



ADVISORY PANEL ON CROWN COPYRIGHT

First Annual Seminar – 18 March 2004
The Economics of public sector information
(Version 3)

Date: Thursday 18 March 2004
Time: 9.30 a.m. - 5.00 p.m.
Venue: Oxford Internet Institute, 1 St. Giles, Oxford
Chair: Professor Richard Susskind, OBE
Secretary: Thomas Papworth

Attendees:

Toby Bainton	Secretary, Soc. of College, National & University Libraries; Member, APCC
Professor Michael Batty	Director, Centre for Advanced Spatial Analysis, UCL; Member, APCC
Paul Boyle	Head of Information Rights Division, Department for Constitutional Affairs
Dr Stephen Coleman	Visiting Professor in e-Democracy, Oxford Internet Institute
Michael Crosse	Economist, Department of Trade and Industry
Professor William Dutton	Director, Oxford Internet Institute
Trevor Fenwick	Managing Director, Euromonitor plc; Member, APCC
Professor John Kay	London School of Economics; author of <i>The Truth About Markets</i>
Mary King	Treasury Officer, HM Treasury
Marlene Mallicoat	Academic Researcher, Oxford Internet Institute
Christopher Marsden	Research Officer, Oxford Programme in Comparative Media Law and Policy
Susan Moore	Senior Analyst, Department of Trade and Industry
Ted Nelson	Fellow, Oxford Internet Institute
Howard Picton	Deputy Manager, Information Centre, Bank of England; Member, APCC
John Ponting	Chief Information Officer, The Met Office; Member, APCC
Christopher Roper	Director, Landmark Information Group; Member, APCC
Duncan Shiell	Director of Strategy, Ordnance Survey; Member, APCC
Dr Damian Tambini	Head of Oxford Programme in Comparative Media Law and Policy
Richard Thomas	The Information Commissioner
Carol Tullo	Controller of HMSO and Queen's Printer
Professor David Vaver	Director, Oxford Intellectual Property Research Centre
Peter Wienand	Head of Intellectual Property, Farrer & Co; Member, APCC
David Worlock	Chairman, Digital Content Forum; Member, APCC
David Young	Policy Adviser, Universities UK; Member, APCC

Welcome & introductions

1. Professor Susskind welcomed the delegates and expressed his thanks to the Oxford Internet Institute (OII) for hosting the event. He expressed the Panel's hope that this would be the first of a series of annual seminars hosted by the Advisory Panel on Crown Copyright (APCC) to which guest speakers and delegates would be invited.
2. Professor Susskind outlined the three broad objectives of the day: to identify where Government policy was clear, to identify where it was unclear and to identify where it was clear but in need of revision. The morning sessions were designed to educate while the afternoon sessions aimed to stimulate debate. Each of the day's sessions was preceded by a presentation by a guest speaker.

UK Government policy

3. Carol Tullo, Controller of Her Majesty's Stationery Office (HMSO), outlined current Government policy on the reuse of public sector information (PSI) and the origins thereof. She began by describing the role of HMSO and its mission to provide "Government knowledge without knowledge of government" by making information easy to find, use and share without the need to understand the complicated architecture of Government.
4. She then laid out the systematic programme of Government and European Union (EU) activity since 1997 in the area of PSI and its reuse:
 - *Your Right to Know* (Cm 3818 December 1997)
 - *Crown Copyright in the Information Age* (Cm 3819 January 1998)
 - *Future Management of Crown Copyright* (Cm 4300 March 1999)
 - HM Treasury Wider Markets Initiative (July 1998)
 - Freedom of Information Acts 2000/2002
 - UK Spending Review 2000
 - *HMT Charges for Information - When and How* (July 2001)
 - *Licensing of crown copyright - HMSO regulatory framework* (Consultation Document, July 2002)
 - *European Directive on the Re-Use and Commercial Exploitation of Public Sector Information - Directive 2003/98/EC* (December 2003)
 - Consultation and regulatory impact assessment on Directive 2003/98/EC (2003-4)The aim of this programme of activity was to create a coherent, consistent policy of co-ordinated effort to maximise the value of PSI through its reuse.

