3

THE CORE CREATIVE INDUSTRIES

LAW 3: CE = CP × T

'Creativity is one of the last remaining legal ways of gaining an unfair advantage over the competition.'

Ed McCabe, copywriter

TERENCE CONRAN

We have looked at creativity and the laws of intellectual property. It is now time to look at creative products and to count the transactions. I have chosen Sir Terence Conran to illustrate this chapter because he is a hugely successful businessman who has built up two large, successful companies (and one not so successful) based on good design and craftsmanship in industries where large-scale commercial success is often elusive. He is best known for two achievements: the Habitat shops which he started in the 1960s, and which overnight became the supplier of choice to swinging London; and more recently for a string of fashionable home furnishing shops and smart restaurants.

He started young. When I asked him about his training at London's Central School of Art and Design, he said that his earlier teenage years at Bryanston School in Dorset were even more important because there he learnt practical skills in pottery, woodworking and metalworking. After Central, he turned immediately to designing and making furniture. The furniture business was slow to make a profit, and his commercial eye soon saw a gap in the market that had nothing to do with furniture: good, cheap food and coffee. Working on the principle, which drives everything he does, of bringing to others what he enjoys himself, he started a restaurant called The Soup Kitchen: 'Most of my

efforts have been to put ideas that give me pleasure in front of other people for them to enjoy.'

Ten years passed before he opened the first Habitat store and by stages acquired a retail empire worth over £1 billion. But it came unstuck and in the process he sold the stores and the name too. He developed another furniture and furnishings chain under his own name, the Conran Collection. Then he saw another gap in the market. Not, as in the 1960s, for cheap sustenance but for more stylish and more expensive, grander places to eat and be seen. His group now includes the smart Bibendum, the smart and vast Quaglino's, Le Pont de la Tour, Mezzo, Bluebird, Orrery, Sartoria and Guastavino's in New York (they are all smart, of course, and most are vast). In 1999 Conran Holdings, of which he owns 62 per cent, produced revenues of £90 million.

For over thirty years he has manufactured, entertained and sold in abundance. Where I live in central London there are four Conran restaurants and two shops within half a mile. Each is completely different but each is unmistakably his. His first love is designing and making. When I ask him if he is a practical man he gently corrects me: '*very* practical'. In an age of global brands, which he is becoming, his business is still based on the individual's pleasure in making and shaping something. He much prefers making to selling. He sees the selling of his own products as a secondary part of the process, and dislikes selling other people's products. He is not a salesman. He tells me: 'I can get away with being a restaurateur, which is partly about selling, because we do manufacture the food in the kitchen. But I am somewhat ashamed of being a retailer.'

I met Terence Conran at his offices in Shad Thames, below Tower Bridge and next to Butler's Wharf and several of his shops as well as the Design Museum, which he founded. He lives above his offices. He was wearing his trademark blue shirt and round cufflinks. His office is typical Conran: comfortable, elegant, colourful, simple. He says he doesn't like the phrase 'well designed', preferring 'intelligently designed'.

He is a scavenger for pleasure. His talent is to notice something – a colour, a shape – and to recreate it and reposition it in such a way that other people enjoy it too. Before I met him I had focused on creativity

in the absolute sense of 'something from nothing'. During our talk I realized repositioning is equally valid. He said, 'Creativity is hard to define. It's mostly straightforward but there's also something magical, almost spiritual, about the process.' And he comes back to the practical: 'You need to know the history of things and to be able to see a gap in the market.' He knows many people can have an idea but he also knows that few follow it through.

He recognizes from his own life that the creative person never moves in a straight line: 'I do believe that someone who is really creative is interested in everything that impacts on their life,' and deliberately searches out new experiences. But, having found what you want, 'You have to stick with it. You have to be absolutely determined, otherwise you might just as well write poetry.'

Does everybody have a creative talent? 'I always say to anyone who says, "I can't draw", that if you can write your name you can draw.' There is no special trick. The best education for children is to say, 'Look! Isn't that interesting?'

Conran reminds me of Warhol's description of an artist as 'Someone who produces things that people don't need but which he – for some reason – thinks it would be a good idea to give them.' But that rather apologetic remark (you don't really need this) obscures both men's steely determination to give it to us.

THE IDEAS BUSINESS

This chapter quantifies that 'steely determination' in the heartland of the creativity economy. It describes the fifteen industries where creativity is the most important raw resource and the most valuable economic product.

Data on the creative economy are fragmented and elusive. Its products are found not only in factories and shops, like traditional goods and services, but surround us almost everywhere. We are enmeshed by words and images, patented products, brands and trademarks. We talk of information overload and image overload in ways that we never talk of clothing overload or food overload.

Once identified, some creative products can be difficult to quantify

and value. It is relatively easy to size up a machine, but measuring and valuing the patent in the machine is more complicated. Government sources are patchy. In spite of their statements about the importance of the creative economy and the Internet's 'new economy', most governments remain fixated with traditional manufacturing and services. They have a sound reason for their bias. They depend mostly upon manufacturing, less upon services and hardly at all upon intellectual property for their tax revenues. This problem affects not only domestic output but also international trade. The export and import of most creative products are absent from the trade statistics because they are not subject to customs and excise taxes.

The criterion for inclusion is whether the industry meets the definition of the creative economy given in Chapter 1: financial transactions in creative products, or $CE = CP \times T$. To be included, a product has to be a creative product, and a transaction has to take place. The criterion of a creative product is a good or service that results from creativity and has economic value. The criterion of a transaction is that an exchange takes place with an economic value. In many cases, the product will include one of the main forms of intellectual property (patents, copyrights, designs and trademarks) even if it accrues more value as a physical object than through intellectual rights. Conversely, I have excluded some forms of intellectual property, such as trade secrets, as being too general for my purpose.

I have included research and development into new processes and products that may lead to a patent, but I have not included the product that may result nor the sales that may follow. The same principle applies to trademarks. I have included the business of the creation of a trademark but not the resulting sales. The design of the Exxon logo is a creative act; but selling Exxon products to vehicle drivers is not. I acknowledge that this distinction is becoming blurred as more goods are treated as brands rather than commodities. But common sense requires it be made in order to differentiate between the core industries and the rest of the economy which they supply.

GLOBAL GROWTH

Worldwide, the creative economy as defined above was worth about $2,240 billion ($2.2 trillion) in 1999 and is growing at 5 per cent a year. Since, according to the World Bank, the world's gross national product (GNP) in 1999 was $30,200 billion ($30.2 trillion), the creative economy represents 7.3 per cent of the global economy.

The largest market is America, which was worth $960 billion in 1999 and is expected to be worth over $1 trillion in 2000. The International Intellectual Property Alliance (IIPA) defines the country's core copyright industries as those that create copyright products; its categories are TV, film and video production; music publishing; music and other forms of recording; book, magazine and newspaper publishing; computer software; theatre; advertising; and TV, radio and cable broadcasting. It says these industries contributed $348 billion domestically in 1997, accounting for 3.65 per cent of GNP, and $66 billion in exports, totalling $414 billion. During 1977–97 they grew at 6.3 per cent a year compared to the country's overall growth of 2.7 per cent a year. Overall, they contributed more to the American economy than almost any other industry: more than chemicals, aircraft and aircraft parts, cars and car parts, electronic equipment, industrial machinery, and clothes.

