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Policy push, personal pull: trying to make sense of the journey towards the information society

Chris Batt

Introduction

Picture the scene: 2020, a warm summer evening, somewhere in England. For two weeks the premium movie channels have been blasting the airwaves with ads for the premiere of the latest blockbuster from Kenneth Branagh, the grand old man of British film. Running in prime time on all 50 pay-to-view movie channels, showing three times during the evening and priced at 250 euro per broadband feed. Local-end (home) video recording is disabled and nobody is going anywhere.

The British immersive film industry leads the world, and consequently families across the face of the planet, in gardens, in igloos, even in houses, are planning to join this dying custom of the single launch of a movie. In English gardens, video sheets are unrolled and hung from trees, walls and sheds while personal surround sound systems tune themselves to the media command centres that sit on the local end of the broadband feed. It is a convivial event, with families and friends together watching the big show, where they want to. Personal sound systems do not destroy the tranquillity for those not watching, while talking is still possible. Gone are the cinemas where people sat in silent rows unable to move around or react as they wished. The utility of those dark impersonal buildings does not now run to movies! With extended family and friends watching – the grown-ups in gardens, the kids in bedrooms – the 250 euro price of the feed is cheap for what will be an entertaining and happy evening.

The film begins. An exciting adventure set in a bygone age, *A winter's tale* is steeped in Shakespearian characters and settings that are as close to the mythical age as possible. The latest post-production techniques are better than reality: 'If you've tried reality, now go virtual and try the real thing', 'If you wanna get real, get virtual' may have become slogans to forget, but without doubt the virtual effects and the attention to authenticity make it hard to believe that the watchers are not part of the action.

They are spellbound, they gasp, they talk, they share. From time to time they press buttons on their 'personal remotes' to mark a particular moment, image or setting. For all movies, indeed all broadcast media are no longer simple, linear, flat events that happen and then are over. The film, the natural history programme, the cultural epic are in a real sense merely the tip of an information iceberg that offers pathways and voyages into the world that they describe. The immersion may not be a part of the event, but diving into the body of the iceberg (if that is possible?) is a natural follow on.

The act of creation has become more than the visible product. The medium of broadcast, of shared viewing, while still commanding global attention, is equally a metaphor for the richness beyond. New technologies and old skills have come together to make the power of film and television a doorway into culture, into history and into the future.

The movie is over, the video sheets now dissolving into the myriad local, national and international channels that make up the medium. Parties are starting, but some people are already reviewing the data they have gathered during the film using their personal remotes. Each press has 'tagged' a route into the iceberg. Context relevant and designed to fit the profile of the user, the route may be to places, images, objects, more movies about the events depicted, about Shakespeare, about literature and even how to escape from bears. The legacy of *A winter's tale* is at once opinion about performances, camera angles, interpretation and the millions of people inspired to search further beneath the surface of what they have seen. Technology has made viewing at the same time more gregarious and a personal lifetime's journey into the richness of our societies and cultures. It has done something even more dramatic. Network technology has enabled everyone (or at least everyone who has access to the networked resources) to become an equal contributor to a global forum of debate, challenge, argument and empowerment. It continues to transform how people see themselves within the context of others. The network is at once a delivery

mechanism for entertainment, for learning, for shopping, for information and at the same time a common ground for the two-way exchange of ideas unfettered by the will of the media mogul, the power of any single government to control its citizens or by international treaty. Quite literally, the biggest ‘free for all’ in history.

What is the meaning of all this? What should we understand by it? What challenge does it present for the future of our cultural and learning institutions? Of course, it presents just one of many possible futures. One in which there are things that we can recognize, some things that we could almost do now, and some things that today are impossible. Technological possibilities are always fun, but my interest here is in the social and policy environment that will now and in the future predict what direction our future might take. To do that we have to identify some key indicators that might give us clues, about which we can ask meaningful, if leading, questions.

