

Broadband & Disability : Are We Ready?

Speech given at e-Access'06

New Connaught Rooms, London

On 14th September 2006

by Kevin Carey

Director

humanity

22nd August 2006



“In our Tenth year working for eInclusion”

humanITY is a UK Registered Charity (1059921), founded in 1997 to foster digital inclusion across all platforms - computer-based systems, broadcasting & telecommunications - in the context of increasing hardware and content convergence.

We work as a not-for-profit consultancy, with varying rates for Government, Major Corporations and Civil Society which enables us to provide a free service for those who share our aims.

Our current daily rates are:-
Major Corporates - £1,250
Medium Companies - £1,000
Public Sector - £750
Civil Society - £600

Terms and conditions for contracts over ten days are negotiable.

We are always willing to hold discussions and undertake exploratory work free of charge.

All resources not covered by official or commercial confidentiality are published on our web site as free resources.

Our current activities include a wide variety of accessibility issues; we are:-

- Acting as advisers to the EU Commission and representing the UK Government on EU accessibility bodies
- Acting as advisers to Departments of the UK Government, including the DfES, DTI, DWP and DCA, on accessibility issues
- Working with Major Corporates on accessibility including Microsoft, Intel, The BBC and British Telecom
- Finalising proposals for a European Centre on Accessible Media
- Working with the Digital Television Group, Switchco and Ofcom on the accessibility of Digital Television
- Advising Ofcom on the accessibility of broadcasting
- Advising the DfES and UFI on the MyGuide (Cybrarian) Project
- Authoring a forward-looking accessibility prospectus that includes 3d printing and haptics
- Working with Futurelab on the accessibility of e-learning
- Advising RNIB, RNID and SENSE on accessibility issues.

For further information, visit our web site at: www.humanity.org.uk

or contact us at:

humanITY

108 High Street

Hurstpierpoint

West Sussex

BN6 9PX

Tel : +44 (0)1273 834321

Email: humanity@atlas.co.uk

Broadband & Disability: Are We Ready?

50 years ago when television was getting into its stride, the demand for it and the commercial possibilities of supplying that demand ran well ahead of supply specifically designed with the medium, so the schedules were made up of three basic strands borrowed from other media: cinema products for the large screen, which could be shown but were not entirely suited to the small screen; drama adapted from the stage to the studio; and radio 'talking heads' with pictures. Only the soap opera stood in its own right as a television product, to be followed by westerns and quizzes. It was only in the 1960s that the television play, the documentary and the crime thriller came into their own right.

You could say the same kind of thing now about broadband. So far its commercial *raison d'être* has been its ability to speed up and smooth out transactions which were initially designed for narrowband. We have not yet reached the stage where products are being made which particularly match broadband's capacity to deliver.

For disabled people the potential is enormous; but are we ready? As a sector, are we going to put up with what the industry and access technology sectors let us have, or are we going to grasp the initiative? In the area of speeding up and smoothing out there is evidence that we are alive to such possibilities as delivering large files for talking books and haptic objects; and video conferencing is set to improve in quality; but I want to suggest that there are two major developments, not really possible in narrowband, which could change all of our lives; these are:

- The switch from client side to server side transactions; and, closely linked
- The development of blended applications.

And I want to suggest that the disability sector needs to shake itself up in order to take advantages of what will soon be on offer; that it should be proactive and tough in its dealings both with the generic ICT industries but also with the access technology sector and Government.

Server side

For a variety of reasons including telephone tariff structures and the Microsoft business model, we have all been saddled with client side operations. Before the internet was a reality, we bought over-engineered hardware on which we ran operating systems and applications which had to be installed on individual machines or networks. Even now, most of us pay a substantial annual fee to maintain our system through the physical presence of a software specialist; we download patches for bug fixing, we use client side virus protection software and we are the victims of the hardware/software ratchet where processing power increases alternately with operating systems and applications upgrading. Even now that the use of the internet by most of us is approaching its tenth birthday, we still have to put up with this grossly wasteful mode. We only use a modest percentage of our potential applications; and we

are cursed with built-in obsolescence.

