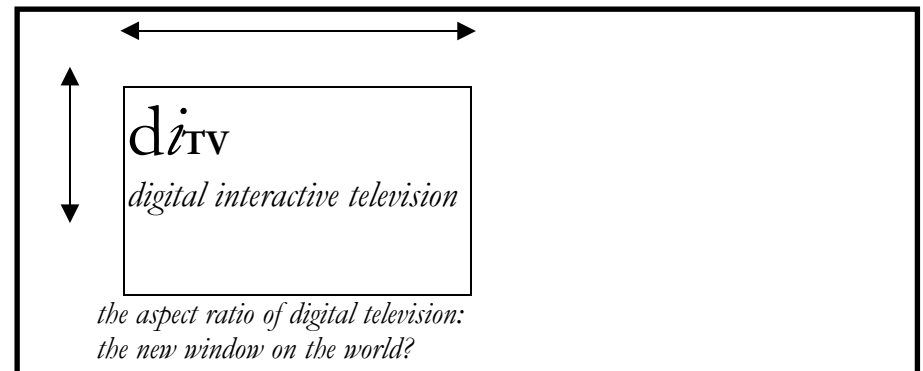


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Report to the Department of Health

HEALTH POLICY ISSUES ARISING FROM DIGITAL INTERACTIVE TELEVISION



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HEALTH POLICY ISSUES ARISING FROM DIGITAL INTERACTIVE TELEVISION

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1. Preamble

The report reports on interviews undertaken and research conducted. It provides insight into the key issues that emerged with their potential research implications.. The report then locates the various research issues under specific questions around which research objectives might be collected.

This report was prepared with the assistance of many people who so willingly gave of their time to think through with me some of the issues raised by digital television, and interactivity in particular. While I have endeavoured to understand their insights, any mistakes are, of course, mine.

The report also involved reviewing the current literature with a focus on identifying research priorities with policy implications, and to include initiatives in other branches of government.

The report comprises an assessment of the importance of these findings for understanding and analysing the research and policy implications, for subsequent exploration and validation through commissioned research. We need to get a wide picture of the range issues we face as we begin to think, not about the technology of digital television and the technology of interactivity, but the meaning it will have for us in our lives, and importantly the implications it may have for health.

Like any such work, this is a contribution to a debate, not the debate itself.

Mike Tremblay

December 1998

2. Summary

2.1. Main conclusions

This report begins the process of scoping research issues for the Department of Health arising from developments in digital interactive television, and how this technology, and the development of convergence of various information and telecommunication technologies raises important considerations. These issues include service delivery within the NHS, as well as go the heart of the public's interest in health.

1. There was considerable interest among interviewees in exploring with the Department of Health how to take forward further consideration of the issues raised. It was a consensus view that they would be prepared to participate in a policy round-table on digital interactive television, to consider the focus of research and provide a forum for continuing advice and discussion.
2. People will have much greater access to information about health; the implications for wider access needs to be looked at in terms of its implications for the quality of information, and potential impact on the relationship between patients and health professionals and carers.
3. Technological change is being driven and developed by commercial interests and is potentially moving faster than public policy. Public constraints on information technology infrastructure investment need to take this into account, particularly as these commercial developments are likely to increase the public's access to health information as well as to providers of health goods and services potentially outside of the publicly funded health infrastructure.
4. Digital interactive television represents a completely new way of conceptualising the relationship between the public and providers, both public and private, of goods and services. It is particularly important to realise that technological convergence will make existing internet and web-based services features of digital television; the research and policy issues that emerge with e-commerce and the knowledge society are particularly relevant here.
5. The new television world is fragmented into special interests, as broadcasters seek to better define their viewing audiences. Digital television favours the development of many specialist channels catering to smaller but better defined audiences. This may potentially undermine the current notion of a national viewing public, and necessitate the development of different health promotion messages reflecting these new publics.

2.2. Research should have three specific objectives to inform the impact of digital interactive television on health policy

This report identifies research issues that are likely to be important in the short (one to two years), and medium term (two to five years). It is clear that this is a rapidly changing field that will require nimble research and policy development.

2.2.1. The pace and speed of developments over the short and medium term will be rapid

The discussions with various people suggest that there is a lack of consensus over the pace of technological change with respect to digital television, and the expansion of the internet. Research suggests that the uptake of the internet has been the fastest adoption of a new technology of recent years.

The internet, itself, is also a dynamic and inherently ungovernable environment, and perhaps likely to become even more so, as democratic principles of openness and disclosure prevail over censorship and control. Anthony Giddens in a BBC interview said that the internet may redraft our notions of the state and political control.

It would be prudent for research to be undertaken on a wide front here:

1. It is important for government to fully understand the pace of change of the technologies in information and communications, particularly given the lack of consensus amongst those leading on its development;
2. The social factors are very important as the internet is emerging as a universal service requirement for industry, and may indeed become a utility itself; government must develop an appreciation of how such pervasive, unstable, dynamic yet acceptable technologies may influence various forms of consultation, policy-making, commerce and service delivery;
3. The broadcasting environment is evolving into a varied and niche-like form, away from few broadcasters and toward multiple narrowcasters with their smaller viewing audiences; this suggests the need to consider whether the current regulatory environment is appropriate to such a varied, diverse and fragmented world. People already get a vast amount of their information from television; more channels, greater diversity of the messages and greater responsiveness to particular consumer or viewer groups will also affect how the public interest is determined.

2.2.2. Health service delivery, health information and wider issues will be affected

The impact in health will be on:

1. new ways for the public to acquire information about health, from a variety of information providers, and including access to information on proscribed subjects such as prescription drugs, as well as performance information of health care providers;
2. new ways for the public to access services, ranging from appointment booking with their GP, access to new forms of gatekeeper, to commercial providers of services where public services are offered in partnership.

These need to be fully researched and integrated into government strategic and policy thinking, particularly whether the government will be able to maintain a monopoly on the quality of information available on health, and on the provision of public health services.

2.2.3. Research should realise specific objectives for policy-making for government

The proposed research agenda identifies the need for government to understand:

1. its role in the provision of health services to the public, including on currently accepted principles of organisation to structure service delivery.
2. its role in providing health information to the public, and whether the state can maintain a near monopoly on providing reliable health information
3. the state of development of enabling technologies in the digital interactive arena
4. the development and understanding of the public acceptance of new technologies, particularly which are related to consumer demand
5. the possibility for digital interactive television to exacerbate social exclusion or enable social inclusion.

3. Conceptual overview

Digital interactive television presents a challenge across a wide range of policy issues, and is unlikely to be a neutral part of how society evolves in the future. In particular, this report has identified a range of research issues some of which will help us get a better understanding of:

- **KNOWLEDGE:** what we can know or learn about the impact of this new technology,
- **VALUES:** how it will affect our social, personal and political values in the face of technological change, and
- **ORGANISATIONS:** what impact or implications it has on the principles of organisation structuring the NHS and the public's access to health goods and services.

The following three tables endeavour to summarise the research agenda into a comparison between the present situation and one likely in a digital interactive television world linked to specific research areas identified in the report.

KNOWLEDGE

Research issues arising from the changing nature of knowledge, how it is used by individuals and professionals, including public dissemination, and availability.

present use of knowledge	digital interactive knowledge
<ul style="list-style-type: none"> • information is <i>clinically relevant</i> with a focus on diagnosis, treatment of sick people, or identifying targets for health promotion messages • information is exchanged between health professionals and patients, usually on the basis of information being given to the patient but reflecting the <i>needs and interests of the care giver</i> • information is associated with <i>transactions</i> between health professionals/care givers and care recipients/patients 	<ul style="list-style-type: none"> • information is about individual well-being, life-style and choices about <i>personal health status</i> • information is exchanged between patients, consumers, and other interested parties and health professionals, the <i>needs and interests of the individual</i> control and structure the access to information • information is associated with individuals moving from one set of lifestyle choices and behaviours to another <i>as they seek to transform their lives</i>

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report section	areas with a focus on research on knowledge
6.1.1.	Research is needed on the implications of wider public access to health information and services.
6.2.7.	There is little research on whether advertising or information of the sort covered by existing prohibitions would increase consumption of medicines or increases demand for GP consultations; there is a case for researching whether there ought to be a more balanced release of information to the public about new medicines.
6.2.7.	An international comparative study is possible to the extent that the US and the UK represent two approaches to the release of information to the public, and at present we have very little if any research on whether restrictions on information in the UK are evidence-based.
6.2.8.	It is likely that much research on telemedicine/health telematics might be broadened to encompass many of the issues associated with digital interactive television, and indeed usefully broadened to include applications associated with digital interactive television, especially where a consumer focus is paramount.
6.3.1.	Research should focus on the implications for individuals in accessing information, health services and advice, and less on the technology.