There is global interest in the information society, and for good reason. Never before within the fabric of the developed societies has there been so visible a shared hope of what an information society might do; never before within the developing world has there been so obviously the hope that the emerging technological networking of information (telephony, internet, etc.) will produce a steep change in the ability of those countries to educate coming generations, to compete in world markets and to become part of a global community. What will be the factors that might bring these things about, assuming we could define such hopes in tangible form? This question is at the heart of what follows, although the reader is cautioned in advance that there are no simple patterns or conclusions to be drawn. My purpose is to place some features on a still-unexplored landscape and to indicate how they may relate and interact with each other.

This chapter will examine four areas of influence that must affect the chances of us sharing that global premiere of *A winter's tale*. They are:

- common features of the information society
- technological change
- public policy, private practice
- social transformation.

It will then conclude with some thoughts on the impact of various mixes of these phenomena as they might interplay and combine together.

Common features of the information society

Scrape away the gloss many present as their vision of the information society and we find uncertainty and generalization. Terms such as knowledge society, learning society, even wisdom society are used with no more clarity than concepts such as 'free society' or 'empowered citizen' – we sense the implication without clear meaning. Grasping for that meaning more often than not produces the effect of sand through fingers. That has not stopped a global industry of books, journals, policies and polemic telling us what will be and what needs to be done.

Nevertheless, we will need to find benchmarks that can define our arrival in or approach to an information society; otherwise we are lost before we start. I want to offer a 'triangle of factors' that will act as indicators towards the information society; they are information, connectivity and social capital.

Information

Many would argue that we have too much information already and that the internet presents the ultimate in overload nightmares; to paraphrase Oscar Wilde, 'we have information on everything, but know the meaning of nothing'. Nevertheless there is an emerging consensus that of all the factors, and there are more than the three examined here, the nature, the presentation and relevance of the content on the networks will be the 'killer app'. The concept of content rather than information is becoming a widely used descriptor for web-based information since it implies more than the word information. It suggests a product, with structure, that can be trusted, that is integrated into the nature of the network and is focused on the end-user. Currently this may seem a fine distinction to make, but it is significant in defining a change from the heterodox mass of information that today is the source of our knowledge – books, reports, the web, broadcast media, mediation, advice services, word of mouth – to the more coherent, integrated, flowing and user-focused environment that the web will have to become if everyone is to benefit.

As a measure of change, therefore, we might expect to see sustained increase in digital content as 'coherent information', the exploitation of connectedness to create journeys linking different sources and places, drawing from online encyclopedias, museums, multimedia and people's memories to deliver to one location a personalized experience that is much more than the haphazard

location of random bits of information. Content will drive learning, create new life skills, support daily life and personal development and enable everyone to achieve more and understand others better. These may sound noble sentiments for something as apparently simple as packaged information, but the medium that content inhabits is itself a powerful force for change.

Connectivity

There can be no doubt that the most dramatic manifestation of connectivity is the new fluidity of information flowing from one place to another, from one place to everywhere. The world wide web, e-mail and the mobile phone sum up for better or for worse the swirling ocean of information exchange that now takes place around us. To judge this good or bad is to miss the obvious point that these phenomena are in what they do little different from much of our present behaviours. So far, the primary effects of the web, e-mail and mobile phones are of scale and speed rather than of difference from the past. They allow more people to do more things, more cheaply than they could do before.

And yet, of course, it is not that simple. The fact that these new forms of communication have proved so spectacularly popular, with hundreds of millions of e-mails and small text messages (SMS) a month in the UK alone, has created new commercial opportunity and while the majority of high flying dot coms turned out to have all the aerodynamics of a bunch of keys, there are new service industries emerging to support and develop these new markets. Mobile and fixed telephone companies (telcos) may not be having the best of times as the business models of these new consumer technologies are tested, but we see in this information-rich market a reflection of the sustained move away from industrial production that so many developed countries have shared over the past 40 or more years. A move away from the production of real, tangible things like cars, ships, aeroplanes. Now other countries can do that better, more reliably and more cheaply.