5. The programme had been informed by consultation with the information industry, research community, PSI providers, information innovators, reusers and users of PSI and members of the public. The strategy that had emerged had been to create a 'one stop shop' for Government information (based within HMSO) and to maximise the openness, transparency, speed and ease of access/use of the licensing process, to ensure fairness between users and to eliminate exclusive contracts and departmental vetoes on information reuse.
6. To achieve the above objectives, HMSO had
 - adopted a 'Plain English' approach to its documents;
 - adopted marginal cost pricing for core information (for definitions of these Core and Value Added Information see: <http://www.hmso.gov.uk/copyright/licences/click-use-home.htm>)
 - instituted online licences (Click-Use Licences), firstly for core information and now for value added information. More than twice as many Click-Use Licences had been issued than extant licences in all the years prior to the establishment of Click-Use.
 - promoted the creation of information asset registers of non-published material in various departments and had created the Inforoute portal through which these might be accessed.

- created a Standards Division to monitor progress, establish the Information Fair Trader Scheme (which set standards for PSI providers) and set up and provided secretariat support for the Advisory Panel on Crown Copyright.
7. Carol Tullo also put PSI policy in a European perspective. The *European Directive on the Re-Use and Commercial Exploitation of Public Sector Information* (Directive 2003/98/EC) required that PSI providers clearly define the terms they were employing, make information equally available to all potential reusers, create asset lists, streamline licences and employ standard licensing terms. The next stage was to create wider collaboration outside central Government, further promote the internet as a communication tool and review the effectiveness of Government policy so far.
 8. The Government's ambition was to establish joined-up government that focused on the complex needs of multiple users, encouraged interoperability with other systems and made governmental, parliamentary and other official information easy to create, find and use.
 9. One delegate asserted that Government websites in the UK were poorly used in comparison with other Anglo-Saxon and with Nordic countries. This despite HMSONline receiving 17-22 million hits a month over the past year. The delegate suggested that this alleged under-utilisation might result from Crown copyright.

Introduction to the Economics of public sector information

10. John Kay offered to provide a "scatter gun" approach that would fire off a random set of five issues relating to the economics of public sector information that the delegates might like to consider.
11. First, he discussed the nature of information as a commodity. Information in many ways resembled a 'Public Good', a commodity that, if provided, could not be provided exclusively to some within society but must, inherently, be provided to everyone equally. The example he cited was the lighthouse: once running it provided an identical level of service to everyone. He contrasted this to an impure Public Good that had to be provided equally to all users but from which some users might be excluded (for example, a park from which some could be excluded but which those inside benefited from equally). He noted that it was often difficult to recover the costs of public goods, and that they were generally funded by philanthropy, taxation, levies on use, voluntary contributions by users, "Quasi-rents" (profits from first user advantage) or the granting of monopolies in related areas.
12. Moving on to the economic issues of intellectual property he noted that the basic principle behind intellectual property rights (IPR) was to maximise the dissemination of intellectual property while encouraging creativity by enabling the innovator to reap a reward for their work. Copyright, he noted, did not actually protect innovations but, bizarrely, the presentation of that innovation: IPR did not protect calculus but the *Principia Mathematica*; source-code was copyrighted but not the concept of the graphical user interface (in other words, Windows language could be but the concept could not); specific drugs could be protected but methods/regimes (e.g. bandaging) could not. Another delegate cited the example of Database Right that protected form rather than substance.
13. Intellectual property owners and rights-practitioners were generally eager to analogise between information and other commodities: "intellectual theft" did not actually deprive an individual of their property as it was merely shared more widely (though the point was made by one delegate that it still deprived the creator of their income).
14. The value of information was not clear until the nature of the information was revealed and the seller often knew more about the product than the buyer, giving the seller an innate advantage.
15. Finally, he explained how Economists try to see economic systems in "General Equilibrium". Often observers concentrated on supplier profit as opposed to the benefit yielded to the system as a whole. Industries were often structured to meet the regulatory system and not visa versa. For example, new

medicines were expensive because society demanded high-cost clinical trials to ensure safety and effectiveness. Access to information was important to the structure of the information industry.