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VALUES

Research issues arising from potential changes social values, particularly in terms of the emergence of consumerist thinking in health.

present values	digital interactive values
<ul style="list-style-type: none"> • values are <i>manifest</i> and are framed in terms of professional conduct, professional accountability, professional knowledge • personal responsibility is with respect to the role of <i>care givers serving patients</i> • knowledge is valued for its <i>utility</i>, precision, functional attributes and how it leads to action by health professionals 	<ul style="list-style-type: none"> • values are <i>emergent</i> and are framed in terms of an individual's participation in clinical decision-making as an equal with the health professional • personal responsibility and personal conduct is part of the normal life <i>choices of individuals, supported by care givers, and others</i> • knowledge is valued to help people <i>understand</i> health, anticipate situations, and linked to personal enjoyment, learning and modes of presentation and is shared by both health professionals and the public

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report section	areas with a focus on research on values
6.1.1.	Research is needed on the various influencers on the health views held by the general public, and what forms of opinion forming are most appropriate today.
6.1.2.	Research is needed to support policy-making affecting consumer responsiveness to new technologies.
6.1.3.	We need to understand how trust is developed and maintained between the public and health providers (of information as well as service), and what form the trust that people seem to put in the veracity of television and its messages will take in a digital interactive world.
6.1.4.	Consumption of health resources by people needs to be researched in the wider context of the many alternatives available, particularly, as regards greater access to information and the greater use of that information to influence consumer actions, including any impact on the dynamics of the patient/professional relationship.
6.2.4.	We need to have a better understanding of the extent to which people see themselves as a consumer, and not as a recipient of a health service from government.
6.2.5.	Research is needed into the wide range of commercial interests in individual consumers making personal discretionary spending decisions on their health in order to determine what, if any, represent either unacceptable commercialisation of health or acceptable opportunities for further development, with or without government involvement.
6.3.2.	The Department's research agenda would be enhanced through a wider community of activity and involvement, to create opportunities for wider dissemination and discussion of the findings.
6.3.3.	Some form of public dissemination should be an appropriate component of research in the public interest, and certainly could form a regular feature of all health policy discussions and publications.

ORGANISATIONS

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Research on both the public and private structures that organise the health system in the UK.

present organisations	digital interactive organisations
<ul style="list-style-type: none">• <i>profession-centred</i> organisational arrangements prevail, with a focus on modes of delivery as the way of structuring how individuals relate to health• <i>asymmetrical</i> relationships prevail which favour the health service and knowledge giver (i.e. the health professional), in determining the locus, timing and process of care delivery	<ul style="list-style-type: none">• <i>client-centred/patient-centred</i> organisational arrangements with focus on modes of personal use and access as a way of structuring how individuals prioritise health in their lives• <i>balanced and symmetrical</i> relationships prevail which favour both those who provide health services or information and those who receive a service or information (health professional and the individual), creating greater diversity in locus, timing and process of care delivery

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report section	areas with a focus on research on organisations
6.1.2.	Research is needed to assess the extent to which community interests can use digital interactive television to organise themselves around specific health interests.
6.1.2.	Research is needed to ascertain the level of demand for and types of learning opportunities in the global learning village, and seek to identify ways to ensure that standards of practice and learning continue to be protected even when learning has moved beyond the jurisdiction of the regulator or accreditor.
6.1.3.	Research into the relationship between the health professional and the patient is needed where the informational differences favour the patient, and challenge the knowledge of the health professional to exhibit suitable evidence-based practice.
6.1.3.	Research is needed to determine how and in what ways public health bodies, such as NHS Trusts, PCGs, Health Action Zones, and others, can take advantage of this technology to enhance their public legitimacy and improve participation in decision-making by the public.
6.2.1.	It would be appropriate to consider the opportunities for the UK to establish leadership in both research and practice in digital health.
6.2.1.	Research opportunities could be pursued with the private sector developers of new broadcast technology, and with other like-minded countries, as part of a wider exploration of the economic and social benefits of collaboration.

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report section	areas with a focus on research on organisations
6.2.2.	Research could usefully be undertaken to explore how <i>NHS Direct</i> might take advantage of digital interactive television, either by having a television or teletext presence or its own internet access.
6.2.3.	Research into alterations in the regulation of broadcasting and health is appropriate in the context of a wider examination of the impact of digital television on health policy.
6.2.6.	It seems appropriate to consider a cross-Whitehall “special interest group” to coordinate policy development, and track the development of technological change as it affects public services, but also as a participant in the wider social and commercial discussions within the UK.
6.3.1.	There are a number of ways to assess the impact of digital interactive television, and which might be built into new policy developments within the NHS, local government and education; research opportunities should be encouraged to expand the scope of these initiatives to consider the wider electronic/digital communities and e-commerce. Exploration of these should form a constituent part of commissioned research to take advantage of the considerable commercial momentum in developing digital and interactive capabilities.
6.3.2.	The Department may wish to encourage the development of unique research and study centres focusing on the impact on health of multimedia, including digital interactive television.

4. Understanding new digital media in health

This report begins the process of scoping policy issues for the Department of Health and how emerging technology, and convergence may raise important considerations. These issues include service delivery within the NHS, and go to the heart of the public's interest in health.

1998 marks the beginning of the broadcasting of digital television in the UK, with a gradual replacement of existing analogue broadcasting over the next few years. It is clear that there will be more digital channels than we have had with analogue channels, and they will increasingly cater to specialist viewing interests, as well as offer opportunities for increased access to goods and services, since one feature of digital television will be the potential for *interactivity*. That is, not only will there be a signal coming into people's homes, carrying the digital television image, but there is the possibility of a return signal from the television to the broadcaster, via either cable or telephone links to be used by the viewer to access information or services.

People say this will be like combining the very best features of television, with what we are beginning to see as the features of the internet and world wide web.

This combination will offer the public:

- enhanced viewing of television channels, more channels, more specialist interest channels and programmes, which could include channels focused on people's health and life-style interests;
- the opportunity to "browse" or access additional information associated with specific programmes or wider interest, through internet-type interactivity with sources of information;
- the opportunity to participate in real-time interactivity with others linked via the television;
- the opportunity to access services or purchase goods via the television.

The NHS will harness new information technology to improve quality and efficiency by providing knowledge about health, illness and best treatment practice to the public through the Internet and emerging public access media (e.g. digital TV).

The New NHS: modern, dependable, 1997

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This is as the convergence of the television, telephone, and the computer into an integrated information and communications tool for public use.

Considerable commercial energy and resources are being invested in exploring the shape of this new environment, and even as this report is being prepared, developments are apace which may challenge some of this report's conclusions. What is important is that the developers of these technologies are confident of their vision and believe in the ultimate benefits to the public, either as individuals or as consumers.

The UK government has begun exploring the early shape of e-commerce and the knowledge economy as well as recognised the need to begin to think about how such a converged environment might be regulated to the benefit of all. Noteworthy here is the DTI Futures Unit Report, **Converging Technologies: consequences for the new knowledge-driven economy**. [15] There are also the reports from the European Commission [18] and the DTI/DCMS [14] on regulation in a converging world, plus the new Research Framework V from the European Commission [19] which identifies information and communication technologies as an interest.

There is also the steady flow of articles in the daily press, reports and specialist publications offering insights on both the technology and the many teething problems associated with how the public will access digital television, pay for it and otherwise enjoy it.

There is currently no position on the impact of digital interactive television in the health field even though it has been frequently mentioned, most recently in the Department of Health's recently released **Information for Health** report [13] which suggests a focus largely on enabling technologies within the NHS.

Today, when we think of interactivity and individuals we are most likely to be speaking of the internet and how it is changing how people access information. While it is increasing in prevalence, the cost of gaining access to the internet includes the cost of a computer (which needs to include a modem, and also fairly highly specified in order to provide a moderately pleasurable experience of use), a telephone, an internet provider; there are also the telephone bills whenever access is made to the service. So, while many millions have access, the internet and this sort of interactivity is enjoyed by a select few, at present.

Scale of access is increasing as communities and schools, for instance, provide access as part of their services or as part of organised community action. One of the first large-scale international internet projects was supporting the activities of the 1995 International Women's Conference in China. Since then numbers of subscribers have increased, the quality of the internet improved, and the scope of its presence and services expanded enormously.

