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# Chairman's Foreword

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**Julian Dickens**  
**Informed Sources**

The Information, Communications and Media (ICM) Panel was set up to consider the ways in which digital development will increasingly affect UK business and society. It established a number of Task Forces to address various elements of this digital environment.

The Information Relationships Task Force was asked to explore the development and the future of “information relationships” - best described as the types of “exchange” which take place in the online environment - commercial, non-commercial, public, private, consumer-generated, or business-generated.

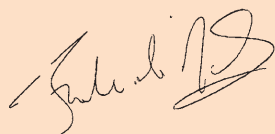
The Task Force focused upon the broader implications of such developments for UK plc, society, and Government. We did not attempt to come up with definitive answers to the range of questions and issues that we identified. Rather, we saw the purpose of the Task Force - and this Report - as a sounding board to test out the range of possible factors likely to make an impact on the digital future.

In particular, the Task Force focused on two key areas: the attention economy, and the C2C (consumer to consumer) economy. These two online developments will make a significant impact upon the evolution of the generic online economy. The development of digital networks has led to the communications and media sector moving from an economy built on scarce bandwidth to one built upon scarce attention. In the future, this will lead to the customisation of services built upon the availability of personal information. Recognising the value of attention and personal information as a currency will have significant implications for individuals, businesses, education and regulation. A number of social issues are raised as a result of this ability to personalise information, not possible in the earlier analogue TV or telephony environment.

Secondly, the C2C economy is likely to expand dramatically and have profound economic consequences for certain market sectors, notably software product distribution and existing C2C ‘intermediaries’ such as classified advertising magazines or estate agencies. The rise of C2C activity also highlights a number of key issues in the area of copyright and intellectual property rights, which the Task Force spent some time assessing.

I would like to thank warmly all the members of our Task Force, who willingly gave of their time over the year to attend meetings and discuss the issues at stake, and helped to make the process such an instructive and fruitful one. In itself, this commitment by Task Force members is testimony to the centrality of these issues for the future success and viability of a digitally-enabled UK plc.

I hope you find what follows a stimulating and useful assessment of the likely impact that networked information relationships will have upon the future digital marketplace.



# 1 Introduction

## 1.1 What are 'information relationships'?

Information relationships can most simply be described as the 'deals' which take place in the online environment. There are a range of possible 'deal-makers', and types of deal, including those made:

- Commercially or non-commercially
- In public or in private
- Between businesses
- Between businesses and consumers
- Between consumer and consumer (of particular and increasing significance)

This Report has been written in order to describe and to highlight the growing importance of such deals. Other Task Forces and research have focused upon the substantive content of such online products and services: this Report chooses to set its priorities elsewhere. The particular focus of the analysis contained in this Report is upon the *relational links* connecting content, players and platforms, which means in consequence that its deliberations cross the more traditional sectoral and subject boundaries.

## 1.2 The genesis of the Task Force

The second round of Foresight, of which the Information, Communications & Media (ICM) Panel is a part, began in April 1999 as a five year programme, designed to bring together academics, industry players and Government officials in order "to further UK plc" in the specific area of information technologies and media development. The first round of discussions (1994 - 1999) produced a series of timelines for the growth of technologies in various sectors. The second round, of which this Report is a part, has sought to widen the debate beyond technological determinants, instead taking evidence and facilitating discussion between a variety of industry sectors.

The ICM Panel decided to seed a series of Task Forces to help expand discussion and also to generate findings to feed back into the Panel's own deliberations. The other Task Forces which it has set up have focused on the future development of particular, extant, sectors of the economy - for example, the education process, developments in information technology, and so on. Their aim has been to collate and update existing work in the area, and to offer expert opinion as to the likely future development of the sectors.

The Task Force on the Future and Development of Information Relationships was set up in a different spirit: to explore what can best be called an idea rather than an existing area of understanding and research; to assess whether this idea withstood the scrutiny of a

selection of media industry, academic, consultant, regulatory, and financial experts; and to discuss the likely parameters of the area and whether and (if agreed) how best to continue a more in-depth analysis of the issues once the Task Force had drawn to a close.

The 'idea' that the ICM Panel asked the Task Force to investigate was that of the likelihood of significant growth in the importance of 'information relationships' as the online economy develops over the next 10 - 15 years. In particular, the Task Force was asked to examine the likely resonance of customer data as a new form of online 'currency', and to discuss what its impact would be - and what UK plc needed to be aware of - if such a currency became a global, tradable commodity.

The Task Force was, then, given the brief to:

*... consider the long-term potential of the exploitation of personal and business information, and the ensuing economic, political, legal and societal implications. The Task Force is to be primarily concerned with what information is being collected and exploited, rather than how it is technically achieved.*

A number of senior figures from a variety of institutions and companies was approached, and a list of the Members of the Task Force appears in Appendix A. The aim was to ensure that discussion was as focused as possible upon the particular issues pertaining to the media industries, whilst retaining an active understanding of the development of the issues for the surrounding industries and sectors.

### 1.3 Methodology

The Task Force spent some considerable time deciding upon its remit. These discussions were an integral part of the Task Force's overall mission, which was to ascertain whether the particular area of information relationships was one which merited close, focused study. It is important to stress again that the overall aim of this Task Force was to examine the *relationships between* content, players and platforms, crossing sectoral and subject boundaries. While other Task Forces have examined some similar issues, this Task Force has focused on the *networked* aspect of future online relationships as the most crucial element of online design. In other words, it is the markets and the currencies used for trade in the online or switched network space, rather than the actual commodities that are being offered for trade, that this Task Force has chosen to focus upon most in its deliberations.

Four meetings were held between November 1999 and May 2000, with additional material and thinking being generated outside each meeting. The first meeting discussed which areas should be examined in the subsequent meetings. Further meetings examined each area through presentations from members or invitees and guided discussion. The final meeting focused upon how the work of the Task Force should be continued, and it was agreed that a 'toolkit' of possible scenarios should be presented as the basis for further enquiry (see section 4.1).

After a period of consultation during the Summer and Autumn of 2000, during which an interim draft report was sent to a range of interested parties for comment, this Report is being published.

It is important to note that the Task Force was not asked to come up with definitive answers to the series of questions and issues outlined above. Rather than provide a detailed 'roadmap' of the possible future, it has produced from its deliberations more of an initial survey of the landscape it sees ahead, noting the contours it believes are the most significant for further, closer, examination. It should also be stressed that this Report does not contain exhaustive documentation of available research and statistics in this field.

The purpose of the Report is to act as a sounding-board, providing a snapshot of the views of a range of senior broadcasting and telecommunications executives, consultants, academics, regulators and Government officials about the likely shape of network relationships.

## 2 The Attention Economy, and the C2C Economy: two new online markets

The key findings of the Task Force, and those which colour its entire deliberations, are that there will be a rapid growth of two economic markets as a result of the evolution of addressable or switched networks to levels of mass penetration:

- An attention economy
- A C2C (Consumer-to-consumer) economy

These twin markets, the Task Force believes, will make a significant impact upon the development of the generic online economy, and need to be closely monitored and understood by business, Government and society at large to ensure their optimal development.

### 2.1 An attention economy

The attention economy can best be described as the way that services and goods will increasingly be made available to individuals in return for their attention: either their agreement to disclose personal details, or details of their online activity, or to watch/receive ever-more targeted advertising and marketing. Such an economy is already in development, as evidenced by the way that free or heavily subsidised mobile phone or television set top box hardware is provided to consumers as an inducement to take a network connection. These arrangements are expanding to include such services as free Internet access or call time in return for the user's agreement to view targeted advertising, selected on the basis of the user's personal profile.

In particular, the development of interactive services and technology is likely to lead to increasing amounts of information being collected, stored and utilised by organisations and individuals on a continuous and automatic basis, with projected increases in computer processing power likely to lead to novel methods of manipulating this information for commercial advantage. Organisations are likely to increasingly attempt to form 'relationships' with their customers/clients to fully exploit and maintain their information, and thereby gain significant commercial advantage.

On the one hand, these developments offer clear benefits to both sides: free or subsidised goods and services for the user, valuable and resellable information for the provider. Although of course an over-simplification, at a most basic level this is little different from the broadcaster/viewer deal that supports commercial free to air television: if you watch my advertising, I'll give you free programming.

**However, the possibilities of rapidly increasing personalisation and the consequent level of detail that online data collection and ad targeting technologies are bringing, means that a number of social issues are raised which were not part of the earlier analogue TV or telephony relationships with end-users.**

These include:

- Enabling individuals to get value for their data
- What to do with data collected about children or sensitive data
- The possible emergence of a new information 'underclass', whose rights to privacy are put under pressure by their pecuniary need to divulge personal details in exchange for 'free' goods, services, leisure pursuits or information

This evolution of personal information and attention into a quasi-currency is examined in more detail in section 3.1.

## 2.2 A C2C (consumer-to-consumer) economy

Switched multimedia networks will enable direct consumer-to-consumer activity to expand dramatically, as already indicated by the growth in such areas as online auctions and the unlawful copying and online transfer of MP3 music files.