Along that continuum that has moved us from an industrial society towards an information society through what Daniel Bell (1974) always called the post-industrial society there are other features to show the shift towards the creation and exploitation of networked content rather than the fabrication of physical objects; financial services in a global market is the most obvious

example, although the news media, espionage and the call centre phenomenon are others that come immediately to mind. All of these activities depend on the interconnection of systems to gather, manipulate and re-form information to meet particular ends. Thus connectivity is creating new ways of doing old things, such as personal banking by phone or online, and new opportunities for service delivery: the 'content' referred to above. Examples of such networked products include:

- *E-books*, which may change the nature of authorship as that connectivity of media (image, sound, text) will enable 'creators' to turn linear storylines into infinite experiences.
- *Distributed services* such as Napster where network connectivity enabled a global database of music files to be shared. While ahead of copyright law, Napster demonstrates that new forms of distributed exchange will be possible.
- *E-commerce*. This has not yet challenged the High Street, but the personalization of service that is possible in this coherent environment suggests that in the future there will be many niche markets where people will prefer to purchase across a network. Amazon.com and other online bookshops already offer e-mailed personal recommendations based on previous purchases and the chance to see what other books people who bought your particular choice have selected.
- *The disconnection of product or service from place*, which is making it possible for institutions that previously depended on physical visits, to reach out to new audiences and to support their existing users in new ways. Museums, libraries and other cultural institutions now put information about their services on the web, give access to their catalogues and are now beginning to work together to create new experiences that could not exist in a single institution. This offers a rare win/win situation where the creation of and access to new cultural content will change how individuals and communities behave and at the same time will encourage the emergence of private sector interest as critical mass becomes achievable.

Whether such developments are good, bad or socially neutral is impossible to decide. The fact that I must wait 15 minutes listening to canned music before being able to book an airline ticket may be frustrating, but the booking can

be done at any time of day or night and avoids the need to visit travel agents and queue behind others equivocating over holiday choices.

Social capital

The third characteristic is social capital, the capability of people to support, develop and take advantage of networking and networked information. Where in the past the terms 'librarian' and 'information worker' suggested connotations of libraries of one form or another, it is now no leap of the imagination to consider that many people working in service industries such as finance, insurance and travel are first of all information workers. They use databases, understand the need for accuracy, reliability and timeliness, and base their decisions on the data that are presented to them, usually on a computer screen. Information is the bread and butter, the food of progress. Recognizing the need for a competent workforce capable of developing and using these systems in new and imaginative ways has been high on the government agenda for some years and while at present there is a downturn in demand in some service industries, the longer term will demand a workforce that is well trained, understands the nature of information as raw material for creating content and can work in an environment where re-training and professional development are the norm. Not everything will last for long since new systems linked with global competition will guarantee the survival of only the very fittest.

It is already evident that the move towards an information society where networking underpins daily activity does not bring with it in the short or in the medium term an encompassing automation of all process and services. Effective and skilled workers are going to be more important than ever, dealing with the human problems that do not fit easily into the order of automation. System complexity will bring greater sophistication to wide ranges of need, expressed in diverse ways, but not for some time yet. The role of the human mediator will be a secure job for a good few years to come. And there will be a growing demand for creators of content and all the ancillary skills that will be called for: in hardware and software design and support, market research, psychology, pedagogy, and so on.

Of course, having a workforce that is adequate and competent is only one part of the social capital dimension, and probably the easier part. It is quite apparent that significant numbers of citizens use the networked services that

are available to them. Digital television as a key to more channels and services is approaching 50% penetration in UK homes while over 40% of the population has access to the internet. Online shopping is a small but growing market, as are online banking and the wide use of telephone-based services. All these are changed patterns of behaviour, but today, for every citizen who is at least mildly interested in the web, there is at least one other who through lack of incentive, money, ability, motivation, or opportunity is not. Information competency – the ability to judge what information is needed to support a decision or action, use all available channels and be inquisitive – remains a rare skill. Progress stems not simply from making more useful information available on the web, although that will help. It depends on demonstrating to every citizen that information (including digital content) should be a staple for living and that it is easy to get. The social capital to underpin the information society is therefore not just workers with the right skills, it is a population who understands that information will help at every turn, that it is easy to obtain, can widen the view of the community and the wider world and help one to understand others. Moreover, that the traditional sources of information (TV, newspaper or someone in the pub) are generally partial and unreliable, until substantiated by other sources. Such observations, I believe, underline the importance of intervention for the public good, both to increase the skills base and to protect citizens from the control of powerful minorities.