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It is apparent that as the internet evolves it will move closer to being a feature of digital television, rather than solely a standalone experience: more people have televisions than computers, at least until the computer *becomes* the television, which is what we may be experiencing now. Developments are likely to emerge from the convergence between the internet and broadcasting. This is sometimes likened to a multimedia revolution, but its importance goes beyond a rich visual and textual environment for the viewer to an environment characterised by immediacy of access to information and services through the television set.

This interactivity within a digital broadcast environment will offer enhanced communication capabilities between consumers and broadcasters, advertisers, and service providers. We can already have some idea of interactivity through the *TV Travel Shop*, a channel developed by Flextech Television.

The internet is about multiple connectivity, me to everyone else, and everyone else to me, all the time. Traditional television is about my television receiving programmes according to a programme schedule. The digital era will offer consumers access to at least a few hundred channels over the next few years, and eventually thousands in the longer term. The cost of television programming falls in the digital world, as does the cost of the channels themselves, to the point that they will be ubiquitous – in house company channels, specialised channels for very small and discrete audiences, public access channels, etc. [39]

The convergence of the internet and the television suggests individuals will be able to access on demand:

- what television programmes they would like to watch whenever they would like, from the full offering of channels
- supporting information from wherever it is to be found to whatever level of complexity is desired and organised in a variety of informal and formal ways
- various providers of goods and services.

A key feature is that this will be a global capability. Individuals will not be bound by geographic constraints, since distance is not a meaningful concept in the digital world. And, control of information may ultimately be impossible. As for quality, at present the internet is a self-correcting system with flexible approaches to quality and standards, reflecting either the debatable nature of the accuracy or correctness of the information, or the acceptance of the authority of those involved to negotiate and establish their credentials. Honesty prevails to the extent that claims are essentially public, and can be easily challenged; the net result is rapid consensus on what is, or is not, the truth. This, of course, presents an issue for people who feel that the public should be protected

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from charlatans and inaccurate information. Misinformation provided to people on the internet is often very quickly challenged, and the providers of that information identified and vilified. What we know is always subject to some uncertainty and doubt; the question is whether there are acceptable levels of variance in health information, and indeed, whether we can rely on internet honesty to police quality and accuracy.

Importantly, though, is that even an accreditor of information will be subject to scrutiny and review. And, any accreditor or imprimatur of quality in the interactive world risks being wrong, or worse perceived as a censor.

For vulnerable and easily influenced individuals, the greater knowledge of others is powerful, even if they are wrong. In health, there is great uncertainty in some areas of clinical practice, yet the public is often not aware that there is a lack of consensus. It may be better to understand advances in health knowledge as more the development of a clinical consensus, and not of truth and falsity.

Health is one of the areas that has a particularly significant presence on the internet. There are a great number of health-topic discussion news groups (e.g. *uk.people.health*), and web sites, both government and private offering access to services as well as information and include governments and regulators, consumer interest groups, special interest and lobby groups, the health industry, academic institutions and health foundations, and broadcasters and information providers.

This information is provided in both an organised and informal manner. For instance, there is access to well-organised health information on health promotion by accessing the Health Education Authority's *Health Promis* site to search for information on health promotion. One can also find individuals with special interests maintaining informal linkages of interest to smaller communities with perhaps more specific requirements.

The resources are becoming endless, and the *Health Service Journal* on its web page provides access to some 1000 sites; the US government's Department of Health and Human Services site offers access to a variety of service and information providers, and offers a *healthfinder* service to the public. The Department of Health and Welfare, in Canada, offers a health resource site, as do other governments and national bodies around the world. All the major pharmaceutical companies offer health information from their web sites (particularly in light of regulatory differences in the US), as do virtually all health foundations, and health interest groups.

5. Policy research issues

There was considerable interest amongst interviewees in exploring with the Department of Health how to take forward further consideration of the issues raised. It was a consensus view that they would be prepared to participate in a one-day policy round-table on digital interactive television, to consider the focus of research and policy development and provide a forum for continuing advice and discussion.

The Department may wish to establish a continuing forum of discussion to consider the various rapid developments in modern technology and communications, changing consumer and citizen priorities, and the development of public policy.

5.1. Providing information to the public

All the interviews raised issues about how the government gets the health message across to the public. It appears, therefore, to be timely, to explore a wider information dissemination strategy, in particular, reflecting

- the evidence whether health messages work and do produce a gain in health status or reduction in personal health risk, and
- the targeting of groups for specific health messages particularly as there may be some fragmentation of the public interest across the different types of communication media.

It has always been important to think about ways of engaging the public in the structuring of health messages; the potential for digital interactive television is to offer greater access to special interest groups in delivering more personal health messages directly to particular populations at risk.

We view the Internet as one of the 'features' of digital TV services.

Craig Mundie, Advanced Consumer Technology Group, Microsoft Corporation, *Wired Magazine*, April, 1998.

The Health Education Authority has commissioned good research on multi-media [24], and this work needs to be continued, perhaps with more focus on implementation and dissemination outside of academic research communities, and within communities such as their Social Action Research Projects. Other countries have achieved public health promotion campaigns in partnership with the private sector, notably *Participation* in Canada. Additionally, it may make more sense to pursue regional or local implementation strategies but which take a national perspective. To a great extent, the problems of health and of information to the public by

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government at least may lie in the real problems of intersectoral working and boundary issues across departments, rather than being intrinsic problems of the information or the message itself.

All this is not new, but it does challenge our traditional thinking about health messages normally dependent on generally available terrestrial broadcasting environment and a national consensus on health messages themselves. Indeed, government may wish to consider assessing the value of working in partnership with private sector information providers, or other businesses with an interest in health and well-being. While the broadcasters and commercial sector generally have limited experience with digital television to date, the level of awareness is rising; this offers an excellent opportunity for the government and the private sector to conduct joint research into areas of common interest, and draw upon industry experience and best-practice, particularly in raising awareness of health matters and altering individual attitudes toward healthy outcomes, within the emerging digital interactive world.

A very real concern if digital interactive television becomes a viable means of delivering public services is that not everyone will have ready access to it in the short term; and will everyone have access to it in the longer term? At present, the uptake of internet connections appears to be greatest amongst middle income urban homes. This is, however, expected to change in time.

5.2. Quality of information

Discussions raised issues about how health information would be ‘certified’, to ensure the public had access to high quality and reliable information. The current situation with the internet, apart from the many web pages on health, are many disclaimers about the quality of the information provided.

There may be a lack of consensus at present on methods to certify information on the internet and in particular health information, but there are established and robust methods to validate the content of health television programmes, even if the issues raised are controversial, and challenge current scientific knowledge. Efforts to offer high degrees of certainty may draw attention to relative weakness in established scientific knowledge, and create opportunities for exploitation of patient concerns. Any classification system that helps the public understand relative risk of health choices should be explored and linked to issues that concern the public. The proposed *Electronic Library for Health* [13], drawing together resources already existing within the NHS appear to follow the view that definitive information can be provided and that the public should be protected from inaccurate information. In the context of existing or likely internet resources, the proposed Library may not produce the desired result, but add cost to the NHS to manage health information.

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The investment in information infrastructure for public dissemination of health information may be better done with a variety of partners, reflecting the characteristics of health information and health messages, the needs of the different publics within society, and the features of the community-level infrastructures available to those publics – libraries, healthy living centres, etc. In that context, then, the vetting of knowledge appears to be handled quite well by the collective resources of our universities and schools, and health information should be looked at in the same way. The approach taken by the National Grid for Learning [38] may reflect one approach by developing a *Code of Conduct and Ground Rules* regarding the acceptance of content on the Grid, but in a way which balances the interests of all those involved; naturally there may be other approaches worth researching.

Nevertheless, the government will need to satisfy itself that existing or proposed systems of vetting health information quality are adequate to informing the public at large, including the level and type of infrastructure investment. The research issue here is on how and in what way can the public be assured of the quality of information, without the government acting as censor. In the modern context, this represents a novel challenge to our society, as in the past we have often relied on professional bodies to certify individuals who in turn controlled information, and the public had access to a more limited range of sources of advice or information. The new challenge is a world with less restrictions, and more varied forms of access; it is unlikely that professional bodies or governments will prevail if they seek to pursue a restrictive information policy.

5.3. Information on demand

The interviews indicated a shift is likely from mediated access to health information (e.g. via a doctor) to *access on demand* to high quality and reliable health information – including drug, diagnosis, treatment and outcome information. There is emerging in practice “brokers” [15] who will provide access to health information. And while it now appears that general principles of disclosure and access are being readily established within the wider information and knowledge communities, particularly with respect to public access to hitherto specialist information, it remains to be determined what the impact will be on health professionals of more informed patients.