Over 3.8 million Americans work in the core copyright industries, about 2.9 per cent of the total workforce. Nearly 2 million Americans described themselves as artists in 1998, an increase of 70,000 over the previous year, according to the Bureau of Labor Statistics (the Bureau's category of 'artist' includes most arts and cultural workers). There were 30 per cent more writers and 50 per cent more musicians than in 1970. Consumer expenditure on admissions to the performing arts increased at an average of 8 per cent a year throughout the 1990s.

The number of patents has shown similar growth. Because they are registered, patents can be precisely counted, although their economic value has to prove itself in the market in the same way as copyright. In 1999 the US Patent Office issued 153,493 patents for inventions, 14,732 for designs and 421 for plants, a total (with 448 reissues) of 169,094. It also registered 104,000 trademarks.

According to the World Bank, the next largest national economies measured by GNP are, in order, Japan, Germany, France, UK, Italy, China and Brazil. The ranking of their creative economies is slightly different. Japan has very high expenditures on R & D, as well as the world's highest per capita demand for newspapers, comics (its manga comics had sales of over ¥500 billion, $4.5 billion, in 1999) and electronic entertainment. Germany also has high expenditures on R & D and mass media. However, both countries (as do France and Italy) have lower levels of production in other sectors, and a lower level of exports, compared to America and Britain. China and Brazil are at a different (lower) stage on Maslow's 'hierarchy of desires', and a larger proportion of their GNP is spent on food and manufactured goods.

Britain's position, with a market size of £98 billion, is due to its substantial level of activity across all fifteen industries, from art to video games, and its reputation for originality and quality. It also has the two-edged benefit of speaking English, which assists its exports but makes it an easy market for American imports. In 1997 Britain moved ahead of Germany and France into second place, behind America, in the export of services. A large and growing part of these services revolves around creative products. Whereas America has shown continuous growth in both patents and copyrights, the British creative economy has grown faster in copyright products. The number of jobs in the creative sector has grown by 32 per cent over the past ten years, which is about seven times as fast as the workforce as a whole.

Over 750,000 Britons describe themselves as working in the creative industries. The number has grown by 3 per cent every year since 1991, many times faster than the population. There are 60 per cent more artists, 55 per cent more musicians, 40 per cent more actors and other performers, 30 per cent more writers and 400 per cent more people working in digital media. This last figure may seem an unfair comparison since in 1991 the category of digital media consisted mainly of the CD-ROM which struggled to find a commercial market, whereas now it covers all online and Internet activities. But that is the point. Some of this activity is very new. As a result the British are spending more money on copyright work than ever before: over £3 billion on books,

£1.8 million on music CDs and cassettes, £400 million on the theatre, £500 million on concerts and £600 million on the cinema every year.

FIFTEEN SECTORS

This section gives data for (i) market size and (ii) industry earnings of the fifteen core creative industries. The market size is the amount spent annually by consumers and business in a specific market; for example, the amount spent in America or Britain. The industry earnings gives the industry's revenues; for example, the amount that American or British companies earn. The global totals balance but individual countries show disparities. For example, American and to a lesser extent British, French, German and Japanese companies often earn substantial sums overseas, so their industry earnings are larger than their domestic market. Conversely, countries which import a lot have a larger market than is shown by their national companies' earnings. The sources are given in the Notes. The base year is 1999, but later data are given when available.

Advertising

Advertising has a love–hate relationship with creativity. In his seminal book *Confessions of an Advertising Man*, published in 1963, David Ogilvy, founder of Ogilvy & Mather, wrote, 'I tell new recruits that I will not allow them to use the word creative to describe the functions they are to perform in the agency.' He preferred the word 'remarkable'. Over thirty years later, Lee Chow, Chairman of TBWA Chiat/Day gave the opposite and more modern view when he said at the launch of ABC-TV's new logo, 'I am an artist who happens to be in the advertising business.'

Today, advertising faces one great opportunity and several challenges. The opportunity is to widen its work beyond the traditional display media of press, TV, radio, cinema and 'outdoor' (billboards) into the new relationships, both high-tech and low-tech, by which organizations now reach their customers, inserting logos, brand names and slogans into areas that have been ad-free. Already, some top

agencies are making more money from sponsorship and 'marketing strategies' than from display advertising. To achieve this, they face three challenges. The first challenge, almost solved, is to switch from charging their traditional 15 per cent commission on clients' media expenditure either to royalties based on sales or to fees. The second is to learn new skills (new to them, at least) of marketing and merchandising. The third is to compete with the many strategy and design companies, often younger and more nimble, which already have these skills and can focus on new concepts and ideas and subcontract the rest.

Advertising is moving from being a copyright business to being both a copyright and a trademark business. Agencies not only create new copyright works but are a major user of existing works; although ironically some of the most famous slogans, especially the simple ones, have been judged to lack the requisite 'skill and labour'. As they move into marketing, so they become more involved in the creation of trademarks and brands.

There are two ways to measure advertising in financial terms. The industry itself prefers to combine the relatively small amounts that advertisers pay to agencies to create campaigns with the much larger amount the advertisers spend to buy media time and space on TV, newspapers, etc. This traditional approach made sense when the agencies both designed a campaign and bought the media, charging their commission on the purchase. It does not cope well with the modern trend to separate these two functions: for a creative agency to devise the campaign and a separate company to buy the media outlets. Therefore, I give two sets of data: first, the amount spent on the advertising agencies themselves; and second, the amount spent on both the agencies and the media. In calculating industry size, I use the former figure, since the latter amounts appear as revenues of the various media industries, and to include them here would be double-counting.

The global market for the creation and development of advertising is worth about $45 billion. The three main centres are New York, Tokyo and London, followed by Frankfurt, Paris and Hong Kong. The US market is worth $20 billion and is growing at 7 per cent a year. American agencies dominate the global business because American companies are the major advertisers. The UK industry's revenues are £5 billion. It has a workforce of 120,000 people.

Advertisers' total expenditure on advertising (consisting of their expenditure on both agencies and media) dwarfs these figures. The total amount spent on advertising worldwide was $308 billion in 1999. Zenith Media expect the total to reach $332 billion in 2000, an increase of 7.8 per cent. As yet, only a small proportion of this growth is due to the increase in Internet advertising, up from $1.5 billion in 1998 to $4 billion in 2000. The largest market in 1999 was America ($134 billion) which is expected to grow to $140 billion in 2000. The second biggest was Japan ($37 billion). Together, these two countries account for nearly half the world total (a pattern of dominance that occurs in many of the fifteen industries). The next largest markets were Germany ($20 billion) and Britain ($16 billion). Outside Europe, the rest of the sector is quite small.

National growth rates vary according to economic output. America and Europe are growing at 5–8 per cent a year but Japan's recession has led to a fall of around 4 per cent a year for four successive years. Growth in the rest of the world is static. Media expenditure in Africa shows signs of growth but most of the advertising campaigns and media outlets are owned by Western companies.

Architecture

Architects provide the creativity that fuels the building and construction industry, which is the world's fifth largest industry after defence, education, health and food. Their artistic and economic role varies widely from the top handful of prizewinning architects who design the world's most prominent buildings to the hundreds of thousands of architects, surveyors, builders and owners who design and construct the remainder.

