

Universal Citizen Access  
Universal Consumer Access  
A New Approach

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To be read with AbilityNet's response  
Mind the Digital Gap: It's Bigger Than You Think

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# 1 Introduction

1. This Report has three objectives; to:
  - Develop a new strategy for citizen/consumer access to digital information in the public domain;
  - Review previous policies and offer a brief critique;
  - Set the problem of citizen/consumer access in a new context.
2. The assumption underlying this Report is that all citizens/consumers who are in any way disadvantaged by virtue of education, language, capacity, facility, physical or other impairment and economic status want, as near as possible, the same access to digital information systems as their peers, on a non-discriminatory basis at a fair price.
3. This Report is most directly concerned with those who face problems with accessing digital information systems as the result of an impairment, grouped in clusters in descending order of prevalence as follows:
  - Learning and cognitive
  - Physical
  - Hearing
  - Visual.
4. This ranking should be an important factor in policy making but because it runs counter to the general perception it is frequently inverted; blind and visually impaired people clearly have particular problems, particularly with images whose description currently cannot be automated but the depth of their problems should not be confused with its prevalence. This erroneous inversion also severely under estimates both the prevalence and depth of problems faced by people with learning and cognitive disabilities.
5. The traditional approach has been to call for digital information systems which are both "usable" and "accessible" by people with impairments (commonly and erroneously referred to as "disabilities") (see Box 1). This

approach necessarily forces policy makers into defining "usability", "accessibility" and "disability" whereas the concept of citizen/consumer access to digital information in the public domain is a much simpler concept.

6. The over-arching strategy, therefore, is not to overcome a lack of access by recommending highly detailed impairment-related solutions but by seeing this sector of the population as citizens in respect of the state and consumers in respect of the commercial/business sector.
7. The Report is not intended to contain a comprehensive set of proposals for access to all digital information systems by all citizens/consumers and it rejects the strategy that says nothing should be done until everything can be done: the best should not be the enemy of the good.
8. There is an assumption (see Para 41 below) that the access by most citizens/consumers can be secured through generic technology and the Report accepts this strategy with some qualifications.
9. The main text of the Report, targeted at policy makers and strategic planners in the public, commercial and third sectors, is written in non-technical language.
10. More detailed explanations and discussion points of issues raised in the Boxes are set out in the accompanying appendices.

### **Box 1. Citizenship and Disability.**

The problem of defining the rights of access to digital information is that it forces us to define "disability" as an "exception". A person with an impairment is, first and foremost, a citizen and consumer in the market and not a special case for privilege on the one hand or discrimination on the other.

11. A major error of policy has been to characterise the digital information system as "usable" or "accessible" by people with impairments on the basis of measurable, supposedly standard, characteristics, such as:

- The adjustability of print size and other characteristics primarily for visually impaired people
- The facility to switch sub-titles on and off, primarily for hearing impaired people
- The use of 'switches' by people with physical impairments and
- The facility to simplify information arrays, primarily for people with learning and cognitive impairments.

12. This Report advocates a citizen/consumer centred approach which focuses on the ability of people to complete tasks defined by the information system publisher/producer (see boxes 2/3).

**Box 2. Peer Normative Access.**

Quantitative peer normativity for the use of goods and services can be defined according to the sum total of citizens/consumers, a demographic segment or a community of practice. Thus, accessing television broadcasting is peer normative for citizens/consumers as a whole. Peer normativity can be set as a percentage of a demographic segment which allows measurement of access.

Task completion parameters. The crude concepts of usability and accessibility frequently exclude time and cost from their definitions whereas their inclusion allows the generation of measurable comparisons between the performance of an individual citizen/consumer defined with reference to distinguishing impairment factors and the peer normative group.

**Box 3. The Concept of Fair Price.**

The more an activity is peer normative the narrower the gap should be between the price for a generic user and the user whose access is below a peer normative bench mark.

Where an identifiable group cannot access the full benefits of goods and services, or cannot task complete within normative times, then a fair price regime should exist.

13. The traditional reliance upon the public sector to legislate and finance citizen/consumer access to information is no longer viable:

- The UK Government's default position is against regulation, even in areas where this would not increase business or its own costs
- The barrier to European Union legislation has been made higher by accession; this is particularly relevant in respect of the regulation of communications hardware
- Public sector expenditure is set to fall over the next decade
- It is becoming increasingly difficult for any government to exercise effective content regulation in a global market (see Box 4).

**Box 4. Content Regulation in a Global Market.**

Most content regulation is classically based on the place where the content is produced/published. The degree of regulation encourages creator / publisher migration to less regulated locations causing a competitive relaxation of regulatory pressures. But anxieties still exist which can only be met by exercising regulation at the point of consumption, placing obligations on the information channel provider and retailer.

14. Most public policy on citizen/consumer access to information has been based on the premise that the gap between the person and the system (the human/system interface) can be closed by persuading the non-user to "get online" whereas the gap might be caused by design problems in the system which deny access to some citizen/consumers (see Box 5) such that providing free access to systems or even providing incentives might generate no extra uptake. This Report proposes that the human/system gap must be narrowed from both the supply and demand 'sides'.