One of the interviewees observed that the software that is used by *NHS Direct* should be available on the internet and could be more fully developed with suitable user guides. Certainly, if it were on the internet, it would rapidly become a service available through digital interactive television.

5.4. Technological change

The diffusion of digital interactive television into the public domain may follow a different pattern from the adoption of new technologies in clinical and health settings generally. Clinical capital equipment and information and communications technology are subject to public spending constraints, but individual spending on digital television is personal and discretionary, and can be influenced by advertising, subsidies and personal interest.

In addition, clinical and health settings are unlikely to adopt technology that does not directly support demonstrated health or clinical outcomes. Again, the public is unlikely to be influenced by this thinking in acquiring digital televisions. Interactive services are likely to be influenced more by the market and public acceptance, and less by clinical outcome studies, and may create points of conflict between the public's access to goods and services through interactive televisions and sceptical views of health professionals. In this respect, professional acceptance and adoption may not keep pace with public acceptance, and the growth of associated services. Does this matter?

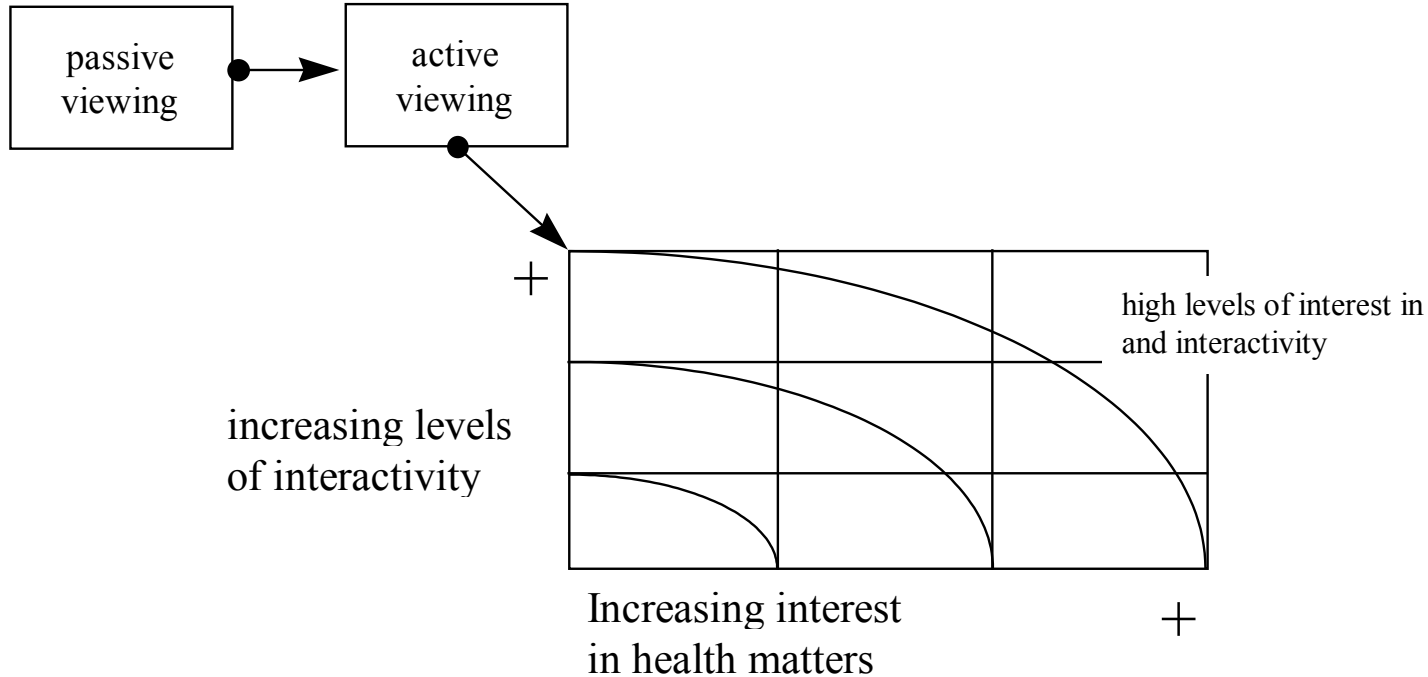
5.5. Interactivity

What sets the digital television apart from what we have become used to lies in the potential for interacting with the television to access information, goods and services. In this respect, interactivity brings everything together: the internet, the telephone, the television, the computer, and probably a host of other features that will be added on (fax, answering machine, who knows?).

According to Flextech Television, people will interact with their television in a variety of ways and reflecting different interests and levels of involvement with the television. People will switch between passive viewing of the television to more active interest, characterised as "lazy interactivity", rather than the more engaged sort characteristic of people accessing Web sites.

The diagram simplifies this visually, illustrating the key switch between passive and active viewing and then the movement into the interactive domain, of which lazy interactivity would be one form.

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And as the technology evolves, the utility people get from different forms of interactivity is likely to increase. Importantly, it appears that the enhancements associated with the set-top boxes to receive digital signals will offer a high level of environmental control to persons with a wide range of disabilities, from physical adaptation to alternative presentation of information made possible by its digital origins. It would also appear that people could also be offered greater choice of language. This is in addition to the potential of set-top boxes to handle clinical information and telemetry from the home setting.

The telephone and internet are seen as anonymous and confidential; they are private. BSS, in running its call centres and helplines for broadcasters, reports that this confidentiality is very important to callers; people are still embarrassed discussing some issues and there are still taboos, which are not always easily dealt with. Television, on the other hand, is a more social activity. How, therefore, can private and individual issues be discussed through an interactive television environment when the television is in the middle of the living room.

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BSS have some experience with email counselling and with internet chat rooms, and have found that a facilitator is still needed to draw out the discussion. This appears to suggest that while digital interactivity will be a high technology application, the exploitation of the interactivity in some contexts will require human contact, and considerable privacy and sensitivity.

The interactivity that matters here is real-time interactivity, where the programmes and the helplines are available at the same time. Video-on-demand and time-shifting programmes disconnect the helplines from the televised content, and may affect the use people can make of both the programmes and the helplines. Interactive access to information is less affected.

6. Specific research areas

6.1. Research on individuals and their sense of well-being

6.1.1. How might an individual's sense of well-being be influenced by health digital interactive television?

The quantity of health programmes is increasing on terrestrial television, and is likely to increase in the digital world. Interactivity opens up the possibility that the public will have access to increased information and services focused on their health and well-being. The emergence of health brokers or virtual gatekeepers is a possibility. One effect is that it is likely to be more difficult to create a single message stream to communicate to large numbers of people.

Research is needed on the implications of wider public access to health information and services.

The electronic digital world is open 24 hours a day and may indeed operate like a call-centre – there when you need it. In time, people will enjoy largely unmediated access to all the information they are likely to ever need on health, information which they will have access to independently of a consultation with a health professional.

As well, the public may be able to access various services focused on their health. For instance, with access to internet capabilities, research is needed on the likely implications of personal health information being accessible via smart-cards linked through the television, and which might be used to update health records, to arrange prescriptions, or maintain personal health records of encounters with a personal fitness trainer, diet counsellor, or other interactive health provider. How will this relate to traditional or mainstream health records, for instance?

The capability exists of using the internet to advise people of important health actions, such as booking an appointment, to take their medicine, or to update them on their personal interests. Research is needed to determine the feasibility of using this capability and how best to take it forward, as it would require wider links between the *NHSNet* and existing internet providers, and may create greater interaction with an individual's personal choice of health provider.

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Much effort is focused on providing printed health promotion material and selected video information, but the video market for patient teaching materials is small and not well-developed so that the public generally has little access to such material.

Research is needed on the various influencers on the health views held by the general public, and what forms of opinion forming are most appropriate today.

People generally do accept television in their lives and while some few members of society may reflect dissident views on popular culture, these are a minority and perhaps elitist view of modern society.

Access to health services is via GP gatekeepers; however, a digital interactive world opens up new potential *virtual gatekeepers*, or *health brokers* who may be more accessible to the public. This challenges the traditional and established notions of how the public forms opinions of what their health needs are and how they are best met. Certainly, a better understanding is needed on the general influence of television, and there has been some limited research on its effect on diet, alcohol, etc. [2, 5, 6, 10, 16, 36, 43, 44, 46] and some ESRC-funded research [62 to 68].

