors are highly attractive (as successful collaboration can lead to extended relationships and the chance of future business). According to some in the industry, the prospect of collaboration spurs innovation in independent production houses – especially smaller and less well-established operators – as they are keen to demonstrate their capability and potential value as longer-term partners.

The nature of working relationships and contracting and production arrangements means that producers and their clients tend to work in very close proximity. This proximity exposes independent producers on an ongoing basis to the changes that are experienced by their broadcaster partners.

Indeed, such innovation gives much impetus to development activity as producers strive to create content that is suitable for contemporary and evolving multi-channel and multi-device environments. Thus, some commentators suggest that whilst a significant level of innovation in independent production is triggered by ideas that are indigenous to the sector, much development is a response to innovations introduced or undertaken by their broadcaster clients.

As with other creative sectors, technological changes (both hardware and software) have heavily impacted on both the propensity to innovate and innovation trajectories in the broadcasting sector

As broadcast production-related technologies have improved in their performance and become much more affordable, sophisticated broadcast content has been produced more rapidly, and fallen within the province of a broader range of suppliers.

Many independent producers now undertake a more comprehensive range of production tasks 'in-house' (with major savings), and are becoming increasingly self-sufficient in filming, editing and completing some stages of the post-production process.

While such self-sufficiency is a trigger for process and organisational innovation within the sector, it can also lead to the development of novel products as independent producers bring their distinctive approaches and methodologies to bear on a larger segment of the content development and realisation process.

The notion of 'technology trickle-up' is mentioned as another interesting driver for innovation in the sector. Some practitioners suggest that the evolution of user-generated content such as blogs or podcasts has alerted content producers to what can be achieved with limited budgets. They suggest that ideas borrowed from the 'user-generation' domain will appear increasingly in mainstream media channels.

Revenue and payment systems within the broadcasting industry are changing dramatically (with important implications for innovation)

As noted above, the success of PACT in re-negotiating broadcast content rights has changed the balance of rights between producers and broadcasters, ostensibly reducing the power of the latter. While some broadcasters have returned content production in-house, others have sought to derive optimum value from their licensed assets in the limited time available to them. And while the change initially caused some disquiet among independent producers, it has subsequently been a trigger for innovation, particularly with respect to the development of new business and revenue models, and the re-configuring of partnering arrangements (see below).

6.4 Types of innovation

Whilst the types of innovation in independent production mirror those in other creative sectors, they are more likely to be recognised as innovation
The forms of innovation that can be found in the independent production sector mirror those that are found in many other creative industries fairly closely. However, the concept of innovation is recognised and deployed more widely in the sector than in many parallel creative domains.

Whether because of the technological basis of much of the work that underpins the broadcast content development process – or the BBC background and connections of many of the practitioners that operate within the sector – 'innovation' is likely to be known and labelled as such rather than as business renewal or product development activity.

Four main classes of innovation are identified by practitioners – each is explored briefly below, with some allusion to variants and examples of development activities.

Most practitioners note that business models are being redeveloped in the face of structural changes
This is an important area of innovation for many production companies, and reflects the stressed nature of the industry and levels of change that have been experienced in recent years. Most informants report that some attention has been afforded to the development of business models appropriate to the changing climate within the broadcasting industry. Some suggest that the creation of new business models and re-positioning their business are key areas of innovation activity.

Production companies are making increased use of novel risk sharing and reward contracts
Given the difficulties that have been experienced by many broadcasters (especially smaller and minor overseas operators), some production companies have entered into shared risk and reward arrangements. The producer charges a minimal fee – perhaps 50-60 per cent of the market rate – and recoups the remainder from a share of royalties. This approach ensures that programmes that otherwise would not reach production stage can be supported from their early stages of development through to completion – the expense of doing so independently is becoming too high for some operators.

Some producers report that they have been forced to pare costs to an absolute minimum to win and maintain business
This is especially the case with respect to US clients. Whilst not an innovative business model in itself, cost paring is allied with other approaches as a survival strategy, one that can be sustained until greater fluidity and improved cash flow returns to a troubled market.

Many producers report innovative approaches to the generation of development finance
New approaches to financing development are reportedly crucial in the face of significant competitive pressures. Given the reduced time period in which broadcasters as licensers of content are now able to recoup their investment, such operators are allegedly exerting substantial downward pressure on licensing fees. This has impacted negatively on independent producers, reducing incomes substantially and cutting capital for new programming.

As a consequence, some producers have looked to distributors to make up funding deficits by supporting the development of content suitable for pre-selling in overseas territories. This has created a complex funding and rights triangle involving producers, broadcasters and distributors; however, this complex nexus of relationships and arrangements is seen as necessary if new programmes are to be made.

Essentially, under evolving arrangements, distributors contribute to the development of new programmes by independent production houses. The producers license their product to UK broadcasters who then own UK rights to broadcast for five years. Distributors can sell the product immediately following its first UK transmission – and thus recoup their investment – in overseas markets, and the independent producer can recoup investment following revocation of rights under the five-year rule. According to some producers, such distribution deals are essential to the survival of smaller production companies and assist them in bringing product to market, and developing a longer-term and sustainable revenue stream.

Some production companies are choosing to locate at least some of their filming in cheaper locations overseas
Though not in itself a new business model, some producers innovate in their production processes by locating some of their filming outside the UK. As content budgets have been

stable for a decade, they must find new ways of reducing production costs.

The internationalisation of location shooting helps to rein in overheads. In some countries – including the Czech Republic, Ireland and New Zealand – there are also tax incentives in place.

Some industry representatives believe that the UK is losing out as a result of this relocation: they argue that tax breaks in the UK would generate benefits in terms of employment, tourism and the expenditure that is associated with film production (benefits that would far outweigh any reduction in tax revenues).

Organisational innovation is evident in the independent production sector in many forms

One of the most significant of such innovations is the growing out-sourcing of routine operations and functions. Many companies report that they now exploit a global pool of expert labour (for example, CGI technicians in Latin America, and web designers in Hungary and Romania), and through sub-contracting work they are able to realise substantial operational savings.

Some concerns with respect to management of processes and quality are reported, but developing economies are generally perceived as excellent suppliers of high-level craft and technical skills. Off-shoring can also reduce problems associated with currency fluctuations.

In some areas there has been a shift in demand for skills – demand for technical or crafts skills is outstripping that for creative skills

In some specialist areas of content production, there is a perceived shift in focus away from creative skills (often characterised as the mainstay and artistic core of the production industry) in favour of technical and craft skills. This is particularly evident with CGI and HD-oriented production companies, and reflects increased demand among commissioners and consumers for visually 'realistic' programming (wherein creative content and quality of storylines may be less important).

With CGI in particular, specialist producers report that increasing specialisation is key to the production process. So, there is great innovation in the production process. CGI used to be seen as a craft skill and each project would be handled by an individual or integrated team from start to completion. Now, the trend is towards 'production lines'.

Each individual CGI technician is trained as a specialist in one component of CGI work (rendering fluids, shadows or smoke, or human or animal animation) and projects requiring multiple forms of intervention are passed from one expert to the next along the line.

According to some practitioners, this new arrangement (arguably a knowledge-economy update of Taylorist and Fordist practices) privileges specialism and permits the exploitation of bounded skills to ensure the highest possible quality of work and efficiency.

Many producers report investment in software and hardware to facilitate 'in-housing' of some functions

In more conventional production agencies, an important focus for innovation is the use of technology to save money and control more of the content production process. As discussed above, many producers invest in software and hardware to facilitate 'in-housing' of some shooting, editorial and post-production functions. This has reduced expenditure on out-sourcing and generated an enhanced skills-base among employees (as the latter are trained to perform a wider range of technical and creative functions).

However, some practitioners suggest that less use of out-sourcing can reduce creativity by narrowing the range of individuals that are involved in the production process. As contacts with external suppliers are reduced, so opportunities for collaboration and co-innovation are lost, and the 'creative-innovative' spark that is associated with dispersed team working is diminished.

Broader technological developments are central to the production process, and to the re-organisation of functions and working practices

Technology is an important part of the renewal of communications, interfacing and delivery mechanisms. Email and web-based communications tools are used extensively in the broadcasting industry (indeed, co-working on shared whiteboards and in shared web-spaces is reported commonly) and finished products are almost invariably electronically transmitted, a process that increases rapidity of delivery and provides 'ready to go' content to post-production services and broadcasters.

Product and content development constitutes another major locus for innovation activity in the independent production sector
Again, much product and content innovation is facilitated by advances in broadcast and production technologies; however, the application of creativity is at the forefront of developments in a number of product areas:

- *Additional content* – much effort is now applied to the bundling of 'extras' or additional content with programming packages (especially where multi-platform distribution is envisaged). Thus, in the process of shooting, it is common to organise interviews with actors, stills photography, scripting and casting of additional clips and scenes, filming of alternative endings or the capture of outtakes. It is also increasingly common to see some content developed for mobile phone or internet-only distribution. The creation of additional content requires investment and allocation of effort in logistics, however it is perceived as an increasingly important means of generating extra revenue within the industry.

- *Internet-specific content* – There is growing interest in the production of internet-only short dramas and other forms of content. Ten-minute self-contained programmes or short serial episodes are perceived to be attractive to younger internet users (and to the advertisers eager to access them). However, some practitioners recognise that the internet experience is qualitatively different from traditional formats, presenting new challenges to the sector including an expectation of interactivity. According to one practitioner, new media producers are just 'feeling their way' – the rules of the game are not yet established.

- *Repurposing for multi-platform distribution ('content is king!')* – according to many in the industry, repurposing and adaptation of broadcast content for distribution across multiple channels and platforms is a key area for innovation activity. Moreover, producers are eager to experiment with the development of high-quality content that can be delivered across multiple formats and devices: whilst some modification and re-wrapping or packaging may be required, some production companies believe that a digital, analogue, mobile phone, and internet presence is possible for most forms of programming.

But the barriers to such content innovation are many, including alleged risk aversion on the part of commissioners
Despite such optimism surrounding content, some practitioners foresee problems and bottlenecks. Commissioning bodies are often risk-averse, and this can lead to a glut of 'hospital' and 'police' dramas, soap operas and 'young celebrity' programming. This is said to be preventing the production of more innovative content.

6.5 Management and organisation of innovation

Although difficult to quantify with any precision, industry perceptions are that independent production is an innovative sector
It is clear that significant levels of innovation are present in the production industry: however, levels of investment are less easily quantified. Some producers on the technological side of the industry suggest that innovation can account for approximately 10-15 per cent of expenditure, whilst those in creative and concept development businesses believe that innovation can account for as much as 60 per cent of expenditure. Either way, these are big numbers.

Despite wider recognition of innovation activities as such in the sector, most innovation is still viewed as *ad hoc* and organic
According to some commentators, innovation can be deliberate (where there is strong recognition of opportunities, or the prospect that an idea can be developed into the 'next big thing'). On the other hand, innovation can be 'accidental', occuring as it frequently does in the process of delivering a client project. Most practitioners say that innovation is rarely planned and deliberate, and many claim that organisation is broadly *ad hoc* and often 'organic'. The need to invest in innovation is recognised widely. However, few companies have formal methods and systems to evaluate their innovation-related expenditure.

This may partly reflect the resource constraints that most independent producers face
Some firms claim that they have many ideas for innovative concepts, products and forms of delivery. However, there is too little resource or time to bring such ideas to fruition. Although formal resource constraints are cited as the

main barrier to innovation, regulatory bodies are for example, sometimes perceived as a brake on innovation (a programme with a gambling format might attract attention from regulators). It can also be argued that regulation can constitute a disincentive to production companies that might wish to try to experiment with more controversial topics and styles.