Such direct consumer to consumer contact is likely to have profound economic effect in certain market sectors - particularly:

- In the distribution of software products (including music and in due course video material)
- Upon existing C2C intermediaries such as classified advertising magazines and newspapers with a significant classified revenue stream, and 'agency' intermediaries such as estate agency businesses

In addition it is likely to spawn significant new areas of direct C2C economic activity of which online auctions are only the first substantial example.

The emergence of C2C distribution of software products also indicates that there may be significant issues to be addressed in the area of copyright and intellectual property rights. The Task Force therefore spent some time (see section 3.2) debating the likely controllability of C2C copying, and whether, instead of attempting to prevent consumer-to-consumer distribution techniques, ways should be found of generating new methods to recoup revenue which harness the super-distribution possibilities of switched networks.

### Conclusion

The Task Force was unanimous in the view that a more structured and detailed understanding of the growth and nature of each of these two economies was needed. Further examination of the issues is required, not least because the broader implications of their development are only infrequently discussed in the wider research, industry, or Governmental community.

## 3 Substantive discussions: the key issues

In its four meetings, the Task Force identified and discussed a range of issues, in varying levels of detail, that it felt would affect - and in turn be affected by - the growth of the networked marketplace and the development of the attention and C2C economies. It felt that the following areas needed to be better understood in order to optimise the current and future position of UK plc in the online economy:

- Data: a new currency for the attention economy
- Copyright protection and digital rights management
- The organisational structure of media network relationships
- The development of network infrastructure

What follows below is a synthesis of the discussions that took place within the Task Force meetings. The Report also incorporates the feedback received over the Summer 2000 consultation period.

### 3.1 Data: a new currency for the attention economy

This section describes the development of an attention economy, as data is increasingly employed as a tradable commodity. The impact of such development is explored, with particular emphasis placed upon the types of limits or regulatory intervention necessary in order to create a stable currency. The Data Protection Act 1998 (DPA) is examined and some suggestions are made to optimise its role.

#### 3.1.1 THE GROWTH OF PERSONAL DATA AS CURRENCY

The Task Force discussed how the ability to keep personal facts and behaviour to oneself has been something which has hitherto been largely taken for granted. Individuals have been used to controlling the amount of personal information they give out, and to a relatively high degree of inefficiency in its subsequent exploitation. Over the next 10-15 years, this is likely to change rapidly, and unevenly, as data gathering and handling technologies radically improve. Some consumers, either through economic necessity or ignorance, will increasingly relinquish control over their personal data in exchange for apparently free or subsidised goods or services. Others who are more informed as to the choices technology gives them, or whose decisions are not made on the basis of financial necessity, may choose to remain private individuals. It was noted with some concern, however, that the sheer ubiquity of data collection mechanisms, and their increasing invisibility to the average user, may make any such desire for privacy increasingly hard to realise.

### 3.1.2 THE GROWTH OF AN ATTENTION ECONOMY

The Task Force discussed how the power of the media industries has historically been underpinned by their ability to control access to distribution. Broadcast television platforms, for example, have traditionally allocated scarce bandwidth resource to content providers who, in return, have been fairly certain of attracting a meaningful audience share. This underlying economic rationale for media businesses - control of access to distribution - is now being joined by one requiring the courting of the consumer's attention. In an increasingly fragmented media environment, where more and more digital TV channels, or unlimited numbers of websites, compete for business it is not enough simply to have carriage on a given network. There is also an active requirement to ensure one's media products are seen - that audience traffic is generated. Audience attention thus becomes a critical, key currency.

Consumer attention is particularly vital in Web economics. Consumers have tended not to pay with money for content on the Web - there are few examples of successful sites which charge for their content. Instead, the basic driver for Web businesses is the selling of advertising and the conducting of e-commerce. The value of advertising and e-commerce increases in relation to the number of users of the site, and the specificity of the information which can be provided about them to advertisers and vendors. In other words, the more detail you know about the people that come to you, the better you can market them to third parties. To this end, media players and advertisers are seeking to generate ways of accessing as much information about consumers as they can to further and deepen the existing relationship between supplier and customer. It is important to note that this information falls into two distinct categories:

- 'Activity' information - where the online behaviour of a user is recorded on the fly, and used to identify immediate interests (but the user remains anonymous)
- 'Identity' information - more traditional information about who the user is, where he/she lives, how much he/she earns etc.

Clearly, each has value, but a critical point is that the conjunction of the two has higher value still.

### 3.1.3 THE IMPORTANCE OF A STABLE CURRENCY

There is a fundamental tension that lies behind the development outlined above, and one which is vital to explore and expose. On the one hand, as stated above, businesses will become more efficient the more they know about their audiences, and the provision of 'free' or subsidised consumer electronics and network services to the less well-off is of significant value to those consumers. On the other hand, there is a growing (and in the US, increasingly public) concern about the privacy implications of the collection and use of such personal data, which threatens to undermine or at least disrupt the development of data as currency.

It is hard not to overstate the importance of resolving the tension, and of the need to address it at all stages of the policy and industrial cycle. Put simply, **if users are unwilling to develop working and consumption practices online because of concerns over data privacy, then the UK economy at both a micro and a macro level will suffer.**

If data is becoming a currency, it needs to be a stable currency, with its value understood by both the data subject and the data gatherer. There needs to be a trading framework that offers a clear and well recognised basis for exploitation. There also needs to be an explicit policy which seeks to encourage the development of data as a 'hard' currency with all the necessary checks and balances in the system to alleviate the fears of both businesses and consumers. It is also important for there to be pan-European acceptance of the importance of such a data handling regime - the directive on Data Protection goes only part of the way towards this objective, and still leaves implementation in the hands of individual member states with the usual degree of individual latitude that this implies.

### 3.1.4 THE DESIRABILITY OF EXPLICIT DATA COLLECTION

The increase in the value and extent of data collected is already creating tension. On the one hand it would seem necessary for consumers to know precisely what is happening to their data, in order to prevent a destabilising loss of faith when damaging revelations are made about its use (c.f the negative publicity in late 2000 resulting from Amazon's admission that it had weakened its privacy policy to allow it to sell customer data to third parties). On the other hand, evidence seems to point to consumers turning away from those sites which require extensive registration or the reading of detailed privacy policy statements: the longer it takes to get through to the content of a site, the fewer users make the journey.

There are thus potential economic disbenefits to both paths of data collection policy. For the former, when there is adverse publicity about certain undisclosed data collection methods, then consumer confidence online is reduced. For the latter, there is a slower growth of online commerce and usage. It can be argued that as consumers become more knowledgeable, so they will begin to accept and court those sites which offer higher degrees of privacy protection. The active encouragement of such a level of understanding - perhaps within formal education - was therefore regarded as important by the Task Force.

It remains open to debate whether it is preferable to take a 'blanket' approach to data collection - i.e. the 'passport' model whereby consumers fill out their details only once - or to encourage consumers to think actively about privacy management each time they receive or search for content.

Furthermore, any approach to this issue requires a continuous distinction to be made between identity and (anonymous) activity information. Activity information on its own was seen as less threatening to personal privacy, particularly where it is not stored and built up over time. However, both long term profiling, and the merger of activity and identity information are expected to become more and more widespread, both on the web and over digital television and wireless networks. Concern was expressed within the Task Force as to

whether the consumer will have access to such information in order to update, control or veto it. The consumer is likely at times to want third parties to have in-depth knowledge of their tastes, in order to receive better-targeted information, and at other times to want their profile to remain anonymous. The need for data gatherers to be able to rely on a degree of accuracy in data provided was also recognised; for if goods and services of value are increasingly made available in return for data, the wilful provision of false information is increasingly unreasonable.

### 3.1.5 DATA GENERATION AND THE ROLE OF TECHNOLOGY

Many consumers do not yet understand new technology, and therefore do not understand the privacy issues which lie behind their use of particular devices. Partly, this technophobia is an outcome of the fact that the market is a new one. Hence, understanding is incomplete and partial. However, manufacturers and service providers currently do little to alleviate this lack of knowledge or experience.

The attention of the Task Force was drawn to privacy shield software such as Privaseek and Zero-Knowledge, but some concern was expressed that although such software addressed the fears of some online users it was far preferable to create an environment that used education to reduce the climate of confusion, and offered a more constructive opportunity to develop data as a valid currency. Again, the existence of software such as MEconomy, which attempts to create such a trading environment, was brought before the Task Force but time did not permit any form of review.