There is also little UK-specific research on the content of television programmes, and whether they replicate population health risks [22], yet television programmes on health are increasing in number and broadcasters' research suggest that this type of programming is very high on the public's agenda for new programmes, whether programme content adds to or detracts from public health messages from other areas of the economy (e.g. product advertising targeting the young). [69 to 85]

6.1.2. What aspects of digital interactive television are most likely to be useful to consumers, patients, health professionals?

The interactive television will add a new service dimension to what the public currently receives from their commercial encounters with providers of goods and services; it will also raise expectations about acceptable public services. The exploitation of digital interactive television will follow commercial routes, and be influenced by the needs of the public, programme makers, information suppliers, advertisers and sponsors, and not just regulators and health professionals.

Research is needed to assess the extent to which community interests can use digital interactive television to organise themselves around specific health interests.

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There is a considerable range of options available to today's user of the internet, and to some extent some of the phone-in or write-in opportunities associated with health television programmes. A variety of services are likely through an interactive television:

- booking travel, hotel and related arrangements
- ordering products such as books and music CDs
- directly downloading music, documents, images
- making enquiries of service providers
- access to comparative information about goods and services
- networking of individuals with common interests
- electronic mail and document transfer between individuals
- internet study with some courses being accredited for academic purposes.

These will be driven by private sector providers, academic institutions, and should form part of the government's own thinking on service delivery. Providers of health goods and services will emerge within this commercial environment.

The emergence of intranets operating within companies and the NHS (*NHSNet* is an intranet) has created nested systems of interactivity offering the opportunity for groups to define working practices and create shared documents, information and working practices. Similar features are easily replicated through the internet, and could become a wider community service through an appropriate provider. This creates the possibility of multiple providers of information as individuals may be linked into multiple groups of similarly linked people. People, in time, will become part of many different subgroups (just as they do in non-digital society) which will have their own interests, and be catered to by their own service providers with their own commercial logic.

Research is needed to ascertain the level of demand for and types of learning opportunities in the global learning village, and seek to identify ways to ensure that standards of practice and learning continue to be protected even when learning has moved beyond the jurisdiction of the regulator or accreditor.

As a vehicle for education, television is a powerful medium, which has proved itself in many countries as a key way to reach remote communities, reduce pressure on schools, and create wider accessibility to learning opportunities for excluded or marginalised groups within society. TVOntario, for instance, is a dedicated educational broadcaster in Ontario, broadcasting in English and French, with its own internet services. The Open University has recognised the importance, though, of permitting people to meet as a component of part-time and continuing learning, running weekend seminars, or summer schools. The human needs of learners may be met in part through television interactivity; however, as with all education and media, considerable good research is needed to assess the appropriate design and educational structure of this new form of learning [27].

There is, nevertheless, much research already undertaken under the broad heading of “distance learning”. However, distance in the digital world is collapsed through the real-time interactivity. It would be appropriate to ensure that suitable educational research is undertaken to explore the real-time of digital interactivity as it differs from the immediacy of the classroom or seminar while still offering face-to-face contact.

As professional education, too, moves to embrace continuing professional development as a core activity, and away from an emphasis on the initial qualification, digital television offers considerable scope for developing inexpensive new learning opportunities. At present there is only a patch-work of systems for granting credit for continuing learning; but interactivity offers an international arena for further learning, and UK health professionals may find easier access to learning opportunities in institutions not located within the UK or Europe, particularly as US-based institutions appear to be exploiting the learning potential of the internet at a faster rate than other countries.

Research is needed to support policy-making affecting consumer responsiveness to new technologies.

Existing research establishments within universities now offer this sort of advice to sponsoring organisations. This type of research needs to be encouraged and become part of the policy makers’ source of understanding to ascertain the direction that commercial developments are likely to go and the possible range of consumer reactions.

There may be developments which will benefit those currently taking advantage of the technology (the early adopters) and which may not be ultimately the most useful to other groups as they eventually gain access. Important groups are those who are technologically

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marginalised from these developments, even though younger people may be gaining understanding and access at school. We will certainly need to understand the generational issues to support parents to continue to communicate across the technology with their children.

6.1.3. How might digital interactive television influence the relationship between individuals (as consumers, and as patients) and health professionals?

The most compelling feature of the modern information revolution is not just that we have access to more information, it is that we have easier access to information; it is the ease which is breaking down the barriers to public access to information on health issues.

Research into the relationship between the health professional and the patient is needed where the informational differences favour the patient, and challenge the knowledge of the health professional to exhibit suitable evidence-based practice.

What of health is different from other goods and services will clearly need to be rethought, as much of the current evidence is based on the argument that health is unique and characterised by an information asymmetry between the health professional and the patient. What of a world where this information asymmetry may not exist or favour the patient/consumer? Doctors have reported being frightened by a patient who had been fully informed of their health needs from internet and other sources.

However, digital television with added interactivity creates a patient or consumer defined interface, not one controlled or determined by the health professional. Naturally, research will need to be undertaken to determine the extent to which any existing health telematic and telemedicine practices share some of the concerns of digital television. However, as a broadcasting medium coupled with internet capabilities, on-demand and virtual service providers become much more likely. To what extent the public will be prepared to substitute a face-to-face encounter with a virtual one is in need of study to extend what we already know about the telematic encounter..

In keeping with the trends toward greater openness and accessibility within society in general for all its transactions, there may be positive benefits as people feel closer to their health and ways to maintain it.

Research is needed to determine how and in what ways public health bodies, such as NHS Trusts, Primary Care Groups, Health Action Zones, and others, can take advantage of this technology to enhance their public legitimacy and improve participation in decision-making by the public.

Interactivity over the internet is already seen as heralding the beginnings of a new directness of democracy, and the experiments with citizen's juries suggests the possibility of combining the latter form of decision-making with the former's access to the public at large, to widen the base of informed opinion and consultation.

The existing focus within the NHS is on the adoption of the technology within a national policy framework focused on technology which enables the clinical encounter. Any commissioned research should broaden the focus of this framework to embrace the wider information and communication technologies, and their social dimension. This may necessitate encouraging greater participation between publicly funded health service providers to undertake projects with the private sector to explore the potential benefits. The development of understanding may be more rapidly achieved through a pluralistic approach to public/private partnerships.

We need to understand how trust is developed and maintained between the public and health providers (of information as well as service), and what form the trust that people seem to put in the veracity of television and its messages will take in a digital interactive world.

Some commentators suggest that the world is becoming more fragmented and transient, that people's lives, and jobs, are characterised by "temporariness", serial careers, marriages, families. In particular, we need to understand more about patience, and the extent to which in an immediate digital world people will tolerate waiting, for health advice, information or services.

In addition, people will use those sources of advice, information and service that they trust and have confidence in. This suggests that the social contract between the state and the public to provide a national health service may need to be reviewed to verify its robustness in an electronic world.

Commercial enterprises are daily discovering that their guaranteed customer base can easily be eroded by internet providers of goods and services, much as telephone call-centres have made in-roads in insurance, banking, and travel.

The Government should involve the private sector and "break" its monopoly on public health information.

Tony Hockley, Nick Bosanquet, **New Dynamics in Public Health Policy**, Social Market Foundation, 1998.

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The UK is a participant in the European Commission funded project, *Broadcasting Health*, which is designed to create linkages between public health professionals involved in health promotion and broadcasters. This work is still in the early stages, but *Broadcasting Health*, with a focus on understanding methodologies used in health promotion and broadcasting, and on developing a dissemination strategy about public health promotion and broadcasting, represents an initiative which could usefully be aligned with some of the research proposals in this report, and in particular to understand the legitimacy of the public contract in health.

6.2. Research on health policy

6.2.1. What is international practice in the use of digital television, interactivity, generally, and in health matters?

Digital television is still in the early days, though France and Germany have developed digital infrastructures. The US is launching its own digital channels, and given the scale of activity there, it is reasonable to expect to see rapid exploitation of digital interactivity, including Web-television to delivery tv over the internet. It seems likely that the development of US-based channels with their lead on e-commerce and interactivity will have an international dimension.

It would be appropriate to consider the opportunities for the UK to establish leadership in both research and practice in digital health.

Within Europe, the UK can demonstrate leadership both in the development of digital television and as the host of a significant presence on the internet. And while digital television is new, and in its early stages all over the world, the UK is demonstrating leadership.

There is no international or indeed national clearinghouse on the wider health resources. While the feasibility of establishing a national registry of health resources may have merit, the situation to date has been for this role to be provided by more informal routes with certain internet sites being given a tacit mandate to function as a gateway independently of any imprimatur of the information quality.