The purpose of this section has been to offer some impressions of those factors that will form the basis for benchmarking the maturing of the information society. For sure, there will be many more and change won't stop when the benchmark indicator lights show solid green on the progress board. Quite what a post-information society would look like is even more uncertain than the appearance of the information society that is the topic of this book. Will it carry us towards a global community of information societies, or a single integrated, globalized network of information users? Who knows? Yet there are some interesting thoughts that emerge from comparison with the shift out of our industrialized past. Will our information industries move elsewhere, the Pacific Rim, Siberia, the Moon? Will the legacy of the information age be people who are more sophisticated in their use of information, just as we accept and use industrial products from across the world, and use such products to cross the world ourselves in a short time and with little effort? All of that is for the

future, but we do well to remember that an information society will be no more an 'end state' than were the Renaissance or the hula hoop.

Technological change

While there is no intention to wax lyrical on all the wonders of technology for its own sake, it is essential to establish some of the trends that are likely to emerge in the medium term for it will be the continued massification of digital technology that enables us to foresee a future where so much content can be presented to so many. Of course, we might hypothecate a non-technological society richer in information than ours and with the skills to use it, but that would be an *informing* society for some rather than one where through the connectivity of networking, all will be connected together in two-way/many-way interactions. It is precisely the ability to connect everyone and offer equality of opportunity to explore and exploit that has never been seen before.

How far can we be confident about the technological developments that are described at the beginning of the chapter? Starting with general factors, we are likely to see a continuing increase in the power and capacity of consumer PCs and servers so that more sophisticated products will emerge. The 'holy grail' of universal broadband connectivity that is testing government policy in many developed countries may well be achieved, but it will take time since there are currently no practical business models (or technologies) to justify providing broadband to remote communities in ways that are self-sustaining. That may continue to be true even when there exist broadband 'killer apps' that encourage big consumer markets, immersive, online kids' games for example, and where the pricing of broadband connections to the home does not make it a luxury item. Certainly, if the future were to offer that vision of the global premiere, then the problems of broadband roll-out will have to be addressed sooner rather than later. And that will mean a lead being taken by government since the private sector is currently in no fit state to bear the risks that are involved. Universal access to broadband is not a technological uncertainty since the methods and resources needed to achieve it are well known, but overcoming such economic barriers will be an essential feature of convivial experiences such as the premiere of *A winter's tale*.

Integration

The next essential trend will be the convergence of technologies and systems into 'integrated end-user solutions'. Already the majority of us inhabit environments controlled by the microprocessor – in the car, the fridge, the washing machine, hi-fi, PC, TV, video/DVD player, camera and so on. However, the actual division of technological labour in our homes is very much what it has been for many years. What I mean by this is that particular activities are still generally defined by particular physical spaces: the hi-fi is in the front room, the PC in the den, the TV and associated equipment (satellite dish, DVD player, surround sound) is somewhere else. If in the future delivery mechanisms for information and communication are to play larger parts in our everyday lives, then there will need to be far more integration of design and flexibility in use. Our traditional behaviours at home are probably defined by the restricted space that most people used to have and the limited choice of things to do in those spaces. We have been through a generation that has seen the redefinition of the home environment so that the bedroom (especially for children) has become a living space, just as has the garden, subject to the weather (although the 'conservatory movement' has enabled greater use of garden-like spaces).

With more channels for rich content and thus more choices in the future the need to draw all of the technical devices into an integrated solution will become essential. Those devices need not be distributed around the house and/or the garden, but gathered into one place so long as it is possible to deliver what is required to the individual or group of people with suitable means of interaction. The digital roll-up screen that can talk to the central command unit is one possibility, along with the ability to deliver 'shaped' sound to the individual so that their experience does not intrude significantly on those close by.