Co-production and network-based development of programming is very common

The broadcast production industry consists of a network of individuals and small, specialist (and some larger) companies with a range of complementary skills and expertise. Team-based working is seen as essential to the realisation of new and innovative products. Development practitioners believe that one of the most important development functions resides in the assembly of expert groups for the progression of content projects.

Given the high level of proximal working and interaction in the industry, the development process requires very good personal relationships and buy-in from various stakeholders. The inception of '360 degree' approaches and methodologies will require even closer strategic relationships. While much innovative work can be achieved, industry commentators caution that sourcing and managing relevant expertise will be a real challenge: the creation and purposing of material for multiple formats requires many layers of expertise and the growth of such activity implies significant further organised and process innovation.

Part 7: Overview and analysis of industry case studies

This chapter weaves together insights from the four separate sector case studies, in terms of drivers of innovation, the types of innovation involved, and the more general issues of innovation management and innovation systems. These categories inevitably have many overlaps, but splitting the discussion in this way should help us to identify major common themes and points of difference.

7.1 Drivers of innovation

Across the case study industries, a number of drivers repeatedly create pressures for innovation, shape the innovation process directly, or change the context for innovation efforts. Most drivers are experienced directly by the industries studied here. However, some are encountered less directly, for example, when the business clients with whom advertisers, designers or independent producers are dealing are themselves strongly influenced by structural changes in consumer demand.

A. New information technologies are having deep implications for the business environment and supply chains of creative businesses

New information technologies continue to be applied increasingly extensively and intensively in the consumer and business markets, and the supply chains and business environments of creative firms. Particularly important here are: digitisation of content (including historical content); expectations around the digital delivery of content; expansion of broadband and computer facilities (and capabilities on the part of customers and business partners); development of applications software of many types; and new channels for delivery or use of content.

These developments create opportunities for familiar products to be designed, produced, delivered and used in new ways; for new combinations of familiar products; and for brand new products. They also raise the prospect of new competition as a result of 'digital convergence' (the blurring of boundaries between creative industries, and between such industries and telecommunications and computer industries.)

These technology drivers are experienced in all of the creative industries, but nowhere more strongly perhaps than in videogames development. The industry has to adapt to the succession of consoles, with their more powerful and faster chips offering opportunities for enhanced experience, new features, functionality and connectivity options. Broadband communications allow online games, while mobile phones present not just new platforms but also new concepts for gaming.

The other industries also feel the pressure of a changing technology environment, with advertising, for example, not just being provided with new marketing channels, but having to deal with fragmentation of audiences across multiple media.

When we consider the types of innovation undertaken, and more general issues of innovation management, we shall continue to see the pervasive influence of new information technology. It affects the nature of the product (by enhancing the richness of experience or permitting delivery of tailored content). It allows more sophisticated market research

and marketing of innovations (data-mining to assist in locating targets, direct marketing through email and Web environments). And it changes how innovation activity is conducted (use of content generated through Web 2.0, co-development through client zones). And, of course, practically all information-processing activities associated with innovation activity are ones where the new technologies can be applied.

B. Partly reflecting these technological trends, but also other developments, we have seen a proliferation of new content delivery mechanisms which have driven wider innovation in all the sectors

Technological advances are also leading to new media, new channels and new delivery mechanisms. We present this as a distinct driver because the proliferation of platforms also reflects regulatory trends (allowing more competition in broadcast media and telecommunications) and changes in the domestic and global competitive environment.

106. We are here rather loosely using a term introduced by Linder (1970).
107. Toffler (1984) predicted and named this development.

Digital broadcasting, mobile communications and internet delivery of content are particularly important developments in this context. As we have seen, the videogames development sector is highly influenced by the succession of competing games consoles. Even in the product design sector – where the proliferation of platforms is not such an important driver – we encounter designers who are working on the features of devices such as mobile telephones.

C. Ongoing and complex changes in the regulatory environment have pervasive implications for innovation in the creative sectors

There is an ongoing and complex evolution of regulatory environments: this is associated with market liberalisation, digital convergence and the application of new technologies, and new social and environmental concerns.

This makes regulatory influences pervasive, but they affect different industries in different ways. For instance, concerns about privacy, pornography and violence particularly affect the advertising and videogames industries. Videogames must meet certification requirements (differing across countries), and online gaming raises questions about control of access to under-age players, and those who fail to abide by rules of the game. The product design industry confronts technical compliance requirements, and needs to address health, safety and environmental standards. (In addition to formal regulations, there may also be standards imposed by powerful clients.) The independent television producers are strongly influenced by the evolution of media regulation (including rules about broadcasting licences and sourcing of content). Rules restricting advertising during children's programming affect both advertising and broadcasting industries.

D. Consumers of creative goods and services are becoming more sophisticated, more networked, more discriminating and more active

Four developments taking place on the demand side for creative industries are substantially realigning the nature and expression of demand.

Consumers (and clients) are becoming more *sophisticated*. They are more experienced in 'reading' and assessing the products of the industries.

Consumers are more *networked*. They exchange views – criticisms, recommendations – and may distribute content among themselves, as well as providing feedback to suppliers.

Consumers are more *discriminating*, able to exercise more choice – attention spans are supposedly more limited, with remote controls enabling channel surfing and timeshift devices offering alternative schedules. Consumers have many alternative services offering other ways of spending leisure time ('the harried leisure class').[106] Advertisers have had to confront the issue that young people are increasingly switching from broadcast TV to the Web and mobile phones.

Consumers are more *active*; they may be 'prosumers',[107] creating their own content; or more often actively co-producing content and creative experiences together with suppliers. The various industries examined vary in how they experience these factors, not least according to whether their immediate markets are businesses or individual end consumers.

In terms of final consumers as drivers, the videogames development experts we interviewed reported facing demand for novel titles (games significantly different from existing offerings); greater sophistication/realism in gameplay; and improved interfaces (to enhance gameplay experience). Advertisers in our study repeatedly remark that audiences

are more fragmented: this permits more precise targeting of content where more precise location of audiences is possible.

Business clients are also seen by creative businesses as being more demanding. Thus product designers claim to have experienced increased pressure and questioning of their expert view from 'more educated' clients. One feature of this is growing pressure from clients to produce a greater number of 'alternative versions' of designs in relation to each brief. In advertising, there is a reported increase in the intensity of agency-client relations, with increasingly close interaction being sought. At the same time, clients (many under competitive pressure) have a cost focus, being eager to minimise costs whilst maintaining quality.

Business clients themselves are changing, reflecting broader economic changes (for example, the declining role of manufacturing and increasing role of services in the UK). The emergence of new businesses associated with new channels and platforms – each with new needs and perspectives – can spark innovative approaches in the creative industries that serve them.

E. The creative industries are functioning in increasingly international markets

This can provide opportunities for exports of their products or for setting up outlets in new overseas markets. Online export of creative products in digital form may allow even small firms (and 'prosumers') to reach global audiences.

Similarly, some creative businesses face competition from overseas entrants into domestic markets. While increased competition associated with globalisation is common, there are niches where local provision for local demand remains particularly effective, providing some shelter for localised creative industries and restricting export opportunities (for example because of language differences, varying tastes, close links between the creative product and other elements of the local milieu or cultural context.)

Globalisation also brings with it international financing, as well as cross-border mergers and acquisitions. While labour is far from perfectly mobile, international travel has become much easier and new IT offers scope for collaborative and distant working of many kinds. The heated discussions about off-shoring in many of our case study sectors reflects the fact that many firms now access skilled (and other) labour at low cost overseas – and while this labour may not always be attuned to the requirements of many Western consumers, it may be in touch with the tastes of ethnic minorities and 'omnivorous consumers' (see Section 2) in the West.

Wider economic changes associated with globalisation and structural change also impact on some of the creative industries. Product design firms that are currently focused on serving manufacturing clients, for example, may need to reorient their business to service sector clients or to reorganise so as to follow their markets overseas or capture new overseas clients. Even industries like those parts of broadcasting that cater mainly to 'local' audiences may find that they see consumers increasingly scattered around the world as people's living and working patterns become more dispersed.

A generalised intensification of competition from various sources is driving innovation at the firm level

While the drivers discussed above affect creative industries as a whole, the experiences of individual firms in these industries are greatly influenced by the strategies of their competitors and collaborators in response to wider trends. Innovation on the part of others is itself an important driver of change.

It is also an essential source of ideas for creative producers and informed consumers. Firms need to stay abreast of these innovative developments to remain competitive and relevant.

This is important in labour markets – especially for the ability of creative firms to attract the right staff – as well as in business and consumer markets. Thus advertising industry interviewees note that a reputation for innovation (along with one for producing cost-effective products) is highly valued in a crowded market, with awards for innovation and success being taken very seriously.

Intensified competition is very widely experienced, with established firms facing new entrants not just from overseas territories but from UK universities: in design, such entrants might include graduates from UK design colleges working as freelancers, and in broadcast production, professionals who have exited established broadcasting companies in favour of independent status. Another trend is for at least some producers to in effect 'commoditise' their products, making

them more standardised; in some industries this may lead to a separation between those offering cheaper mass-produced products and those offering more bespoke ones including associated business services (consultancies in product design and videogames development, for example.)

Partly as a result, IP issues are viewed as increasingly important in many creative sectors and as a driver for innovation
Finally, intellectual property (IP) manoeuvring by competitors, the need to organise IP agreements with collaborators, and perceived threats of piracy and unauthorised copying, imply that IP issues in innovation are increasingly important to many creative industries. And IP can act as a driver for technological innovation (copy-protection), or for other types of innovation (for example, creating attractive non-digital components of products like packaging, or shifting to licensing arrangements).

7.2 Types of innovation

Our case studies have identified many innovations and innovation trajectories in the creative industries. We classify these under a set of headings below, though innovation activities actually span several categories. It is not surprising that many of these developments are very much responses to the drivers discussed above. But, again, many of the specific examples of innovation are responses to more than one driver. Thus viral marketing is driven by changes in consumption and the new technologies for distribution of content, while also seizing the opportunities they provide.

We begin with the two 'classic' categories of innovation – product and process innovation – among which several types of innovation can be highlighted. We then move on to some types of innovation that do not fit neatly into these categories. In later sub-sections we move on to consider changes in organisations and business models that may also be considered to be types of 'wider innovation' (as it is reported in the Community Innovation Survey – see Section 2).

A. Product Innovation I – Repackaging and repurposing content
It is common to find that material – especially creative content – that has originally been produced for one specific product is exploited in new ways by creative businesses. It may be reorganised, repackaged, combined with other material in new ways, so as to create new products, to reach new markets, to extend product lifetime, or to achieve other commercial and/or creative goals.

At one extreme this may involve little more than a relatively gestural invocation of a brand or iconic image in new contexts, as when a fictional character is used to endorse a consumer product.

More substantial change may be effected when texts and narratives are reworked for new media: it is possible simply to make broadcasts available for streaming or downloading via the Web (or mobile platforms), but there is also a move to creating value-added content.

In independent television production this can include 'additional content' such as cast interviews, outtakes or alternative scenes. (There are some suggestions from producers themselves that content innovation here is being restricted by the risk aversion of commissioning bodies and broadcasters.)

Videogames based around characters or narratives developed in other media require extensive content innovation, with the development of a more complete games world, tasks and activities for the player, and so on.

Tie-ins are sought across platforms and media, notably in the games industry. Technical skills are required to ensure suitability in multiple formats, together with skills in editing and creation of content. As the scope for extracting further value from creative content is recognised, so IP issues become more salient; firms seek to control how their content is re-used, and gain awareness of the changing IP landscape.

B. Product Innovation II – New products, new markets, improved quality
Improvement in the quality of existing products is a feature of practically all industries in an increasingly competitive world. Creative industries are confronted by the particular opportunities and demands provided by continual change in media and delivery platforms. A prime example of this is the increased complexity and realism in videogames.