### 3.1.6 THE DATA PROTECTION ACT

The Task Force spent some time discussing the provisions of the Data Protection Act 1998 (DPA), in force since 1 March 2000. A number of points were made:

- The DPA is not a radical new departure, merely a tightening of existing law, with greater enforcement powers
- The often reported burdens of DPA compliance have been overstated. As long as a business gets data subject consent (which is increasingly in line with public expectations) even in the US, the limits upon the use of data are not unduly onerous
- It was noted that the major principle by which the Data Protection Commission operates is that of the 'informed consent' of data subjects. However, the practical implications of this classification in terms of the nature of the action required of the data subject were felt to be unclear. In particular, the distinction between opt-in procedures (where the data subject has to expressly agree to data being used) and opt-out procedures (where the default position is that the data can be used unless the data subject actively disagrees), was felt to be not very straightforward. For instance, the Task Force was advised that gaining the data subject's 'unequivocal express consent' can be satisfied by opt-out rather than opt-in procedures, as long as the opportunity to opt out was a 'genuine' one, not visually or semantically obscured. This can be contrasted with the

position of 'sensitive' personal data, where 'explicit consent' is required, which means that opt-in procedures are applied

- Generally, anyone processing sensitive personal data (i.e. relating to ethnic origin, political opinions, religious beliefs, trade union membership, and so on) must get the subject's explicit consent to do so, or may be permitted to do so only in other restricted circumstances
- There was some discussion about whether more subtle hierarchies of importance could be assigned to different types of data collected in different ways - distinguishing for instance between activity and identity data. It was also argued that the withdrawal of consent to the collection of data could not supersede normal contractual ties. In other words, the contract between a set top box operator and consumer is predicated on the collection of data, and the consumer cannot withdraw from this without being in breach of contract. Against this, a section of the Task Force took the position that many pay-TV subscribers would in all likelihood be unaware of the small print elements of the subscription contract, and thus might perhaps have subscribed in ignorance of the data collection provisions and their potential implications
- Overall, there was general agreement that the UK should try not to follow the US model of creating a number of different privacy policy schemes. Rather, it was suggested that a standard kitemark could be developed with different levels of privacy being offered. The consumer could decide at which level they wish to opt-in, depending on the perceived benefits of data-exchange. The development of a kitemark should go hand-in-hand with developing educational strategies to teach users how best to go online and how to protect or exploit their personal data. It may be possible to modify the Consumers Association's current ratings system for e-commerce sites
- The Task Force also agreed with the following four steps of procedure for adequate data protection:
  - Sites must display a prominent privacy policy
  - Users must be given a choice. In particular, sensitive information should be opt-in only
  - Users must be able to see and correct the data which is held about them - although there was some debate about whether this should relate to all forms of data, or only that which is sensitive
  - The DPC should conduct regular audits of companies to ensure compliance
- While the Data Protection Act contains a number of these principles, it was felt that the Data Protection Commissioner had an inadequate marketing presence and was poorly understood, leading to a suggestion that the Data Protection Commission potentially could be forced into the position of emphasising negative stories about customer data and privacy in order (ironically) to generate adequate attention to its role. Concern was expressed over the growth of potentially damaging stories about "going online" from any source, and support for more widespread promotion of the enabling role of the Data Protection Commission was strong.

### 3.1.7 CONCLUSIONS

There was some discussion in the Task Force about the definition of personal data, and why the collection of online data should necessarily be seen in a different light to the collection of data in the real world. It was argued that non-consensual collection of personal data is ubiquitous in the real world - for example anyone can monitor a person's physical movements - and some concern was expressed that the exploitation of personal data is being deliberately stoked up as an area of social anxiety rather than being seen as an inevitable social price to be paid. However, others argued that the sheer cost of such monitoring in the non-networked world would make it in reality an impossible undertaking on a mass scale, and therefore the comparison could not be made with that of the development of online monitoring.

It was also concluded that data and privacy discussions have hitherto been expressed in conceptual terms rather than anchoring them to their increased monetary value. It is necessary to give people an understanding of 'data' in the same way as people understand 'money' and its value. This could be achieved through public policy, standards and codes. It was noted, however, that there is likely to be an inequality in the value of people's data - in demographic terms, an AB subject's data may be worth more than a DE subject.

This need for understanding the value of data is an issue that could also be extended to the training of database managers. Currently, the Task Force assumes that there is little if no ethical policy training for this sector, unlike most other professions. One possibility is to add a component to current technical training, to cover the ethical issues involved in database compilation. An industry body may be able to provide a sample curriculum.

It was agreed that any focus on the data economy should have the following goals:

- To further e-commerce
- To ensure there is a transparent relationship between parties
- To protect the individual from unscrupulous use of the information collected
- A balance needs to be found between the competing agendas of these objectives, in order to ensure that businesses are not held back by over-regulation in this sphere

## 3.2 Copyright protection and Digital Rights Management

### 3.2.1 THE PROTECTION OF COPYRIGHT

As mentioned above, a major corollary to the development of C2C activity is the growth in significance of copyright protection. The increase in electronic copying and retransmission clearly represents a threat to intellectual property rights.

The particular example of Napster.com was discussed. Currently, if a user downloads Napster software, an interface is provided between myriad users, allowing each to search song file records on others' hard disks. Napster doesn't hold the recordings but acts as a search engine for others. The business rationale for Napster is to create a community site which generates large amounts of traffic which can then be monetised at some point in the future. The scale of the enterprise is significant - over 600,000 tracks, or 2 terabytes of sound recordings can be available at any time.

Napster is being sued by the RIAA, but in November 2000 it announced that it had signed a deal with Bertelsmann, to exchange its software for the legal rights to use Bertelsmann's music content. Bertelsmann hopes to find a way of getting users to pay for a subscription. Even if Napster is thus 'neutralised', other technologies - such as Gnutella - offer the same or even greater (and harder to monitor) search and download facilities.

The key point about developments such as Napster is that they illustrate the power of the C2C dynamic, showing how consumer behaviour is potentially forcing changes to established business value chains.

#### What can be done?

The Task Force agreed that existing copyright rules should and could not be ignored simply because they are able to be breached much more effectively in the online environment. However, legal remedies would be unlikely to prevent the risk of extensive "not for profit" copying and online retransmission of (initially) music software. Given the UK's stake as a leader in the global music industry, this is of material concern. The Task Force therefore recommended investigation of two alternative approaches to the issue - consumer education, and technological rights management solutions (see section 3.2.2). The Task Force took particular notice of US surveys, which showed that a majority of students downloading unauthorised copies did not take the view that it was wrong, or harmful to the industry. Such an attitude can only be altered by a widespread educational initiative in the UK - perhaps within the forthcoming "citizenship" aspect of the curriculum. However, consultation responses underlined the difficulty of encouraging a more law-abiding approach among online users of audiovisual and other copyrighted material, given that the 'victim' is generally perceived as particularly powerful and profitable.

### 3.2.2 DIGITAL RIGHTS MANAGEMENT

Digital Rights Management (DRM) can be described as 'the protection and management of the rights and interests of parties involved in the production, distribution and consumption of digital information. Its underlying rationale is to bring governance into the electronic environment.'

The Task Force was given a demonstration of such a system by InterTrust, one of a number of companies offering such a solution to the marketplace. The DRM proposition tends to involve placing either hardware or software into a device, which then interacts with incoming content according to a series of rules of usage, allowing the user access only to what he/she is entitled. Rules are made by the rights holder in the first instance. The rules are not necessarily about direct financial payment. They could involve an agreement to disclose personal data, or to view an advertisement in return for viewing/downloading. Rights can be given on a PPV basis, or disproportionately allocated between first purchase and subsequent free access, or free trial and subsequent payment for access, or rental, or any variation of these. It is critical to understand that such a system not only restricts piracy, but also creates the environment for lawful and productive C2C distribution. By enabling a consumer to pass a recording or programme to a number of friends - who will have in return to pay for access - the management architecture creates a basis for lawful 'superdistribution', and offers significant potential additional revenue for rights holders. As such it represents a major step forward for the development of online markets.

The key issue debated within the Task Force was whether such DRM solutions are practicable in an environment where C2C activity - i.e. free transfer of audiovisual files - is already prevalent. The Task Force identified a serious organisational obstacle here. If a technological solution is to be effective, it will need to be adopted by as many organisations as possible. While the problem remains poorly understood and technically complex, little progress is likely to be made. The need for some clear leadership in this sector was thus identified as key. In the absence of any such solution, it was suggested that rights holders may have to be much more creative and lateral about where their revenues might come from in the future, with the concept of advertiser-supported music being put forward as one possible model.

### 3.2.3 CONCLUSIONS

Some members of the Task Force argued that the education system could be utilised to educate users about the economic need for copyright payments in order to ensure the long-term viability of content creation. Work in the area of consumer education is already being undertaken by the Intellectual Property Group of the Creative Industries Task Force. However, considerable doubt was expressed over the likely impact of such a programme, given the perceived incumbency and power of the audio-visual industries.

The alternatives to C2C distribution - the 'gatekeeping' DRM solutions - are currently over-complex and unlikely to succeed in their present manifestation. Therefore, the Task Force felt that the more fruitful strategy for content owners is to 'ride with' the wave of C2C activity rather than attempt to stem it - Bertelsmann's deal with Napster in late 2000 being a case in point.

While the rights of copyright holders should not be ignored, the Task Force felt it important for businesses to acknowledge the rise of C2C distribution as a trend unlikely to be quashed, and perhaps start to seek alternative revenue streams to those of packaged product. Overall, however, a balance is required between the interests of the various stakeholders which

include the consumers, the rights owners/talent, the consumer equipment manufacturers, the copy protection technology providers and the broadcasters, distributors and platform operators. Maintenance of this balance is important not only to ensure the rapid development of the market but also, crucially, to ensure a continued economic viability.