If convergence of technologies into 'integrated consumer channels' is a necessary requirement then we must recognize that the same is true of the control of those channels for the convenience of the user. Today we sit with devices to control VCRs, DVDs, TVs, we have Palmtop computers and we have sophisticated washing machines. We also have personal computers that, if they have travelled a long way in the past ten years, cannot by any stretch of the imagination be said to offer foolproof and simple methods of operation. Windows is great if you have nothing better to do, but how many people have the time and incentive to use their Desktop to full advantage or push their word-processor software to the limit of performance? Very few is my guess. Imagine

what life would be like if you had to boot up Windows before you could drive your car: by now we would all be walking everywhere. The reality is that the majority of people will want to do a few simple, straightforward things again and again: send e-mails, listen to chosen radio stations, watch things, surf along well-trodden paths and so on, doing it with ease at the click of a button, the nod of the head, where and when.

Content

The final technologically related trend is almost certainly the most significant in the context of mass consumer markets (and probably for all markets). In-depth discussion of the future integration, scope and economics of networked content, the information, services, entertainment, must be beyond this chapter since there is so much to be explored, so many questions to be aired. However, we cannot ignore the fact that it will be the content of the networked services that creates mass-market interest. If there is enough of it and if it is attractive to large audiences then business models for sustainability will emerge, as has been the case with the growth of pay television. What is different about the content on digital networks, as for example the world wide web, is the rich interconnectedness bringing resources together from many and diverse sources. Until now the network that we call the internet has been no more than simple protocols and connections that have kept cleverness and control at the edges, the servers that provide the content and the end-user machines. Across the network, anything can go anywhere without let or hindrance. The world wide web enables different content servers to interact and present themselves in more attractive and fluid ways for the end-user. There is currently little chance of control or intervention in the system.

Connection

There are going to have to be some big decisions made by governments in the next few years about the extent to which web-like services should be made widely available to everyone, as a primary means of delivering information and experience in the domestic, workplace and educational settings in symbiotic relationship with the broadcast media. We already inhabit virtual worlds through television, very much a metaphor for the 'real', and it is within the

context of broadcast media that we are beginning to see convergence of linear programming and that interconnectedness that is the internet. The BBC's website is an emerging example of this with extensive information resources on the web to support and enrich the traditional broadcast medium.

Such connectedness could be a very powerful driver for the encouragement of an informed and inquisitive society. It would be a key mechanism for learning for life since if it were possible to offer the utility described above when watching *A winter's tale*, to bookmark items and events for later investigation, the incentive to question and explore would be greatly encouraged.

Implicit in such techniques must be the brokering of new relationships between public and private, public and public, between movie production and the small screen, between old industries and new markets, powerful forces that governments will need to manage. Current discussions within the public sector (in the UK and across Europe) on the creation of a common information environment for all digital resources are early steps towards the convergence on content focusing on the end-user. In that future the first priority for that end-user will be the digital object, the piece of information, rather than a particular website or database. We will need new interfaces, new middleware to manage the integration, and rigorous standards for the design and linking of those digital objects and other resources. Sustained effort will be needed to plan how integration will match the needs of both the naive and the specialist user.

Technology can enable or disable an inclusive information society meaningful to all. Whether or not you tend towards utopia rather than dystopia may depend on how reliable your PC has been in recent days, but the fact remains that with vision and effort the technologies and services we already have could do much to improve the lives of every citizen. However, the real measure of a technology's success will be its invisibility. If the physical bits continue to dominate as they do at present, most people will never get to the content that may be there for the finding. Facility of use, access to content and the integration of systems will have to be paramount.

Public policy, private practice

If assessing the impact of technology over an extended period is problematic, at best trying to project the past into the future, extending that assessment into

the fields of public policy and the market economy rapidly begins to look foolhardy. There are, of course, some features that we can observe from the past five years that may help us in the short to medium term. Most obvious is the level of commitment of the present UK government to the wide adoption of ICT, networking and broadband technology, a commitment that has been backed up by significant investment to create public networking resources (National Grid for Learning, the People's Network, UK Online) that are intended to give the whole population easy access to the technology and the support necessary to make them competent in their use. While such interventions are to be seen across Europe, indeed in many parts of the world, the UK was an early entrant and has sustained a level of investment still the envy of many countries. It is evident even from casual observation that without the investment of public funds the progress made during recent years would have been negligible.