They also face opportunities and demands flowing from the greater sophistication of consumers – many products will not be

consumed repeatedly; instead consumers expect a succession of novel or more-or-less linked products. Videogames, again, need to supply more complex and multi-faceted characters, and to create novel situations and activities for consumers.

Markets are in any case changing, with an ageing population and the maturation of consumer markets wherein some consumers first encountered the creative products in question when much younger than they are now. Many creative businesses are responding to the drivers discussed earlier by applying their capabilities to creation of products for completely new markets (games for educational purposes), or for new segments of existing markets (games aimed more at female or elderly audiences).

Innovation will reflect changing social and economic structures, and this may involve targeting a given product, or a particular product family, at particular segments of a heterogeneous and, in many cases, increasingly fragmented market. The advertising industry focuses much of its innovation on the development of novel content, for example, and on 'mass customised' content (tailored to particular consumers and contexts). The consumer experience is targeted, with much emphasis on developing rich or multi-media experiences in its campaigns. For its business clients, the industry creates new tools and services for campaign tracking and consumer targeting etc. that assist clients in understanding consumer behaviours, planning product development and marketing strategies, and evaluating campaigns. (This blends into organisational innovation, as when the advertising firm moves towards becoming a developer and provider of consultancy packages/services connected with advertising strategy.)

C. Process innovation

Contrary to the focus of much of the innovation literature, not all process innovation is a matter of technological innovation. But it is inescapable that new information technology is pervasively used in creative industries, even in those industries where – unlike, say, videogames – it has not always been a major element of their products and processes. It may not in general be able to generate creative ideas – these tend to come from experienced creative professionals or, in some cases, 'young upstarts' – but it is used for 'capturing' information (like video images) that can be exploited in the creative process, and as a source of tools and techniques for working up creative ideas. (The elaboration of new basic ideas is often a trigger for the generation of new ideas, or extension of the original ones into new products.)

New technologies also enable the sharing of ideas and drafts with colleagues and clients. Creative industries are still often reliant on traditional ways of meeting and sharing ideas – brainstorming and project meetings using whiteboards, or flipcharts etc. – but collective workspaces supported by new IT are employed increasingly, especially on large and complex projects.

Thus our product design interviewees report very rapid and substantial changes involving the introduction of electronic whiteboards and shared web spaces to support collaboration in teams. New IT also accelerates and simplifies many of the tasks that are required; this makes it possible even for small firms to handle more steps in the production chain in-house. (This, in turn, can trigger other process and organisational innovations; it may affect product innovation, too. For example, designers and independent producers can achieve greater oversight of larger parts of the development and realisation process; thus they may be able to bring their distinctive approaches and creativity to bear on more of the creative product.)[108]

Sophisticated project management tools are also being deployed in many creative industries to support the coordination of time-critical campaigns (in advertising, for example), and complex projects (in design, for example). These tools are believed to result in reduced risk of failure, and to permit closer monitoring of projects allowing for more adjustment of operations in real-time – thus, in advertising, real-time campaign tracking and evaluation systems are increasingly common.

D. Using users

While concepts such as 'open innovation' and 'user-driven innovation' are often exaggerated – after all, who wants to be closed and unresponsive to users? – changes in the role of users in the innovation process are mentioned frequently by creative industry practitioners. They see this as more than improved process innovation or innovation management; in fact, the engagement of users is reshaping consumer experience, marketing, and other elements of innovation.

108. Adam Smith famously discussed ways in which increased specialisation can promote innovation, but the argument here is that decreased specialisation can do so, too.

Moves in this direction are reported in all the industries studied, though in product design, such engagement is more with business clients than end-consumers (both groups are involved in the case of advertising).

There are widespread efforts to involve users in various activities – generating new content, generating ideas for content and other features of products (e.g. interfaces), distributing content (through P2P systems, email, blogs, social networking sites), and promoting products (e.g. viral marketing, user groups).

The videogames development industry has been sourcing ideas for innovation from more sophisticated users for some time, and is deeply involved in user and usability testing. Online games are increasingly being opened up to user-generated content.

Broadcasting has moved beyond phone-ins and letters from listeners, to running message boards where audiences can exchange reactions, recommendations and news. Advertisers use similar interaction to explore what brands mean to consumers.

In their dealings with business clients, the product design industry talks of 'e-mediated partnerships' and 'client zones', where there can be discussion and co-production of designs. (One implication noted above, is that this may mean that clients become more demanding, requesting more versions and modifications of designs. It could also allow partly-formed ideas to be 'borrowed' by clients and used in other ways without attribution.)

The Web can also be an electronic shop window – an innovative and rich website attracts clients in an environment where style, fashion and creativity matters. In the advertising industry, we see parallel trends such as 'innovation laboratories' fostering co-innovation with business partners. This may mean 'getting inside a client's brand and values', but more mundanely, it could mean engaging more closely with their R&D and marketing functions. In these industries, one focus for innovation, then, is upgrading the client interface (and this is linked to other trajectories of improving relationship management systems so as to foster closer links and longer-term relationships with clients.)

E. Delivery innovation and new interfaces
While the delivery of digital products by new media has elements of product and process innovation, changes in mode of delivery – again involving different ways of interacting with consumers – warrant being seen as a specific class of innovation. The internet is especially important: an interactive Web presence is vital for most firms.

The advertising industry is profoundly shaped by these developments, with the migration of advertising into the digital domain being so pervasive that electronic marketing is now dominant. Much innovation activity concerns moving direct marketing from mail shots to email and other online environments (beyond new content, innovation here can include identifying and characterising target audiences or evading spam filters.). Digital TV may also require innovative and novel packaging of content from the broadcast production industry.

These media developments provide opportunities to reach more diverse and fragmented audiences; they also require innovation in the construction of multi-channel and multi-platform campaigns. The videogames industry is a different case, as the delivery of traditional games or updates on the internet is overshadowed by the emergence of online gaming, with scoreboards and real-time competition features. It is clear that interaction among users has become an important element of the games experience.

7.3 Organisational and business model innovation

Organisational innovation may be hard to distinguish from the wider evolution of businesses, but new models and approaches are emerging. In some of the sector case studies, notably product design, the term 'innovation' is connected as much with strategy-driven shifts in business and revenue models as it is with development of new products (even though such organisational changes are usually portrayed as being highly spontaneous.)

A. Out-sourcing and off-shoring
Out-sourcing is particularly common in the more technology-based industries, where codified tasks need to be distributed around the world. In the videogames development industry, for instance, out-sourcing to Russia and India is being driven by cost control and a requirement to manage production and project cycles more flexibly. Routine operations and functions are thus out-sourced to a global pool of expert labour and specialist companies.

This is made more possible because some former 'craft skills' have become de-skilled – with increasing specialisation of workers and fragmentation of tasks, giving rise to 'assembly line' organisation.

But with the cost of technology continuing the fall – and its use becoming easier – some aspects of production are being brought in-house. Independent broadcast producers are training staff to use relevant technologies and other elements of the production process. This can be cost-effective and safer where outsourcing is seen as insecure and hard to manage and control.

In product design firms, price competition is especially intense. Out-sourcing is part of cost-saving, and is associated with some reorganisation of workflows in this industry. (It is hoped by many practitioners that fluidity will eventually return to the depressed market, and more creative strategies can then be pursued.)

The advertising industry reports moves towards off-shoring too, but interviewees suggest that this will be limited by client conservativism.

TV production now involves much location shooting outside the UK to save money and exploit tax incentives. These off-shoring strategies are not usually seen as opportunities for innovation. But they do highlight the increasing interdependence of firms as 'network organisations', operating as part of a constellation of producers involved in accomplishing complex projects, sometimes across borders.

B. Supply chain repositioning
Successful firms in the creative industries are liable to reposition themselves in supply chains as competition grows and markets change: attempts to lead projects or offer consultancy services associated with the work of their industry are fairly common. Some advertisers are seeking 'to climb up the value chain' and offer market analysis, brand consultancy and product line management.

Innovation can also be supported where freelances and sub-contractors are employed. Their management can involve new project management tools. The creative firm may focus on core capabilities, networking with a set of strategic partners. This may be a stimulus to innovation, as among independent producers who report that they innovate partly to establish their value as long-term partners to broadcasters.

But other firms may seize the opportunity to reduce their dependence on intermediaries, with videogames developers hoping to rely less on publishers by moving to self-publishing, something made increasingly feasible by broadband communications, electronic payment mechanisms and digital rights management systems.

C. Strategic partnering and leadership
Many business services are reportedly moving from being arm's length sub-contractors to a more proactive role which may even involve leadership. Thus advertisers talk of 'innovation partnering' and even of leading new product development for clients, by integrating this with marketing and advertising functions. Product design firms similarly aim to engage in higher value activities such as brokering and strategy, brand and identity consulting. Some product designers are also experimenting with development, marketing and distribution of 'own products': this may lead to their management and orchestration of the set of businesses involved in creating the final product.

D. Risk, reward, and business models
Associated with developments in supply chains and project leadership are new financial and profit-sharing arrangements. In the case of large projects, specialised creative firms are typically paid standard fees. But in other cases, there is an element of risk-sharing. Independent television producers, for example, expect to recoup their outlay through a share of royalties. Here the risk and reward are shared with broadcasters and distributors. Sharing of risk and reward is also experienced by product design firms.

The volatile environments of many creative industries – indeed, the stressed nature of such industries as product design – naturally encourage different business models. New ways of achieving payback for creative products are sought. Advertising revenues support broadcast and online content, and are a significant element in videogames development. Licensing fees – including overseas rights – and royalties are important for product designers. Subscriptions are increasingly important for videogames, especially in online markets.

7.4 Innovation management and innovation systems

Innovations and their associated pressures bring substantial challenges to management. While these challenges are widely recognised, there is less agreement about how they are best met. Best practice is still emerging – though that may be an alien concept in such a diverse and volatile environment.

A. Innovation-related market and business environment research is common in some sectors, but outside advertising is not large-scale

What creative industries often refer to as 'research' is their semi-organised scanning of their markets. In this they are like most other innovative industries, with senior professionals expected to keep up to date with evolving trends in the consumer or business markets, examining the innovations and strategic positioning of competitors and similar firms in other industries or countries.

Large firms in some sectors – such as financial and retail services – have invested considerably in data-mining systems that enable them to profile customers and track market trends. Such an approach appears to be quite uncommon in the creative industries we studied though, perhaps because the firms may be too small to afford such exercises, or the complex nature of their products make it difficult to compile standardised data on sales trends. In any case, such exercises may be less useful in sectors where creative firms are mainly dealing directly with business clients rather than final consumers.

A major exception is the advertising industry. Here new technology is being employed to support established approaches to market research and environmental scanning. Thus Web 2.0 and the online interfaces mentioned earlier are rising to prominence as sources of signals.

Database and data-mining systems provide tools for identifying and analysing signals relating to market development and changing consumer tastes, profiling types of consumers, and matching brands and products with lifestyles. But outside advertising, the processing of new ideas is largely casual and *ad hoc*. Senior staff filter promising ideas and present the most promising ones at Board level. This filtering appears to be largely based on tacit knowledge rather than any generic set of criteria. This may reflect the great diversity of projects being undertaken – or it may simply be a case of professionals seeking to retain some mystique.

B. Formal systems of innovation management are rare

There is little evidence of much use of formal R&D, even in the more technology-based industries. Little formal R&D is reported by videogames developers, for example, who may apply the term to work in connection with generic or multi-purpose tools to support games development, but not to creative development of specific new products. (Such innovation is perceived as part of problem-led development processes, not as flowing from more fundamental rethinking of the nature of their products.)