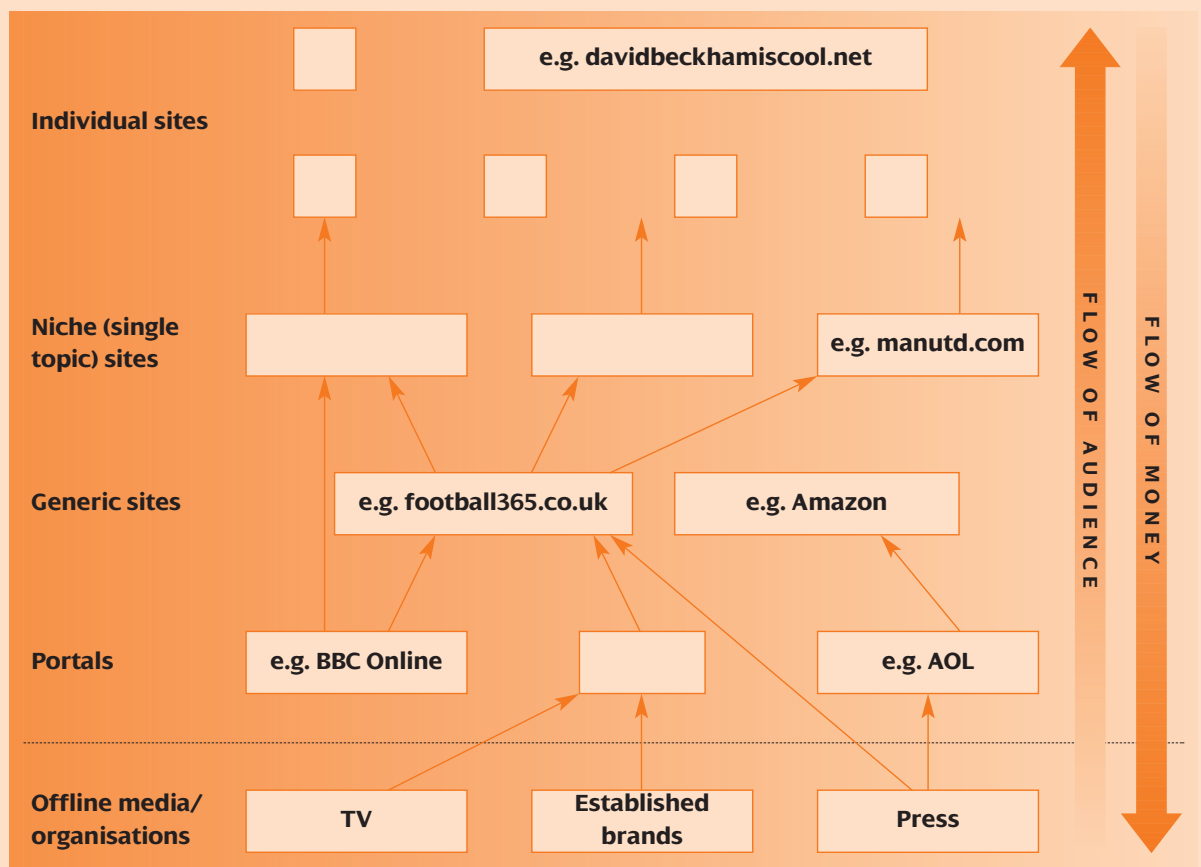
### 3.3 The organisational structure and competitiveness of companies in the network economy

The Task Force examined how media companies were evolving as they sought to colonise new media opportunities. While 'traditional' media companies face some difficulties in their attempts to be as nimble and cash-rich as their online competitors, they retain a number of key strengths, not least of which are their ability to take advantage of scale economies, to use their real-world brands and content, and to cross-promote new online businesses.

#### 3.3.1 ARE UK RESTRICTIONS ON TV CROSS-PROMOTION OF ONLINE BUSINESSES HAMPERING GROWTH?

##### Online B2B relationships

The diagram below shows the flow of audiences through the online environment, with revenues going in the opposite direction, as providers pay for audiences.



The online space is characterised by a sequence of relationships between online and offline players. Many dominant online players tend to receive cross-promotion and therefore audience traffic from the offline players with their large shop windows. In the US the freedom of broadcasters to extensively cross-promote their own websites has been key to their development. There was active discussion in the Task Force around the proposition that current UK regulatory restraints on TV cross-promotion of websites are preventing broadcasters from effectively leveraging an asset which has been of significant commercial value in the UK, and that such restraints were therefore limiting the growth of domestic web operations.

On balance, the Task Force concluded that it was possible to exploit the TV window for online promotion without breaking current guidelines. Moreover, the Task Force noted the lack of consensus among members over whether cross-promotion was the best way of driving traffic which will remain loyal in the long term. Cross-promotion, whether through programming or real-world media advertising, was seen as but one possible strategy for gaining prominence. Another popular and efficient model was that of employing a good distribution strategy through retail connections (as with Freeserve) - or via portals. It was also noted that while cross-promotion drove traffic to sites, sites weren't necessarily sticky enough to retain the audience, and that some broadcasters were finding this a particular problem. However, there was agreement that players need critical mass, enabling them to utilise economies of scale and scope, and to this end an integrated online and offline presence was of long term value.

### 3.3.2 IS THE UK SPACE BEING DOMINATED BY THE US?

In the UK, the top online sites (according to MMXI traffic figures for November 2000) are largely of US origin, even if localised, and some concern was expressed that this trend would continue. In addition, some members felt that the US was dominant in the UK in terms of its market share of hardware and software as well as site traffic.

Property	Unique Visitors (000)	Digital Media Reach %
1. MSN.COM	5 482	43.8
2. YAHOO.COM	4 470	35.7
3. MICROSOFT.COM	4 221	33.7
4. FREESERVE.COM	3 751	30.0
5. MSN.CO.UK	3 557	28.4
6. PASSPORT.COM	3 251	26.0
7. YAHOO.CO.UK	2 452	19.6
8. BBC.CO.UK	2 133	17.0
9. LYCOS.COM	2 126	17.0
10. BTINTERNET.COM	1 931	15.4

Source: MMXI November 2000, at home users only

It was argued that - because of the degree of scale economies involved - it is difficult for UK companies, addressing a much smaller domestic audience, to compete with US companies. Some Task Force members suggested that it was therefore incumbent upon UK companies to focus on the US market themselves, either through content or by physical relocation, and that such a strategy should find means of support through Government initiatives.

A number of additional reasons for a 'slower' UK start were also identified:

### 1. Funding and Risk

It was pointed out that funding problems begin early for UK start-ups. There is a cultural barrier to asking friends and family for financial help in start ups, unlike the US. Additionally, there is a greater stigma attached to bankruptcy and insolvency in the UK, although an early lack of venture capital has now been corrected.

### 2. Tax regime issues

There is no requirement to pay local sales tax on products bought via the Internet in the US. Should the UK Government be urged to go beyond its recent measures and place a zero level of capital gains tax on Internet companies so that they are encouraged to set up here? Or should concern be focused upon where the underlying service industries will be based as a result of development of e-commerce? The Task Force discussed the likely impact of variable VAT rates throughout the European Union on the location of e-commerce sites, and concluded that there was a serious risk that vendors would choose to locate their operations in countries with lower rates of VAT such as Luxembourg. If fulfilment moves offshore, then this is a great threat for UK plc. The preferred objective should be to get people to use sites based in the UK so that the ancillary service infrastructures are kept in the UK rather than move offshore - the example given to the Task Force was of Coral online betting operations moving to Gibraltar to escape the UK tax burden.

Against the above fear of US dominance, however, it was noted that - as with the television industry - those US companies which are most active and successful in the online space have done so in part because they have chosen to localise their content and their operations as they expand outside the US.

There was additional discussion around the prospect that US portal dominance might also be transitory, because of the likelihood that local content and local portals come more strongly into play in the broadband and mobile environment. Especially in the UMTS market, there is likely to be a move away from the current narrow band US portals back to more local content, as broadband portals will have a strong focus on services that are targeted to the user's precise location, and because the local network operator is likely to secure a prominent (if not dominant) portal presence. However, it was also argued that mobile is going to be 'broadening band', not immediately 'broadband'. Therefore, those with most traffic in a narrowband wired universe will have a larger audience to migrate to the eventual broadband mobile environment.

### 3.3.3 HUMAN RESOURCES: "WEB" EXPERTISE VS. MANAGEMENT SKILLS

The issue of staffing in new media businesses was one which was acknowledged as being key to the development of the information economy.

There was some debate about whether UK plc was generating the right IT and Internet management skills, and whether there were significant bottlenecks in the human resources processes within Internet and online businesses. A review of the direct experience of Task Force members indicated that it is particularly difficult to find managers who have the right amount of technical/industry expertise, and vice versa. In other words, employees with technical knowledge tend not to have management experience, but there is no time to turn these people into competent managers by releasing them for MBAs, because they are critical to their businesses. On the other hand, it is very difficult to migrate traditional managers into new online spaces. Although they have managerial expertise, they don't have the technical or market knowledge - and thus lose credibility among the workforce quickly.