There are two questions that arise from this observation. First, what is the probability of sustained government investment being maintained into the medium and long term; and second, what balance might emerge between public and private investment? Will a viable market for networking and networked resources develop and will the government remain committed to pushing the UK forward to achieve the target of being the leading knowledge economy within the next five years?

Lessig (2001) in his recent study *The future of ideas* presents the internet as an example of a 'commons', a space freely available to all to use as they wish, without control from the private or the public sector. He argues that unless the present structure of the internet is sustained and defended, the very nature of its accessibility, its neutrality, its role in innovation and the development of ideas will be lost. This ubiquitous freedom which is assumed in so many models of the information society could be killed as quickly as it has flourished. Yet while at heart we might all wish to see a sea of digital content flowers blooming on our web of the future, to be picked and cross-pollinated by anyone and everyone on the face of the planet, is that likely? Will governments and/or the media moguls of whatever form allow that to happen?

On the journey towards the information society we are travelling through a landscape that is unlike other mixes of public policy and private sector interest. There is no commercial market for digital content creation since demand has yet to be established within a mass market and the significant investment that

is currently being made is on behalf of the government to support the core policies of learning and education: visible in the higher education's Distributed National Electronic Resource, the schools' National Grid for Learning and Curriculum Online, and lifelong learning's New Opportunities Fund Digitisation Programme, Culture Online and LearnDirect. There is big money being sunk to create online learning resources, just as the government has made a strong policy and financial commitment to offer universal access to the technological resources to every citizen. The technology and the skills are the means, a learning society is the end. The policy platform suggests that this investment will be the means to build a strong knowledge economy within the UK, where the population will have better information and better skills in the use of the technologies, and therefore be able to make more productive decisions about their lives, thus contributing to a society that competes effectively in a global market for information, services and knowledge. To achieve this the Government must foster a viable market economy that is innovative and competitive on the world stage.

It is at this point where the uncertainties and unusual nature of the landscape start to become visible. What evidence we do have about the market delivering networks and networked services shows that they are young and very delicate blooms. The dot.com boom came too early, without the critical mass of consumers with the mindset to consume digitally. New business models will emerge as more people take up the web and use it regularly. Examples such as e-banking, bookselling, music exchange and cultural resources were cited as early entries to test new models. But how far will it be possible to maintain clear blue water between the interests of the large media companies and the freedom from direct control that makes the internet what it is today? Our scenario paints a picture of the integration of two virtual spaces, broadcast media and the web, taking the strengths of both without injecting any of the practical concerns that are visible across the globe about the influence that a few large organizations can have over the media that we all experience, wherever we are. The current uncertainties in the UK over the future roll-out of digital television (a key component in the integration of broadcast media and the web) underline this dilemma. If the supply of dTV becomes focused within the control of a small groups of large media companies, what chance then to protect the 'commons' that is the web today?

The past few years have seen dramatic changes in policy towards information

within the public sector. What was once more often a tool of demand management, to be queued for and hunted down, is becoming a commodity that is packaged with the end-user in mind. Services such as the government's portal UK Online (ukonline.gov.uk) and the health advisory service NHS Direct Online are two powerful examples of those changes, where for the first time people can get access to information and advice in ways directly meaningful to them when and where they want to. If sustained, as I am sure they will be, they will influence how all public services develop nationally and locally. Over time, such services could change the attitudes and expectations of the majority of the UK's citizens and would therefore foster how the commercial market grows. That in itself will not be a neutral effect. As change takes place it will be essential to maintain a careful watch on the extent to which commercial decisions affect the balance between freedom of choice and near-monopoly supply that is becoming apparent in UK television services. If the end-to-end supply of service dominates, then the supplier may find it useful to manage demand and accessibility. For example, if the key delivery channel for content, TV, web, or other, is broadband and the broadband network is in the hands of one or two suppliers, they might decide that constraints be put on bandwidth or the supply of video feeds to maximize income, filter all services or create a walled environment that stopped users gaining access to the rich diversity that is the current web.