For those disabled people who then need another layer of application for accessibility, such as screen reader or switching software, there is another level of complexity so that the mean time between faults is shorter than for the already short span of the standard system. We might, alternatively, buy a turnkey solution but whichever route we choose, the cost is prohibitively high and the results fragile at best and frustrating at worst.

Now that broadband is becoming ubiquitous we need to turn this approach on its head. Sky television has already demonstrated the success of subscription models and I want to suggest that the same kind of model could be used for operating systems and software, leaving us with thin, relatively long-lasting, easily maintained clients. In this system, as now, we would pay for a license to access an operating system and suite of applications but we would do this by subscription. I already pay £80 per month to keep my office systems running in addition to the cost of upgrades and new applications and I would be happy to devote this to the initial supplier instead of paying for stuff in boxes and a maintenance engineer. Upgrades and patches would be applied once and once only at the server, virus checking with directories of spam and dangerous mail could be operated at a distance and for a special fee my preferred access solution could be delivered. On this basis, with a single supplier, there would be no argument about whose fault it was when there was an incompatibility problem; and any bug would be fixed for all users instead of the fixes being individually delivered.

The days are surely over when fixing a fault was a bit of fun. In the days when computing was new and largely confined to early adopters, we were prepared to put up with a little inconvenience as a form of play but, to quote the universal joke about software and motor cars, if cars were designed as badly as software we would all be dead. That's fine when you are filled with the pioneer spirit but I am now filled with weariness.

The initial problem with this proposal is not technical nor even financial. The core of the problem is a business structure that could deliver the service without infringing EU competition law unless, of course, Microsoft wants to play ball. In all honesty, there is no reason why it should, voluntarily, do anything. Its licensing model has been brilliant and in spite of what forecasters say about its decline, there is no point ditching it yet; there is a great deal more revenue to be squeezed out of making the world go Vista before thinking about a genuine subscription model. The key, of course, to changing Microsoft is not in appealing to its better nature, the key is in the public sector and major corporates writing user requirements that influence the product. If the political establishment and the telecommunications companies, together with civil society, insisted on user requirements that insisted on server side systems and thin clients that is what they would ultimately get. There would be some fascinating games of chicken along the way but the killer application will be television over the internet. We might be prepared for a long time yet to buy client side storage capacity but the guts of any on-demand archive are going to be in the server. If the public have the choice of buying something that

looks like Sky and buying something that looks like Microsoft, you don't have to be a genius to know which most of them will choose.

Assuming, for the time being at least, that Microsoft does not want to play ball, we have a regulatory problem to solve. The Government can't supply its own subsidised service because of EU competition law; and so it should lead a consortium including broadcasting, telecommunications, the software sector and civil society to sort out a legally compliant solution. It sounds like a lot to ask; but if half the effort is used for this model that has been used in the perennial upgrade ratchet, then there should be no problem. Business might want to use some of its CSR funds to pilot such a system. What is not viable is a continuation of the existing narrowband solutions in a broadband environment.

In advancing server side accessibility I am not only thinking about screen reader technology or the ability to operate switches. People with learning difficulties in particular could have access to predictive voice-in, parsing machines to simplify grammar and vocabulary and automated help with searching and dictionaries. One of the great problems for people with learning difficulties has been their imprisonment in client side applications designed by academia and the high-end market for computer-oriented people.

But people with identifiable learning difficulties which bring them into the disability ambit are only at the extreme of a spectrum. One of the great missions of broadband should be to crack through the barrier which is keeping about 1/3 of the population out of home computer use. At one end of the functionality spectrum are those people with serious special needs; at the other end there are the early adopters and those who now use complex computer applications almost without thinking about it; but there is that vast swathe in the middle which is either excluded or whose internet participation is tentative and frustrating.

Now you have heard me say this before but I will say it again. The public policy approach to this problem has been to look at the functionality gap between people and information systems from an almost entirely anthropocentric point of view; instead of blaming the bad design of systems they have blamed people for lacking skill; but, as we all know, training is a cost transfer from the producer to the consumer. If an individual can find anything in a hypermarket and can drive a car but cannot find items on the internet or operate a computer you have to blame the system not the person.