Architecture is a copyright business as opposed to a patent or trademark business. An architect's sketches are protected by copyright, as are the scale drawings and models and all the artistic and literary works and designs involved in the process of creation up to and including the building itself. Architects often retain copyright in their buildings although they may transfer it to a contractor or license a contractor to make copies. The person who buys or rents a new house does not normally acquire copyright in it.

Architecture has the distinction of being the most truly international

of the fifteen industries, partly because it does not rely on words and partly because it has achieved its own global iconography that is independent of any single nation or culture. Even governments that restrict cultural imports in other sectors are happy to appoint foreign architects to deal with buildings of the greatest national and cultural sensitivity. The French, probably the most culturally exclusive of all industrial nations after the Japanese, asked Briton Richard Rogers to design the Centre Georges Pompidou at Beauborg and the Chinese-American I. M. Pei to redevelop the Louvre. Los Angeles-based Frank Gehry designed the new Guggenheim Museum in Bilbao in the Basque country, and Spain's Rafael Moneo has designed Houston's Museum of Fine Art. The German government asked Briton Norman Foster to design its new Reichstag in Berlin; and Kisho Kurokawa was asked to build a new wing for the Netherlands' prestigious van Gogh Museum in Amsterdam.

Worldwide there are about one million professional architects who have combined revenues of about $40 billion. Of the top thirty firms in terms of revenues, America and Japan have twenty between them, with Britain in third place.

In the US, the 17,000 member firms of the American Institute of Architects had gross revenues of $24 billion in 1999 and net revenues (excluding subcontracted work) of $17 billion. Average profits were 13 per cent. These firms employed 115,000 licensed architects, 20,000 interns, 30,000 other technical staff and 20,000 administrative staff.

UK architects' revenues are £1.6 billion, of which £1.25 billion comes from British clients and the remainder from overseas. The Royal Institute of British Architects (RIBA) estimates there are 30,000 practising architects. Together, they account for about 22 per cent of the fees earned by all building professionals and about 2 per cent of all expenditure on construction.

Art

The art market is unusual in that it deals only in original works that are unique or rare, and it is primarily a second-hand market. Whereas the whole point of most industries, including design, music, publishing, film, TV, computer software and video games, is to multiply and sell as many copies as possible, the art dealer's objective is to emphasize scarcity.

As a result, even though artistic works do qualify for copyright, the purchaser of a work of art normally buys only the object and not the copyright to it. The artist retains the copyright. The priority given to the art object means that many artists do not encourage the copying of their works, even if they might gain financially. In addition, an artist's signature may be separately protected as an artistic work or as a design. A peculiarity of the European art market, originating in France, is the *droit de suite* or resale tax under which an artist (or the artist's heirs, for seventy years after the artist's death) qualifies for a percentage of the sale price, usually around 4 per cent, each time a piece of work is sold.

By dealing in the same product over several years it is possible to accumulate an accurate record of its price as it goes up and down, demonstrating how the economic value of the same product can fluctuate. Paris-based Groupe Serveur's Artprice.com has a database of over 180,000 artists and 2.3 million works that have been traded since 1987. The art market also exemplifies the 'deal economy' because every transaction is unique. Even two identical prints sold consecutively constitute different transactions and may fetch different prices because the sale of the first will affect the market for the second. The very low barriers to entry and the low start-up costs allow many thousands of dealers to operate.

Overlapping the commercial market is the stately world of museums and galleries which provide repositories and archives of high-quality or specialist art. Their main business (with some exceptions) is to guard heritage and celebrate new work. They do not normally buy and sell copyright except when they produce a catalogue which requires them to acquire reproduction rights, like any publisher.

Globally the high end of the market, consisting of work by professional artists, is worth about $9 billion; this figure includes fine art, jewellery, fine furniture and some *objets d'art*. The market is dominated by New York and London, which together represent over 70 per cent of all sales both at auction and through galleries; buyers from other countries often buy through a dealer in one of these two cities. London has 70 per cent of the European market; the next largest centres are Paris and Geneva. Christie's, the world's largest auction house, had revenues in 1999 of $2.3 billion (including all types of

artefacts), of which American sales brought in $1.0 million and European sales $1.1 billion. The world's most-visited art gallery or museum is the Louvre in Paris, which attracted 5.9 million visitors in 1999.

The US market is worth about $4 billion. As many as 240,000 Americans give 'painter, sculptor, printmaker or craft-artist' as their prime occupation and a further 21,000 give it as their secondary occupation. A further 350,000 people work in an administrative or management capacity in galleries, museums and other art ventures. The New York art scene is the most active in the world and New York artists command the highest prices for contemporary art worldwide. The National Endowment for the Arts has a budget of $98 million and state, city and private donors provide many times that amount.

The UK art market is worth £1.8 billion (the total art-and-antiques market is worth £2.5 billion). British firms earned £2.2 billion in 1999, including £1.3 billion overseas, so the domestic market splits equally between £900 million earned by British firms and £900 million in imports. The market is expected to grow to £2 billion in 2002. It has a workforce of about 25,000 full-time and 13,000 part-time people.

The British government provided direct grants of £216 million to public museums and art galleries in 2000. National lottery arts and heritage funding, mainly for capital expenditure, has totalled over £3.6 billion since 1995. The British Museum receives the largest annual grant (£43 million in 1999) and had the largest number of visits (5.4 million) followed by the Victoria and Albert Museum (£31 million and 0.9 million visits), the Natural History Museum (£28 million and 1.7 million visits), the Science Museum (£21 million and 1.4 million visits), Tate Britain (£20 million and 1.8 million visits) and the National Gallery (£19 million and 5.0 million visits). The private Royal Academy of Arts, which was set up by artists in 1768 and is still run by artists, had a turnover of £19 million in 1998, coming from exhibitions (£5 million), trading (£10 million) and donations (£4 million). It attracts 1.4 million visitors.

Crafts

Crafts flourish in two separate markets; in the art market, where they are regularly exhibited in art galleries and sold at auction, and also in the tourism and leisure markets. In these mass markets, people buy crafts without much regard for authorship or formal aesthetic, and value them by price and utility as well as quality. In both sectors, but especially in the mass market, many people make crafts for their own use and not for sale. Although all craft works count as artistic works, the majority of people do not assert their property rights.

Some cultures have a chronic debate whether crafts are art or even creative. The British are deeply conflicted. They will happily treat an English silver chalice of the fourteenth century or a Sung bowl as a wonderful work of art but when they look at contemporary work they become confused and snobbery sets in. The best response to this conundrum was given by an English gallery owner who asked Tobias Kaye, a woodturner, whether he was making art or craft. Kaye replied, 'Well, the process is art but the result is craft.' 'Funny,' said the gallery owner, 'because I asked Richard Raffan [another leading woodturner] the same question last week and he said, "The process is craft but the result is art."' Other countries do not have the same 'either/or' mentality. The Chinese, Japanese, Indian, other Asian, Aboriginal Australian, African, Arab, Russian, Mexican, Peruvian, American Indian, Inuit and other cultures happily mix art and craft. Art critic Herbert Read said, 'Pottery is at once the simplest and most difficult of all arts. It is the simplest because it is the most elemental; it is the most difficult because it is the most abstract.' It certainly fits the conditions of being creative.