There is next to no measurement, recording or evaluation of the expenditure associated with what R&D there is. Practitioners are able to estimate innovation expenditures, but do so without any systematic monitoring. Thus, in independent production, interviewees suggest that anything between 10 per cent and 60 per cent of expenditure is accounted for by innovation activities – both quite considerable figures!

The lower figure represents the technical end of the business (e.g. preparation of computer generated imagery – our producers are presumably not responsible for much of the new hardware and software here); the higher figure more closely corresponds to the creative end. But such estimates, it should be stressed, are not based on formal methods for monitoring or evaluating of investment – and one reason for this is that while there are deliberate decisions made about innovation, often major developments are not a result of planning, but of practitioners 'getting carried away on projects'.

Most practitioners claim that innovation here is mainly *ad hoc* and 'organic' and is rarely planned: though at a strategic level most firms are involved in positioning themselves for new development (and this affects their recruitment, marketing, and collaborations, for example).

Interestingly, while the advertising industry invests considerable effort in campaign review, it too reportedly undertakes little innovation or R&D evaluation. The only measures of success appear to be attention in the trade press and industry awards (though the latter tend

to reward creativity rather than a financially successful campaign).

Some advertisers argue that all campaigns should have clear objectives from the start, with metrics agreed by both advertiser and client. They suggest that relevant success, performance, profile and impact metrics would be positive for the industry's confidence and credibility.

Tax relief could drive more formal assessment of innovation activities. There is some awareness of the R&D tax credit scheme among product designers (less in other industries) and its relevance to these activities. But few are clear about what counts as R&D and how such activity might be demarcated from other parts of the development process. And there is little understanding of how the scheme is administered, with a general perception that the administrative overheads would be too large to contemplate.

The product design sector undertakes some R&D-like development of products on behalf of clients (and indeed in some respects it is very close to the R&D services sector). Problem-solving and development on behalf of clients may attract the innovation tag. Where such activity is undertaken on behalf of a designer's own business, it is unlikely to be perceived as innovation. Creative industries may paradoxically be inclined to see innovation as unremarkable, and thus not always worth highlighting.

Perhaps this is why there are few creative businesses with dedicated R&D or innovation budgets. Innovation is funded mainly from specific projects for clients; and few business clients are willing to support much experimentation. Advertising agencies invest in software development for market research, data-mining, profiling and project management/delivery – but this is rarely perceived as innovation investment either.

Accordingly, innovation management itself is rarely identified as a discrete role. Instead it is a part of the job description of all senior professionals: they are expected to be the source of creative ideas, or at least their conduit into the business. They generate ideas, co-develop projects and innovative solutions with clients and business partners, and scan the environment for ideas to borrow. They establish and manage project teams; in some sectors with complex projects and many partners, project management skills become very important. They are also typically responsible for more organisational forms of innovation, including exploring new business models.

In sectors like independent production, team-based and inter-firm collaborative work is almost universal, with co-production and network-based development of programming very common. The broadcasting landscape is characterised by networks of individuals and specialist firms possessing complementary skills and expertise.

Production of content for multi-platform, multi-channel and multi-device environments is expected to lead to an ever greater focus on close strategic relationships, and thus the sourcing and management of relevant expertise will be a major issue.

The social skills and personal relationships needed to assemble expert groups and teams are key assets for senior professionals in the industry. They have to achieve buy-in from relevant stakeholders and motivation from employees to undertake new projects.

Similar issues arise in other industries. In advertising, innovation activity is typically led by a 'project champion' (usually a head of Business Group or a manager with relevant interest and contacts with suppliers of complementary assets or skills). He or she is responsible for assembling a team with relevant capabilities and skills for a given project.

Few agencies appear to operate permanent innovation teams; the experience of being recruited into new project teams and being removed from regular duties can benefit the individuals involved. Their established approaches and thinking may be challenged, and they must integrate their individual creativity with the tools and disciplines involved in innovation projects. (There are few immediate incentives provided for being innovative, though there are obvious career benefits if the individual is credited adequately.)

More formal knowledge management systems are being introduced in some quarters. One common feature of such systems is their role as repositories of past accomplishment (making them very useful for repurposing, as discussed above). They are not generally used to monitor the competition and they currently have limited use in the production of new creative ideas, though this may change if knowledge management systems are integrated

more closely with 'client zone' and 'innovation laboratory' systems (assuming intellectual property issues can be resolved). More informal mechanisms such as brainstorming, and interchange within product teams, remain vital. Apprenticeship within these teams is relatively informal: explicit mentoring schemes are relatively rare in the creative industries studied here.

Practitioners often complain that there are insufficient resources to bring many of their creative ideas to fruition (or even to explore their feasibility in more depth). There is no shortage of creative ideas, but there are constraints – regulatory ones, conservative clients, pressure of time and resource issues.

Intellectual property management is increasingly recognised as a key element of strategy, across all four creative industries studied. Formal approaches are adopted here, as opposed to most other aspects of innovation management. One reason for the new awareness is the emergence of new aspects of IP concerned with new technology developments in particular. Such issues as the repurposing and use of content from other property right holders, the delivery of content through new, non-geography-based media, and the growing importance of branding, require new approaches. The videogames development industry (like the software, film and music sectors) is among those most concerned with intellectual property issues, because of the ease of copying not just the underlying ideas, but the creative product itself.

Part 8: Re-examining innovation in the creative industries in the light of the sector case studies

The case studies reveal considerable variety in the challenges faced by different creative industries, but there is also a great deal of commonality. One striking factor is the wide range of opportunities and demands associated with new IT and digitisation in all sectors, including the emergence of new collaborators and competitors, and new modes of collaboration and competition. Other common factors include the increasing sophistication of consumers and demands from business clients and the growing size and complexity of projects (even with product design, where firms have on average become smaller).

All industries are affected by ongoing transformations in markets and business environments, and the creative industries are no exception. Indeed, the creative industries' emphasis on knowledge-intensive work and the 'experience' dimensions of products may make them exemplary.

Many of the innovation activities of creative businesses are likely to remain hidden from innovation researchers and policymakers
Our sector case study evidence suggests that the range of innovations encountered in creative industries goes well beyond the types, and the processes, of innovation that are emphasised in most innovation studies, statistics, and policy approaches. Often the innovations encountered span multiple areas, and organisational, process, technological and consumer experience innovations may be combined (and perhaps even be in collision in some cases). An online version of a game, for instance, may involve new technology (broadband communications), processes (required to manage multiplayer environments), and user experiences (players in different locations communicating by voice in real-time as they are making the game moves). Such a version of a game may also offer scope for new forms of organisation of innovation, as user inputs are welcomed into creating aspects of the game world.

8.1 A framework for understanding innovations

We can develop a new conceptual framework for understanding innovation in the creative industries, linking innovations to specific business processes
The range of innovations we have identified forces us to look beyond the diamond model of Figure 1. One way in which they vary, of course, is in their technology content, which Figure 1 captures. But another important differentiating feature relates to the specific business processes that the innovations concern. Indeed, innovations can be categorised in terms of the various areas of the firm's business processes where they are located – though in the case of creative industries (and many other industries with a heavy service content) we need to extend the conventional set of business processes, so as to include those involving consumer experience and co-production activities.

Such a listing of sites relating innovation to different business processes includes the following categories (grouped into a set of overlapping areas of innovation practice, in the Olympian model presented in Figure 2):

1. **General administrative activities and financial management.** The innovations featured here – office automation and financial control systems – are likely

to be very similar across firms in many sectors, with differences among firms being influenced by issues of firm size, the range of branches or sites at which work is undertaken.

2. **Business model.** Innovations may involve how finance and profits are derived. For instance, publications and websites may be funded through advertising revenues as opposed to payment from readers.

3. **Value chain location and positioning.** What parts of the creative product are being produced and processed by the firm; and what role is taken in terms of leadership or other role in the chain. For instance, innovation may relate to strategies for 'moving up the value chain' or taking responsibility for fewer or lesser elements of production.

4. **Communications.** With suppliers, collaborators, supply chain partners, etc. While this will relate closely to value chain position, tools and techniques for relating to partners, and for managing these relationships, can be sites for innovation of various kinds.

5. **Internal communications.** And the management of human resources and work organisation within the enterprise. Approaches ranging from knowledge management systems to ways of maintaining contact with staff in the field and new training systems are examples of innovation here.

6. **Back-office/backstage production processes.** These are processes in which the product is designed, scripted, rehearsed, prototyped, etc.; they vary considerably according to the type of industry: the activities can be heavily dependent on skilled or unskilled labour, or on technology of various kinds. The processes may even be rendered visible as part of the consumer experience. Innovation can involve the application of new technologies or procedures to such preparatory work.

7. **Transactions.** Innovation may centre on the process of payment for access to product. E-commerce and systems for online bookings and reservations, and loyalty cards, for example, are innovations in this area, and may be more or less closely tied to marketing and related areas. Innovations may also involve less technological novelty, such as various types of season ticket and membership scheme.

8. **Marketing and customer relationship management.** There are likely to be many innovations common across creative industries and many other service industries in this area. But specialised innovation approaches may reflect consumer or business client requirements, and the interactive nature of many creative products: few other industries feature 'fan clubs', for instance.

9. **Content of product.** The content is the core material which is consumed to produce the desired experience: the text, imagery, and other symbolic substance that usually constitutes the main object of consumption. Innovations can range from the creation of completely new genres of content through to reframing of familiar content within a new context (e.g. a new production of a drama or piece of music).

10. **Performance and production processes.** The product is generated through creative work, often in the form of a performance by artists, actors, musicians, etc. – though this performance may be recorded and/or consumed immediately (in which case process and product overlap considerably). In the case of material artefacts, the production process may involve craft work or some more manufacturing-like activity. Innovations in the supporting technology and in the organisation of creative work are manifold.

11. **Product format.** The creative product has a particular format and character depending on the sorts of media and performance that it involves. Innovations can involve new types of product (such as new media like DVDs) and improved features of existing products.

12. **Delivery of product.** How information content, or the physical medium for such content, reaches the consumer (or how the venue for performance and display is constituted). Much service innovation has concerned delivery, with electronic delivery of information services and technological support for conventional performances being particularly important. The creation of new venues, the repurposing of existing venues (perhaps by introducing live music to a restaurant), the restructuring of venues

109. In the diamond model this was presented in terms of the 'cultural concept' behind a new creative product. Neither this terminology nor that of 'content' (or even 'symbolic content') is completely satisfactory.