### **Box 5. Supply and Demand Side Policies.**

Current policy has been firmly anchored to the assumption that improved systems uptake can be almost entirely solved by manipulating the 'demand side' of the equation. In spite of the effectiveness of regulating access to television by Ofcom there has been reluctance to extend access regulation even where it can be effective

15. The public sector has shown a marked bias in favour of PC-based information systems in spite of the explosion of television after 1990 and the more recent explosion in the use of mobile telecommunications, notably among those the Government finds it most difficult to reach.
16. Multi-channel television would allow the public sector to provide a massive quantity of linear (television-like) material under Parliamentary supervision without the use of the more cumbersome Web, freeing the Web for more transactionally-based functions.
17. More citizens are capable of sending an SMS than using a QWERTY keyboard, again, notably among the least advantaged.
18. Television is moving towards being interactive.
19. It is therefore vital that the public sector, to meet its own goals and those of citizens, should adopt a medium-neutral, multi-channel approach to citizen communication in which all channels provide the widest possible citizen access.
20. Whereas the history of content regulation has been based on different media (books, broadcasting (see Box 6), cinema, telecommunications), medium specific regulation, even where it can be effective, is not ideal because it engenders a new round of activity every time a new medium is developed. Any legal framework on citizen access must be generic or medium neutral.

### **Box 6. Broadcasting Regulation.**

The obligations of broadcasters to provide "special services" are set down in the Communications Act (2003) and are regulated by Ofcom which defines the proportion of content to be enhanced and imposes the obligation on broadcasters according to their 'qualifying revenue'.

#### **1.1 Summary of Key Concepts in the Introduction**

(1) The abstract and general should be replaced by the particular and the concrete. Thus, the terms "disability", "accessibility" and "usability" should be replaced by the single concept of the ability of citizens/consumers with impairments to complete authorially defined or serendipitous) tasks peer normatively.

(2) Peer normativity is defined by demographic and/or lifestyle and can be bench-marked as can the percentage of task completion and time taken to complete.

(3) Those who suffer from impairments should not be separately classified in terms of citizen/consumer access but should be considered alongside all those who task complete less often or more slowly than their peers.

(4) Improvements in citizen/consumer access to digital information systems should be generated both through supply side and demand side measures.

(5) The dissemination of information, particularly by the public sector, must be both channel neutral and multi-channel, reflecting the user interface adoption of end users.

## 2 Government & Law

21. Although there are areas of contention on both sides of the Atlantic, the 20th Century saw a massive increase in the breadth, depth and political traction of rights based legislation. It might be broadly advanced that the necessity for a right to be recognised is proportionate to its perceived social, cultural and political value. Thus, a citizen right to information is much more desirable in a democracy and in an information-based economy. This report therefore proposes, on the basis of the UN Convention on the Rights of Persons with Disabilities (2006):

- A generic right of citizen/consumer access to information in the public domain on a non-discriminatory basis at a fair price (see Box 3), supported by a default obligation on authors and publishers to facilitate the enjoyment of this right.

22. A generic right is one which is granted independently of the medium so that new media do not present new barriers and do not cause classification problems, eg. is television on demand to be regulated like linear, spectrum-based broadcasting or is it to be classified as internet material?

23. Access is the ability to realise the author/publisher intention, ie. to acquire information, purchase goods, complete a pro forma (see Box 7) or to complete any task which the author/publisher intends.

### **Box 7. Authorial Intention.**

The central purpose of publishing is that the consumer as near as possible realises the authorial intention i.e. what the author wants the consumer to, read, transact, complete a task etc.

24. With the exception of broadcasting, most operations to realise authorial intentions for citizens/consumers with impairments are carried out by

specialist intermediaries, such as AbilityNet, Action On Hearing Loss and Royal National Institute of Blind People (RNIB); this is an unwarranted cost shift from the producer to the consumer. Authors and publishers may argue that providing non-discriminatory access is too expensive but manufacturers and shop keepers would not be allowed to make the same mistake with respect to the operation of the Minimum Wage and, in any case, the requirement to deliver material on a non-discriminatory basis is qualified by the concept of 'reasonable adjustment' (see Para 28 below).

25. There is much that authors and publishers can do to render content in such a way that its access is widened (see Box 8). Authors and publishers should be responsible for the extent to which citizens/consumers can access their material not only through the way the content is designed but also through the provision or the guaranteeing of the provision of manipulative tools.

**Box 8. Basic Features for Widening Citizen Access to Digital Information Systems.**

- a) Information design
- b) Text Adjustability
- c) Graphic Presentation

26. There is a special obligation on the public sector as an author and publisher to publish on a non-discriminatory basis.

27. The concept of non-discrimination must be understood within the context of reasonable adjustment which will vary according to:

- The author/publishers mission and publicly stated objects
- The capacity of the producer, financially and technologically, to implement adjustments

- The social gain from adjustments.

28. However, the concepts of reasonable adjustment and optimal access must be rationally defined; discrimination should not be based on irrational or flawed analysis; and although the concept might apply particularly to the public sector, it should apply to all publishers on the basis of the above three criteria.

29. There are major exceptions in the public sector where the general rule of reasonable adjustment should be over-ridden by absolute obligation to guarantee 100% citizen access:

- Voting and access to information and participation vital to citizenship
- Access to goods and services guaranteed by Parliament (including national legislatures) on a non-discriminatory basis, including those services designated as "digital by default"
- Access to justice.

30. A generic right of access might be operated in two ways:

- The establishment of a universal right to which exceptions on the basis of 28 above
- A cascading right, beginning with the public sector and the bodies it finances and licenses, moving 'down' to smaller bodies.

31. On balance, the second approach is less costly and more realistic and the concept of social gain can in this instance be based upon the concept of peer normativity, ie. rights are not asserted equally by all citizens/consumers in all sectors but reflect actual activity (see Box 2).