It may be important to research the roles that the government should best adopt in ensuring the quality of available health information. Such development and thinking will attract international interest, but must of necessity go beyond the narrower provision of high quality research information to the NHS and health professionals offered by, for instance, the Cochrane Collaboration, and the newer institutions, such as NICE. Such a step would be consistent with emerging practice of establishing one-stop gateways to anticipate a user's likely needs and interests.

Research opportunities could be pursued with the private sector developers of new broadcast technology, and with other like-minded countries, as part of a wider exploration of the economic and social benefits of collaboration.

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This would appear to be consistent with the objectives of the Department of Trade and Industry which is focused on developing the information society and the digital economy. The government may wish to take on this leadership role, consistent with calls for the development of the digital economy, to establish a UK base for the digital health world. The historic leadership the UK has shown in addressing health issues and the challenges of limited resources demonstrates the robustness by which the UK can lead in policy making in this field.

Health is seen by the public as a unique strength of the UK. Opinion Leader Research, *New Great Britain - Re-inventing our Traditional Strengths*, 1998.

6.2.2. What might be the impact on new policy initiatives to increase public access to health information and support, such as *NHS Direct*, in light of possible convergence of call-centres and digital interactive television?

Research could usefully be undertaken to explore how *NHS Direct* might take advantage of digital interactive television, either by having a television or teletext presence or its own internet access.

Call centres and television have gone hand-in-hand for some time, as many television programmes have offered call-in numbers for viewers to seek additional information. A more recent development has been scene-setting programmes, followed by either radio or tv phone-ins. The real-time interactivity of digital television will be a next logical step in this progression. *NHS Direct* is a call-centre staffed by nurses; mindful of the suggestion of one interview that the software these staff used should be available on the internet, the real question is whether suggestions such as these are not just foretelling the likely future of public access to health information.

It is not impossible to imagine *NHS Direct* being accessed via an interactive television, supported by text pages and suitable followup. Advanced information and communications technologies, aligned with digital interactive television, may undermine the enormous infrastructure investment of programmes such as *NHS Direct* especially if they fail to take account of the rapidly changing technological frontier.

6.2.3. Are there areas of overlap between the NHS statutory role, the Health Education Authority and possible public service roles of digital interactive television in health and the popular media more generally, under existing or proposed ITC regulation?

While the ITC appears satisfied with the robustness of current regulation, broadcasters who may become involved in offering health programmes, as well as access to providers of health goods and services, may become involved in public service issues. At present, there appears to be a narrow understanding of the public service role, which may not be able to accommodate likely expansion of the broadcast role in health, with corresponding implications for statutory bodies..

Research into alterations in the regulation of broadcasting and health is appropriate in the context of a wider examination of the impact of digital television on health policy.

Issues to be considered might include:

1. the feasibility of a block funding of health television programmes similar to the current block funding Channel 4 receives for educational programmes;
2. the suitability of all health broadcasting, in whatever form, being governed by a single set of regulations, perhaps under the auspices of the ITC which has begun to consider internet broadcasting, and the content on associated web pages and documents;
3. the suitability of distinguishing between the statutory role of the Health Education Authority for identifying the health promotion messages and the responsibility for the dissemination and promotion of those messages;
4. assessing broad regulatory issues arising from the convergence of television programmes, information content, and access to related goods and services.

At present, the ITC is the regulator of commercial television, yet health programmes and the development of interactivity will have a wide range of appeal across the full public and private broadcasting spectrum. The BBC has a health web-page, while VirginNet offers Virgin Health Services as part of its internet presence. However, the public broadcaster works to different standards of accountability than the private broadcasters. There needs to be research on the nature of the public service role of broadcasters who become involved in health.

6.2.4. Are there policy implications for the public/private mix of health service organisation and delivery?

The health interests of the public may enhance a mixed economy of health.

We need to have a better understanding of the extent to which people see themselves as consumers and not as recipients of a health service from government.

There are benefits to be gained for the individual as they are given greater access to information about services available. Television viewing is putting people into smaller niche groups based on their viewing interests, and these viewing interests and subsequent search for useful health information, may not respect the public/private split in health service provision. This is partly reflected by the considerable interest by employers in occupational health information and workplace health services (e.g. primary care in the workplace), an area not well-served by the NHS.

Examining these issues will present conceptual and political difficulties since it will be necessary to explore the extent to which increasing the public's access to more health information from television, and the possibility of accessing information interactively with service providers through the television, will influence the perception of health information and health services as a consumer product and service, rather than a service of the state delivered outside consumer-based considerations.

Many people are not comfortable with the notion of citizens being consumers of a government service; the way of framing the government/citizen relationship is one which some argue should not be predicated on a consumerist model. In the context of how to improve the services offered by government, notions of customer satisfaction, and quality are central, even if not comfortably characterised by the usual consumer transactions.

6.2.5. Are there macro-economic benefits associated with digital interactive television in health?

Digital interactive television may offer consumers greater access to health information and providers of goods and services; but the current understanding of consumer behaviour focuses almost exclusively on their interactions with the NHS and with the primary care gatekeeper, the general practitioner. Given the scale of health spending, both personal, public and private, relatively small variations in individual behaviour can have a substantial impact on demand for health services. Wider access to information appears to drive greater understanding of levels of service provision and outcomes that are expected, and may drive greater self-diagnosis. What isn't so well understood is what impact this has on demand for NHS services, particularly in primary care.

Consumption of health resources by people needs to be researched in the wider context of the many alternatives available, particularly, as regards greater access to information and the greater use of that information to influence consumer actions, including any impact on the dynamics of the patient/professional relationship.

This is a major area for further research, much in the same way as *NHS Direct* needs to be assessed for the same features, to determine whether greater access to information and forms of advice may function as a second opinion for many people.

The great fear of any health system is the marketing of illness with the corresponding increase in consumption of scarce consultation time with the GP. Most health service delivery patterns, including the organisation of health care systems, favour the working patterns and habits of health professionals. Any shift in the control of the health encounter is likely to have an enormous impact.

Most of what we know is focused on NHS resources; little is understood of the private health sector which operates under generally different rules from the public sector. Taken together, there is no coherent model of the structure of the UK health system, which takes into account all the health-seeking behaviours of the public.

At present, legislation severely restricts the public's access to a great deal of information, on public interest grounds, to avoid undue fear and potential for misunderstanding. With the changes in US FDA restrictions on media advertising of prescription drug products, many internet sites now contain access to information which UK residents cannot access domestically. The widening arena of health information outside of UK jurisdiction needs to be assessed with respect to a potential impact on UK policy and public behaviour.

The Government believes that both the assessment and communication of health risks needs to be done better.

Our Healthier Nation: a contract for health, 1998

More broadly, while there is considerable interest in the knowledgeable patient, and the empowered consumer, as ideals, the reality will need to be carefully examined from the macro-economic perspective. Knowledgeable and empowered patients may not respect the traditional boundaries that health policy attempts to enforce.

Research is needed into the wide range of commercial interests in individual consumers making personal discretionary spending decisions on their health in order to determine what, if any, represent either unacceptable commercialisation of health or acceptable opportunities for further development, with or without government involvement.

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This is also a fertile area of enquiry, particular as it offers an arena to explore potential public/private partnerships. As government seeks to enhance the level of services offered to the public through advanced information and communication technologies, it is important to acknowledge that the bulk of investment in new technology is being made by the commercial sectors.[17] The level of investment, the pace of innovation, and diversity of services possible are emerging from a commercial exploitation of the opportunities to meet, and exceed, consumer requirements (whether for information, home shopping, or appointment booking).

One implication may be to blur the notion of who is the real provider of a service or product. In particular, electronic commerce creates a world in which very small businesses can offer a very cost-effective, and potentially universally available business service, without the need to invest in considerable infrastructure or undertake massive advertising; could this apply to labour-intensive health service activities, might it easily apply to the provision of health information? Telemedicine, for instance, blurs the roles in, for instance, accident and emergency, by permitting highly skilled trauma nurses to manage distant emergencies supported by local expertise; *NHS Direct* supplants much of the doctor/patient relationship around diagnosis with a distant telephone nurse supported by elaborate diagnostic software.

An interactive television world offers the opportunity for the public to interact with a variety of front-line health resources (potentially both public, charitable, as well as for-profit), any of which can be linked forward to *NHS Direct*, or individual GPs, or other care providers, depending on how and what the consumer/patient chooses from available options.