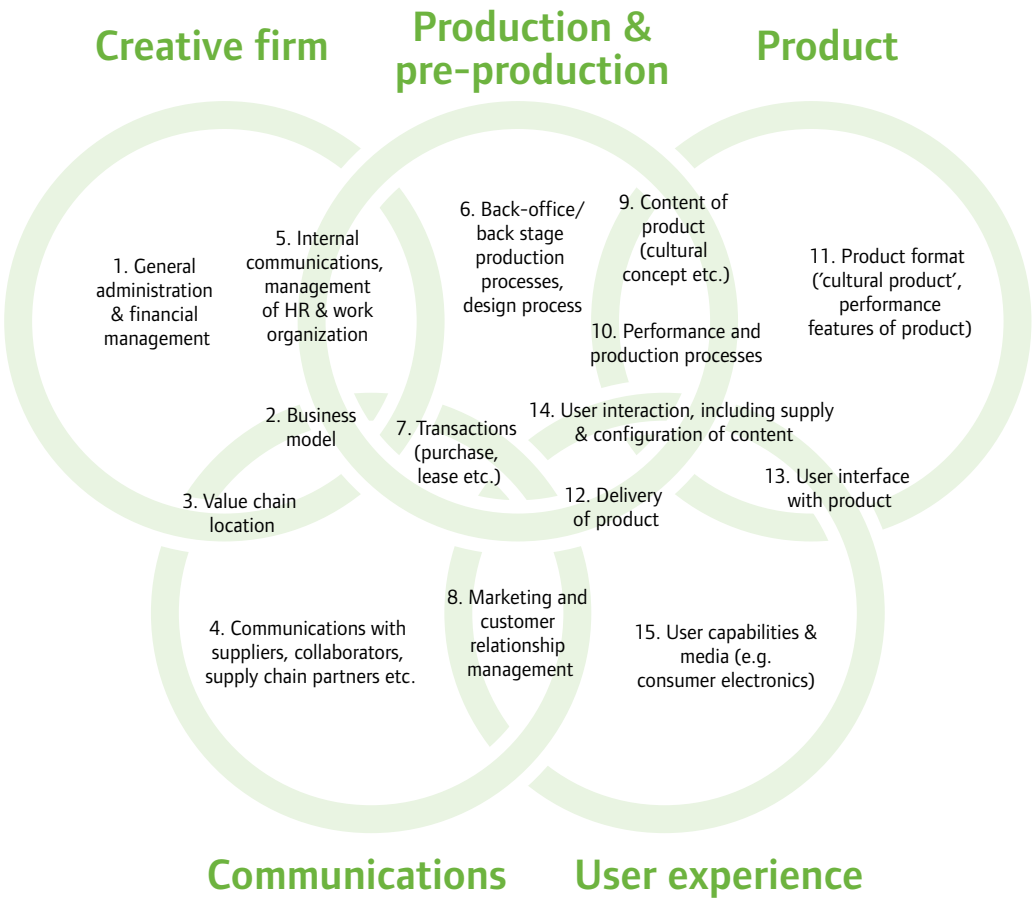
to provide new dimensions to the consumer experience, are all options for innovation.

13. **User interface with product.** How the consumer engages with the product, their points of access to content and functionality. For some creative industries, the interface may be electronic (cf. Point 14 below), but may also involve creative facilities and premises such as cinemas, theatres or galleries. Innovation can involve decisions about which facilities are created and used, as well as how they are configured and rendered appropriate settings for the experience in question. Where we deal with physical media such as TVs, PCs, phones, or even print media, there is a more restricted sense of interface reflecting the types of control and entry points presented.

14. **User interaction.** In part the scope for user interaction is determined by interfaces (Point 13 above). But creative products can also reflect consumer inputs beyond this. Moreover, the consumer experience may be determined by interactions among consumers. Co-production is an important feature of many creative (and other knowledge-intensive) services, and much attention has been attracted by recent innovations collectively labelled Web 2.0, where users supply much of the content to websites. Such models may be developed well beyond 'social networking' websites, as evidenced by the popular facilities offered by Amazon or the BBC for their users to add their own reviews or comment to the views and information provided by other users.

15. **User capabilities.** The area in the 'User Experience' circle is also a site of innovation, for instance in mobile phones that show live TV, and perhaps in the development of consumer skills and tastes required to secure full benefit from creative products. Typically innovations here lie beyond the creative firm's business processes, and are undertaken by users themselves (however, they can involve

Figure 2: Sites of innovation in the creative industries



suppliers of consumer technologies, rather than players from the creative industries).

This list is presented with specific relevance to creative industries. But the categories are relevant to a wide range of industries (though terminology may need to vary across sectors). It will be apparent that some of the areas for innovation are ones where a creative firm would have to rely upon other industries to help set standards, and to make their own complementary innovations, if the new product is to find a market. Other areas are ones where there is much more scope to go it alone with a new idea.

Major innovations may well involve action and novelty across several of these sites
Indeed, major innovation undertakings will often include the introduction of a whole series of individual creative products, as when we see tie-ins between a film, a book, a videogame, a set of toys, a website – or even a series of such tie-ins. Creative sub-sectors like cinema are increasingly dominated by such multi-media products, with their own supply chains, business models, creative product development, and user experiences. This adds a level of complexity to the analysis of (commercially) major creative products.[110]

110. This also appears as a challenge to firms that are not necessarily regarded as part of the creative industries. For example, mobile telephone network operators have struggled to manage the complexities associated with the introduction of music and video downloads.

Innovation at any of these sites may take various forms, as has already been suggested. Returning to our earlier discussion of innovation theories, we note that an innovation at any of these sites is liable to involve a mixture of radical or incremental:

- Technological development – where the innovation is associated with the creation or adoption of new or improved technologies

- Organisational change – where the innovation is associated with the creation or adoption of new organisational forms and practices of work (including the 'work' of consumers and business clients)

Furthermore, though the most evident site at which this will be encountered is the user experience associated with the creative product, more radical or incremental innovation may also involve:

- New creative content and/or aesthetic design – where the innovation is associated with efforts to shape the experience of users (who may be business partners or employers, in addition to consumers and clients) by providing more pleasant, sophisticated, or simplified interactions and symbolic material.

Each of these categories is associated with its own types of professional skill and knowledge, and many innovations require the innovator to be able to combine distinctive skill sets.

Technological innovation has been pervasively important in the creative industries, and if anything is becoming more so
Technological innovation has traditionally been at the centre of most innovation thinking. Such innovation is certainly pervasive across the creative industries studied. If anything it is becoming more important, with the ongoing developments in the diffusion, capacity and usability of IT, creating both opportunities and challenges for firms. Key technological developments across our case study sectors include new tools to: simulate and represent designs; control the production of radio and TV programmes; develop and assess information on consumers to be targeted by advertising campaigns; or create and archive content for videogames.

The 'creators' respond to changes in consumer media and platforms with new products and product elements. They also respond to new user practices – such as social networking websites – by recognising the new opportunities they provide for interaction with – and information about – clients and competitors.

Social and organisational change is also frequently – though not always – associated with technological change
New ways of consuming products, and evolving public or client concerns and motivations can impel content-related innovation, which can also be inspired by industry factors (evolution of genres, for example) and experience in other media and other parts of the world.

The changes are also often associated with new organisational strategies. In some cases firms have downsized, so that their lead staff can concentrate on creative activities rather than having to manage large teams; in other cases new technology has permitted some disintermediation so that the creative firm can undertake more of the production activity itself.

The general drift has been toward specialisation – for example, specialised contributors of sound, artwork, even plot concepts to

videogames production. But there is also some integration of previously specialised activities – for instance, as marketing, market communications, and customer relations are brought together in some new media advertising activities, with extensive use of databases and information-gathering tools.

There is considerable ferment in business strategies and organisational arrangements. Economic uncertainty and concerns about globalisation (off-shoring of professional work, establishing bases near emerging markets) contribute to this further.

Increasing emphasis on the experience economy means that changes in symbolic content will be increasingly recognised as an important source of innovation

Change in symbolic content, and the associated experiences created for users, has been given much less attention as an issue for innovation thinking and research than have technological and organisational developments. However, the appearance in management discourse of terminology such as 'experience economy' and 'customer service focus' indicates that industrial practitioners are sensing the importance of such forms of innovation. Our study can be seen as a further recognition of its importance. Innovation studies need to grapple with these topics, even if they are less tangible than technological innovations.

8.2 What does this say about 'hidden innovation'?

'Hidden innovation' was originally introduced as a description of types of innovation and innovation process that were not being given sufficient credit in established innovation studies, policies and indicators. Studies of service industries had recognised that service innovation rarely involves formal R&D expenditure and management, and was rarely reflected in such measures of innovative outputs as number of patents.

Where the focus is the creative industries, the issue is especially acute, but in its Hidden Innovation report, NESTA (2007) also demonstrates that hidden innovations are apparent in activities as wide-ranging as oil and gas exploration and prison services. Four different sorts of hidden innovation are identified by NESTA and each of these resonates with the case studies examined in our research on the creative industries. We briefly set these out, together with the challenges they might present to improving mapping and measurement of innovation:

1. *Innovation that is the same or similar to activities that are measured by traditional indicators, but which is excluded from measurement.* Much R&D-like activity is underway in creative industries, but is not described as such. It is often organised in different ways from those familiar in high-tech industries – dedicated departments or professionals are uncommon; the activity is usually built into product or project development, or carried out in the course of work that is underway. The exclusion of market research, for example, from R&D surveys and tax credit systems necessarily pushes this activity into the category of hidden innovation. Innovation surveys have failed to cover many creative industries. Improving measurement systems to deal with these shortcomings should be relatively straightforward.[111]

2. *Innovation without a major scientific/ technological basis, such as innovation in organisational forms or business models.* We have noted many cases of such innovations. For instance, shifting to an advertising-financed model as opposed to directly paying for creative content is novel in many creative industries – even if it has been used by commercial radio and television and free newspapers for some time. For such innovation to be encompassed by innovation studies, we need satisfactory ways to differentiate 'new' activities (whether new to the firm, the industry, or the world at large) from those that are simply replicating or 'rolling out' activities already instituted in other markets (e.g. extending the geographical reach of the market, without introducing changes in products or using novel distribution or marketing tools).

3. *Innovation created from the novel combination of existing technologies and processes.* 'Repurposing' of content is a central feature of many creative industries. This can involve new combinations of technologies and processes, with the content itself designed, produced, organised, stored, and delivered through technological systems and social processes (such as those associated with rights management).

111. One of the biggest headaches may actually be one of the improvements that requires least reconceptualisation of instruments – the extension of surveys to cover more small firms. Statisticians are reluctant to take this on, because of the burden on the firms, and the relatively low incidence of substantial innovation activity on the part of many traditional small firms. With high innovation levels in many creative industries, the latter argument has less force, but the problems of burdening industry are real ones that may require creative solutions.

The delivery of creative content via the internet or mobile phones is a good example. Embedding one's advertisements in a videogame – perhaps, displaying virtual posters in the backdrop of car races – is an innovation that not only spans two of our industries, but involves reworking the advertising content to fit seamlessly into the virtual environment, and to convey the required messages.

Such innovation could be addressed in innovation surveys by appropriate questions; the demarcation of novel practices from more limited customisation will require careful guidance and formulation of questions.

4. *Locally-developed, small-scale innovations that take place 'under the radar' and are therefore unrecognised or accounted for.* Practitioners in the creative industries recognise that most of their new projects demand innovative problem-solving. They also accept that many of their innovative solutions are not formally recognised, 'captured' or reproduced.

   Of course, some major innovations developed on-the-job are recognised as important ones. And some types of technical development (for example useful lines of code in videogames) may be systematically archived for re-use.

   But many other new developments are never revisited. Since this is problematic for the firms that might be able to profit from them – 'knowledge management' systems to support innovation are reportedly not yet very successful – these are likely to be hidden innovations that will be hard systematically to measure by conventional means. Perhaps the most effective approach would be to ask the professional workers themselves how far they are engaged in non-routine problem solving.

The scale of hidden innovation in the creative industries seems to be great, and the forms it takes appear to be extraordinarily diverse. The framework we have sketched out above provides one way of thinking through the issues raised in our case studies, though it cannot do complete justice to the rich descriptions that these have provided us with.

For instance, assessing the value of innovations – the extent to which they are transforming experiences and behaviours, creating revenue, or inspiring imitators and successors, would require us to go beyond examining the types of innovation. As well as understanding innovation management, we would need to explore what these innovations mean for the creative businesses and their consumers. Further work is undoubtedly needed on such case study material. But already it is possible to draw some conclusions from the results of this study.

Part 9: Conclusions and recommendations

This report has explored hidden innovation in a set of creative industries. It has identified a great deal of innovative activity that is poorly represented in statistics and metrics, in policy discussions, and in the management literature. In these conclusions we address the implications of our work for innovation measurement and policy more generally.

We particularly emphasise measurement issues because our study is about finding ways to bring hidden innovation to the surface to better understand its nature. This understanding should help underpin development of policy and management practice. We can also learn a great deal from examining such evolving practice, since it is responding to – and sometimes helping to create – the transformations that are reshaping the nature of innovation, innovation management, and innovation policy.