The questions that were posed earlier in this section about the scale and extent over time of government investment and the lasting balance between public and private, have not been answered in any firm way. Nor could they be at this stage. In my view this stage of the journey towards an information society requires action to do things, to experiment and to begin a process of change. Governments, in reacting in the way that the UK government has reacted, are doing exactly what they must to begin the process of change. That does not excuse the need to hypothesize about the future, to assess what the risks and opportunities are in the light of experience, or indeed to change tack if it is clear that new problems or dangers are to be faced.

While individual governments will have different approaches to information society policy and the definition of relationships between public policy and markets, both the media and the web are now global phenomena with influence beyond individual sovereign states. In such conditions the relationships between countries and their ability to work together in blocs and globally will

be the main agent for managing what the future information society will be like. Yet the decisions and priorities that are set in public policy will require finesse to ensure that the freedom and neutrality of the internet that today offers so much to enable innovation and the empowerment of the individual is not destroyed by too much intervention either in the public interest or the interests of a small number of multinational corporations.

Social transformation

Paradoxes and uncertainties have always abounded when exploring future possibilities. Once one breaks out of the straitjacket that is the worldview of the now, there can be few secure landmarks to guide; this is the nature of prognostication. Sometimes it is possible to assess the balance of probability with more confidence – when global tension is high or when serious natural disaster occurs, for example. These are matters out of the hands of ordinary people that must be responded to rather than influenced. Is the journey towards an information society any different?

The paradoxes soon surface when the social implications of change are considered, particularly the power of individuals and groups to have impact on future trends. For example, is the opening scenario, with a global media environment linked to an apparently neutral world wide web, a real possibility? Does the average user of the web realize that they are part of a trend that represents a radically different set of connections, relationships and freedoms than anything previously experienced? Probably not. I have already raised the topic of the delicate balance that will be needed between the public good value of an open network that fosters exchange and innovation and the powerful effects of large organizations that wish to manage and direct the use of the services that they provide. ‘Walled gardens’ may be a concern to those for whom free access to unbiased information is a matter of philosophical concern, but to the avid home shopper it may not be. Could the future turn from friendly free-for-all into a world of ‘information prisons’ that control and restrict what people can obtain from where?

The answers to such questions will depend on an assessment of the value that ordinary people place on the information they locate in cyberspace. Is it relevant, easy to find and reliable? Is it useful to their everyday lives? That places great emphasis on public policy not simply to provide people with access to

the technology at reasonable cost, but more importantly to provide them with the skills and competencies to use and exploit networked resources and to make judgements about the information that they find. In this sense the best chance for sustaining in the future the diversity that is the web now will be those interventions that the government and public service institutions are currently making.

We can expect, then, that over the coming five years there will be more people making more discerning judgements about the quality of content they require to lead their lives. It is already normal for students to use web resources to support their learning and the trends that are observable in places such as libraries and community learning centres in the UK suggest that there is a growing demand from all social groups, all age groups and cultural groups for access to networked resources. Some of that arises from general interest about what the web can offer, much of it concerned with using simple tools such as e-mail to keep in touch with families and friends in distant countries. The trends that drive progress will not necessarily be those at the cutting edge of the technology. Public investment in quality content such as cultural heritage and learning resources will be essential to boosting demand and testing ideas.

On the other hand, it is absolutely clear that there are more people in the UK with more money and more time to explore new technological opportunity. The consumer electronics market appears to be booming as DVD with widescreen TV and 'cinema surround sound' are taken up with enthusiasm, and more people expect to be able to travel with libraries of music on portable juke boxes or minidisk systems. Homes fill up with televisions, and spare mobile phones become the norm. Those who can afford to spend money on non-essential items (and according to recent research by the Henley Centre for the Arts Council of England (2000), that is now a majority of the population) expect to have high-quality experiences; hence the move towards cinema-like presentation in the home and top quality sound when travelling. Expectations have risen and will continue to rise as technology improves and so long as prices are competitive. There is the risk in all of this that the temptation for integrated solutions (the entertainment command centre) that will deliver all the media and information to the home and be able to interface to a local network of interfaces will overwhelm any recognition of the value of open and free access to networked resources. Buying such hardware brings with it a

discrete and controlled set of service options. Here we have again the concerns that were expressed at the end of the last section: going for the no-choice soup-to-nuts solution restricts the opportunity to eat at another restaurant.