Going back to the reference I made to Sky versus Microsoft, what people want from their computers is a 'broadcast-like' experience which I define as follows:

- User control that enhances self esteem and self confidence
- Producer responsibility for malfunction
- Simple error correction
- Non ambiguity and non duplication of the screen experience.

In other words, it does what you say, it doesn't fall over when you press the button, you're not told off for what you haven't done and you can find what you want. In the age of on-demand product; if you can't find it, you can't buy it.

Broadband, however, is not just about consuming, it is also quintessentially about interactivity and it is in that context that I want to discuss Blended Transactions.

Blended Transactions

The most remarkable manifestation of the use of broadband for disabled people will, I think, be the use of blended applications. This means that two or more people can simultaneously access the same data and use the voice telephone at the same time.

So, for example, you are filling out a form and get stuck; you push an on-screen button and a call centre operative answers. She sees your partly filled form and talks you through the area of difficulty, or passes you on to somebody else. As she holds on until another person is found, you do not end up in a voice mail cul de sac with an incomplete transaction that costs you and the call centre time and money without the transaction being completed. For many operations this would constitute a kind of triage so that you would do the easy bits autonomously and only use the call centre for the difficult bits.

This kind of system would break down some existing accessibility barriers:

- First, people would not have to make a choice between on screen text and voice telephony
- Secondly, those with less self confidence could enjoy the kind of simultaneous access which would ensure that they were not alone
- Thirdly, people with visual difficulties or learning difficulties could customise the transaction, starting in either medium, proceeding in both and finishing in either medium.

Fortunately, there is more to life than filling in forms. The same kind of hybrid or blended technology could be used for always on virtual communities of support, for working out childcare and shopping rotas, for dealing with crises like emergency admission to hospital and even for having a good time. Because the disability demographic is heavily skewed towards the elderly the isolation breaking aspect is really important. Elderly people watch higher than average amounts of television and if they could part substitute an always on broadband community network, they would be less lonely.

Another area of importance in hybrid transactions is education. The Government's e-Learning strategy was spot on in most of what it said it wanted but the problem with its vision was that it was narrowband in its outlook. eLearning that is conducted on-line only, totally autonomously, tends to benefit those with confidence and self motivation. The introduction of friendly facilitation would greatly enhance the potential of eLearning.

A natural development from this is the use of friendly facilitation in all sorts of areas such as joint creative projects where the human touch could be introduced at periods of pressure or crisis or simply to sort out a problem of dependency between different people in the project.

Of course, none of this is going to be of much use without funding but I believe that there is a funding model that could expand the use of ICT by disabled and disadvantaged people without radically increasing the budget.

The public sector, in collaboration with civil society, should work out an economic model based on server side applications and thin clients and agree a basic package of support for all citizens in need, not just disabled people who are in the Access To Work programme. If we are living in the information society then access to information is a non discretionary item, it constitutes a socially normative activity where failure to participate is seriously excluding, exacerbating already existing socio-economic disadvantage.

In such a system the public sector would pay a basic subscription to a supplier and would under-write a thin client on a lease, instant replacement, basis. Individuals could then top up with special services or non-standard access such as mobile wireless until it becomes socially normative. This would save a huge cost in over-engineered hardware, installation, maintenance and upgrading. If the Government is really serious about getting more disabled people into work and cutting down on exclusion then the current, narrow, expensive Access To Work system will need to be reformed.

In saying all this I have gone slightly outside the remit of my Report on Broadband and Disability but it is important, if things are to change, that we face the new situation maturely and honestly. During the past quarter century the ICT sector has been in a state of permanent revolution and this is not going to stop; but competition will get tougher as broadcasting, computing and telecommunications converge and we will have to become much better at talking to ICT industries, we will have to be much more persuasive in dealing with Government and, in our own back yard, we will have to be much more demanding of the accessibility sector.

Instead of being arch lobbyists for a better world made by somebody else, the disability sector will have to become part of creating it.