9.1 Innovation surveys and measurement

We have seen that the creative industries, and the types of innovation they undertake, remain under-represented in statistics and conceptual analyses. The evidence base for policy and practice in the field is thus impoverished. That this is recognised in the UK is demonstrated by DIUS's recent announcement that it will pilot a new Innovation Index in 2009, aiming to include more hidden innovation (including creative industries) activity, and to put a fuller system in place by 2010.[112]

Our focus here is mainly on improvements that can be introduced in the framework of CIS-type instruments. There is also scope for better assessment of innovation activities within individual firms (and, perhaps, within business networks); and for survey work looking at the diffusion and elaboration of specific types of innovation.[113]

9.1.1 The sampling frame of CIS-type surveys needs to be extended to capture more creative sectors

The sample of firms covered should be expanded to include more creative industries. In particular, SIC division 92 is liable to include several innovation-active creative industries. This should be a priority for further extension of CIS.[114]

Many creative firms are microbusinesses; a complete understanding of the innovation performance of the creative industries requires information about these smaller firms to be collected

Survey questions would need to be revised to be rendered more appropriate for smaller firms, and the concern about overloading small firms with official requests still needs to be taken seriously: smaller firms need shorter forms.[115]

Given that relatively few firms in creative industries have yet been captured in the sampling frames of CIS surveys, one solution might be to organise specialised surveys to examine creative firms and sectors – especially the 'creators' – rather than extending CIS to a large sample of small firms, or to weight its sampling toward creative industries. Such surveys could be a test bed for new questions aimed to capture more of the essence of creative industry innovation.[116]

9.1.2 Questions on types of innovation

The CIS4 questions cover a wide range of innovations, but at the outset the survey asks

112. This will be managed by NESTA in partnership with the Office for National Statistics (ONS), the Design Council, the CBI and others. See DIUS (2008) White Paper 'Innovation Nation' published in March 2008 and online (with much other relevant material) at http://www.dius.gov.uk
113. Many important technological innovations have been examined by such surveys – for instance there were numerous studies in the 1980s examining the diffusion of microelectronics, PCs and robotics. Less common, but equally feasible, are studies of diffusion of organisational practices such as just-in-time and quality control procedures. One approach to survey studies might involve: (1) identifying what are more or less emergent and familiar innovations in technological, organisational, and content areas; and (2) enquiring as to whether and for how long a period the organisation has been employing such innovations, and how routine they are in their products and processes.
114. Less likely to include creative industries, but still liable to be innovation-active, are SIC division 90 (Sewage and Refuse Disposal, Sanitation and Similar Activities), SIS division 91 (Activities of Membership Organisations n.e.c.), and SIC division 93 (Other Service Activities, including hairdressing, funeral activities, physical well-being activities, astrology, pet care and escort services).
115. Surveys of small business such as IFF (2008), which do enquire about innovation (along with other topics), should be encouraged to use questions that are more comparable with CIS formulations.
116. Again, this is relevant in the context of the Innovation Index proposed in DIUS (2008).
117. As noted, it is common to interpret these two questions as having a technology focus; in all likelihood many – though probably not all – respondents will also make this assumption.

about product and process innovations. Several issues arise with these questions, and several ways of extending them can be envisaged:

- The first is the likely exclusion of much non-technological product and process innovation, when respondents interpret these questions as ruling this out.[117] For instance, new service encounters and creative experiences, or improved user-friendliness, might reflect new work practices – such as how visitors to a theatre are welcomed. One partial solution would be to ask respondents whether these innovations are: (a) mainly technological; (b) mainly a matter of organisational practices and routines; or (c) a mixture of the two.[118]

- In the creative industries, these questions may well fail to elicit responses where the innovation reflects Stoneman's 'soft' innovations – those involving creative content, aesthetic design features and packaging of products.[119] A solution here would be to explicitly differentiate within product innovations between those primarily affecting the cultural content or user experience, and those affecting product functionality, reliability, quality, prices etc.[120]

- Innovations concerning delivery and user interactions may be excluded, even when they have a high technology component. At present we have no way of knowing how far they are regarded as product or process innovations, and how far they are simply hidden. The definitions of product and process innovation could be extended to make it clear where these aspects of innovation are to be included. Better still, though imposing more of a burden on respondents, specific questions could be added asking about innovations concerning the delivery of goods and services, transactional activities, and relations with users.[121]

- With process innovations, the question is liable to evoke responses about the immediate production of the good or service, obscuring back-office and backstage innovations such as those involving communications, administrative, marketing and financial processes. The questions on 'wider innovation' do address some of these topics (marketing in particular is singled out). But these questions are isolated from the more general innovation questions in CIS4, and do not clearly address the whole range of activities described earlier in our 'Olympian' model of business process sites for innovation.

CIS4 asks about 'implementation' of new or significantly changed:

- Corporate strategies: changes in Business Model may be captured here, though this could equally be eliciting answers about, for example, changes in value chain location.

- Advanced management techniques within the enterprise: does this rule out supply chain management? Communications with suppliers, collaborators and supply chain partners are important opportunities for innovation which may be missed here. Internal communications may be captured, though they might feature under another heading. Knowledge management is specified as an example of advanced management techniques, and this could include innovation management approaches.

- Organisational structure: this may capture changes in the management of human resources and the organisation of work within the enterprise, along with those in general administrative activities and financial management, and in the spatial or business practice organisation of the firm.

- Marketing concepts or strategies: this is fairly precise, though a range of contacts with customers and clients (e.g. 'after-sales' service, and issues to do with co-production of the creative experience) may not be seen as relevant here.

The only way to be sure that a survey is sampling the wider range of types of innovation that have been discussed above is explicitly to ask about these different types of innovation. Additional questions addressing the various sites of innovation could be introduced, following closely the format of the existing CIS questions ("in the last 3 years have you introduced…?").[122] Questions as to how far these innovations are technological or otherwise could be appended to these.

Asking more questions would increase the size of the survey form, but it is difficult to see how this could be avoided in a CIS examining a wider range of types of innovation.

A major shift in survey approach might be one solution, for example by shifting more of the

118. Another approach would be to ask how far the most important innovations undertaken by the firm involve new technology and how far new organisational practices and structures (for instance, scale ranging from 'not at all' to 'extensively').

119. Another issue is the exclusion of changes of a purely cosmetic nature. As implied by Stoneman's (2007) comments about design and product differentiation, there may be more or less important creative innovations excluded by this specification, because the distinction between cosmetic change and aesthetic content will need to be spelled out more explicitly.

120. Here and elsewhere, work would be needed to establish a clear terminology that can be interpreted in consistent ways across the range of creative and other sectors. This will require pilot studies, of course. In such piloting, an effort should be made to obtain information as to exactly what innovations are being referred to. This will assist in developing effective questions and understanding the nature of the changes being discussed.

121. A slightly different approach would be to ask about innovation in 'product services', those services that support acquisition or use of the main product of the firm.

122. Again a question could ask about the extent to which the most important of these innovations involve new technology and/or new organisational practices and structures (using a rating scale ranging from 'not at all' to 'extensively').

focus to the innovations rather than keeping it on the firm. For instance, respondents might be asked to identify their top three innovations (which could be defined as those that have been most important in terms of turnover, market share, profitability, or some similar criterion – even cultural impact). Then, a set of questions in the survey would explore these innovations – what their nature is, how they were managed, what sources of information were used and collaborations undertaken, and so on. Other questions, for example, those about innovation activities and expenditures, could remain as more general questions concerning the orientation of the enterprise as a whole.

9.1.3 Other questions

In the present CIS survey, the questions about novelty and origins of the innovations, sources of information or collaboration are likely to be answered with the 'technological' product and process innovations considered at the outset.[123] References to R&D, acquisition of equipment and software, and the like, do seem to be aimed at more technological innovations; though some of those dealing with sources of information and collaboration could serve fairly well for non-technological innovation too. One solution would be to ask similar sets of questions about technological and organisational innovations.

It would certainly be useful to explore the activities undertaken and sources of information used for the less technological ideas and innovations. The precise questions employed in this part of the survey are frequently worded in a fashion inappropriate for creative industries (for example, discussing 'knowledge' rather than 'ideas').

Likewise, questions about the impacts of innovation do not provide much insight into consumer experience (this may be wrapped up into 'improved quality') or ways in which consumers are involved in its creation.

New questions should be developed concerning the different impacts that the innovations may have on consumers and on the innovating firm itself. Such questions should explore how firms themselves understand the impact of their innovations (for instance, assessing their cultural importance, by looking at the extent to which ideas are being imitated or built upon).

More generally, we are concerned that the question about sources of information (and that concerning collaboration) is inadequate for uncovering many creative industry (or services) innovations. Consumer co-production is hard to detect; the sourcing of creative ideas in artistic and cultural communities or in-practice is hard to determine. These are important topics if we are to have a fuller understanding of the evolving role of experience-based industries and services in the economy.

9.2 Innovation policy and management

NESTA has produced many studies on hidden innovation.[124] On the basis of the present study, we would argue that there is a strong case for the generation of more (and more detailed) evidence about the role of policy in fostering, impeding, or changing the trajectories of innovation in the creative industries. Accordingly, we suggest that this is a key area for further research: it would be useful to undertake such research on a comparative basis, exploring the topic by examining what influences the policies in different countries and regions are having.

Our case study research has found that some creative professionals believe that government support programmes have been helpful for at least some creative industries. We also encounter complaints about the difficulties encountered when such support is run down or terminated abruptly.[125] Targeted programmes – such as those that support digital content sectors in regional clusters, or promote increased use of industrial design – are generally viewed positively. But the R&D tax credit scheme is not sufficiently open or accessible to the creative industries.[126]

The creative industries are highly innovative and they are at the forefront of major technological changes, which are spurring new creative content, consumer experiences and organisational change. The big challenge for both policymakers and managers is to keep abreast of emerging practices here.

Managers also need to know what strategies are being adopted by other creative firms (and in other relevant sectors) to discover opportunities for new approaches in their own firms and networks.

But more widely, there is a body of work emerging in the Knowledge-Intensive Business Service (KIBS) arena that focuses on the co-production of services between service firms and their clients. This is particularly relevant to

123. The survey shifts from early concern about whether any product/process innovation has been undertaken, to asking about more general innovation activities and relationships. It is likely, but far from inevitable, that the latter questions should be answered in terms of the specific innovation(s) discussed at the outset. It is less likely that they will be answered in terms of 'wider innovations'.

124. See for example the 'Hidden Innovation' report at: http://www.nesta.org.uk/informing/policy_and_research/highlights/hidden_innovation.aspx

125. These programmes may not have had a specific focus on innovation.

126. This is discussed more in Miles (2007). If tax credits were effective, we might find that firms put more innovation-related investment into R&D and less into other forms of activity. If there is a real problem of the creative industries failing to take sufficient account of technological opportunities, this would be welcome; if it leads to a diversion of effort away from potentially more effective forms of creative innovation, it is problematic.

creative firms with business clients, since the studies in this literature propose that firms can improve co-production by management of their relationships with clients.

Thus Bettencourt et al. (2002) note that making sure that deadlines are met, and that problems are diagnosed early on, demands traditional project management skills. But co-production relationships also require project leadership skills in areas such as conflict resolution, team building, and effective and honest communication. By encouraging and rewarding client behaviours there can be more effective and innovative co-production, more open communication with shared problem solving and greater personal dedication of staff members. Top managers are responsible for selection and adequate resourcing of leaders with such abilities.

For policymakers, the task is even more demanding: to understand these new or hidden practices; to ensure that existing policies are not putting unnecessary barriers in their way,[127] and to design policies that can more actively foster creative practices and modes of organisation characteristic of the creative industries.