The global market for crafts is varied and diverse. The high-end market, consisting of crafts whose authorship and provenance is identifiable, is worth about $1 billion. The mass market of works individually made for sale is probably worth twenty times as much. Based on the industry's own estimates, I have put a value of $20 billion on it.

The US market, in terms of sales of craft materials to craftworkers, is worth $11 billion, and is growing at the rapid rate of 10 per cent a year, but only a fraction of this material is used in crafts intended for sale. The industry estimates the total market to be worth about $2 billion.

The UK market is worth about £400 million. There are 25,000 people working professionally, mostly in textiles (26 per cent) and ceramics (21 per cent), followed by wood, metal, jewellery, glass, toys and musical instruments. About 55 per cent work full-time. Of these, 600 have a turnover in excess of £250,000 each, although the average annual turnover for all craftworkers is under £10,000.

Design

The Industrial Design Society of America (IDSA) defines industrial design as the 'creation and development of concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of users and manufacturers.' Design is not only responsible for the front end or face of most products and services, but is a major input into all origination and manufacturing processes. Without some design element, most manufactured goods and services would either not exist or would fail to differentiate themselves in the marketplace. Research by the London Business School shows that for every 1 per cent of sales devoted to product design and development a company's sales and profits will rise on average by 3–4 per cent a year for five years.

Designers want their designs to be both eye-catching art and fit-for-purpose function. Their successes are world-renowned, although they themselves are hardly known to the public at all. The VW Beetle, the Coca-Cola logo, the 'No Entry' street sign and the Nike swoosh are global icons that decorate our age. Yet few people could name their authors, and the public is quick to blame designers for artiness and expense. Prime Minister Tony Blair admitted in June 1997, 'If MPs pushed for a debate on shipbuilding they would probably get one, but if they pushed for a debate on the design industry they would be dismissed as concentrating on trivia.' Britain's current lack of interest is a remarkable turnaround from the Victorian age when between 1839 and 1842 the British parliament passed four separate Design Acts. It is the same in America where the census form did not admit the category of 'designer' until recently, and many thousands of designers were hidden away in the category of 'other freelance worker'.

A design may qualify for three kinds of property protection. It will almost certainly qualify as an artistic work for copyright. In Britain it

will also qualify for a 'design right' which is rather like copyright and intended for functional designs. In addition, a designer can register a design, obtaining a stronger level of protection, although this is available only to designs with a significant aesthetic element. The availability of automatic protection, especially the new design right, has led to a fall in the number of registrations. In all cases (copyright, design right and registered designs) the term of protection is shorter than for other copyright works, reflecting the traditional view that they are less a matter of 'artistic' expression and more a matter of industrial manufacturing.

The global market is worth about $140 billion, of which America, Germany and Japan produce nearly 60 per cent.

The US market is worth $50 billion, about a third of the global total, and is growing fast. The IDSA says the average annual growth in design jobs over 1995–2000 was 21 per cent. Its research into training and hiring suggest the four most sought-after skills for would-be designers are 'creative problem-solving; 2-D concept sketching; verbal and written communication; and the processing of materials and manufactures'. Skills in information technologies rate fifth.

The UK industry is worth £17 billion a year. Most of this money – about £12 billion – is spent by companies on their own internal product design and development and the remaining £5 billion is spent on independent designers and consultants. There are around 23,000 full-time designers and about 180,000 other people working on design and product development. In 1999 the Patent Office received 9,000 design applications (of which British citizens made 4,000), and registered 8,500. It received 58,000 applications for trademarks (including 45,000 from Britons) and approved 43,000.

Fashion

Designer fashion is a small but intensely competitive business: a volatile mix of art, craft, design, manufacturing and retailing. It is the most visible tip, with an influence disproportionate to its size, of the global textile and clothing industry. The major brands and companies are headquartered in New York, Paris, Milan and Geneva and sell not only clothing but also accessories, watches, perfumes, etc. A fashion product is protected by copyright only if it is made with 'individual

skill and effort' and thereby qualifies as an artistic work; so a handmade dress is protected by copyright but a mass-produced dress is not. Usually, copyright provides too narrow a protection to be effective, especially in such a fast-moving business (there are obvious similarities with computer programs). In practice, fashion designers rely mostly on trademarks, trade secrets and other forms of protection (including tight security, because several collections have been stolen hours before a show).

The global market is worth about $12 billion (although a wider definition of what constitutes fashion brings the figure to nearer $60 billion). The largest national markets are America, France and Germany. The major national industries are in America (£5.2 billion), Italy (£1.5 billion) and France (£0.9 billion); these figures include the designers' accessories, which are growing faster than the clothes themselves. The major companies are LVMH (Dior, Givenchy, Kenzo, Lacroix, Pink); Richemont (Cartier, Chloé, Alfred Dunhill, Hackett); Hermès (Hermès, Gaultier, John Lobb); Wertheimer (Chanel, Holland and Holland); Pinault Printemps Redoute (Gucci, Yves St Laurent) and Prada (Prada, Helmut Lang, Jill Sander and Church).

The US market is worth $5 billion, consisting equally of American and imported goods.

The UK market is worth about £0.9 billion. It is dominated by American, Italian and French products. British companies earn only a small proportion: £200 million at home and £400 million overseas. The largest company is Paul Smith, which in 1999 had revenues of £41 million and profits of £4.4 million (the value of the counter sales was considerably higher). There are about 1,500 designers and about 10,000 other people working in the industry.

Film

No architect can make a business from one building; no designer can survive on one frock, however beautiful. But film is one sector (music and writing are others) where success can come quickly and one success can be enough. The biggest selling film ever is Fox's *Titanic*, which earned $1.8 billion in its first two years. The lure of such riches attracts millions of people to be players in the film-making game or to be close to those who are.

The industry consists of four main sectors: American production; other national production (notably in Australia, Brazil, Britain, Canada, France, Germany, Italy, India, China and Hong Kong as well as, to a lesser degree, in some other twenty countries); American-owned global distribution companies; and local companies which own cinemas, TV channels, and video and DVD outlets. The main trends are the growth of low-cost digital production and the growth of home (as opposed to cinema) viewing, especially on TV, video and DVD. According to *Variety*, the Hollywood studios earned $9.5 billion from American home entertainment in 1999; more than they did from American cinemas.

A film is a qualifying work and protected by copyright. Most legislation interprets the 'author' quite widely to include the author of the screenplay, the producer, the director and others as well as giving separate protection to the costumes, the design, etc. Once made, a film's rights will be sold or licensed to distributors within each territory, each medium (cinema, broadcast, etc.) and in each language. There is a trend towards registering film titles and merchandise as trademarks.

Globally, the film industry is worth $57 billion a year in terms of sales through cinema, video and TV. India produces the largest number of films (760 in 1999), followed by America (630); the next biggest producer was Japan with about 250. America dominates all national markets. It dominates even in Britain, which has an active film industry, but whose consumers spend 80–90 per cent of their box office money to see American films. The world cinema market was worth $16.9 billion in 1999, of which America had $7.5 billion, over 40 per cent of the total, followed by Japan ($1.6 billion), the UK ($1.0 billion), France ($0.9 billion) and Germany ($0.9 billion). The home video market is worth about twice as much as cinema, at $32 billion, and the introduction of DVD will give this figure a boost in coming years. Sales to TV are worth $6 billion.