16. John Kay concluded by saying that creation and innovation were best encouraged by pluralism and openness that would, in turn, encourage competition. A lot of intellectual property issues have been captured by industry groups and exploited to the deficit of the wider economic system. Indeed, it was noted that Patent Clerks were carving out niches for themselves by patenting previously unimaginable products and then being the only person fully conversant with how patent law applies to that subject. However, there was a need to encourage (i.e. to reward) innovation. The debate as it stands was too focussed on moral/legal issues rather than economics.
17. In response it was noted that because much information had now to be accessed in particular forms through particular gateways (i.e. a specific piece of software) information was no longer a public good as exclusivity was possible by restricting access to the gateway.
18. It was also noted that it was the nature of information that the more people have it the more use it was – indeed this may have been true of all commodities and was certainly true of many non-information commodities (e.g. telephones).
19. The following questions were identified as resulting from the first two presentations and surrounding discussions:
 - Was there a need to create an open licensing system?
 - Were most incentives for innovation price incentives?
 - If information was being granted as a matter of course (as was UK Government policy) why reserve IPR at all?
 - How should public sector information be funded?
 - How important was a regulatory regime?

International Perspectives - Europe

20. In the next session three speakers discussed foreign examples of PSI practice as comparisons with the UK. Peter Wienand began by outlining European PSI practice and specifically the new PSI Directive (Directive 2003/98/EC). The Directive, passed in December 2003, would come into force on 1 July 2005 and was due for review by July 2008. It was intended to create a level playing field and help Europe rival the information industry in the United States of America (USA).
21. The PSI Directive set only a minimum standard; member states were allowed to set higher standards if they wished. There was in fact no obligation to allow reuse and exclusions were permissible for:
 - Activities outside a department's public task
 - The IPR of third parties
 - Security/confidentiality reasons
 - Public-sector broadcasters
 - Educational, research and cultural establishments.The Directive distinguished between "Re-use" and access and sought not to affect Freedom of Information and Data Protection legislation or international intellectual property conventions (though in practice the latter were watered down).
22. Some rules and standards were set regarding format, language, means of redress/challenge if reuse was refused, licence conditions and charges, equal and fair treatment and the banning of exclusive rights unless "necessary for...the public interest". The UK Government had published a Regulatory Impact

Assessment on how to implement the Directive in the UK. It was noted that so far the UK was the only EU member to conduct a public consultation.

23. One concern raised was that the Directive might be taken to imply that as soon as a producer reused information for a purpose other than its public task the producer was automatically obliged to make it available for wider use.

International Perspectives – Canada and the United States

24. Professor David Vaver then compared the Canadian policy on Crown copyright with the public sector IPR practice of its neighbour the USA. Canadian law was based on the UK Copyright Act 1911 but Crown copyright was divided between Federal and Provincial Crown copyright. Local authorities have the same rights as any private body. Crown copyright even covers legislation and judicial decisions. By comparison the USA banned copyrighting of any work produced by the federal Government (though the Government could assign it to third parties). States were allowed to hold copyright.
25. He asked why these were different and examined the possible cases for each. The arguments for having no copyright protection (the US model) might have included that:
- Government work was not valuable (clearly not true)
 - Government work was so valuable that everyone needs access to (reuse) it
 - Copyright was not required to provide an incentive to Government innovation
 - “The people” already owned it because it was their Government that produced it and their taxes that paid for it
 - Copyright could be used as a tool of patronage and was therefore dangerous
 - Copyright could be used as a tool of censorship and was therefore dangerous
 - It was in the Government’s interest that its work (e.g. laws) was in the public domain
26. The arguments for having copyright protection (the Canadian and UK model) might have included that:
- Government had the same rights as any private person (an argument that made more sense in the UK/Canadian context of the Crown as embodied by a person than in the US model of a more abstract state but which was nonetheless anachronistic)
 - The concept of copyright could only be protected if it was applied to all work including that of Government (an argument of convenience)
 - Copyright was necessary to ensure accuracy in reproduction (though other laws and market forces could ensure this at least as well)
 - It stopped counterfeiting (but other laws do this just as well or better)
 - It prevented material being used “inappropriately” (and Professor Vaver then cited a long list of moralistic definitions of what was deemed “appropriate”)
 - The Government could utilise copyright law to raise revenue
 - It improved economic and/or social welfare (but did greater reuse not do so just as well?)
27. One defence of copyright was that licensing imposed a degree of accuracy in reproduction. Professor Vaver was sceptical of this and argued that there were plenty of examples of inaccuracy even when work was reproduced within Government (he cited the example of a Canadian judge quoting a UK Lord Chancellor and the draftsman removing evidence of the quote so apparently rendering the judge a plagiarist). Furthermore, market forces (in the form of the reputation of the reuser) would provide a greater and more efficient form of penalty for poor reproduction than punitive action by Government. However, another delegate countered that there was a significant difference between accidental inaccuracy and the intentional misrepresentation which licensing was designed to curtail. It was noted that the Government’s concern with accuracy stemmed from the need for citizens to be able to place confidence in the information they were provided about Government. Crown copyright provided that

reassurance (an example was cited of the use of Crown copyright to curtail the use of the Crown & Portcullis emblem of Parliament by people attempting to extract money from firms under false pretences).