32. The realisation of such a generic right and machinery to guarantee its enjoyment is a long-term ambition which will involve a concerted campaign in the UK and EU but this should not detract from measures to ensure a steady improvement in the situation in the short and medium term:

- All organisations which meet the criteria in 28 above should be obliged to publish a policy stating the steps they will take as their systems are upgraded to widen citizen access.
- Conversely no organisation should be allowed to reverse its access measures.

33. In the meantime, the EU and the UK Government should guarantee end-to-end access (see Box 9) to all digital information systems that are deemed to be of political, economic, social and cultural importance to citizens and consumers. While the public sector can no longer be expected to be the monopoly financier of guaranteed access, it must be the guarantor; as such, the Government should put out its access services to tender so that the third sector can apply to operate in an area where it has great expertise. Thus far, citizen access has been out-sourced to commercial companies which have little understanding of the issues and which have sought to sub-contract specialist charities on grossly exploitive terms. As part of a general policy of public procurement in which the broadest possible citizen access is a major qualifying criterion, specialist agencies in the area of digital information access should be permitted to tender regardless of their size; and all suppliers should be compelled to demonstrate their competence in this area.

#### **Box 9. End-to-end Systems.**

In general, regulation of information systems to generate the widest possible access has tended to focus on publishing rather than on reception. The EU is competent in the area of hardware regulation and is highly unlikely to regulate for access features.

34. The Government should adopt a twin track approach of incentive and enforcement: providing incentives for those who enable bench-marked task completion targets; and strengthening legislation so that the onus of

prosecution for noncompliance does not lie solely with individual citizens. Public sector procurement criteria provide a powerful tool to increase citizen access.

## **2.1 Summary of key concepts relating to Government and Law:**

- The right of citizen access should be generic and not medium-specific
- Information in the public domain should be available on a non-discriminatory basis at a fair price
- The default responsibility for citizen/consumer access to information should lie with the author/publisher
- The concept of reasonable adjustment should be based on mission, ability to deliver and social gain and should be aligned with the concept of "optimal" access which, in turn, should be rationally and measurably defined (see (15) below).
- The public sector has a special responsibility to enable citizen access, particularly where its obligation to provide 100% access over-rides reasonable adjustment.
- The concept of access must be "end-to-end"
- As the Government legislates ends it must be responsible for means, not necessarily as sole agent or financier but as guarantor.
- Public procurement is a powerful tool for increased citizen access.

### 3 Business & Commerce

35. It is now widely recognised on both sides of the Atlantic that the fiduciary responsibilities of boards of directors of commercial companies have been drawn too tightly, focusing almost exclusively on the maximisation of short-term (usually three month reporting) shareholder value at the expense of other stakeholders such as the work force, the consumer, community and social responsibility and the wider environment. It is therefore vital that those concerned with citizen/consumer access to information should join the campaign to widen the scope of fiduciary duty. At present, the key fiduciary duty of directors explains the limited scope for the exercise of corporate social responsibility (CSR) as this has to be a means to a commercial end and not an end in itself. Until there is a change in the law, campaigns to meet social ends through the abridgment of shareholder return is futile as it is, among other considerations, asking directors to break the law.

36. The third sector response to commercial limits to philanthropy has been to develop a 'business case' for accessibility (see Box 10).

#### **Box 10. The Business Case.**

What is generally called "The Business Case for Accessibility" works best in mature markets but much less well in R&D intensive markets with rapid product cycles.

37. The key concept in arriving at a decision about features in goods and services that promote access is that of the optimal which should be closely aligned with the concept of 'reasonable adjustment'. What collection of features will maximise shareholder value? And what is the additional cost of features which would increase consumer access but abridge shareholder value (see Box 11)?



38. The question then arises: should these desirable features be produced generically or through Assistive Technology? Ultimately, this decision comes down to cost rather than to any ideological position and in general over the past decade the price of access enabling features in generic products has fallen much faster than those delivered through assistive technology, eg. cameras, screen readers, screen magnification. The UK Government's insistence on supplying Access to Work needs entirely through assistive technology disadvantages clients and imposes unnecessary public expenditure. Frequently prescribing generic technology will be cheaper than prescribing assistive technology.

**Box 11. The Optimal, the Generic and the Assistive.**

An optimal set of features is one which guarantees the maximum return on capital such that adding or subtracting a feature from the set would reduce the return. Some features which broaden access might be included in such a set of features but many which are required by population sectors with impairments will not.

39. Commercial reaction to proposals for improved access features is generally irrationally negative, exaggerating the degree of the technical challenge and/or the cost of implementation. The commercial sector must apply the rational analysis to access features that it applies to what it thinks of as its mainstream business; the cost of access might be as cheap as the dot on the figure 5 on numeric keypads or as expensive as a refreshable braille display but most features will fall between these two extremes and their cost must be arrived at rationally in order to determine reasonable adjustment and an investment strategy (see Para 20 below).

40. From the perspective of the citizen/consumer, there is a considerable bias in favour of access to digital information systems through the generic route because of what this says about peer conformity and so there may be a

bias in the social analysis of the choice between generic and assistive solutions but the fundamental analysis must be economic. In analysing the assistive and generic sectors it is also important to abandon brand specific in favour of generic prescribing. If an assistive route is either cheaper than the generic or, indeed, is the only solution, it is likely to be supplied by a small company with a fragile but relatively high R&D budget compared with sales which forces up retail prices which are then supported by public sector purchase of goods supplied by near monopolies. Organisations concerned with the supply of goods and services through assistive technology should, where possible, 'buy in' to companies.