A particular concern was expressed about the ability of formal secondary or tertiary education to meet the need to train students in new media skills when technologies are changing so quickly. The time taken to design and implement a teaching course may be too long to catch up with new technology and business needs. Such skills may, for the foreseeable future, have to be learned on the job. Conversely, more traditional management skills need to change less rapidly, but studying for a standard MBA will seem a poor second - in many cases - to obtaining a job at the cutting edge of new media. It was, however, noted that although training in specific technologies would always run the risk of becoming quickly obsolete, the overall knowledge and techniques gained would be transferable to new technical innovation. It was felt crucial to address this issue of HR training bottlenecks as soon as possible, perhaps via the exploitation of a facility using the networked environment. In general, the Task Force felt that the Government should seek to take a leading role in this issue.

### 3.3.4 STRUCTURAL ORGANISATION OF MEDIA COMPANIES

The Task Force discussed the changes taking place within the structure of organisations, as a consequence of the impact of the network economy. For instance, media companies have had to move from a position where they dispensed information to a largely unknown audience, to one where they are managing increasing numbers of direct customer/viewer relationships, where customers are proactive, and where their input may become a direct part of the output of the media business. Organisational boundaries are also blurring: customers are becoming part of the business; the new media sector trend to offer employees stock options means that many employees are also shareholders, and the increasing incidence of and reliance upon joint venture partnerships means that many key resources (especially technology competencies) are effectively outside the control of the corporate centre.

From a more theoretical perspective, it is clear that the media and communications sector, especially in the US, is shifting towards an increasingly tangled web of alliances, partnerships and other connections embracing all players. This trend is also observable in Europe.

In affected sectors the speed of change and the pace of market development means that 'growing your own' (business, technology or competency) is seldom a strategically sensible option because by the time this has been done the opportunity will have passed. At the same time, the complexity of the environment means that collaboration is often the only route to growth, even if partners are also competitors.

Such 'system-based competition' has been characteristic of the technology sector for around a decade and is now spreading into the 'neighbouring' media and telecoms industries. Networked industry structures bring clear benefits for companies seeking to master complex and fast-changing environments, especially for start ups that lack the resources and economies of scale and scope of established firms, but require a different management style - for example the ability to manage 'patchwork organisations', to build a collaborative and entrepreneurial culture, and to develop extremely fast and flexible processes for developing, executing and revising corporate strategy.

In the wider business environment the Internet is transforming the structure of businesses in a number of ways. First, it can mean dramatic improvements in efficiency, by reducing transaction costs, boosting price transparency, speeding procedures and making information available more quickly and widely. As the efficiency of organisations and the market increases, the size and complexity of the standard organisation becomes uneconomic. Increasingly, companies focus on their specific skills and competencies and outsource other activities.

As a result, the Internet is changing the boundaries of companies themselves. They are now able to outsource and otherwise distribute activities away from the corporate centre and use these new communications technologies to develop deeper relationships with suppliers, distributors and many others who might once have been vertically integrated into the firm. Thus, companies are creating a patchwork of alliances, joint ventures and other types of partnerships to promote growth. This in turn is causing a shift from centralised to decentralised management. Third, the Internet is restructuring the relationship between employers and employees. It allows companies to track activities, thereby identifying where value is added and how processes can be streamlined, and to improve internal co-ordination.

### 3.3.5 CONCLUSIONS

The fundamental principles of scale economics are not going to change. Therefore it is incumbent on the UK to take more aggressive positive action earlier against possible competitors if UK businesses are going to be maintained and continue to operate from within the UK. The Task Force did not reach agreement over whether such action required positive discriminatory levers to be set up by Government, or whether deregulation was the only likely and therefore sustainable course of action.

It was noted that the UK was in a position of strength in relation to the development of digital TV and wireless applications and functionality, and that more capital should be made of this. In other words, rather than focus predominantly upon hardware manufacture, the UK should place more emphasis upon its abilities to develop creative content and functionality.

Finally, the need to educate UK plc about the particular staffing and training needs and the structural impacts of networked businesses - and to help UK plc and the education sector prepare for and implement such changes as may be needed - was regarded as of paramount importance.

### **3.4 The development of network infrastructure**

The Task Force discussed the possible development of UK network infrastructure and the factors which will either constrain or catalyse its growth. These include:

- Open access
- The affordability of access
- The development of broadband access

#### **3.4.1 OPEN ACCESS**

It was agreed by the Task Force that in strict economic terms, open access is beneficial to competition. But it was noted that in order to encourage investment, there needs to be a period during which network developers are protected from competition. It was also argued that while open access is good for the consumer, it is not necessarily good for investment, innovation and network growth. From the consumer perspective, some Task Force members felt that there was also a distinction to be made between access to an open network, for which a consumer might pay because it was a gateway offering myriad choice under the consumer's control; and a more gated environment for which a consumer might not need to pay, because the choices therein were circumscribed and consequently advertiser-supported.

In each case it was agreed that there is an inevitable trade-off which occurs, which the relevant competition authorities need to monitor. However, as with any market segment, there was recognition that a key factor in the development of open access policies was the issue of how to define the relevant market - a subject on which the Task Force was (unsurprisingly) not able to reach agreement.

#### **3.4.2 AFFORDABILITY OF NARROWBAND ACCESS**

The Task Force believes that the biggest current consumer impediment to going online in the UK is the cost of telephony. By comparison with the US - where call charges do not generally apply - UK online users have spent much less time online, viewed less advertising, and spent less money. It was noted that this is beginning to be alleviated through the development of free or unmetered Internet access packages. Free calls would be particularly beneficial in encouraging children to go online.

### 3.4.3 THE DEVELOPMENT OF BROADBAND CAPACITY

It was noted that there were question marks over the ability of the current telephony infrastructure in the UK to cope with a mass online usage of, say, 50-60 minutes at any one time, when the original network was developed on the basis of much shorter call times.

Furthermore, some members of the Task Force reported that the telephony infrastructure reportedly cannot deliver the demand that is likely to exist for broadband connections. This will result in a higher-priced broadband offering because operators do not want to unleash consumer demand which may not be able to be met. There is thus a danger of prohibitive pricing of DSL which could relegate it to the B2B sector for the short-medium term - a situation which does not encourage the expansion of UK plc in the provision of online services and applications. It was also noted that DSL technology requires proximity to an exchange, which will adversely impact upon remote parts of the country - the very areas where small businesses and educational establishments have most to gain from broadband connectivity.

Furthermore, delays in the pricing of local loop services have resulted in little activity so far in the area of consumer-targeted unbundled services (although subsequent to this discussion pricing tariffs have been agreed, so this delay may now be minimised). It was agreed that digital cable might be the spur to encourage BT to further accelerate its upgrade of its exchanges, if the cable proposition proves as initially successful as in the US.

Finally, there was discussion of the need to investigate the possible impact of a mass network upgrade to universal - or near universal - residential broadband. The consequences of such a radical move - which would clearly require Government support - were felt likely by many to be hugely attractive, making the UK much more competitive than the majority of EU countries, and enabling massive economies of scale to be reflected in all aspects of the macro economy.

### 3.4.4 PRELIMINARY CONCLUSIONS

The Task Force felt that there were both physical infrastructure and policy constraints to the roll-out of broadband technology. It noted that there needed to be wider understanding of the current constraints upon broadband capacity, and put forward a tentative view that the Government might be induced to step in to aid roll-out. However, it should also be noted that the Task Force was constrained by time from examining the above issues in detail.

## 4 Next steps

The above discussions led the Task Force to consider what next steps might be necessary for the Foresight Programme to further its investigation of information relationships.

There was consensus amongst members that

- Information relationships and a widespread understanding of the issues discussed are critical to the success of 'UK plc' as it attempts to colonise the online network environment
- While there is much useful analysis of each of the substantive issues and their impact upon users either in the consumer, business or public sector, there is little that has been written about the overall *relational framework* which links these developments together. It is the collation of this material that is vital: the sharing of knowledge about macro development issues

Therefore, the Task Force concluded that it was essential to take forward its preliminary work - largely of identifying key issues - for further refinement and application. The Task Force offers, as a preliminary step, a 'toolkit' comprising

- The sketching of a series of critical factors to monitor
- A suggestion as to their likely impact

It is for the next stage in the Foresight process to implement these proposals in more depth and with due rigour.

### The toolkit comprises

- A series of factors (see section 4.1) which have critical relevance to the development and significance of online network relationships, and which require thorough evaluation. It is the consensus of the Task Force that it will be essential to monitor the following in order to judge the development of online relationships over the next 5 - 15 years. These factors need to be monitored in conjunction with each other so as to determine their respective importance as predictors for change in the online economy.
- A preliminary assessment (see section 5) of the way that industry sectors may change during this time-span. The industries chosen for examination have been broadly subdivided into those of 'media software/digital media', 'manufacturing', and 'services'.