28. Another delegate referred back to the argument that taxpayers, by funding Government, pay for Government work in the first place and so should not be obliged to “pay twice”. However, he also noted that this argument was now being turned back on publishers (who often cite it) by research councils in the USA that were now arguing that their work should be reproduced for free.
29. In conclusion Professor Susskind noted that until the Panel fully understands how Government should best reuse information it would be risky to propose premature and potentially misguided reform.

International Perspectives – Australia

30. Professor Mike Batty concluded this session by discussing public sector information in Australia with particular reference to geospatial data in the state of Victoria. He began by noting that data in the Commonwealth of Australia was assembled from the bottom up and that policy was formulated at state level and reinforced federally. The general principles were:
 - Full cost recovery (but with exceptions), which often meant maintenance cost recovery
 - Encouragement of access through online services
 - Ease of finding data costs; online purchasing
 - State dominance of the collection and dissemination of spatial data
 - Fewer national agencies producing raw data than in the UK
 - Value-added data generally developed in the market
 - Widespread policy of sharing data in government agencies, with the public (especially for certain basic datasets) and especially in rural areas
 - An emphasis on (spatial) data infrastructure
 - High metadata and custodianship standards
31. He then went on to discuss Land Victoria, the state agency responsible for supplying basic framework datasets and cadastral property data. Australia benefited from its small population (exaggerated by the fact that states gather much of the information). The high quality of Land Victoria’s website and the ease with which one could locate, access and utilise information electronically was demonstrated. One could purchase data and the means of unlocking it. Costs were made clear and a standard shopping basket approach was utilised. Payment could be made by credit card. Special facilities existed to allow for the large size of spatial information files. The style of the website was clearly informed by a retail approach reflecting the frequency with which state mapping agencies deal with the general public.
32. In conclusion Professor Batty noted that there was still some confusion over pricing and over the market for value added services. Previous experiences with privatisation had also been negative. However, there was now a good standard of integrity, metadata and access and the interfaces (websites) were good.
33. There followed a general discussion. It was noted that the leading data producers in the UK (The Met Office, Ordnance Survey and the UK Hydrographic Office) all had military backgrounds whereas other producers (e.g. HM Land Registry) did not. Funding was shaped accordingly with traditionally non-military producers being funded by the users whereas historically military producers were funded by the state.
34. Another delegate cited the Government’s plan to produce “Data Warehouses” to bring spatial and personal data together to help track educational trends.

Public sector information policy in action – a view from the Department of Trade and Industry