41. Against a context of static or declining public sector expenditure and a default policy position against regulation, it is realistic to expect Government only to under-write the method by which its legislated ends are achieved. This puts particular responsibility on business, as far as it can within the legal framework, to work with the third sector to widen consumer access; and, as already noted in Para 17 above, in the course of this the two sectors need to adopt a rational approach to the effect of the inclusion of access features on a demographic wider than those with impairments. Put simply, it is often said that what is good for those with impairments is good for the general market. It is important to know both the breadth and the impact of access features on the general market to arrive at a rational position. It is no longer acceptable for the third sector to advocate a position irrationally and for the commercial sector to respond irrationally.
42. A necessary first step is an agreement between Government, business and the Third Sector on a set of core functionalities which will widen citizen access but which do not - like the QWERTY keyboard - in themselves constitute commercially valuable attributes (see Box 12).
43. Following on from this, if the commercial and third sectors can arrive at a rational economic analysis of the cost and social gain of additional features to the core which broaden citizen/consumer access in general

and that of people with impairments in particular, the Government should broker agreements where implementation of its own and EU legislation and regulation is at stake. This will often mean identifying funds to sponsor a feature in the generic context which are made available to a commercial company to include a desirable feature ruled out by optimal design. This has profound implications for the Third sector (see Para 52 below).

#### **Box 12. Core Functionality.**

- Channel/user interface choice
- Inter-operability with access technologies
- Text adjustability/ magnification
- Colour choice
- Text-to-speech (TTS) and speech-to-text (STT)

44. An additional complication for the United Kingdom (and most of the world, for that matter) is that the UK offices of most major digital information corporations are sales outlets for companies based in the United States and Japan. An approach to the commercial sector therefore requires the establishment of relations with key decision makers at corporate headquarters. The particular problems we face are:

- Outside Hollywood there is no workable global standard for special services (see Box 4) provision and that standard does not cover the needs of citizens/consumers with learning and cognitive impairments, eg. information array adjustability, additional 'storyboard' material
- There is no immediate possibility of EU hardware regulation
- The UK market size makes it difficult to impose obligations on global corporations, although we can benefit from USA regulation, as demonstrated by the impact of USA 508.

- The corporate call for global standards might be genuine but it might be a cynical tactic promoted in the knowledge that the objective cannot be achieved prospectively or contemporaneously (see Para 33 below).

### **3.1 Summary of key concepts relating to Business and Commerce:**

- Governments should widen the remit of corporations to include social responsibility as an end in itself
- Government, business and the Third Sector should agree a set of core functionalities in digital information systems to widen citizen/consumer access and should adopt a rational, three-way approach to defining the optimal and costing and funding additional features
- The choice between the generic and assistive route for the inclusion of access features should be rational and not ideological
- The specification for goods and services which enable citizens with impairments to access digital information systems and/or to access information through them should be functionally defined and not brand identified.

## 4 The Third Sector

45. Among the many competing priorities for change in the third sector, there is only room to mention five:

- Developing a rational as well as a moral case
- Speaking with one voice
- Project collaboration
- Altering the balance between campaigning and executing; and
- Global alliances.

46. The need for a rational approach to be deployed alongside the moral case for citizen access has already been noted (see Para 17. above) but this has implications for the way in which the third sector thinks about itself. The nobility of the cause is not enough, nor is passionate advocacy which can, so often, descend into glib assertion. The third sector is badly short both of technology expertise and economic and market analysis.

47. The strongest response to our consultation on what this Report should include was a call for third sector organisations to work together. Both the creation of a single advocacy voice and project collaboration requires both trust and delegation but these qualities are sadly lacking in a sector which is both cautious and over-elaborate.

48. One Voice. Too often, collaboration between third sector organisations is discussed in terms of "pooling sovereignty" but we have learned from the current economic crisis within and outside the EU that sovereignty is purely theoretical in the context of solutions which require broad agreement across the boundaries of specific interest. Among charities working with people with impairments, the exercise of autonomous functions, such as campaigning and lobbying, makes no sense in the context of digital information systems where a desirable feature is pertinent to multiple impairments. A common focus for advocacy requires a broad remit which covers access by all people with impairments to all

digital information systems. Once a broad policy is agreed, such an organisation must be left to execute its mandate without constant referral back to its constituents. Such a body will occasionally say or do something which is not entirely in accord with every constituent but that is a price worth paying for sharpness and speed of execution.

49. Outside advocacy, structural arrangements for project implementation are notoriously difficult and it is therefore important for organisations to reach collaboration agreements on particular projects instead of broadening their ambition to institutional arrangements. In the past there has been a great deal of energy spent on constructing one-stop-shop proposals, databases and other devices for propagating and exchanging information but this is largely a displacement activity which avoids the key issue of project collaboration for implementing solutions which requires the development of trust based on clear objectives. Information exchange requires bureaucrats whereas collaboration requires leadership.

50. For too long, organisations concerned with citizen/consumer access for people with impairments have relied on their moral rectitude and a theory of Government-financed rights enjoyment sparing them both responsibility and difficult decisions. The default position has been to campaign or lobby Government or the commercial sector to solve an access problem and deliver an access solution. The changed political, economic and technological environments each call this approach into question.

- Politics and Campaigning. The political environment has already been discussed but its implication in this context is that the return on campaigning will be lower than it has been at any time since the Second World War.
- Economics and Investment. The economic outlook for digital information corporations is better than that for OECD economies in general but without legislation and regulation the demands of the production cycle are more likely to be met than those of consumer lobbyists. It is notable that while the third sector has continually

asserted that there is a 'business case' for access features for citizens/consumers with impairments; it has not reflected that conviction in its own R&D and investment policies. If the case is so strong, why have organisations not invested in this area?