### 4.1 The Toolkit: Factors to monitor

#### 4.1.1 ONLINE PENETRATION

A majority of the Task Force agreed that by 2010, it was likely that access to the Internet in the UK would be effectively ubiquitous, although via a number of different mechanisms, some of which might provide only limited access. The Government has arranged for the monitoring of uptake to the Internet through quarterly surveys from the ONS. However, the Task Force recommends that these surveys are sure to cover the following elements:

- Amount of network traffic
- Number and nature of ISP accounts
- Division of access market between, and purchase and replacement cycle/churn of
  - PCs and modems
  - IDTVs
  - Digital set top boxes
  - Network-capable consoles and other specialist devices
  - Mobile access devices

#### 4.1.2 ACCESS TO AND AFFORDABILITY OF THE INTERNET

The Government has stated that it intends that everyone should have access to the Internet by 2005, defining 'access' as "either through devices at home, work or on the move or through access in a nearby community centre" (A New Future for Communications. Communications White Paper. Section 3.8.1). The Task Force felt that this definition requires further refinement. The Government needs to decide how many of the following factors it wants to promote, and draw up plans accordingly:

- Ubiquity of device penetration
- Ubiquity of connected devices
- Speed of connection
- Low cost or no cost of basic connectivity
  - Which type of currency demanded (money or attention/personal data?)
- Development of Government-subsidised portals (i.e. the aggregation of material for public service purposes)

#### 4.1.3 OPEN ACCESS

The Task Force took as an underlying assumption that there will be an increased openness of access to networks, forced through by regulatory intervention if necessary. The liberalisation of networks was seen to be an inevitable trend, but the degree of openness of different forms of access is a material factor for observation.

#### 4.1.4 IMPACT OF COMPETITION POLICY

There are a number of ways that competition policy can intervene in the development of a network economy. The most crucial of these is to ensure that new industry sectors are not penalised for achieving critical mass. This is particularly relevant to the area of online or media consolidation, where economies of scale and scope are increasingly necessary to compete on the international market, and where traditional market definitions are becoming increasingly outdated. It was suggested by a minority of the Task Force that regulators might allow mergers until there is abuse of market power, and set aside stipulations against a bare

dominant position being held. The example of the delayed launch of German digital pay-TV was cited as an indication of the dangers of placing too much emphasis upon the percentage of market owned by an operator versus the abuse of that market power. It was argued that merger rules in the telecoms sector in Europe have tended to be used as a tool for imposing industrial policy, rather than for pure competition reasons.

#### **4.1.5 DEGREE OF CONSUMER WILLINGNESS TO EXPLOIT SEARCH AND COMPARISON TOOLS**

The Task Force believes it is important to examine how able and willing users are likely to be in the exploration of resources available online. It was felt that there is some risk that however rich they may be, resources will not be taken up if there is no ready education/explanation of access techniques, and/or if the cost is too high. Therefore, it is necessary to

- Continue educational focus on how to use online resources
- Make services and applications easy to find and use, if necessary by the creation or support of public service information initiatives
- Ensure that prices for such services are affordable for the mass market
- Ensure that Internet-illiterate consumers are not penalised in their ability to access key services

The Task Force also felt it important to point out that there are a number of other ways to access information apart from through the Internet. Such information is often most effective as a one-to-many service, and will remain so - for example the weather, news, and sports results.

#### **4.1.6 BRAND BUILDING**

In the face of proliferating choice, the increasing power and value of recognisable brands is generally accepted. Given that there will be more networks and they will in general be open, brand building power therefore becomes of increasing importance as a critical determinant of the development of network relationships.

## 5 Potential change to industry sectors

The Task Force thought it crucial to provide at least a snapshot of the various ways that the above developments could impact upon industry sectors. While discussion of the changes to the media software industry had underpinned much of the debate during meetings, there had been less opportunity to examine other industry sectors - at their broadest, the manufacturing industries and the service industries.

Although there was risk of some crossover with the E-commerce Task Force report, it was felt important to give some space in this Report to the prospects for wider industry sectors, in order to help focus further work in this area.

### 5.1 The media software industry

#### 5.1.1 THE IMPACT OF C2C DISTRIBUTION

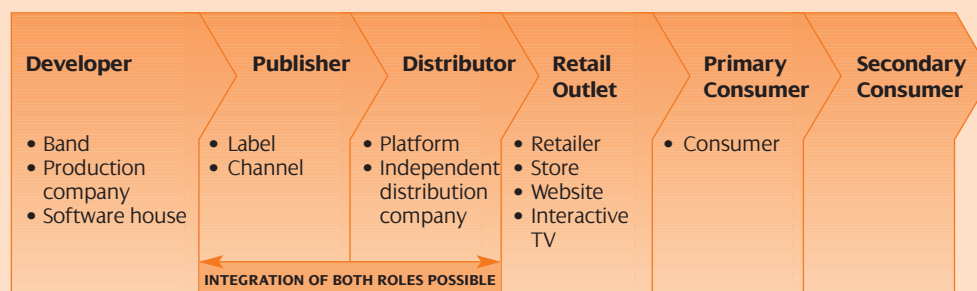
Taking the music industry as the best current example of the potential for disruption in the value chains of the media software sector, the Task Force discussed the development of C2C activity (e.g. Napster) and ways to circumvent it (e.g. DRM) (see section 3.2). It was noted that recorded music sales are approximately £2 billion annually, and that piracy may cannibalise an increasing percentage of this revenue. Piracy is easier to carry out in the digital and online world than in the world of packaged media to date. However, it was also argued that there are some commercial benefits of piracy that accrue to the pirated content or company, not least its marketing function. Additionally, a minority of members felt that piracy is more tolerated in the online world as a 'natural' function of the network, and attempts to limit it were over-zealous.

There was therefore some debate over whether the piracy threat is seismic or not. Most members agreed that it is currently a big issue, with the potential to have a radical impact on current music industry structures, but that by 2015 it was likely - one way or another - to have been resolved, and that a new stability would emerge. Defending the status quo is not per se justifiable; but assisting UK plc to maximise its opportunities in a period of destabilisation is a prime objective of the Task Force process. This particular issue therefore justifies significantly increased attention.

As an addendum to the above, some members felt that it was a fallacy to assume that there were vast amounts of undiscovered talent and content waiting to be traded once networks were more open and run according to C2C dynamics. Rather, it was felt that current industry-led talent-finding techniques are reasonably efficient.

## 5.1.2 THE IMPACT OF ONLINE DISTRIBUTION AND VIRTUAL PRODUCT

### The software industries



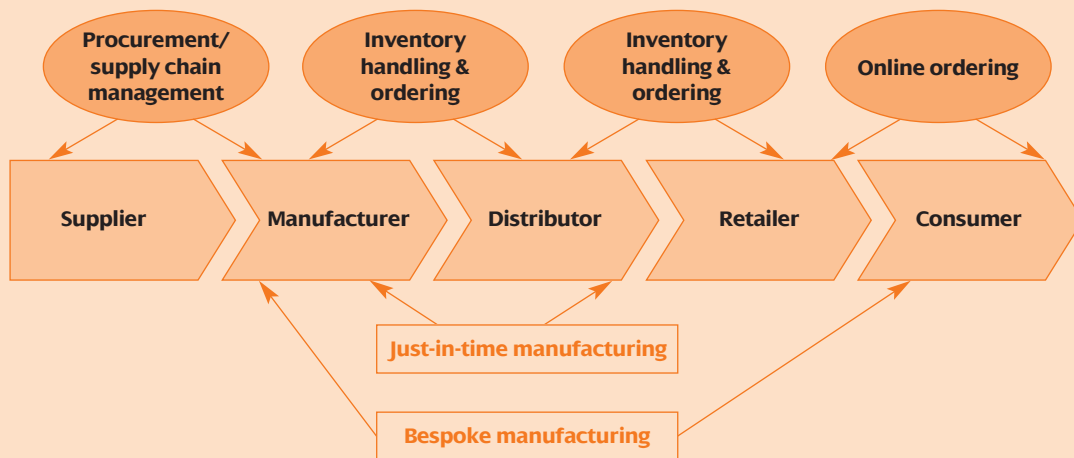
The Task Force believes that online distribution and the development of virtual rather than hard copy product will over time increase the importance of brand, and diminish the leverage of publisher, and distributor and retail players. Power is therefore migrating from the centre towards the left-hand side of the chain.

A number of scenarios for the future of the software industry were discussed:

- A new media player - music channel operators on radio or TV - could enter the value chain and take advantage of its power of cross-promotion and integrated e-commerce functionality (e.g. in the digital set top box) to turn the digital shop window into e-shops
- The new generation of consumers may increasingly be satisfied with a virtual product rather than a packaged product, removing the need for a packaged solution
- Industry players could push for a higher percentage of what may be a lower price for the product
- The online 'disruption' of the software industry could either result in cannibalisation of existing revenue streams, or the encouragement of new spend by consumers
- There will be an increasing role of consumer as distributor (see section 5.1.1)

The Task Force concluded that different types of software will react differently, and produce different solutions, based not least upon the types of communities accessing the product. For example the Task Force suggested that some software companies accepted that their software would be pirated on a wide scale, and so generated new iterations of their product on a regular basis. The Task Force noted that while this was a more than satisfactory solution for some, it might not be the best public policy outcome, and was not a model available to creative product such as music or film; nor would it be possible for non-dominant computer software to lead its consumers through regular paid-for upgrades.