127. Not all forms of innovation are welcome, of course, for reasons of safety and security, intellectual property protection and free markets, and so on.

Policymakers may thus need to undertake their own benchmarking of policies that have been adopted across different countries and regions to support creative industry innovation (and to support similar innovation across industry generally). Some of these policies may be targeted at specific creative industries. Our case studies and survey analysis suggest that innovation patterns vary across industries – and thus that instruments may also need to be adapted to industrial specificities (and those associated with firm size and value chain location). One valuable way of understanding the implications of these specificities for innovation policy would be to review the impact of current R&D and innovation policies on various creative industries and types of firm.

More generally, recognition of the different types of innovation that are underway in the creative industries, and in production of creative goods and services in all sectors, would be an important step towards raising awareness of these varied activities and products. This could be supported by highlighting best practice and better targeted awards schemes.

Beyond this, there may be scope for enhancing training and competence-building measures related to the variety of types of innovation (frequently requiring new hybrid skill combinations), and for various efforts to promote them through, for example:

- Alignment of R&D and existing innovation programmes
- Supporting consultancy and benchmarking for creative firms, sectors and industry and professional associations
- Organising studentships (e.g. CASE collaborative studentship awards), placements and joint seminars to support mutual learning across creative industries (and more widely)
- Tax credits for innovation support activity (beyond conventional R&D)

Some of these suggestions will clearly require considerable effort to persuade relevant stakeholders that these are appropriate areas for policy intervention. More research is certainly needed, as always. But we hope that the material presented in this report will itself provide persuasive evidence concerning the nature and importance of creative industry innovation.

Appendix A: Revealing the hidden: orientation to the study

Introduction – fresh evidence

One of the key aims of this study has been to generate new, focused and detailed evidence to assist in the process of developing a better understanding of the dimensions (types), sites, management and extent of innovation in the creative industries. Whilst secondary materials can assist in the generation of useful overviews and insights – and such materials were used extensively in building industry 'maps' and sector descriptions – it was believed important from the outset that the Hidden Innovation research should build from the bottom up, generating a solid base of primary evidence from which to derive answers to questions that have received little previous attention. A second important goal has been to build a detailed picture of innovation in the creative industries that accurately reflects the experiences and perspectives of practitioners in the domain.

A case-based approach

Given the breadth of activities that are included in the creative industries – and the exploratory nature of the study – it was determined at an early stage that the research would be undertaken via the development of detailed case studies in a sample of creative industries. Rather than aiming to provide a comprehensive overview of the creative industries, it was recognised that the purposes of the study would be served best by the development of rich insights into the specifics of approaches to innovation and innovation activities in a circumscribed range of fields. Four sectors were selected as targets for the construction of case studies – the rationale for selection of cases appears in Table 1 below.

Case development

Construction of cases progressed throughout the first ten months of the project and was undertaken primarily via deskwork, interviews and workshops. The videogames development and product design industries received most attention in the early months of the study, and the broadcast production and advertising sectors in the later part of the research. Deskwork and literature review was undertaken to facilitate mapping of the history, trajectory, structure and economy of the industries, and focused interviews were used to generate detailed insights into the innovation activities (and orientation to innovation) of selected firms in the target sectors.

Approach to innovation

Noting that the term 'innovation' is used to cover activities (the innovation processes) and products (the novel things or activities), our interim report (Green, Miles and Rutter, 2007) distinguishes between three broad facets of innovation phenomena:

1. The Type of Innovation being undertaken – the focus of the novelty.

2. The Management of Innovation – the process whereby new ideas are generated, selected, and materialised into new practices and products, which may then

Table 1: Selection of creative industry cases

Case sector	Rationale for selection
Advertising	Largest of the UK's creative industries in terms of employment and income. ICT- and technology-dependent – characterised by a need to marry creativity with technological capabilities and knowledge of markets and socio-cultural trends.
Broadcasting	Second largest UK creative sector. Strong presence of a public service provider (thus offering potential for illumination of public sector innovation). Shift to digital TV is an exceptional development, on top of the generic 'challenge of the internet'. A major and complex industry, so innovation of many forms can be expected (technological & infrastructural, content, organisational, delivery, concept etc.). Interaction of various classes of innovation (and triggers and consequences of innovation across forms) are of particular interest.
Videogame Development	Games development is a recognised UK strength (though UK performance in games publishing and hardware development is weak). A cyclical industry with inherent risk and massive front-end investment in product/content development. Some innovation shaped by developments in consoles/hardware.
Product Design	The UK remains the major (but challenged) global hub for industrial design. Product Design is characterised by its blending of technology and aesthetic knowledge and its complex links to industrial clients. Design is often perceived as a core support to innovation in client companies. A few large and medium sized companies but a 'long tail' of small and micro businesses.

be tested, diffused, implemented and configured, and so on.

3. The Innovation Context – the wider organisation of innovation in the systemic framework within which the firm-level management processes take place.

These three facets are related to a fourth category:

4. The Agent of Innovation: the organisation or individual(s) responsible for the new idea and its translation into practice.

The facets of innovation are interrelated: the nature of the innovating organisation is liable to determine (and in turn be influenced by) the type of innovations undertaken, the way these are managed, and the wider systemic context(s) in which it is located, for instance. Figure 3 depicts the linkages between these four elements, which are discussed at more length in the interim report.

Interview programme

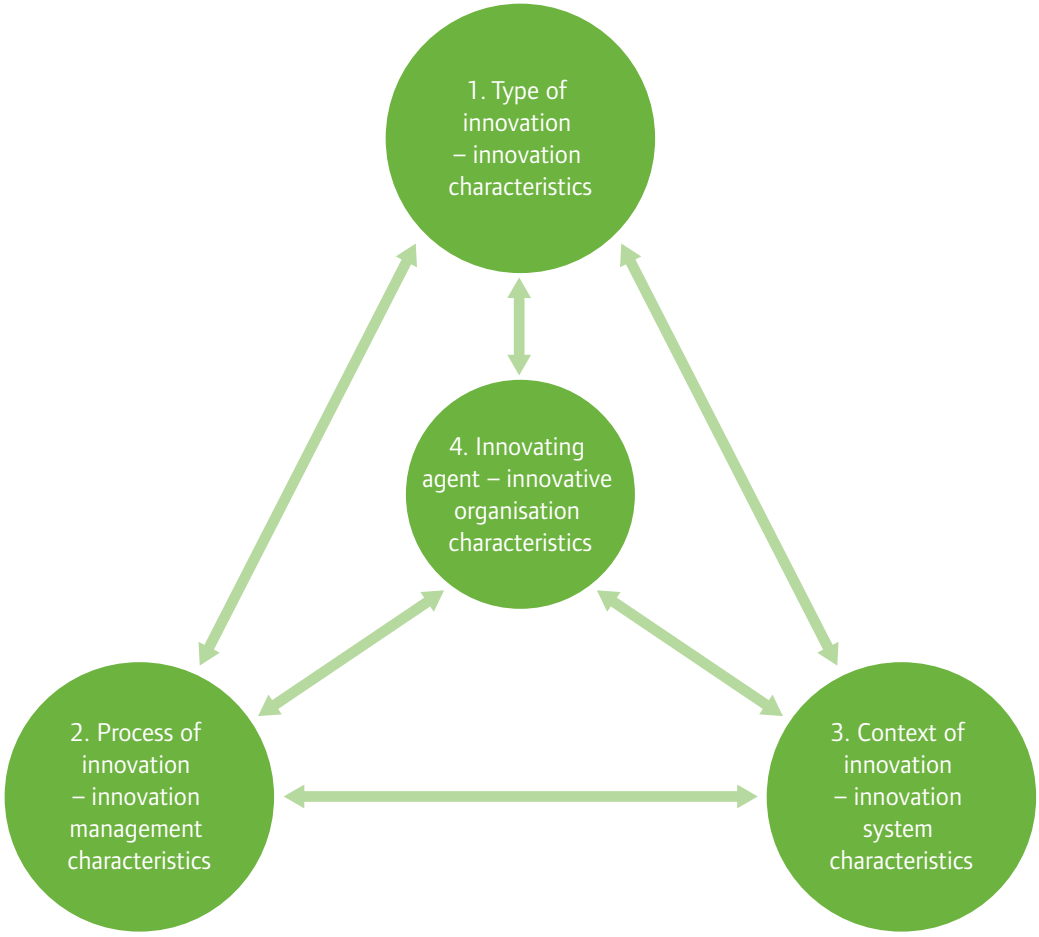
Interviewing in each industry commenced with meetings with industry experts, journalists and representatives of Trade Associations and support agencies. These encounters were useful in developing a general picture of innovation environments, activities and drivers in each industry and for generating data on (and contacts with) the more innovative companies in each domain. Interview programmes were then broadened to include discussions with senior executives and practitioners in firms with a strong innovation pedigree.[128] See Appendix B for a full list of the firms and organisations that took part in the interview programme.

Sector workshops

The sector workshops for product design and videogames development were designed to allow the research team to present its initial findings – based on desk and interview work – and to invite reflection and commentary from a small group of industry commentators and practitioners (and relevant academics). These workshops – each attracting around twelve participants – proved valuable in generating additional insights and in nuancing early outputs. They were also particularly useful in generating ideas with respect to how it might be possible to account for and raise the profile of the innovation that takes place in the creative industries under study.

128. Given the aim of examining the 'hiddenness' of innovation in the creative industries, the project team was eager to ensure that companies with a strong record of innovation were included in the study. The rationale here is that if the innovation activity and investment of a highly innovative firm is hidden, then we can have some confidence that similar activities in less innovative counterparts will also be concealed. Innovative companies were identified via canvassing of expert opinion, snowball sampling and tracking of recipients of industry awards for novelty and performance

Figure 3: Facets of innovation



Analysis of statistical datasets

Analysis of available statistics was perceived to offer a valuable complement to the qualitative case work. The research team engaged in a survey of available innovation metrics, surveys and relevant statistical sources in order to evaluate their usefulness in recording and reflecting the innovation effort and investment that is present in the creative industries. The review included an analysis of the Creative Businesses Research Report (ICM/NESTA), UK Innovation Scoreboard (BERR), sector-specific studies (undertaken for example, by Design Council and Screen Digest), data contained in commercial company databases (for example FAME), and crucially, the Department for Innovation, Universities and Skills' Community Innovation Survey.

Conceptualising and theorising creative activity

Review of creativity and creative industries literatures was undertaken at two levels: first, as noted above, to assist in the development of an overview of activities, trends and key issues in each of the case sectors (and thus underpin collection, marshalling and presentation of primary evidence); second, to facilitate development of a thorough understanding of the ways in which the creative industries (and activities therein) have been conceptualised and theorised. Though the focus in this second strand was clearly targeted at unpacking the portrayal of innovation in the creative industries and understanding the ways in which such innovation has been modelled, the review also aimed to grapple with wider issues relating to the creation and consumption of cultural products, and with the steps, phases and relationships through which such products come into being.

Appendix B: Case study interviews[129]

Advertising and Communications	Broadcasting (Independent Production Sector)	Video Game Development
Access/Access Digital	4:2:2	Rebellion Games
Good Technology/Naked Comms	Baby Cow	ELSPA
Gyro International	Diplomat Films	BERR
Hartley Stone	Hat Trick North	Blitz Games
Madhouse	Kudos	Develop
McCann Erickson	Libra Television	Evolution
MV Media/MV Solutions	RED	DESQ
Proximity (The Dreamery)	Wall to Wall	Games Audit
The Communications Practice		IBM
Vertex		NWDA
		SCEE
		Whizz Games

Product Development		
Panchromos	Satherley Design	Prospect Design
JAB Design Consultancy Ltd	Alto-Design	Factory Design
Raft Consultancy	Sublime Design Group	Smallfry
Frazer Designers Ltd	Product First	Pearson Matthews
Birkbeck College	Bolton Associates	ASA Designers
Kinneir Dufort	The Product Group	PDD
Alloy Total Product Design	Tangerine	Therefore
David Morgan Associates	Lucid Innovation	Design Connect
British Design Innovation/ Design 2020	Form Foundry	DBA

129. The authors wish to express their gratitude to all of the individuals and firms that gave so generously of their time in agreeing to provide information and commentary in connection with this Hidden Innovation study. The organisations that requested anonymity are excluded from this list: all others are included in the tables.