- Technology. As data handling steadily shifts from hardware to software solutions, the capital investment required to deliver solutions is falling rapidly (eg. the shift from specialist navigation devices for blind people to apps on mobiles).

51. As the price of investment in solutions falls the price of campaigning is static for in-house personnel and rising for advertising. The third sector needs to re-balance its investment in campaigning and problem solving. Indeed, in some respects the third sector might consider - eg. in the case of Access to Work - that the Government is not an ally but a competitor.

52. Building on the idea of a single advocacy point, UK organisations cannot afford to develop their own strategies for global market lobbying and should develop a mandated but independent capacity. For the past two decades the approach to global strategy has been almost entirely through the EU entry point but this may no longer be appropriate in all cases.

53. The third sector will need to consider a shift in the way it handles investment. The usual response to calls for investment is that organisations are too poor to invest but if they are as confident in the financial investment outcome of what they advocate then they should be prepared to risk their own resources through the use of social capital, venture capital and borrowing against their own balance sheets.

54. The other major role for the 3rd sector is that of trusted provider of a support service to constantly and consistently help/support/advise the elderly, disabled and those with an impairment on how to use/fix their technology environment.

55. Too many charities utilise volunteers in a disjointed manner offering support and help either remotely or in people's homes. With such a large

market of potential clients (over 20 million and growing, especially as our population ages) the 3rd sector must pool its resources and use of volunteers to service this market.

56. We need to create one joined up support service that any disabled or elderly person can call upon to receive the support and help they will need. Not necessarily to get online, but to stay online. This client base will need regular and sustained help to keep engaged with the digital age, not only because the digital environment moves so rapidly, but because learning and cognitive disabilities and health conditions are by far the most prevalent and will only increase in our society.

#### **4.1 Summary of key concepts relating to the Third Sector**

The Third Sector moral case for citizen/consumer access should be underpinned by economic and market analysis

Organisations with common objectives should campaign jointly through one outlet and concentrate on implementation not information

There should be a shift in the use of own resources from campaigning to problem solving and marketing.

The entity at (19) should have an international dimension.

The area of volunteering should be rationalised and user centred.



## 5 Technology

57. There are innumerable technical issues which this Report might address but, noting that most problems in achieving technological objectives result from human not machine behaviour, there is only space for five:

- Convergence
- Device proliferation
- Standards and uniformity
- End-to-end solutions
- Task completion.

58. In principle, convergence should bring enormous benefits both to publishers and consumers but frequently the 'silo effect' still operates so that information reflects the medium to which it is sent rather than having a common 'look and feel' across technology platforms. It will not be easy to embed a corporate habit of adopting a cross platform 'look and feel' to information display and taxonomy but this is an area where iconic publishers like the BBC can make an enormous difference. In this context, the principle of presenting data arrays at their simplest and enabling incremental enrichment is vitally important. In today's terms that might mean that the 'mobile' page is the default but as smart phone screens get bigger and merge with tablets, the idea might get lost.

59. There is currently no sign of a decline in device proliferation but if the 'walled garden' strategies of major players continue to be effective, we might be left with four global families based around Apple, Amazon/Kindle, Microsoft/Nokia and Google/android (the fragile status of Research in Motion, in spite of its acknowledged product excellence, might be a harbinger of future consolidation).

60. In the context of 'walled gardens' it is credible to ask for uniformity of information display, navigation and taxonomy within the walled space (eg., the same navigation buttons uniformly grouped and functions uniformly

named) (see box 13) but it is totally unrealistic to lobby for uniformity between digital information families. It would be possible to develop inter-operability apps (similar to those used by bibliographic databases) but these might be 'shut out' by one or all of the families.

**Box 13. Walled Gardens and Inter-operability.**

“Walled garden” publishers claim that it is the very uniqueness of their information display and taxonomy which gives them a commercial edge.

There are three basic objectives in applying uniformity of approach within information systems:

- Separating navigation from content
- Establishing uniform location for each series of buttons or links
- Using a common taxonomy and terminology for buttons and links.

61. Standards and uniformity protocols are almost always retrospective and frequently anachronistic. The industrial concept of uniformity has been replaced in the digital age by the idea of unique brand identity, reinforced by a rapid product cycle. The iconic standard in the impairment sector has been the Web Accessibility Initiative of the World Wide Web Consortium <http://www.w3.org/WAI> but its WCAG Guidelines <http://www.w3.org/WAI/intro/wcag20> have been developed too slowly and always behind the publishing trend; and they have concentrated far too much on content rather than the fundamental issue of authoring tools. Investment in standards development should be carefully considered in comparison with alternatives such as achieving uniformity within digital families or developing inter-operability applications.

62. End-to-end solutions are vital for task completion. The major problem arises because of the historical nature of regulation and the reluctance to regulate hardware standards. There is every chance that digital systems based on computers and smart phones will not provide a major obstacle

but television set technology has proved to be a major problem and, as it continues to raise its quality standard, is likely to continue to present problems.

63. As noted above (see Box 2), the objective of the use of digital information systems is to enable the citizen/consumer to complete a task which reflects the authorial/publisher intention in a peer normative manner. Technological research and development, investment and campaigning should focus on this central tenet and not be diverted by theoretical/academic issues.