For instance, the potential to divert a proportion of GP visits is possible if interactivity offers even the same level of service opportunities as *NHS Direct*. As the numbers of the public receiving digital signals rises over the next few years, many opportunities will exist to test what sort of diversion is likely. Even if 10% of GP visits were diverted, that would reduce the impact by some 45 million encounters per year. If 10% of all prescriptions GPs write could be replaced by an electronic prescription that could reduce encounters by some 30 million per year.

Some examples:

- will an interactive *NHS Direct* via television have a greater influence in diverting people from GP visits?
- will electronic prescribing make many visits to GPs unnecessary?

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- will access to enhanced information, or “health brokers” (new gatekeepers) on television, influence how people access primary care resources, influence accurate self-diagnosis and self-medication?

And as current NHS reforms are introduced, will primary care groups and trusts successfully realign the traditional primary/secondary care service dichotomy to realise greater benefits in primary care – will digital interactive television be part of that?

The service-driven agenda that we see being developed on the internet, appears to be having considerable impact on areas as diverse as books, music, travel, and car sales, all offered as part of the interactive service offering. Developments here could challenge the infrastructure investments being made by government. Indeed, government may need to track technological innovation that is below their radar but which have the potential to influence public sector policy.

The public/private health service divide depends to a great extent on a clear division between the different types of providers and their funding streams, in particular with the public sector being most closely associated with basic social values of universal access and free at the point of service delivery. Television-based services may cross social divisions and be paid for in ways other than direct payment by the consumer, e.g. through sponsorship by companies who bundle these services with television viewing options.

There is already a tradition of giving away considerable value of products and services on the internet in return for exclusive relationships with internet users, or to provide a unique route to particular services for which there are fees payable. While it seems clear from discussions with BSS that commercial companies are unlikely to charge for health information, in time access to health information may be a first level of access to fee-charging services.

Interactivity offers the following types of service areas which apart from widening public access to health information may emerge as areas of commercial interest (there are undoubtedly many others):

- services which facilitate access to health providers: e.g. electronic booking of appointments with GPs and with other health care advisors
- services which facilitate personal record keeping: e.g. a personal health record perhaps linked to personal fitness and health goals

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- services which facilitate receipt of desired health products: e.g. filling electronic prescriptions, or ordering medicines and health supplements
- services which meet personal and private health needs: e.g. online “chat rooms” for health advice, including counselling, and *NHS Direct*-type services
- services which facilitate consumer demand: e.g. electronic interactive health “advisors” for fitness, diet, life-style counselling, and linked to the availability of supporting goods and services, such a fitness club memberships, or sports equipment

6.2.6. Does digital interactive television raise policy issues which cut across policy initiatives in other branches of government and what are the implications for future policy and implementation?

Useful discussions were had with interviewees in both the Department of Trade and Industry and in the Department for Education and Employment, which suggest that there is a wide community of interest in digital television, interactivity, and impact on public services.

It seems appropriate to consider a cross-Whitehall “special interest group” to coordinate policy development, and track the development of technological change as it affects public services, but also as a participant in the wider social and commercial discussions within the UK.

While there are merits in establishing wider discussion opportunities for their own merits, a health focus could take account of interests as diverse as sport and fitness, culture and substance abuse, schools health and workplace health. Digital interactive television may provide a useful context for discussions affecting a broad spectrum of social policy issues, without needing to be overly concerned with the implications of the technologies themselves.

The very pressing risk is that departmental initiatives will not enjoy the benefit of the widest possible inputs from across the full spectrum of governmental interests, and thus fail to take advantage of the learning and experience available within the various support networks of individual departments. At the least it will provide a forum to exchange thinking, and at the most ensure a much higher level of coordinated action particularly where a coordinated response is needed in industrial or social policy. There, of course, may be other options.

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The pace of commercial activity is very rapid. By having some coordinating body, there may be economies to government by localising responsibilities for specific issues, but ensuring a wider government framework to derive the greatest benefit. It will also provide mechanisms to harmonise policy developments with commercial developments on a much more rapid and less formal basis. While ministerial portfolios may be reflected in specific policy research objectives, the pursuit of integrated policy development (and implementation) may be augmented by joint working of the sort that currently characterises responses to European issues.

6.2.7. What legal and/or regulatory issues might be relevant, including whether current restrictions in the Medicines Act and other legislation are appropriate?

There is little research on whether advertising or information of the sort covered by existing prohibitions would increase consumption of medicines or increase demand for GP consultations; there is a case for researching whether there ought to be a more balanced release of information to the public about new medicines.

The United States has relaxed restrictions on direct-to-consumer advertising of prescription drugs, and preliminary and informal reports suggest that it has increased accurate self-diagnosis and reporting of illness that are often missed, such as Type II diabetes. Access to information on prescription drug information is available in a variety of forms, including the internet, and UK residents can access this information even though such information is prohibited in the UK.

While there is a European Directive on advertising and well-established restrictions in UK law, [53 to 61] it may be appropriate to distinguish between advertising and marketing on the one hand and providing information on the other. Health information may benefit from the inclusion of information on treatment options, and go a long way toward creating empowered and knowledgeable patients. There have been calls for a relaxation of these restrictions, and some think restrictions do more to enhance the mystique and control of the health professions, than they do in ensuring the public is protected from information which may “cause alarm”.

It may be appropriate to research the different ways information was provided to the public in the case of AIDS and of BSE, as an example of two quite markedly different approaches. There may also be some benefit in reviewing the implications on the release of health information in the proposed Freedom of Information Act, given the restrictions the white paper proposed. [50]

An international comparative study is possible to the extent that the US and the UK represent two approaches to the release of information to the public, and at present we have very little if any research on whether restrictions on information in the UK are evidence-based.

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Direct-to-consumer advertising may work in situations where people are paying for their healthcare, and may continue to be inappropriate where they do not, but in promoting greater access to information, issues are likely to be raised anyway for health professionals who are faced with patients with greater product-specific information.

Television is a window, not just into our neighbourhood, but to the world. The interactivity of a future world will not respect national boundaries, and enforcement of such boundaries by states may rival the machinations of some regimes that locked up their photocopiers and fax machines to keep information from being disseminated. The information genie is out of the bottle, and increasingly people are going to gain access to it, whether directly or by stealth. It has been said that “Sunlight is the best disinfectant”, and in the digital world, it will only be through this sort of openness that we can be certain that the information is of high quality and accurate, no matter who provides it, or how.

6.2.8. How does digital interactive television relate to existing development of health telematics?

It is important to distinguish between telemedicine/health telematics and digital interactive television. The former uses methods which are tools for the clinician to improve services to patients, either through remote viewing of a patient, or through tele-consulting with professional colleagues. The patient may benefit, and the consensus of the research suggests there are benefits, even if the cost-benefit equations have not yet been fully determined. Digital television, on the other hand, faces the individual consumer, or viewer, in their home, and any goods and services offered appear in the context of personal interest or initiative.

It is likely that much research on telemedicine/health telematics might be broadened to encompass many of the issues associated with digital interactive television, and indeed usefully broadened to include applications associated with digital interactive television, especially where a consumer focus is paramount.

The most important distinction is that telemedicine is largely a tool of the clinical setting, to facilitate the interactions between doctors and patients within clinically defined encounters, such as psychiatric counselling in between psychiatrists and prison inmates, transmission of radiological images between doctors, and teleconsulting between primary care doctors and specialists. Health telematics mediates and enhances the clinical encounter, and so it is said, will optimise access to health advice, and expertise and speed the movement of clinical relevant information between providers of care, especially where distance is a barrier. And there are clear uses in emergency medicine, off-shore situation to create “location independent care”. [48] Information may flow more easily, but it is more likely to be an electronic health record controlled by the clinician not the patient.

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Television interactivity is different as it focuses on the individual as a consumer of health products, and as someone curious to know more about their health. It is not based on the mediated clinical encounter, though some elements reminiscent of traditional encounters may persist with newer interactive services, such as *NHS Direct*. But the important defining feature is these encounters are initiated and controlled by the individual, not the clinician.

Broadly speaking, we need to know more about consumers and their health seeking behaviours, though we may have a better understanding within formally defined by traditional and accepted clinical contexts. Indeed, it may be a feature of public health services that they define what are “appropriate” health choices and behaviours for individuals, whether they in fact meet the individual’s needs or not. Where individuals have a choice, though, what do they choose, what do they do? Do they make the wrong choices, make mistakes, are they systematically misled or manipulated by commercial or private interests anymore than by formally mandated health systems?