Of the US average of 700 films a year, roughly 500 are released in cinemas and the remainder sold straight to video or TV. A Hollywood film cost an average of $51.5 million in 1999; the average cost has declined slightly for three years in a row. Box office receipts totalled $6.9 billion in 1998, a 9.2 per cent increase over 1997, and topped $7.5 billion in 1999; the producer might receive one third of these

receipts. The number of tickets sold reached 1.48 billion, the highest figure for forty years (a reminder that even with video, DVD, ordinary TV, pay-TV and pay-per-view, the cinema still flourishes). In addition, video and DVD earned $8 billion (rising to $9 billion in 1999) and TV and cable earned $2 billion. The industry employs 565,000 people, divided into production (240,000), cinemas (134,000), video rental (172,000) and other areas (19,000).

The UK market is worth £2.5 billion, of which the consumer spends £600 million at the box office, £1.3 billion on video and DVD, and £600 million on pay-TV subscriptions, while the BBC, ITV and other free-to-air channels spend an additional £100 million to buy broadcast rights. The figures for DVD and pay-TV are increasing rapidly while other sectors are static. Of this total, American and other imports take £2.3 billion and British films slightly over £0.2 billion. Britain produces an average of 100 films a year (although the total varies widely from 78 in 1998 to 114 in 1999), of which about half are British-funded (58 in 1999). Almost all British films have budgets under £3 million, although the Bond films and a few others each year cost up to £30 million. These films earn their £200 million revenues through the box office (£140 million), video and DVD (£40 million), pay-TV (£20 million) and free TV (£5 million). British companies also earn £545 million from overseas sales and another £320 million from working on foreign productions in Britain. The industry provides jobs for about 33,000 people.

The British industry is well regarded for its creative and technical skills, and won an average of 21 per cent of the major Oscars through the 1990s, but for forty years it has lacked the successful entrepreneurs who exist in British architecture, art, fashion, publishing, theatre, music and video games. As a result, the main financiers of British film-making are the Hollywood studios (who provide most of the finance for 60–70 per cent of British films) and the National Lottery and other subsidies which provide about £60 million a year. The first of the latest wave of British films was *Four Weddings and a Funeral* in 1994 which cost £2.5 million and earned over £160 million at the box office; others include Fox's *The Full Monty* (£155 million) and Polygram's *Mr Bean* (£150 million). *Notting Hill* has earned over £170 million but had the benefit of a American-size budget ten times the size of *Four Weddings*, its predecessor.

Music

The music industry has four main sectors: composition; performance; publishing; and the production and sale of sound recordings. Music is the most intangible of creative products, and its performance involves no physical form at all; it is also, with publishing, one of the most pervasive.

A piece of written music is protected by copyright and related rights at each stage of its life. The composition is protected for the composer's life plus seventy years; and recordings for the performer's life plus fifty years. The broadcast of a recording or a performance is protected separately for fifty years. Typically, a publisher will buy the rights to a piece of music and seek to exploit them by means of recording, performance, etc. Publishing and recording are traditionally separate activities, although, confusingly, all major companies carry out both functions. This separation may be ending as online delivery undercuts the role of the traditional stand-alone company.

The top global companies are Vivendi Universal's Polygram (France), Sony's CBS Records (Japan), Time Warner's Warner (US), Bertelsmann's BMG (Germany) and EMI (Britain). Together, these companies have over 70 per cent of the world publishing and recording markets.

Globally, the four sectors have a turnover of $70 billion. The main sector is recorded music, which was worth $38.5 billion in 1999, of which the US spent $14.3 billion followed by Japan ($6.4 billion), Britain ($2.9 billion), Germany ($2.8 billion), France ($1.9 billion), Canada ($0.9 billion), Brazil ($0.7 billion) and Spain ($0.6 billion). It is one of the few creative industries whose revenues are static: having reached an all-time high of $39.5 billion in 1996 they fell back in 1997 and have since hovered around $38.5 billion. Unit sales are also steady at around 3.8 billion. Many households have now stocked up with CDs and, except in the pop market, do not want to replace them or add to them. The economic crises in Asia and Latin America have also hurt sales.

The sales in the next few years will depend on the extent to which the mass audience turns to the Internet for its music. Will the publishers decide to develop this form of distribution themselves or will they continue to license their rights to separate recording companies? And will the customer pay more, or less? George Geis, Professor of Information Systems at the University of California, Los Angeles (UCLA), expects the Internet to have a dramatic impact. He says that the recording industry is a $100 billion business trapped inside a $40 billion body. Others say the Internet will cut that $40 billion in half.

Music downloaded via the Internet brought total revenues of $375 million in 1999, according to Market Tracking International. Sales in America were $312 million, followed by Europe ($37 million), and Asia and the rest of the world ($26 million). Online sales are expected to reach $4 billion in 2004, shared between America ($2.3 billion), Europe ($830 million), Asia ($580 million) and the rest of the world ($300 million).

The US market is worth about $25 billion across all sectors. Its sales of recorded music were $13.2 billion in 1998 and $14.3 in 1999, or 35 per cent of the global market. It thus sells more than twice as much as Japan, the second largest market, and more than all the European countries combined. American companies earn a total of $8.8 billion. The industry consists of not only 150,000 professional musicians, but another 90,000 people who are aspiring musicians and another 300,000 who have jobs in the industry. According to the National Endowment for the Arts, 20 million Americans, 10 per cent of the adult population, say they regularly sing in a choir or chorus.

The UK market is worth £4 billion. The biggest sector is the consumer market for recorded music, worth £1.8 billion. In addition, media companies (BBC, ITV, radio stations, etc.) spend £200 million and the public sector spends £300 million. Consumers spend at least £500 million on performances and at least £300 million on instruments. UK publishing and recording companies earn additional revenues of £2 billion overseas, made up of £1.5 billion from licences and the rest in direct sales. Expenditure is expected to grow to £4.2 million by 2005. The industry consists of 28,000 people who call themselves 'musicians' on their census forms, another 15,000 people who are aspiring musicians and another 72,000 people who work in the industry in one way or another; as well as 600,000 people who participate in music-making and often pay small amounts of money to do so but are themselves unpaid.

Publishing

The Chinese invented paper and some elements of the printing process but the Europeans were the first to bring together paper, sticky ink, a press and reusable movable type; Gutenberg and others in Germany printed the first, dated modern book, a psalter, in 1457. The Americans printed their first document, a freeman's oath, in 1639. Printing and publishing is now the largest media industry in the world and the pre-eminent copyright industry, having given the world the two key words, author and copyright, that are the basis of intellectual property law in industries as diverse as film-making and computer software.

The industry is still based on this simple, universal process of direct copying, but over time has evolved numerous different formats and business processes to meet specific design needs and local cultural habits. In recent decades, while the local creative inputs of writers and editors have changed little, the technology of design and illustration have changed dramatically, as have the back-office functions of finance and marketing. Book and periodical publishing, like music publishing, has seen the emergence of global conglomerates, although newspapers have remained relatively local. Electronic publishing has grown rapidly, especially on the back of the Internet. It is unclear to what extent electronic publishing is an extension of print publishing, a part of the computer software business, or an industry in its own right.