#### **5.1.1 Summary of key concepts relating to Technology :**

Digital information systems should be defaulted to the maximum access state and the simplest information array

Publishers should adopt uniformity in their displays, taxonomy, terminology, navigation and controls

Conformity between major publishers is unlikely in the short term, so investment should be in inter-operability applications.

## 6 Education & Awareness

64. Universal solutions are inappropriate for local problems. This applies both to the way in which the education system equips publishers to achieve the highest possible degree of citizen/consumer access and the way in which decision making is influenced in this area. Thus, adopting a policy of "raising public awareness" is a poor substitute for targeted dialogue. In an era of intense competition for consumer attention and engagement it is vital that the focus is on raising the awareness level of those who can influence or implement a desired campaigning or lobbying goal.

65. A similar level of forensic analysis is required in calls upon the education sector to include citizen/consumer access (universal, inclusive, user centred design) in its curricula. The key strategic question is whether it is more effective to campaign for a tiny module on special demographic groups to be compulsory in all generic courses or whether demographic groups should be the subject of specialist courses. Campaigning for both will achieve neither.

### 6.1 Summary of key concepts relating to Education & Awareness:

- Campaigning should be targeted
- A choice is required between broad, shallow inclusive design education and a specialist, deep approach

## **7 Key concepts from this report**

### **7.1 Key Concepts in the Introduction**

- (The right of citizen access should be generic and not medium-specific
- Information in the public domain should be available on a non-discriminatory basis at a fair price
- The default responsibility for citizen/consumer access to information should lie with the author/publisher
- The concept of reasonable adjustment should be based on mission, ability to deliver and social gain and should be aligned with the concept of "optimal" access which, in turn, should be rationally and measurably defined (see (15) below).
- The public sector has a special responsibility to enable citizen access, particularly where its obligation to provide 100% access over-rides reasonable adjustment.
- The concept of access must be "end-to-end"
- As the Government legislates ends it must be responsible for means, not necessarily as sole agent or financier but as guarantor.
- Public procurement is a powerful tool for increased citizen access.

### **7.2 Key Concepts relating to Government and Law:**

- The right of citizen access should be generic and not medium-specific
- Information in the public domain should be available on a non-discriminatory basis at a fair price
- The default responsibility for citizen/consumer access to information should lie with the author/publisher

- The concept of reasonable adjustment should be based on mission, ability to deliver and social gain and should be aligned with the concept of "optimal" access which, in turn, should be rationally and measurably defined (see (15) below).
- The public sector has a special responsibility to enable citizen access, particularly where its obligation to provide 100% access over-rides reasonable adjustment.
- The concept of access must be "end-to-end"
- As the Government legislates ends it must be responsible for means, not necessarily as sole agent or financier but as guarantor.
- Public procurement is a powerful tool for increased citizen access.

### **7.3 Key Concepts relating to Business and Commerce:**

- Governments should widen the remit of corporations to include social responsibility as an end in itself
- Government, business and the Third Sector should agree a set of core functionalities in digital information systems to widen citizen/consumer access and should adopt a rational, three-way approach to defining the optimal and costing and funding additional features
- The choice between the generic and assistive route for the inclusion of access features should be rational and not ideological
- The specification for goods and services which enable citizens with impairments to access digital information systems and/or to access information through them should be functionally defined and not brand identified.

### **7.4 Key Concepts relating to the Third Sector**

- The Third Sector moral case for citizen/consumer access should be underpinned by economic and market analysis

- Organisations with common objectives should campaign jointly through one outlet and concentrate on implementation not information
- There should be a shift in the use of own resources from campaigning to problem solving and marketing.
- The entity at described above should have an international dimension.
- The area of volunteering should be rationalised and user centred.

#### **7.5 Key Concepts relating to Technology**

- Digital information systems should be defaulted to the maximum access state and the simplest information array
- Publishers should adopt uniformity in their displays, taxonomy, terminology, navigation and controls
- Conformity between major publishers is unlikely in the short term, so investment should be in inter-operability applications.

#### **7.6 Key Concepts relating to Education & Awareness:**

- Campaigning should be targeted
- A choice is required between broad, shallow inclusive design education and a specialist, deep approach

## 8 Appendices

### Further details of topics discussed in boxes

#### 8.1 Notes about Box 1. Citizenship and Disability.

The problem of defining the rights of access to digital information with reference to a barrier caused by a physical or other impairment is that it forces the advocate and/or the consumer on the one hand and the rights holder and/or supplier on the other to define "disability" as an "exception" to a general rule of non-discriminatory supply in the market. A person with an impairment is, first and foremost, a citizen and consumer in the market and not a special case for privilege on the one hand or discrimination on the other.

Impairment, or the disability that results from it - the terms are incorrectly used interchangeably - are usually defined either with reference to epidemiological classification or to functionality but in either case the boundaries are arbitrary and therefore multiple. It is possible for a person to be ruled not to have an impairment even though (s)he cannot undertake a wide range of peer normative activities.

The current UK definition can be seen at:-

[http://www.direct.gov.uk/en/disabledpeople/rightsandobligations/disabilityrights/dg\\_4001068](http://www.direct.gov.uk/en/disabledpeople/rightsandobligations/disabilityrights/dg_4001068)

If a right of access on a non-discriminatory basis is accepted then the need to define disability or impairment becomes redundant, to be replaced by measurable variants from the peer normative (see end note 2).

'Digital information systems' is a term that refers to any system that conveys an authorial intention by means of digital data transfer and it is therefore a much broader term than the traditional use of 'accessibility' to mean PC and internet systems and it thus includes broadcasting and telephony.