Appendix C: References

Advertising Association (2007) 'Key Facts About the UK Advertising Industry.' Available at: http://www.adassoc.org.uk/The_advertising_industry_-_key_facts_2007.pdf

Bakhshi, H., McVittie, E. and Simmie, J. (2008) 'Creating Innovation: Do the creative industries support innovation in the wider economy?' London: NESTA. Available at: http://www.nesta.org.uk/creating-innovation-pub/

Bettencourt, L. A., Ostrom, A. L., Brown, S. W. and Roundtree, R. I. (2002) Client Co-Production in Knowledge-Intensive Business Services. 'California Management Review.' Vol. 44, Issue 4.

Bilton, C. (1999) Risky Business: the Independent Production Sector in Britain's Creative Industries. 'International Journal of Cultural Policy.' Vol. 6, No. 1, pp.17-39.

Bourdieu, P. (1984) 'Distinction: A Social Critique of the Judgement of Taste.' London: Routledge.

Bryce, J. and Rutter, J. (2006) An Introduction to Understanding Digital Games. In J. Rutter and J. Bryce (eds) 'Understanding Digital Games.' London: Sage. pp.1-17.

Caves, R. E. (2000) 'Creative Industries: Contracts between Art and Commerce.' Cambridge, MA: Harvard University Press.

Cohendet, P. and Simon, L. (2007) Playing across the playground: paradoxes of knowledge creation in the videogame firm. 'Journal of Organizational Behavior.' Vol. 28, pp.587–605.

Cox, G. (2005) 'Cox Review of Creativity in Business: building on the UK's strengths.' London: HM Treasury. Available at: http://www.hm-treasury.gov.uk./independent_reviews/cox_review/coxreview_index.cfm

DCMS (1998) 'Creative Industries Mapping Document.' London: DCMS.

DCMS (2001) 'Creative Industries Mapping Document.' London: DCMS.

DCMS (2004) 'DCMS Evidence Toolkit – DET.' (Formerly, The Regional Cultural Data Framework). London: DCMS.

Deakin, S. and Pratten, S. (2000) The New Competition in Broadcasting: Trick or Treat? 'Economic Affairs.' 20 (4), 27–32 doi:10.1111/1468-0270.00253.

den Hertog, P. (2000) Knowledge-intensive business services as co-producers of innovation. 'International Journal of Innovation Management.' 4 (4), December 2000.

Design Council (2005) 'The Business of Design.' Available at: http://www.designcouncil.org.uk/en/Design-Council/Files/System-Files/Download/

DIUS (2008) 'Innovation Nation.' (Cm 7345) London: DIUS.

DTI (2006) 'Innovation in the UK: Indicators and Insights London.' Occasional Paper No. 6, July 2006. London: DTI.

Europe Economics (2002) 'Market Definition in the Media Sector: Economic Issues, Report for the European Commission.' Available at: http://europa.eu.int/comm/competition/publications/studies/european_economics.pdf

Eurostat (2003) 'Structural Business Statistics.' Available at: http://epp.eurostat.ec.europa.eu/portal/page?_pageid=2293,59872848,2293_68195486&_dad=portal&_schema=PORTAL

Experian (2007) 'How linked are the UK's creative industries to the wider economy?: An input-output analysis.' London: NESTA Working Paper.

Freeman, A. (2007) 'London's Creative Sector: 2007 Update.' Working Paper 22. London: GLA Economics.

French, M. (2007) 'UK studios effectively discouraged to create new IP.' Available at: http://www.developmag.com/news/28202/UK-studios-effectively-discouraged-to-create-new-IP

Frontier Economics (2006) 'Comparative Analysis of the UK Creative Industries: Report to DCMS.' Available at: http://headshift.com/dcms/mt/archives/blog_36/Full per cent20Frontier per cent20Report per cent20- per cent20Annex per cent20A.pdf

Galenson, D. W. (2006) 'Analyzing Artistic Innovation: The Greatest Breakthroughs Of The Twentieth Century.' NBER Working Paper 12185. Cambridge, MA: National Bureau of Economic Research.

GIC (2007) 'Playing for Keeps: Challenges to Sustaining a World-class UK Games Sector.' Report for UK Department of Trade and Industry. Available at: https://www.uktradeinvest.gov.uk/ukti/fileDownload/Finalpdf(LR)AD2695Mono1Games.pdf?cid=410528

Gilmore, J. and Pine, J. (1999) 'The Experience Economy.' Boston MA: Harvard Business School Press.

Grantham, A. and Kaplinsky, R. (2005) Getting the Measure of the Electronic Games Industry: Developers and the Management of Innovation. 'International Journal of Innovation Management.' Vol. 9, No. 2 (June), pp.183–213.

Green, L., Miles, I. and Rutter, J. (2007) 'Hidden Innovation in the Creative Industries.' London: NESTA Working Paper.

Handke, C.W. (2004a) 'Defining creative industries by comparing the creation of novelty.' Presented at WIWIPOL and FOKUS Workshop Creative Industries – A measure for urban development? Vienna, Austria, 20th March 2004.

Handke, C.W. (2004b) 'Measuring Innovation in Media Industries: Insights from a Survey of German Record Companies.' Berlin/Rotterdam: Humboldt-Universität zu Berlin/Erasmus Universiteit Rotterdam.

Heskett, J. (2002) 'Toothpicks and Logos: Design in Everyday Life.' Oxford: Oxford University Press.

Higson, C., Rivers, O. and Deboo, M. (2007) 'Creative Business – Crafting the Value Narrative.' London: Centre for Creative Business.

ICM (2006) 'Creative Business Survey February 2006.' Accessed at NESTA website: www.nesta.org.uk

IFF (2008) 'The Annual Survey of Small Businesses' Opinions 2006/07 (ASBS 2006/07): Summary report of findings among UK SME employers.' London: IFF Research Ltd.

Keynote Market Report (2007) 'Digital Broadcasting.' (2nd Edition): Hampton: Keynote.

Krotoski, A. (2004) 'Chicks and joysticks.' London: ELSPA. Available at: http://www.elspa.com/assets/files/c/chicksandjoysticksanexplorationofwomenandgaming_176.pdf

Linder, S. (1970) 'The Harried Leisure Class.' New York: Columbia University Press.

Locksley, G. (1992) The information business. In K. Robins (ed) 'Understanding Information: Business, Technology and Geography.' London: Belhaven Press.

Loudhouse and Macrovision (2005) 'Digital Play Research.' Windsor: Loudhouse Research.

M:Metrics (2008) 'M:Metrics Reports Mixed Fortunes For Mobile Games Industry.' Feb 19 2008 (Accessed May 15 2008). Available at: http://www.mmetrics.com/press/PressRelease.aspx?article=20080219-gamesindustry

McLuhan, M. (1964) 'Understanding Media: The Extensions of Man.' New York: McGraw Hill.

Miles, I. (2007) R&D beyond Manufacturing: the strange case of services' R&D. 'R&D Management.' Vol. 37, No. 3 pp.249-268.

Miles, I. (2008) Patterns of Innovation in Service Industries. 'IBM Systems Journal.' (Forthcoming).

NESTA (2006a) 'Creating Growth: how the UK can develop world class creative businesses.' London: NESTA.

NESTA (2006b) 'The Innovation Gap: Why policy needs to reflect the reality of innovation in the UK.' London: NESTA.

NESTA (2007) 'Hidden Innovation: How innovation happens in six 'low innovation' sectors.' London: NESTA.

OECD (2005) 'Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data.' (3rd Edition). Paris: OECD.

OFCOM (2008) 'The Nations & Regions Communications Market.' Available at: http://www.ofcom.org.uk/research/cm/cmrnr08/

Pine II, B. and Gilmore, J. (1998) Welcome to the experience economy. 'Harvard Business Review.' 76(4), pp.97-105.

PREST, TNO, SERVILAB, ARCS (2006) 'The Future of R&D in Services: Implications for EU Research and Innovation Policy.' Brussels: European Commission DG Research (S&T Foresight Unit) Directorate K Unit K2.

Peacock Committee (1986) 'Report of the Committee on Financing the BBC.' London: HMSO.

PricewaterhouseCoopers (2004) 'Economic Analysis of the TV Advertising Market.' (Report to Ofcom). Available at: http://www.ofcom.org.uk/research/tv/reports/tvadvmarket.pdf

Readman, J. and Grantham, A. (2006) Shopping for Buyers of Product Development Expertise: How Video Games Developers Stay Ahead. 'European Management Journal.' 24(4), pp.256-269.

Richards, G. (2001) 'Cultural Attractions and European Tourism.' Wallingford: CABI Publishing.

Schmidt, T. and Rammer, C. (2006) 'The determinants and effects of technological and nontechnological innovations – Evidence from the German CIS IV.' Mannheim: Centre for European Economic Research (ZEW), Department of Industrial Economics and International Management.

Skillset (2006) 'Skillset Employment Census 2006.' Available at: http://www.skillset.org/research/article_5136_1.asp

Stoneman, P. (2007) 'An Introduction to the Definition and Measurement of Soft Innovation.' London: NESTA.

Sullivan, O. and Katz-Gerro, T. (2007) The Omnivore Thesis Revisited: Voracious Cultural Consumers. 'European Sociological Review.' Vol. 23, No. 2, pp.123-137.

Tether, B. et al. (2002) 'Innovation in the Service Sector: Analysis of data collected under the CIS2.' CRIC Working Paper No. 11. Manchester: University of Manchester.

Tether, B., Smith, I. J. and Thwaites, A. T. (1997) Smaller enterprises and innovation in the UK: the SPRU innovations database revisited. 'Research Policy.' Vol. 26(1), pp.19-32.

Throsby, D. (2001) 'Economics and Culture.' London: Cambridge University Press.

Toffler, A. (1984) 'The Third Wave.' New York: Bantam.

Tschang, F. T. (2007) Balancing the Tensions Between Rationalization and Creativity in the Video Games Industry. 'Organization Science.' Vol. 18, No. 6, pp.989-1005.

UKTI (2007a) 'Key Facts: Summer 2007.' London: UK Trade and Investment. Available at: http://www.ukinvest.gov.uk/4012657/en_GB/0.pdf

UKTI (2007b) 'UK Inward Investment 2006/07: A report by UK Trade & Investment.' London: UK Trade and Investment. Available at: http://www.ukinvest.gov.uk/4012322/en_GB/0.pdf

Voss, C. and Zomerdijk L. (2007) Innovation in Experiential Services – An Empirical View. In: DTI (ed) 'Innovation in Services.' London: DTI. pp.97-134.

Warde, A., Wright, D. and Gayo-Cal, M. (2007) Understanding Cultural Omnivorousness: or, the Myth of the Cultural Omnivore. 'Cultural Sociology.' Vol. 1, No. 2, pp.143-164.

Wilkinson, A. (2007) 'An Assessment of Productivity Indicators for the Creative Industries.' London: DCMS.

NESTA Making Innovation Flourish

NESTA

1 Plough Place
London EC4A 1DE
research@nesta.org.uk

www.nesta.org.uk

Published: July 2008
HICI/13

ISBN 978-1-84875-022-7