As a conveyor of human achievements from the awesome to the trivial the book has no peer. People appreciate the book not only as a packager of content but for its diversity of designs and for its solidity and respectability. The numbers of titles and of copies sold increases remorselessly, although the margins and profits on sales are ever tighter. Book retailing has undergone a recent transformation with the success of online selling and the introduction of megastores that encourage browsing and often have cafés and sell music as well; like record shops, they are bright, busy and stay open late.

Books have one characteristic that distinguishes them from other created works. They are the most given of all creative products; their visual appeal, size, price range and cultural respectability make them a welcome gift in almost all circumstances and a new or bestselling book comes with the cachet of novelty and fashion. A CD has some of these attributes, but the music industry's smaller output and the

CD's uniform shape, visual opaqueness and narrower price range are disincentives.

The number of new book titles published in the forty largest markets reached 1 billion in 1998, although about a quarter of these titles had been previously published elsewhere. Britain published the most titles, 104,000 (rising to 108,000 in 1999) and sold 800 million copies. The next most prolific markets were Germany (78,000 titles), Japan (65,000) and the US (66,000).

The global magazine market was worth $73 billion in 1999, consisting primarily of advertising revenue of $40 billion with paid sales bringing another $33 billion. According to the International Federation of Periodical Publishers (FIPP), America publishes the most titles (14,707), followed by Britain (8,887), China (8,187), Germany (5,502), the Netherlands (4,731) and Japan (4,249). The advertising revenue earned by magazines rises every year in absolute terms but is falling as a proportion of total advertising expenditure.

The newspaper industry varies widely according to each country's social and economic factors. Japan, which is a highly centralized society, has six of the world's top ten newspapers in terms of circulation, headed by the *Yomiuri Shinbun*. Between them, Japan, China and South Korea have fourteen of the top twenty newspapers rated by sales. Of the remaining six, five are in Europe and only one (the *Wall Street Journal*) in America. America's very active newspaper industry is primarily city-based and local (as are its TV and radio stations). In total, the world's newspapers have advertising revenues of about $100 billion and sales revenues of $50 billion. The largest daily markets are America ($46 billion advertising revenues and $16 billion sales revenue), Japan ($6.5 billion and $10 billion), Germany ($6.7 billion and $4.5 billion), and Britain ($3.8 billion and $2.8 billion). Newspaper sales are holding steady in Germany and Japan but since 1960 have been declining in America and Britain and many other European countries. British circulation has fallen by 20 per cent.

The US market for books, magazines and newspapers is worth $137 billion. Consumer books earned $17.4 billion in 1999 and are expected to earn $19.7 billion in 2002. Professional and educational publishing, both print and online, earned $40 billion in 1999 and is expected to earn $43.7 billion in 2002. Americans spend more on buying books

than on any other medium except cable TV. Consumer magazines earn $20.6 billion, composed equally of advertising revenue ($11.5 billion) and sales ($9.1 billion). Newspapers earned $63 billion, consisting of $53 billion advertising and $10 billion sales.

The British market is worth about £16 billion, and has grown at about 5 per cent a year in the past five years. Of this, print publishing has revenues of £12 billion and electronic information services £4 billion. The book market was worth £3.1 billion in 1999 and employs 31,000 people. The number of new titles continues to rise, reaching 108,000 in 1999, with the largest growth in scientific and technical books (up 22 per cent). Although data is scarce, there are believed to be 30,000 reading groups which, assuming that each group has about ten members, means that 300,000 people are getting together on a regular basis to discuss books. The magazine market is worth about £5.4 billion, of which £3.5 billion comes from the magazines directly and £1.9 billion from spin-offs such as exhibitions, books and special offers. Newspaper publishing earns £3.2 billion and employs 47,000 people. The publishing market as a whole has about 450,000 jobs, of which 82,000 are writers, journalists and editors.

Research and Development

This section describes the scientific and technical R & D activities carried out by companies, universities and research organizations. It does not include academic research on non-scientific and non-technical subjects.

R & D is a patent business. Not all R & D leads to a patent (as we saw with Harry Kroto's discovery of C_{60}), but almost all patents grow out of R & D or need an element of R & D to prepare a successful application. It is also, if secondarily, a copyright business. A researcher's notebooks are critical evidence in telling the story of research; publication in journals even more so.

It can be measured in several ways: the two most commonly used are expenditure on R & D; and the number of patents granted.

Globally, the OECD member countries reported $495 billion gross domestic expenditure on R & D (known as GERD) in 1998, and employed 2.7 million researchers. The leading markets were America ($227 billion), Japan ($125 billion), Germany ($43 billion), France

($16 billion), UK ($21 billion), Canada ($14 billion), Italy ($10 billion), Korea ($10 billion), Sweden ($7 billion), the Netherlands ($7 billion) and Switzerland ($6 billion). I have used World Bank data to estimate that other countries (mainly China, India and Russia) spent about $50 billion in the same year, producing a global total of $545 billion. Throughout the 1990s, R & D budgets were static in America and Japan but grew slightly in Europe, particularly in Scandinavia and Germany. Of the OECD total, the private sector contributed nearly 70 per cent and government and education the remaining 30–35 per cent.

The world's 300 biggest corporate spenders, according to the annual *R & D Scorecard* published by the UK Department of Trade and Industry, are responsible for 70 per cent of corporate expenditure and 50 per cent of total expenditure. These 300 companies spent $235 billion in 1999, an increase of 12 per cent over the previous year. As might be expected, the list is dominated by American companies (which spent $99 billion), followed by the Japanese ($61 billion). Together, these two countries account for more than half the total corporate expenditure. The next biggest market is Germany ($24 billion), followed by France ($13 billion) and Britain ($12 billion). Of the ten biggest spenders, four are American: Ford Motor Company ($6.6 billion), General Motors ($6.3 billion), IBM ($4.6 billion) and Lucent (an IT research and services company; $4.2 billion). The remaining six are Daimler/Chrysler, which is half American ($5.2 billion), Germany's Siemens ($4.6 billion), Japan's Hitachi ($4.5 billion), Japan's Matsushita ($4.5 billion), Japan's Toyota ($4.3 billion) and Sweden's Ericsson ($3.6 billion).

The three main patent offices in Washington, Tokyo and Munich awarded 329,000 patents in the main industrial categories in 1999 (up from 325,000 in 1998). America awarded 153,000 (148,000 in 1998), Japan awarded 141,000 (147,000) and the European Patent Office awarded 35,000 (36,000). The Trilateral Working Group, which consists of these three offices, says 4 million patent applications were in force in 1998. This is a net figure, as patents have to be renewed either annually or every few years throughout their twenty-year lifespan, and over 50 per cent of patents are allowed to lapse.

The growth came almost entirely from foreign applicants (i.e., a

Briton applying for a patent in America, or an American applying for a British one). The number of domestic applications has remained steady at about 200,000 a year globally from 1980 onwards, although there has been a slight increase in Americans making domestic applications.

The Japanese might have smaller R & D budgets than the Americans but, year after year, they make more patent applications. In 1999, the Japanese Patent Office granted 150,000 fully fledged patents and 22,000 lower-level or utility patents. It registered 41,000 designs and the astonishing total of 123,000 trademarks. A total of 336,000 registrations. Japan's activism can be attributed in part to the Japanese liking for formality and bureaucracy, and in part to the Japanese legal system, which gives a high value to registration; but a major reason is the sheer volume of first-class R & D.