Access to information necessarily implies access through information to goods and services.



## 8.2 Notes about Box 2. Peer Normative Access.

Traditionally, the barriers to accessing digital information systems have been defined in terms of:

Usability

Accessibility

Skills development and

Cost

Where

Usability is defined as the extent to which a product or a system accords with normative human behaviour and

Accessibility is a sub-set of usability which results from an impairment or a lack of facility.

The problem with these twin concepts is that they require definitions which are problematic:

First, there is a considerable degree of controversy about the boundary between usability and accessibility

Secondly, it is possible for digital systems to be legally accessible but practically unusable.

This Report proposes that the benchmarks for citizen access should be based upon the concept of peer normativity, ie. the measurable,

- a) Quantitative use of goods and services and the measurable
- b) Normative task completion parameters.

### **a) Quantitative peer normativity.**

The quantitative peer normativity of the use of goods and services can be defined according to the sum total of citizens/consumers, a demographic

segment or a community of practice. Thus, accessing television broadcasting is peer normative for citizens/consumers as a whole, access to multiple entry diary systems is peer normative for receptionists in hairdressing salons and doctors' surgeries and access to emergency call services (panic buttons) is peer normative for people over the age of 90. The state or any other body can define quantitative peer normativity on the basis of changing practice so that, for example, the capacity to send and receive telefax messages was peer normative in business premises 20 years ago but is not so now. Peer normativity can be set as a percentage of a demographic segment which allows measurement of access.

### **b) Task Completion Parameters.**

The most obvious task completion parameter is the time taken to complete a task; but if a service is charged per unit of time then the longer the time the more costly the task completion. The crude concepts of usability and accessibility frequently exclude time and cost from their definitions whereas their inclusion allows the generation of measurable comparisons between the performance of an individual citizen/consumer or group of citizens/consumers defined with reference to distinguishing impairment factors and the peer normative group. For example, we might find from measuring task completion times that totally blind people using access technology take three times as long as the peer normative to purchase theatre tickets online; and we might go on further to say that this differential, as a matter of public or corporate policy, should be reduced to a factor of two.

The comparison in performance between an identified group and the peer normative enables the formulation of quantifiable policy goals.

### **8.3 Notes about Box 3. The Concept of Fair Price.**

The extent to which an activity is peer normative should dictate its differential price so that the more peer normative an activity the narrower the gap should be between the generic user and the user whose access is below a peer normative bench mark. Thus, the almost global access to television

broadcasting has resulted in a flat fee Television Licence except for those who cannot benefit from the whole range of material, ie. blind people, for whom there is a Licence concession.

Where an activity is highly peer normative or when an identifiable group cannot access the full benefits of goods and services, then the public sector should facilitate - but not necessarily finance - a fair price regime, eg. the braille version of a book costing £30 largely made up of colour plates should cost less to the blind or visually impaired person who only has access to the author's text and descriptions of the plates.

Price differentials also occur because of radically divergent task completion times using systems which charge by the minute. Again, the Government should ensure but not necessarily finance systems to reduce differentiation.

#### **8.4 Notes about Box 4. Content Regulation in a Global Market.**

Most content regulation (such as the provision on television of special services - audio description, signing, sub-titling - the creation of classes of content unsuitable for children, limits on free speech in respect of racial, religious or other incitement, data protection and state security limitations) is classically based on the place where the content is produced/published where content creators/publishers operate within the domestic law of the physical place from which they conduct their activities. The degree of regulation engenders creator/publisher migration to less regulated locations causing a competitive relaxation of regulatory pressures; but anxieties still exist which can only be met by exercising regulation at the point of consumption, placing obligations on the information channel provider and retailer. This is largely unexplored territory in respect of citizen/consumer access.

Most public policy is based on some variant of the public sector regulation of monopoly state or cartel operated spectrum-based television before 1990. It has already been shown that, apart from breaking their own web accessibility

rules, governments are not capable of regulating web sites even in their own jurisdiction, let alone in the jurisdictions of other countries.

Except for price regulation, the location of fixed telephone public kiosks and access to emergency services, the regulation of telecommunications has been weak, particularly in the mobile market.

### **8.5 Box 5. Supply and Demand Side Policies.**

Ever since the development of small business and domestic computer systems, UK Government policy has been firmly anchored to the assumption that improved systems uptake can be almost entirely solved by manipulating the 'demand side' of the equation. In spite of its own experience of the effectiveness of regulating access to television by Ofcom set down in the Communications act 2003, which has been a resounding success, it has been reluctant to extend access regulation even where (see Box 4) it can be effective in such areas as:

- Governments implementing their own policies on universal access

- Laying down citizen/consumer access as conditions of licence on banks, major retailers, public utilities etc

- Including universal access as a criterion in procurement.

## **8.6 Notes about Box 6. Broadcasting Regulation.**

The obligations of broadcasters to provide "special services" - audio description, signing and sub-titling - are set down in the Communications Act (2003) and are regulated by Ofcom which defines the proportion of content to be enhanced and imposes the obligation on broadcasters according to their 'qualifying revenue'.

The contrast between regulated and unregulated media is exemplified by the difference between regulated channels and unregulated electronic programme guides (EPGs). Because the 2003 Act set down regulations on special services to be provided within broadcast content, these were strictly observed but because the Act was silent on EPG access, the publishers made no provision; thus, people with impairments could not find the channels where there were special services.