## 5.2 The manufacturing industries



The Task Force debated whether the potential for significant disruption in this sector was likely to be less than in the software sector. The development of online exchanges was discussed, and in particular the implication that manufacturers will be increasingly able to source suppliers from outside the UK. However, it is also the case that the development of exchanges may enable such suppliers to feed into new international markets.

It was agreed that in this context it was necessary to distinguish between different sizes of company within the industry - it is important for Government to target SMEs, as there are significant financial hurdles for small businesses going online.

The Task Force felt that it was unlikely that there would be a radical shift in the use made of the real-world store. For example, the prospect of stores becoming showrooms rather than retailers, with the retail transaction occurring online, was largely rejected. However, it was noted that some large shopping malls are at least contemplating a charge for entry - an indication of a possible premium being placed upon certain types of leisure oriented real-world shopping rather than the less enjoyable (and automated) replenishment shopping.

## 5.3 The service industries

The Task Force examined very briefly the area of service industries and the likelihood of their replacement by networks providing either direct consumer/provider links, or a consumer 'DIY' service.

The growth of call centres was discussed, and it was felt that this growth will continue as a necessary adjunct to the growth of online services, as many online transactions result in some kind of customer query only answerable by a real person. It was also pointed out that the two types of customer liaison will - at least for a while - work in tandem, as for reasons of data protection, the call centre will refer the caller back online to highlight those areas of data protection the consumer must take account of, and which are costly and lengthy to go through in a telephone conversation.

A consensus was reached that certain 'online expert' systems are likely to erode low-end professional services in a timescale of 5 - 15 years. A polarisation of service levels offered is likely - for low-end services such as wills, tax returns, and basic medical information, a DIY approach would be the norm, with the professional becoming involved only for more complex situations, which would of course be more lucrative for them. The members of the Task Force - by deliberate selection an unusually highly-motivated and experienced online sample - directly related a number of examples of using online research to solve or speed diagnosis of quite complex medical issues. However, some concern was expressed over the public policy implications of a more DIY approach to subjects such as health and law. There was also some scepticism over the extent to which a majority of consumers and citizens would wish to develop their own low-level expertise, or whether they would prefer to devolve such activities to the respective professionals.

Such debate re-iterates the importance of more research being undertaken into how to segment consumers and citizens according to their ability and willingness to search for answers, and their available time and spending power. "Who will pay, and for what?" remains a basic question with few clear answers. Given the possible impact of online services on the health budget, for example, this lack of current clarity or understanding is untenable.

## 6 Conclusions of the Task Force

Following the Task Force deliberations, and input from the wider business, Government and academic community over the summer and autumn of 2000, the conclusions below serve as a summary of the debates raised, with added recommendations and action points.

The Task Force was unanimous in its view that a more structured and detailed understanding of the growth and nature of each of the two economies of attention and C2C is needed (see section 6.1 and 6.2), not least because the broader implications of their development are only infrequently discussed in the wider research, industry or Governmental community.

### 6.1 The attention economy: data as currency

**Issue:** In a networked environment the provision by individual users of their attention, and of data about their identity and ongoing behaviour, has increasingly the potential to become an identifiable and valuable commodity able to be traded for goods and services in the same manner as cash. However, there remain many obstacles to the liberation of this new currency as a widespread form of payment - i.e. a stable currency - which require concerted action if they are to be overcome. In particular, if users are unwilling to develop working and consumption practices online because of concerns over data privacy, then the UK economy at both a micro and macro level will suffer.

**Recommendations:**

- The role and focus of the Data Protection Commission - and its resources - should be expanded and changed from one of prevention to active enablement, creating a regime which assists informed consumers to balance a right to privacy with the ability to control and trade their data in a targeted way.

**Action:** DTI, Data Protection Commissioner (Home Office)

- The DTI and the business community should seek to educate businesses to understand and appreciate the value of personal data. A trading framework needs to be set up offering a clear and well-recognised basis for exploitation. Because a quantifiable value is being placed upon consumers'/citizens' attention or behaviour, this value should be assessed by an explicit, recognised entity. The business community should adopt a kite mark standard reflecting best practice for the collection, retention and exploitation of different levels of consumer data. The ethics of data use should be more widely understood, especially for database managers.

**Action:** DTI, Business Support Organisations i.e. CBI, IOD, Trade Associations

- In conjunction with the above, the DTI, Consumer Organisations and the DfEE should seek to build both awareness in consumers of the value of their data, and their confidence in the legal and regulatory framework for holding and trading data. This should be incorporated by the DfEE into citizenship classes at secondary school level.

**Action:** DTI, DfEE, Consumer Organisations

## 6.2 C2C economic activity and its effect upon IPR

**Issues:** The C2C (or peer to peer) economy enabled by a network environment - as reflected in the growth of such businesses as online auctions - will have an increasing impact on both existing business models and, in such forms as online communities, upon society as a whole.

The impact of C2C upon the packaged media industry - music, video, film - will become increasingly significant with the development of file-sharing software such as Napster and Gnutella. Steps need to be taken to ensure that existing IPR is not undermined, while acknowledging that consumers are unlikely to accept a diminution in file-sharing capability.

### **Recommendations:**

- The DTI in collaboration with Foresight should undertake a detailed review of the economic and social impact of C2C activity (taxation, economic models and entrepreneurship). This should involve interested parties from business, Government and academia.

**Action:** DTI, Foresight

- The rights of copyright holders should not be ignored. However, businesses should acknowledge that the rise of C2C distribution is a trend unlikely to be quashed, and should start to seek alternative revenue streams and business models to those of conventional packaged product. The DTI, Foresight, and Rights Associations should collaborate on the process of modelling potential alternative revenues.

**Action:** DTI, Foresight, Rights Associations i.e. British Music Rights

## 6.3 Universal broadband

**Issue:** Universal broadband access will act as a catalyst to the growth of the networked environment and promises significant economic, social and environmental benefits, giving the UK the prospect of taking a leadership position in areas as diverse as broadband content development, distance learning and acceleration of SME growth. However, current market development is slow, particularly in the area of infrastructure roll-out.

### **Recommendations:**

- The Government should first decide its own definition of 'universal broadband access' - be it ubiquity of device penetration, of connected devices, speed of connection, low cost of connectivity, no cost of connectivity or type of currency demanded.

**Action:** DTI, DCMS, OFTEL, Foresight

- The Government should examine the possibility of intervention so as to enable a more swift roll-out and take-up of broadband connectivity - for example, through mandating universal access requirements upon private operators, or through more public-private partnerships. The Government should undertake a comprehensive analysis to consider the various economic, social and environmental impacts of such a move.

**Action:** DTI, DCMS, OFTEL, Foresight

## 6.4 Equality of access

**Issues:** The money/time division between many consumers/members of society cannot be ignored. Users will behave very differently according to the amounts of their available time or money, and policy and commercial development should factor this into account. Affordability of both devices and services is critical to the development of the online economy and community.

Internet-illiterate consumers should not be penalised in their ability to access key services. For example, with the possible development of more 'DIY' approaches to subjects such as health and law, with interactive 'consultations' eventually available over the Internet, there should always be the option of bypassing such self-generated help and going straight to a professional.

### Recommendations:

- The passive delivery of information - e.g. one-to-many services such as teletext weather, sport and news - should remain an important means of distribution and continue to be available to all, but training all citizens to fully exploit the online opportunity (see section 6.5) is critical to deriving full social value from the investment by Government.

**Action:** Government, Public Service Bodies, Media Organisations

- Low-cost or no-cost points of access should be provided in community areas

**Action:** Government, Public Service Bodies, Community Organisations

- The development of online public services should not result in lack of 'real-world' provision and help

**Action:** Government, Public Service Bodies, Community Organisations

## 6.5 Education and training

**Issues:** It is necessary to educate consumers about the new online environment in terms of use and expectation. It is also necessary to educate consumers specifically about data protection issues.

Furthermore, there are key staffing and training issues arising from the development of new media businesses, particularly relating to HR bottlenecks. Managers often do not have the requisite technical knowledge, and those with technical knowledge often do not have the time to learn how to be efficient and respected managers.

### Recommendations:

- Citizens should be trained so as to ensure that the full diversity of the Internet is exploitable by them, rather than it being limited by commercial gatekeepers. For example, simple search engines can be deployed, and public information on search methods should be provided at libraries and community centres

**Action:** Government, DTI, Foresight

- Secondary education should be mandated to teach children the value of their personal data, and the strengths and weaknesses of online information and services. Publicity campaigns should focus upon the issue of data as currency in its positive light

**Action:** DfEE, Secondary Schools, Home Office, DTI

- The Government should take a leading role in developing remedies for staffing bottlenecks in new media businesses. It should enlist the support of educational establishments in creating more public-private education initiatives.