Globally, the league table for patent licencing fees is headed by the US and Japan. American patent licensing revenues are estimated to be $200–250 billion a year and Japan's $50 billion.

The $227 billion that the US, as the biggest national market, spent on R & D in 1998 rose to $243 billion in 1999, a year-on-year increase of $16 billion. Its main corporate spenders, after the world leaders mentioned above, were Motorola ($3.1 billion), Intel ($2.8 billion), Microsoft ($2.7 billion), Pfizer ($2.5 billion), Johnson and Johnson ($2.4 billion) and Hewlett-Packard ($2.2 billion). Although a company's licensing data is often confidential, it is reckoned that IBM has the largest patent licensing revenues, about $1.5 billion in 1999; 20 per cent of its profits. What is most remarkable about these revenues, as well as the absolute size, is that they have increased by 300 per cent since 1994.

The company that registered the most American patents in 1999, as in the six previous years, was IBM with 2,756. It was followed by NEC (1,842), Canon (1,795), Samsung Electronics (1,545), Sony Corporation (1,409), Toshiba (1,200), Fujitsu (1,193), Motorola (1,192), Mitsubishi (1,054) and Lucent (1,053).

UK expenditure on R & D was £15.5 billion in 1998, rising to £15.9 billion in 1999. The main sources of funds were business (£10.2 billion); government departments, including the research councils (£2.0 billion); higher education (£3.0 billion); and non-profit organizations (£0.2 billion). A further £2.2 billion came from abroad. Of the total, £13.2 billion was spent on civil research and £2.3 billion on military.

Table 1: Patents Registered by the US Patent Office, by Country of Applicant (1999)

Country	Number of patents	Percentage of total
1. US	94,049	55.6
of which		
California	18,861	
New York	6,902	
Texas	6,426	
New Jersey	4,372	
Illinois	4,308	
2. Japan	32,515	19.2
3. Germany	9,896	5.9
4. Taiwan	4,526	2.7
5. France	4,097	2.4
6. UK	3,900	2.3
7. South Korea	3,670	2.2
8. Canada	3,678	2.2
9. Italy	1,686	1.0
10. Sweden	1,542	0.9
Others	9,595	5.7
Total	169,163	100.0

British companies in the global 300 list spent £7.8 billion in 1999, an increase of 8 per cent over the previous year. The drugs companies spent the most: AstraZeneca (£1.8 billion), Glaxo (£1.3 billion) and SmithKline Beecham (£1.0 billion). The next biggest spenders were British Aerospace (£693 million), Unilever (£616 million), Marconi (£471 million), Invensys (£378 million), BT (£345 million), Shell (£313 million), Rolls-Royce (£215 million), Reuters (£197 million), ICI (£181 million) and Nycomed Amersham (£128 million).

In 1999 the British Patent Office registered 7,995 patents, compared with 9,249 and 7,945 in the previous two years. British expenditure on R & D is low in comparison with other industrial countries, and

Table 2: Patents Registered by the UK Patent Office, by Country of Applicant (1999)

	Country	Number of patents	Percentage of total
1.	UK	2,883	36
2.	US	1,380	17
3.	Japan	1,281	16
4.	Germany	708	9
5.	South Korea	533	7
6.	Taiwan	181	2
7.	France	150	2
8.	Canada	123	2
9.	Ireland	113	1
10.	Finland	72	1
	Others	571	7
	Total	7,995	100

produces fewer patents. Its expenditure on R & D was 1.8 per cent of GNP in 1999, compared to a global average of 3.5 per cent (and a remarkable decline from the 2.4 per cent spent in 1981). These figures are especially dispiriting in the light of the research, quoted above, of the clear benefits of R & D to sales. Not only do British companies spend less but their research is less commercially orientated and produces fewer patents. In the table above, Britain scores below Texas. R without the D.

Software

The design and writing of computer programs is clearly creative, but whether it deserves its own category is arguable. It might make sense to include each kind of software in the relevant industry; so the making and selling of software for an industrial process would be included in R & D, and computer-aided design (CAD) would be included in design. But the people who work in computers see themselves as a separate industry and so I list them separately here.

They certainly produce intellectual property. As we have seen, a computer program is recognized as a literary work worldwide and America awards patents to programs that satisfy the patenting criteria.

The European Patent Office is inclined to follow suit, in the interests of standardization, but the UK and many other national European patent offices are not convinced.

The global software industry is worth $489 billion. The main markets are America and Western Europe, which together account for 73 per cent of sales. The next biggest market is Japan.

The US market is worth $325 billion. Since 1990 it has grown at 13.5 per cent a year, two-and-a-half times faster than the economy as a whole. It employs 650,000 people, who are remarkable for having average earnings of $62,000 a year, more than twice the national average of $28,000.

The UK market is worth £35 billion and has an annual growth rate of 15 per cent. The leisure software sector is worth about £1 billion. About 240,000 people work in the industry, of whom more than half work as independent consultants. The web-based sector has about 10,000 people, and produces total revenues of £5 billion, according to the IDC, which also predicts growth to 100,000 people producing £10 billion by 2005.

Toys and Games (excluding video games)

The design, manufacturing and sale of toys and games is a large, stable industry although it has been affected by the growth of TV and video games. On the one hand, the new media provide a major source of new products as well as good advertising and merchandising opportunities; on the other, children want to spend less time playing with toys and more time in front of the TV or video screen.

A toy or a game qualifies for several kinds of intellectual property. Its name can be trademarked, and its design and artistic elements protected by copyright; for example, the printed design of the characters of Pokémon or a board game like Monopoly are protected as an artistic work. But the rules, even though they might seem to be the heart of the game, cannot be protected. British patent legislation specifically excludes rules for 'playing a game'.

The global market was worth $53 billion in 1999, up slightly from the previous year's figure and in line with a long-term upward trend. The market is expected to grow to $55 billion in 2000. Children's individual expenditures range from $273 a year in America and $204

in the Middle East to $120 in Europe, $11 in Asia and $1 in Africa.

The US market is worth $21 billion. The UK market is worth £1.7 billion, also slightly down on the previous year.

TV and Radio

In technical terms, broadcasting is a highly specific and straightforward business, consisting of sending sounds and pictures through the air to multiple receivers. Over the years the means of distribution have changed from VHF to UHF, from analogue to digital, from terrestrial to satellite, and expanded into cable, but the technical principle remains the same. It started with radio but television is now the major form. Television has developed in half a century from a curious technical device to the world's most popular form of entertainment. Its living presence in every home (at least, in the rich countries) make it a powerful and affluent medium with substantial political and social significance.

The competition to create a new programme – even an old programme with a new twist – is formidable. The world's highest-rated new programme of recent years is *Who Wants to be a Millionaire?* for which Celador took the banal concept of a quiz show on general knowledge and gave it two twists: it offered prize money that doubled until it reached the top of £1 million; and a contestant could telephone friends to find the answers. With such small adjustments a global best-seller was born. The highest-rated programmes are 'reality shows', make-over shows and soaps. Other popular formats are sports, news and drama serials.