There are many areas which have similar features, particularly to emerging telemedicine law [47, 48], which are likely to be relevant to television. These include:

- Are health professions appropriately regulated with respect to what they say and do in a broadcast environment, either to a mass audience, or in call-in shows or where some level of interactivity is available?
- Is the regulatory environment certain with respect to regulating health content on both public and private broadcast channels, including responsibility for programme content, and for delivery of goods and services through the interactive component of the channel, including across borders within the European Union?
- Is the determination of risk and responsibility well-defined with respect to advice and health services provided by digital interactive television, where more informal providers, and less clinically defined settings, are likely to prevail?

6.3. Approaches to developing UK capability in digital interactive television and health

6.3.1. How should the features of digital interactivity in health be tested?

New media developments are focused on mass markets, and therefore research requires that larger-scale projects be undertaken, taking into account a wide range of personal, social and technical considerations.

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There are a number of ways to assess the impact of digital interactive television, and which might be built into new policy developments within the NHS, local government and education; research opportunities should be encouraged to expand the scope of these initiatives to consider the wider electronic/digital communities and e-commerce. Exploration of these should form a constituent part of commissioned research to take advantage of the considerable commercial momentum in developing digital and interactive capabilities.

There are a number of initiatives currently underway in the country looking at community-based reform, namely:

- primary care groups and primary care trusts within the NHS
- healthy living centres
- health action zones between the NHS and local authorities
- education actions zones with public and private partners
- private sector health centres

Any of these offer significant opportunities to explore “wired” or “wireless” communities and the testing of interactive digital capabilities. In particular, the *education action zones* offer considerable potential to explore interactivity with a receptive and critical audience of young people and thus learn more about their emergent expectations. The education action zones also offer examples of public/private partnering where technological innovations can be channelled. Indeed, there may be some merit in linking education action zones, health action zones and healthy living centres in novel and relevant ways.

It may be premature to point to health action zones or PCG/PCTs as sponsors of pilots, but where there exists the interest in exploring the technological innovation in the context of information provision to the public, there should be ways of creating avenues for these ideas to be taken forward without excessive bureaucracy.

Research should focus on the implications for individuals in accessing information, health services and advice, and less on the technology.

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The focus should be on exploring the nature of *interactivity*. This means actually creating living “laboratories” (many broadcasters have developed effective research methods in partnership with universities) in which people can discover how they use the technology and how the health professionals are likely to respond. While academic and market focused research can deal with specialised subgroups of participants to test elements of the technology, and explore attitudes and feelings, the impact within the community requires communities to explore together what all this means.

The new NHS IT strategy [13] points to new thinking about health and information, in the service of clinical service provision; there are considerable unstated opportunities for public/private collaboration in research and exploitation of research findings.

6.3.2. How should the UK develop increased capability to research and understand the relationship between digital interactive television (and the media more generally) and health?

There is a mix of commercial and academic research interest in modern media, partly funded by the industry and focusing on consumer uptake or acceptable of innovations. This reflects corporate interest in markets and understanding the broad social trends that from time to time are said to be driving change. Government will always need to establish ways to assess the social implications of technological change, but for whatever the research may say, the long trend over the centuries is that technology is invasive, unpredictable and probably largely unresponsive to policy and planning. The key learning point of the late 20th century is that social processes and change are not neat and tidy and amenable to planning and manipulation.

The Department may wish to encourage the development of unique research and study centres focusing on the impact on health of multimedia, including digital interactive television.

There are a few centres in the UK, such as at universities in Glasgow, Leeds and Sheffield, which have developed excellent connections with the public and private broadcast sectors. There are also many centres in the UK that focus on health but these are either health management centres of which many have been set up over the past decade, largely dependent on contracts with the NHS or ESRC, or clinical research centres anchored in medical schools with links to the MRC or corporate research.

It is instructive to observe the keen interest taken in health by the many charitable foundations. Kaiser Family Foundation in the United States fund a programme of research through Johns Hopkins School of Public Health with a particular interest in how sexual issues are depicted on television. The Wellcome Trust has recently approved development of a multimedia “Kidney Patient’s Guide” (by Tom Bowen Associates and Cognitive Applications Ltd) as part of their *Science on Stage and Screen* programme. What appears absent from the research agenda is a wider appreciation of health through the media in the lives of people.

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Too often, though, much activity almost exclusively explanatory in nature is focused on trying to understand what the government's thinking on health is, and little focused on the social context of health. While all these contribute greatly to our collective understanding of the NHS, and government policy, one is still left undernourished for a wider research perspective on people and health, in particular aspects of people's lives that are not directly subject to white or green papers.

Some of the thinking here emerges from organisations on the fringes of current thinking. One example is the Peckham project, [42] something that has been a part of the UK health landscape from the 1930s when some far-sighted people tried to get architects to build a patient-focused health facility. There are many others.

Importantly, the funding of these centres should not be solely from government but include the philanthropic communities with public dissemination of results. While some organisations currently include some of these issues loosely within their mandates, research is needed to determine the suitability of creating novel organisations, with unique missions to explore the changing interfaces between people, technology and their health.

The Department's research agenda would be enhanced through a wider community of activity and involvement, to create opportunities for wider dissemination and discussion of the findings.

The Department should encourage the development of a sustained programme of consultation across society focusing on health issues, and wider than the specific NHS service delivery concerns.

This could take the form of establishing a forum of consultation on policy issues which incorporates a broad mix of people. Interactivity in television can create "town hall" settings for issues to be explored and discussed, drawing on the concept of citizen's juries as they are being trialled in the country. These would be focused on creating an informed framework of discussion and consultation of the public on a regular basis (perhaps quarterly, led locally and meeting annually in plenary sessions) focusing on exploring with government the public's response to changing technology and health.

6.3.3. What various approaches to disseminating and developing the research framework can be encouraged?

Some form of public dissemination should be an appropriate component of research in the public interest, and certainly could form a regular feature of all health policy discussions and publications.

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There are wide range of approaches for disseminating research, but perhaps the greatest drawback is the failure to engage with the general public. Research communities generally speak to each other, and often in the coded language of their respective academic fields. However, in health, we should expect a much wider and more accessible dissemination of research objectives, methods, findings, and conclusions, in particular ways which widen the community of interest to the public at large.

This must extend far beyond the mandated bodies, such as CHC's or Health Authorities. There are some 24 magazines currently available on the market directed at consumers and their health, focused on healthy living, beauty and fitness, with a couple of notable exceptions, such as *Top Sante*, which started life in France with a serious but consumer-based focus on health. The dissemination of health information and the results of research in health do interest the public, who appear to have a virtually insatiable appetite for health news, presented in a digestible and clear form.

7. People interviewed

Formal semi-structured discussions were undertaken with the following people:

People	Organisation	Areas discussed
Felicity Ford <i>Development Executive, (responsible for Broadcasting Health project)</i>	Broadcasting Support Services <i>provider of call-centres to augment television programme content</i>	<ul style="list-style-type: none"> • EU Broadcasting Health project • provision of support material to the public • public's interest in health material
David Brennan <i>Vice President, Research and Channel Development</i>	Flextech Limited	<ul style="list-style-type: none"> • nature of digital television and interactivity • developments in digital television, convergence
Rob Dickenson <i>Executive, Business Development</i>	<i>television broadcaster, content provider, specialist in digital television</i>	<ul style="list-style-type: none"> • access to health information • commercial aspects of public service television
Mary Ryan <i>Head of Education</i>	Health Education Authority	<ul style="list-style-type: none"> • multimedia technology
Catherine Herman <i>Head of Information and Multimedia</i>	<i>special health authority with responsibility for health promotion</i>	<ul style="list-style-type: none"> • research on effectiveness of health promotion methods
Derek Freeman <i>Project Manager, New Media</i>		<ul style="list-style-type: none"> • communicating health messages to the public

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People	Organisation	Areas discussed
Robin Moss <i>Head of Educational Broadcasting</i>	Independent Television Commission <i>television regulator</i>	<ul style="list-style-type: none"> • regulation of television content • regulation of internet content • regulation of “controversial/explicit” content and advertising
Jill Turner <i>editor and health journalist</i>	The Health Summary <i>health newsletter</i>	<ul style="list-style-type: none"> • the public’s needs and interest in health information • social inequality and access to health messages
Greg Dyke <i>Chief Executive; seconded to the Department of Health to review the Patient’s Charter</i>	Pearson Television <i>television broadcaster</i>	<ul style="list-style-type: none"> • <i>the Patient’s Charter</i> • empowering consumers and access to health information
Martin Boyle	Department of Trade and Industry	<ul style="list-style-type: none"> • convergence • health industry
Keith Holder	Department for Education and Employment	<ul style="list-style-type: none"> • <i>National Grid for Learning</i> • convergence • digital interactive television for education

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