**Action:** DTI, DfEE, Academic Institutions

## 6.6 Regulatory intervention and competition policy

**Issues:** If open access is the norm for online environments, then the market is likely to be able to self-regulate. However, regulators have a role to play in monitoring and preventing the abuse of market power - as distinct from the prevention of a dominant position per se.

The globalisation of the media industry - particularly as it extends into networked media - requires new interpretations of existing competition policy. In particular, the definition of relevant markets is one which is necessary to revisit in order to allow UK media players to achieve the necessary critical mass to compete internationally. The UK is in a position of strength in relation to the development of digital TV and mobile wireless applications and functionality, and should capitalise upon this primary position in the creative content and functionality arena.

**Recommendation:**

- Future competition policy should explicitly recognise the global nature of the media sector and the differing regulatory requirements that are needed to achieve economies of scale. Competition policy in this regard needs to be flexible enough to respond to rapidly changing market conditions and definitions. In addition, consideration should be given to the benefits and drawbacks of a regime focused on abuse, rather than simply the creation of a dominant position.

**Action:** DTI, Competition Commission

## 6.7 Monitoring the development of the online environment

**Issue:** It is critical to provide ongoing assessment of the development of the online industries and their relational dynamics according to a range of factors. If this is done, likely brakes and catalysts to expansion can be monitored and necessary remedies or policy shifts set in place. It is also critical to conduct ongoing consumer behavioural research. Consumers and citizens need to be segmented according to their ability and willingness to search online; their available time; and their spending power. 'Who will pay, for what?' remains a fundamental question with few clear answers, yet it remains central to the successful growth of SMEs and more widely, UK plc.

**Recommendation:**

- The Government should enable an ongoing monitoring of new media development, encompassing the elements of the 'toolkit' laid out in this document. These elements should be monitored according to a transparent and consultative methodology, and ongoing results made public so that all industry, academic and Government players can build upon the findings

**Action:** DTI, Foresight, Government, Academic Institutions, Consumer Research Organisations

# Appendix A

## Members of the Information Relationships Task Force

Member	Company
Julian Dickens (Chair)	Informed Sources
Matthew Batstone	BT
David Brown	EMS
Alan Copps	The Times
John Enser	Olswang
Anne Heal	BT
Julie Hull	ITC
Piers Inskip	Carlton Communications
Lucy Küng	University of St. Gallen
Frances Lowe	British Music Rights
Danny McCaughan	CDT Ltd
Susan Moore	DTI
Ian Moss	OFTEL
John Perkins	National Computer Centre
Alison Preston	Informed Sources (Secretariat)
Michael Redley	ITC
Peter Roe	BT
Mark Suckle	QVC
Geoff Sutton	MSN
John Swingewood	BskyB
John Taysom	Reuters Greenhouse
Peter Thomas	University of West of England
Jeremy Thorp	NTL
Malcolm Wall	United News and Media
Ian West	InterTrust

## Appendix B

# The consultation process

The ICM Panel established three inter-related Task Forces to consider the long-term developments in the emerging digital environment, namely,

- The Future and Development of Information Relationships
- Information Technology, Electronics and Communications
- The Learning Process in 2020

Like other ICM Panel Task Forces, the Information Relationships Task Force produced its own consultation report outlining its initial ideas and thoughts together with any preliminary findings and conclusions. Copies of the consultation reports are available on the Foresight website at <http://www.foresight.gov.uk>.

To encourage debate and to stimulate a response to the Task Forces ideas, the reports were distributed to over 3,000 key stakeholders, both as individuals and organisations, across business, government and academia.

In total, the Task Forces received over 140 responses to the consultation exercise, and a list of respondents to all the ICM Panel's consultation documents is annexed. Copies of the individual responses are available on the Foresight website. In developing the key recommendations contained within this report, the Information Relationships Task Force has taken into consideration the feedback received to the consultation exercise.

The Information Relationships Task Force would like to add its thanks to those of the Panel to those individuals and organisations who contributed to the consultation exercise.

### List of Responders to ICM Panel Consultation Documents

Abbey National	British Institute of Retailing	Cox & Booth Ideas
Association of Independent Research & Technology Organisations	British Music Rights	Cranfield University
Alcatel	BT	Department of Environment, Transport & Regions (DETR)
AOL	BT Cellnet	Department for Education and Employment (DfEE)
Bank of Scotland	BUPA	Department of Trade & Industry (DTI)
BBC	Business Links - Sandwell	Douglas Westwood Associates
Blencartha Productions	Cable & Wireless	Edinburgh's Telford College
Brian Ridsdale	Christopher Ling	Engineering Council
British Association for Information, Library & Education Research	CIS Teleport	Engineering and Physical Sciences Research Council (EPSRC)
British Geological Survey	Civic Trust	
	Council for Museums, Archives & Libraries	
	Coventry University	

Ergonomics Society  
European Education Partnership  
Further Education Development Agency (FEDA)  
GAMBICA  
Gavin Foster  
Glenrothes College  
Glasgow Caledonian University  
Glasgow Telecolleges Network  
Growth Challenge - N. Ireland  
Guildford Educational Services  
Higher Education Funding Council of England (HEFCE)  
Hewlett-Packard  
Highways Agency  
HTI  
ICL  
International Electronic Publishing Research Centre  
Institute of Direct Marketing  
Institute of Education  
Institute of Physics  
Institution of Mechanical Engineers  
Learning & Business Link Company  
Lord Howell of Guildford  
Loughborough University  
Martyn Thomas  
Mike Allan  
Mobile VCE  
National Association for the Care and Resettlement of Offenders (NACRO)  
National Consumer Council

National Educational Research Forum  
National Training Organisation for Engineering Manufacture (EMTA)  
OCR Examination Board  
Office of Telecommunications (OFTEL)  
Orange Plc  
Patent Office  
PCIF  
Pete Spindley  
Pira International  
Playing Safe Ltd  
Professional Contractors Group  
Professor Sir Graham Hills  
Qualifications & Curriculum Authority (QCA)  
Queens University Belfast  
Real Time Club  
Richard Marriot  
Royal Academy of Engineering  
Royal College of Physicians Edinburgh  
Royal Holloway, University of London  
Royal Society of Edinburgh  
RSA Security  
Sainsburys  
Scottish Further Education Unit  
Scottish Power  
Seagate  
SEMA Group  
Sheffield Hallam University  
South Yorkshire Passenger Transport Executive  
Steve Creed

Stow College  
Sussex University - Institute of Employment Studies  
Tesco  
The British Radio & Electronic Equipment Manufacturers' Association (BREMA)  
The Henley Centre for Forecasting  
The Library Association  
The Newspaper Society  
The Post Office  
Time to Market Association  
Trades Union Congress  
University College, London  
UK Consortium on Photonics and Opto-electronics  
University of Dundee  
University of Essex  
University of Glasgow  
University of Surrey - Roehampton  
University of Surrey  
University of Teeside  
University of Ulster  
University of the West of England  
University of Wolverhampton  
Vis Interactive  
Vodafone  
Welsh Education Funding Council  
Worshipful Company of Information Technologists

# The Foresight Programme

Foresight is about being ready for the future. The UK's Foresight programme is the Government-led initiative that looks at what might happen in the future and what we need to do now to secure long-term competitive advantage and enhanced quality of life.

Foresight brings together the voices of business, Government, the science base and others to identify the challenges and opportunities that we are likely to face over the next ten to twenty years or more. In doing so, Foresight aims to bring about a culture change for the better in the way business and the science base relate to each other and to the future.

The programme was launched in 1993 following the white paper on science, engineering and technology, *Realising our Potential*. It has a panel-based structure and operates on a five-year cycle. The current round of Foresight began in April 1999 and work is being taken forward through three thematic and ten sectoral panels, each looking at the future for a particular area.

All panels consider the implications of their conclusions for education, skills and training and sustainable development.

This report - and those of the other panels - represent the culmination of over a year's intensive research, debate and discussion. They provide the basis from which panels and others will work to help turn the recommendations into action.

## Foresight panels:

- ▶ Ageing Population
- ▶ Crime Prevention
- ▶ Manufacturing 2020
- ▶ Built Environment & Transport
- ▶ Chemicals
- ▶ Defence, Aerospace & Systems
- ▶ Energy & Natural Environment
- ▶ Financial Services
- ▶ Food Chain & Crops for Industry
- ▶ Healthcare
- ▶ Information, Communications & Media
- ▶ Materials
- ▶ Retail & Consumer Services

The views expressed in this document should not be taken to represent those of the Office of Science and Technology or the Department of Trade and Industry.

The views and recommendations expressed in this document represent the broad consensus reached through the work of the Panel and its task forces, and its consultation with key stakeholders. They do not reflect the personal views of the members or the organisations they represent.

**The Office of Science and Technology or the Department of Trade and Industry does not accept responsibility for any action taken based on the views and recommendations in this document.**

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Department of Trade and Industry



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