Its future development depends on (1) increasing the capacity of its transmission networks, (2) interweaving broadcasting's traditional one-to-many services with the Internet's capability for one-to-one interactive services and (3) producing new content that can exploit both formats.

Radio and television broadcasting started as a technical process and therefore as a patent business. The first broadcasts were live because there was no reliable means of recording a programme. It remained a patent business for several decades until first radio and then television programmes could be recorded in advance for later transmission. Ampex's invention in the 1940s of a recording tape powerful enough

to handle moving pictures launched a whole new TV production industry and added a copyright business. Every TV programme counts as a 'film' and qualifies for copyright; and each broadcast counts as a performance. Recently, the growth of multichannel packages puts more emphasis on branding and marketing. So television has developed from being only a patent business to being mostly a copyright and trademark business.

Television makes up over 85 per cent of the revenues of the global broadcasting industry but radio is a minor success story, illustrating the principle that old media seldom die. American radio had advertising income of $16.9 billion in 1999 and is forecast to grow to $26.6 billion in 2004. In Britain, BBC Radio receives £400 million from the licence fee and commercial radio earns advertising revenue of £400 million. The BBC also receives a £200 million government grant to operate its World Service.

Global TV revenues are $195 billion, coming from advertising, subscription, viewer licence fees, sponsorship and government grants. There are 1.1 billion homes with televisions, the biggest markets being China (450 million in 1999, and forecast to rise to 500 million in 2000), America (99 million rising to 102 million), India (82 million rising to 90 million), Russia (58 million rising to 65 million) and Japan (41 million rising to 42 million). Britain had 23.9 million TV homes in 1999 and 24.3 million in 2000.

The US TV market is worth $72 billion. Advertising revenue for the four main networks and the 1,090 local stations totalled $38 billion in 1999 and is expected to rise to $48 billion in 2003. The networks have been losing audience share for decades but their advertising revenues continue to increase as advertisers have to buy more spots in order to reach the same number of people. This oddity – that, in a constant market, where supply is fixed, lower ratings may lead to higher revenues – is common in the broadcasting business. The cable-and-satellite channel operators earned $44 billion in 1999, and are expected to earn $50 billion in 2002.

The British TV market is worth £6 billion, consisting of advertising (£2.8 billion), the household licence fee (a total of £2.2 billion of which £1.8 billion goes to BBC TV and the remainder to BBC Radio) and subscriptions for cable and satellite programming (£1.4 billion). About

60,000 people work in TV production and broadcasting (and about 3,000 in radio). Many are self-employed; nearly half the people working in ITV, the leading commercial network, are self-employed.

Video Games

The video games industry consists of two sectors: console-based games with stand-alone proprietary consoles (the main sector), and CD and DVD games that can be played on a standard computer. Both are extremely volatile. America's Atari was the first major producer but was soon trumped by Nintendo, a Japanese manufacturer of playing cards, which launched Game Boy in 1989 and by 1993 was Japan's third most profitable company. Its 890 employees made more profit than did the 150,000 people working for Hitachi, the world's biggest consumer electronics manufacturer. In turn Nintendo was outplayed by Sega's Saturn and then by Sony's PlayStation (PS). PS1 has sold 74 million consoles, and many hundreds of millions of games, and had over 70 per cent of the world's games market. By 1999, revenues from PS1 consoles and games brought in 25 per cent of Sony's income and 38 per cent of its profits. In 2000 Sony launched PlayStation2 with an integral DVD player but not, to some people's surprise, with an integral modem. It claims that PS1's 'Emotion Engine' and 'Graphics Synthesizer' provide equivalent picture quality to 35 mm film. These three companies dominate the proprietary formats which are aimed mainly at children. The PC-based games are aimed at older people.

The Japanese dominate both consoles and games. One of the most successful game authors is Shigeru Miyamoto, who designed Nintendo's Super Mario and Donkey Kong (which has worldwide revenues in excess of $5.5 billion). The US and UK each design about one third of new games. A new video game routinely costs as much to develop and write as a major film (although production costs average one tenth as much). A successful game can comfortably outsell a top-grossing film, especially in Japan where the Final Fantasy VIII game sold 3.2 million copies and grossed about $150 million in its first three weeks.

Video games, like films, generally consist of a wide range of different copyright works; for example, literary, artistic and dramatic works, as well as works categorized as films. The whole may also qualify as a database and be protected by the law on copyright in databases. This

complexity, and the constantly changing technology, often results in difficult and time-consuming rights negotiations because the suppliers of artwork and designs for video games may not know how to define the use made of their work or how to set a fair price for it (for example, should they charge more for an image used in the opening sequence than for one used in one of the upper levels, where fewer people will see it?). Recent games like Nintendo's Pokémon which started as a video game and then extended into TV, merchandise and cards (exploiting Nintendo's origins as a playing-card manufacturer) depend increasingly on trademarks.

Global turnover in video games is about $17 billion. Consoles add $3 billion but I exclude them from the creative economy as I exclude TV sets and hi-fi equipment, except insofar as they result from R & D and bring in patent revenues. The market for games grew at an average of 15 per cent a year in 1997–9 and is expected to grow at 25 per cent in 2000–2. The main markets for games are the US ($5.4 billion), Europe ($5 billion) and Japan ($4 billion). The Japanese are fanatical game-players and dominate video games as much as Americans dominate feature films.

The US market for games, worth $5.4 billion in 1999, is none the less huge. Consumers also bought 37 million consoles, costing $1.8 billion, of which 52 per cent were Sony's PlayStation. Electronic Arts, the world's largest video games publisher, had gross revenues of $1.2 billion in 1999.

The UK market for games is worth £1 billion, up from £200 million in 1990. Sony says it has sold 5.7 million PlayStation consoles in the UK, which implies that one in every four homes has one. British companies make both PC and console-based games and have revenues of £700 million. The best-known companies are Eidos, makers of Tomb Raider with Lara Croft, and Rare, part-owned by Nintendo, who developed Donkey Kong. The British are more successful in video games than in TV or films but many talented designers, like many British film-makers, fail to raise enough money to sustain their independence. It is tempting to sell out to America: Richard Branson sold Virgin Interactive to America's Viacom and Bullfrog went to Electronic Arts.

SUMMARY

The table below gives the size of the creative economy on the eve of the twenty-first century:

Table 3: The Creative Economy – Market Size (1999, in $ billions)

Sector	Global	US	UK
Advertising	45	20	8
Architecture	40	17	2
Art	9	4	3
Crafts	20	2	1
Design	140	50	27
Fashion	12	5	1
Film	57	17	3
Music	70	25	6
Performing Arts	40	7	2
Publishing	506	137	16
R & D	545	243	21
Software	489	325	56
Toys and Games	55	21	2
TV and Radio	195	82	8
Video Games	17	5	1
Total	2,240	960	157

TOWARDS 2020

In January 2000 the creative economy was worth about $2.2 trillion and growing at 5 per cent a year. If we project this figure to 2020 at the current compound growth rate of 5 per cent we can forecast a total of $6.1 trillion. The actual growth will depend on the rates of increase in supply (as more people create more works) and demand (as more people move up the hierarchy of desires). Some industries will grow faster than others, with the fastest growth coming in businesses where

technology enables each product to attract more revenues. In other words, then as now, the size of the creative economy depends as much on how products are managed and distributed as on what is produced. This is the subject of the next chapter.