35. Michael Crosse began by citing two cases that reflected on the Government's public sector information (PSI) policy. The first was a quote from Jefferson that illustrated the concept of information as a public good: "He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me." The second was a recent case of a postgraduate researcher giving up his job to become a heating engineer because it was more remunerative, thus illustrating that the provision of information must nonetheless be rewarded.
36. The key questions in information policy were what information should the public sector produce (as opposed to leaving to the private sector) and how should the production of that information be financed? The defining economic concerns here were based around "Allocative efficiency". This idea had been developed from Adam Smith's concept of the "hidden hand": individuals in pursuit of their own interest could bring about a desirable result for the whole economy. Building on this, neo-classical economics developed the idea that, within perfectly competitive markets, goods would be provided at quantities and prices that were "Pareto Efficient": given the initial distribution of resources, no-one could be made better off without making someone else worse off. This was referred to as "allocative efficiency" because resources were allocated to maximise the amount of utility (or welfare) being derived from the system. As part of this process, competition obliged firms to reduce prices until they were producing at "Marginal cost".
37. By operating in the market and funding this through taxation the Government would distort allocative efficiency. All taxes (e.g. on sales values, income or profits) introduced distortions to the signalling function of prices and earnings. There was also "Deadweight Loss" whereby part of a subsidy was wasted. This arose when the recipient would have voluntarily paid the full price, so that the subsidy was an unnecessary transfer from the taxpayer.
38. Mr. Crosse outlined again the aspects of "public goods" in the economic sense (as outlined by John Kay in an earlier session): that they were non-rivalrous in consumption, because they were not depleted by consumption, and that they were non-excludable (once produced it was not possible to exclude anyone from consuming them). It followed that it was allocatively efficient for them to be available free. However, this left the problem that their costs of production would not be recovered through prices. The question, therefore, was who should pay for production and in what quantity should it be produced? In the case of information, one could introduce exclusion by creating institutional barriers (e.g. copyright and patents) which themselves cost money (particularly to enforce). Information also exhibited an extreme economy of scale in that the first unit produced could be expensive but every unit (re-)produced thereafter was cheap (i.e. almost free). Another delegate noted that this seemed to undermine the basis of "First Mover Advantage" in that the original consumer would bear all the costs and their rivals would reap the benefits of cheap reproduction unless some system existed to protect their investment (e.g. copyright and patents). However, technology was undermining barriers to reproduction, reducing costs to zero and making it almost impossible to protect digital content.
39. The private sector employed legal and technical barriers (as outlined above) and was then able to use differential pricing e.g. "Two price tariffs" whereby one was charged for access/connection (e.g. a satellite dish or telephone connection) and per unit (e.g. month of viewing or minute on the phone). However, Pareto Inefficiency could result when the private sector "Cherry Picked" profitable parts of business and refused to supply unprofitable markets. This was an area where public sector production with a Universal Service Obligation might be preferable. The public sector could have natural advantages in certain other cases. Areas where the public sector needed to fund and perhaps directly produce products included:
- Basic research in areas where the results did not produce revenues: profitable research would only follow when development work was done (this could be done by competing firms).
 - Information as a by-product of Government activities
 - "Merit Goods" where dissemination was a part of Government policy (e.g. legislation)
 - Where security/confidentiality required Government control

- Where natural economies of scale suggest that a monopoly supplier was most efficient and it was deemed more economical for the state to produce the product than to regulate a private monopoly.
40. It was essential that Government price its information fairly. In the case of core material (that which had been produced for Government work but which might afterwards have other uses of interest to third parties) the cost of production would have been incurred by Government anyway in conducting its business, so marginal cost pricing was economically efficient; reusers would only be charged for the cost of producing the extra unit (i.e. sending it to them, which in a digital age was almost zero). Marginal cost pricing or even free distribution might also be appropriate where there were overriding public policy reasons for the widest possible dissemination.
 41. Where information production was an agency's main function or where the information was produced specifically for a customer ("Value-added services"), equity and long term efficiency were served by transferring the full cost of production to the consumer (otherwise the provision of the information would be subsidised). The way in which fixed investment costs were recovered could be by simple averaging over prices or by differential pricing. One example of the latter was "Ramsey Pricing" (variable pricing based on charging what each consumer was prepared to pay) which had certain desirable properties in terms of allocative efficiency. There were, however, Competition Act concerns which might preclude its use.
 42. There was confusion and debate surrounding situations where one or more consumers were themselves part of the public sector, so that the public purse was paying itself. However, efficiency dictated that departments charge one another so as to oblige them to consider the true value of the information they were purchasing.
 43. Following the *Cross Cutting Review of the Knowledge Economy* that the Department of Trade and Industry and HM Treasury sponsored in 2000, it was decided that marginal cost pricing would be applied to all core information, but that value added products would be priced at a 'fair' market rate. Trading funds would attempt to achieve a return on their investment and this would provide efficiency incentives if they were to compete in the market. Fair trading considerations would also apply.
 44. Delegates cited two problems stemming from the above. One was an example of rivalrous information: if a Government department identified a potential market or trading opportunity then it would be rivalrous because the more firms knew about it the less any individual firm would benefit from it. The other was the fact that innovation might be stifled because first mover advantage was undermined, subsequent movers/users reaping the benefit of the first mover's innovation at a fraction of the cost.

Public sector information policy in action – a view from HM Treasury

45. Setting out HM Treasury's position, Mary King began by reiterating the distinction between Core and Value Added products and the prices incurred by each. She also explained that trading funds should charge at market prices. Non-Crown public sector bodies set their own policy.
46. The Treasury's guidance to Crown bodies recommended that Government departments charge market prices for goods that were also produced in the private sector because private sector competitors might have higher costs (e.g. higher cost of capital) and the Government would not want to compete unfairly in the market. A profit was therefore acceptable if it ensured that Government was not undercutting the private sector. However, some price differences were inevitable because of differences in the services provided.
47. The trading funds were set up with the aim of leading to "...improved efficiency and effectiveness in the management of their operations". They existed to serve the policy needs of Government but also of the wider public and the private sector. It was reasonable that users should be charged for what they used so marginal cost pricing was not applied. If it were there would be a significant cost and funding gap.