## **8.7 Notes about Box 7. Authorial Intention.**

The central purpose of publishing is that the consumer as near as possible realises the authorial intention; the author would want the consumer to, for example:

- Distinguish between a satirical spoof and a piece of news
- Conclude that a web site's main purpose is retail rather than information provision
- Understand the author's indicated lexical order
- Acquire information, purchase goods, and complete a pro forma.

People with specific impairment(s) face difficulties when trying to realise an authorial intention:

- A congenitally blind person will have problems with pictures, particularly those which are peculiar to themselves (The Mona Lisa as opposed to a cookery illustration)

- People with severe hearing impairments may be able to read a musical score and monitor the tempo of a performance but will have difficulty with the finer nuances of the playing
- People with certain cognitive impairments may fail to realise the outline of the authorial intention because they cannot handle the detail.

This last example in particular explains the need to help people with impairments to realise the authorial intention in as near equivalent a manner as is possible.

Behind this understanding there lies a fundamental paradigm which posits that the way society is structured superimposes a disability on an impairment but this too easily becomes extended to posit that, conversely, all the consequences of impairment can be overcome by adjusting social structure and practice. This is why the first example is so important.

Whereas intermediaries may find it relatively simple to interpret the authorial intention when images are discussed in the text or when 100% captioning is possible with audio visual material, images which subtly support text raise questions of authorial intention, as does the need to simplify captioning or to simplify quantum's of data.

It is usually assumed, for example, that classifying data to accelerate the operation of bifurcating switch or screen reader access is a straightforward task but, in fact, taxonomy is an interpretative process not the application of rules of classification.

Nonetheless, there is much that authors can do in taking responsibility for clarifying their intentions to citizens/consumers (see Box 8).

The major objection to providing citizens/consumers with the capacity to adjust content in accordance with end note 8 is that it ruins authorial integrity; but an author can and should retain a read-only version of all publication that is available alongside the adjustable version.

## **8.8 Notes about Box 8. Basic Features for Widening Citizen Access to Digital Information Systems.**

### a) Information design

Granular - all elements capable of discreet manipulation

User interface neutral

Multi modal - multiple media which are self-standing and mutually supportive

Defaulted to simplest form - enabling Incremental enrichment

Access features defaulted to "on"

Clear lexical order

Clear genre identification

Architecture and taxonomy standard within a system and within a publisher family.

### b) Text Adjustability

Size

Font

Leading

Kerning

Justification

N-height ratio.

### c) Graphic Presentation

Background/foreground

Brightness

Size adjustability.

## **8.9 Notes about Box 9. End-to-end Systems.**

When the first audio description regulations were approved in the UK, there was no television set available to de-code the additional audio description, captioning and signing services.

Conversely, the legislature of the State of California set standards for automobile pollution control by catalytic converter before these were in industrial production, as a spur to technological development.

In general, regulation of information systems to generate the widest possible access has tended to focus on publishing rather than on reception. The EU is competent in the area of hardware regulation and is highly unlikely to regulate for access features.

## **8.10 Notes about Box 10. The Business Case.**

What is generally called "The Business Case for Accessibility" works best in mature markets such as mass retail and high penetration information services where a relatively small number of players are competing for perhaps only 1% of the market. It works much less well in R&D intensive markets with rapid product cycles.

Its extrapolation as a paradigm for all commercial transactions with respect to citizen/consumer access is based on three fallacies; that:

There is no competition for capital with other products or features with a higher return on capital

The feature will be supplied by a monopoly; and

There will be high uptake by the targeted demographic.



### **8.11 Notes about Box 11. The Optimal, the Generic and the Assistive.**

An optimal set of features is one which guarantees the maximum return on capital such that adding or subtracting a feature from the set would reduce the return. Some features which broaden access might be included in such a set of features but many which are required by population sectors with impairments will not.

In lieu of a loosening of fiduciary responsibility to shareholders, the cost for any desirable features for consumer access must be rationally derived so that they can be rationally added to the set of features or excluded from it.

The cost of adding a rationally excluded feature might be met from a variety of sources but at this point it must be decided whether to finance the feature through generic production or whether to realise it through a niche assistive technology source.

Assistive technology is the sector which supplies features to generic goods and services which enhance the access of people with impairments.

### **8.12 Notes about Box 12. Core Functionality in Digital Information Systems for Widening Citizen/Consumer access**

Channel/user interface choice

Inter-operability with access technologies

Text adjustability (see Box 8)

Colour choice (see Box 8)

Text-to-speech (TTS) and speech-to-text (STT)

### **8.13 Notes about Box 13. Walled Gardens and Inter-operability.**

“Walled garden” publishers claim that it is the very uniqueness of their information display and taxonomy which gives them a commercial edge. The argument has been resolved for the PC keyboard where no manufacturer now realistically claims that idiosyncratic features provide an advantage but it has not been settled, for example, in the case of television and other consumer goods remote controllers.

There are three basic objectives in applying uniformity of approach within information systems:

- Separating navigation from content

- Establishing uniform location for each series of buttons or links

- Using a common taxonomy and terminology for buttons and links.

**Separation.** Many information arrays jumble navigation/execution buttons with information links. This is confusing for many people of learning and cognitive difficulties and it also presents problems for screen reader users.

**Location.** Frequently a button for a function is in a different place on the screen (or shown in a different lexical order on a screen reader) not only in different sectors of the same family publishing enterprise but also from page to page within a sector.

**Taxonomy.** There is no standard method of classifying information but calling the same function the same thing is manageable, eg. inside an application the words: "cancel", "done" and "finish" are used interchangeably.

The concept of a publisher house style can effectively be extended to cover all three areas.