We should not get too hung up on such issues. In a society where there are reasonable policies to maintain a balance between regulation and market forces it is likely that most of the time most people will be satisfied with what they are able to do. Those who are aware of the potential for growth and innovation that could arise in a population that is skilled to use information and has access to limitless information resources will argue that to fail to achieve that potential is to fail society. Others might suggest that to force that information freedom on to people who do not see the need for it is just as oppressive as the domination by one or more large organizations. People will do what they want to do and are able to do. It may be quite reasonable to expect the current move to provide access to ICT resources and offer the skills to use those resources in productive ways, but that does not mean all those people will suddenly adopt completely new lifestyles. There will be a transformation, but slowly over time as the information and those resources become invisible, a normal part of the average life. Lifelong learning will become no more conscious an act than breathing.

Nevertheless, the social impact of the broader balance of free-for-all networking and managed media remains to be played out and will depend on the aggregation of individual decisions across countries across the globe. There will be social transformation as the technology integrates more with our lives, but we cannot be sure how far it will support the thrust of the information society described in the earlier part of this chapter.

Conclusion

Any attempt to write about the potential and likelihood of an information society (in whatever form it might take) always ends up talking about an Easter Island landscape where the stone figures are replaced by question marks. We can begin to see where the questions need to be asked, but there are few easy answers to be found. The title of this chapter was predicated on the question, what will be (or should be) the balance between public policy and the traditional supply and demand market? Will public policy push us in the 'right' direction sufficiently or will the personal pull of individual choice in a free market get

us to a more robust and long-lasting society where information can be traded and exploited within traditional economic models? Although the consequent title seemed a good idea at the time it was probably a bad question to begin with. If the subsequent exploration has shown anything at all, it is that we are not at a junction where we are able to make a choice between one or the other, and we are never likely to be. Any future reality will see the playing out of various policies and forces in a rollercoaster journey that will lead to addictive exhilaration for some, but for others a feeling of uncertainty and nausea.

I like to think that there is still the chance to create the sort of information society where the act of taking learning journeys is as joyous as watching a good film or TV programme and where entertainment and learning can be intertwined; that reading a paper or indeed reading a book can be the key to unlock other interests and ideas. That more than anything we can use the technological opportunities to make people's lives better and in doing so create better, more stable and more tolerant communities. That through greater understanding of different lifestyles, individuals and communities we can become confident to live in harmony with those from different traditions. It is within this development framework that our great public institutions must see their future evolving: access to cultural assets, to new learning opportunities and to the services of government are both the means to unlock the information society and essential building blocks for that new order. Museums, libraries, advice services, archives, schools, universities, colleges, broadcasters must all have places in the jigsaw of a society where there is a balance between the right to know and the right to supply. Where people have the skills to know what is available and where it can be found. Where the strengths of what we already have are sustained into the future.

Should those goals be achieved we would have an informed society that is a learning society, and that would be a noble achievement. If I am asked to predict what might be the most significant of the drivers at this juvenile stage, then I am sure that it will be effective public policy together with joined-up investment. Those two things could make a difference to individual opportunity and create the universal access that will generate increased demand for information and information support services.

By way of final comment I wish to return to the question asked previously about the nature of the post-information society. The concept of an information society has always been and always will be impossible to define in an objective

way; rather it reflects a series of trends that might dominate social change. However, beyond an informed learning society we need to see other landmarks, the knowledge society and the wisdom society. Information is only useful if it is put to good use, and a knowledge society will be one where people are competent to combine information with their own experience of the world to create new knowledge and ideas. The wisdom society I envisage as a place where everyone is capable of taking their knowledge and ideas and sharing them in useful ways with others – the recycling of their wisdom back into the information resource. Were we to aim for the latter landmark it would certainly require a very liberal and open web of communication freely available for use by everyone without hindrance. To end, I cannot resist offering a new slogan for my vision of the future. The most powerful driver of success with end-users will be the scope, quality, accessibility and relevance of what the various channels will offer and the networks can deliver. On that basis I can think of no better title for our goal than the Content Society.

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