48. It had been argued that taxpayers would recover the costs of funding the trading funds as agencies because of increased secondary use of data which would fuel the economy and generate (taxable) revenue for information industry firms. However, this was risky (and perhaps impractical) - there was no guarantee that greater Government revenue would result. In any case, a proposal to fund PSI producers through taxation would still have to compete with other Government priorities.
49. One delegate noted a paradox in the above whereby the arrival of a private sector trader in the market might actually push prices up (the opposite of the expected result of competition) because it could not produce as cheaply as Government and Government must match the private sector price.
50. Another delegate observed that it was very hard to value information assets and this was key to the issue of the economics of public sector information.

The challenges facing trading funds – a view from the Met Office

51. John Ponting began by discussing the Framework Documents that set the parameters in which trading funds operate. These required the trading fund to develop and pursue profitable commercial outlets for services, within HM Treasury guidelines, and to maximise the financial contribution made by the sale/licensing of services to offset the core and central overhead costs of the Agency.
52. In the case of the Met Office its core tasks were to provide a range of meteorological and climatological services to:
 - Ministry of Defence (MoD) - including armed forces and other activities
 - Other Government Departments
 - the Civil Aviation Authority (CAA)
 - Commerce
 - Industry
 - PublicThey also provided a national meteorological service.
53. The Met Office's value added services, provided to public and private sectors, included information services for the following sectors:
 - Aviation
 - Retail
 - Local Authorities
 - Energy
 - Insurance
 - Building & Construction
 - Travel
54. The Met Office's international commitments included membership of the World Meteorological Organisation (WMO) which required it to share meteorological data with WMO partners. It also co-operated extensively in Europe through ECMWF and EUMETSAT.
55. The Met Office's core tasks were generally funded by Government departments (primarily MoD) and the CAA. These organisations also purchased value added products. The revenue generated from all value added services made a contribution to the core services as the value added services could only exist as a result of investments made for core work.
56. The Met Office and other trading funds were obliged to trade on a level playing field as a result of
 - the Competition Act (UK and Europe)
 - the Freedom of Information Act (& EIR)

- the Information Fair Trader Scheme
- the separation of public and commercial services
- Data wholesaling
- Consistent internal and external charging
- The banning of cross-subsidy of commercial services from core services

This created significant tensions for the Met Office.

57. The Met Office provided many essential services but the costs of these were mitigated by the revenue generated by commercial activities. It was therefore essential for the Met Office to be able to protect its IPR and so be able to compete in the market.

The challenges facing trading funds – a view from Ordnance Survey

58. Duncan Shiell began by discussing the printed maps for which Ordnance Survey (OS) was most famous, including the Explorer range of 1:25,000 maps, the Landranger series of 1:50,000 maps and others. The national mapping agency of the USA only mapped down to Explorer level where as larger scales were often required by utilities, states and the private sector. In the USA these were provided by the private sector but these were often of low quality, were incompatible and were on average twenty years out of date.

59. Ordnance Survey was given a five year target of generating a 9% return on investments (other than the OS database, the value of which was hard to measure). This would be achieved even though OS had not been profitable in each of the five years. Revenue had risen year on year but this was achieved by increasing supply and not increasing price. Efficiencies also had an effect: technology had enabled OS to reduce staff. Large investments over the previous four years had been possible only because of OS's trading fund status.

60. Members of the OS board (three quarters of whom had been drawn from the private sector rather than long standing OS employees) agreed that the trading fund model was superior to privatisation or funding through general taxation. The trading fund model encouraged the reuse of information because it was in the trading funds interests to maximise its output through increasing demand.

61. As regards pricing OS operated differential pricing but (under its commitments to the Information Fair Trader Scheme) it was obliged to charge the same amount for the same product/service.

62. One delegate suggested that because the trading funds now charged Government departments for their work those departments might be discouraged from using the data and so produce lower quality work. However, Duncan Shiell countered that this was dealt with through the Government's Service Level Agreement by which Government departments have agreed prices with OS. Another delegate noted that it was not the fault of trading fund policy that bad decisions were made by other departments.

63. It was also suggested that conflicts over intellectual property between Government departments were inefficient. It was agreed these conflicts did sometimes obstruct co-operative ventures between OS and licensed partners.

64. In a final note on trading funds it was stressed that the various trading funds were exceptionally heterogeneous. For example, a key difference between the Met Office and OS was that the Met Office licensed base data and competed in the production of applications; OS did not compete with customers in producing applications.

Trends in the United States – The Creative Commons

65. Damian Tambini described how Creative Commons was trying to find a middle ground between the “all rights reserved” form of copyright and the “anything goes” anarchy that would exist without any IPR. Its aims and values were centred around education, innovation and expression by providing a reasonable degree of protection of intellectual property while recognising that existing copyright laws could be proscriptive.
66. Creative commons licences could be tailored to suit the needs of the licensor. There were simple options which could be applied and simple symbols could be put on work to indicate which of the options had been exercised:
- Attribution required?
 - Commercial exploitation permitted?
 - Derivative works permitted?
 - Share-and-share-alike required?
67. Under the Creative Commons system there were three levels (“expressions”) of data within documents that were defined as
- Human readable – those parts accessible to all
 - Lawyer readable – legal code underlying the documents
 - Machine readable – the metadata
68. The Creative Commons system had already made headway in Brazil, Germany and Japan. It had also caught on in the USA. However, no UK public bodies had yet adopted it. It was nonetheless greeted positively by the seminar: one delegate applauded its fluidity and openness and noted that it used intellectual property rights but was not a slave to them; another noted that it promoted and encouraged reuse by using copyright in new and imaginative ways.

Reactions of a technology visionary

69. Ted Nelson took a few minutes to highlight some failings in the information technology industry. It had traditionally been led by technology rather than utilising it; Mr. Nelson felt that the information technology industry was crying out for an input of philosophy and literature.
70. Conventional electronic documents tended to commit four basic errors:
- Documents were generally one file in which everything appeared in a sequential position
 - They usually attempted to simulate the paper documents with which we were all familiar (in much the same way as early automobiles had a simulation buggy-whip)
 - They were structured hierarchically
 - Links tended to only operate in one direction (a basic flaw with hypertext)
- As a result of these electronic documents could present difficulties in:
- Annotation
 - Managing versions
 - Providing serious multiple links
71. On the other hand, Project Xanadu (the first explicit hypertext project, that had been going since 1960) concerned itself with entirely different document structures including:
- multiple selectable overlays of structure, links and decoration (no embedded mark-up)
 - explicit side-by-side inter-comparison of documents, versions, commentary, etc.
 - visible lines between corresponding parts of inter-compared documents
 - “Microversioning” – one edit change at a time
 - “Micropayment” to foster mixed quotability of paid and unpaid content – one only paid for the proportion of the document one employed.

72. This latter turned publishing on its head. If the content was put on line then when quoted the document could direct the reader to the original (rather than reproducing it) and one could see the text in context. This eliminated the danger of misquoting or taking quotes out of context and enabled payment in proportion to the amount used (as opposed to the system, exemplified by book ownership, in which one had to buy the whole document even if one only wanted a part of it). This also allowed one to quote secondary works and automatically attribute original text fairly and credit the original author (both in terms of respect and money) appropriately.
73. Unfortunately, Project Xanadu had concluded over the last decade that it was incompatible with the World Wide Web in its current format – especially HTML and XML.

Closing comments from the Rapporteur

74. In summing up the day's discussions, Professor William Dutton returned to Professor Susskind's three questions: where was Government policy clear, where was it unclear and where was it clear but in need of revision. He felt that the principles under discussion were clear: ease of access, accuracy, transparency and equitable pricing for like-for-like services. What was less clear were the definitions of such fundamentals as "information" and "public sector", as well as the objectives (democracy, revenue-generation or development), policies (which differed between states and between organisations), practices and underlying technologies.
75. New issues had also emerged that needed further examination. It was clear that the issues under discussion went beyond economics, and so required a multidimensional approach; economics alone would not provide the solution. He noted an "information paradox" in that more information was being created than ever before even though funding was declining. Finally, he cited implementation of policy as a key issue. Reform could take two forms: rational, comprehensive reform or incremental change. The likelihood of the rational, comprehensive change was small, however, which was why implementation would be so important.

Minutes compiled by

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