



Digital Britain Interim Report

An Education Response to DCMS / BERR

The Digital Britain Interim Report has been discussed at recent meetings of the National Education Network standing groups. We are impressed by the breadth of the Digital Britain concept and agree with many of the action points; particularly where they recognise the importance of learning at all ages, safe and secure access and strategies to ensure that digital technologies are implemented and used effectively.

We would like to respond on behalf of the National Education Network (NEN), but note the response date of 12th March. Within this timescale we submit a relatively brief note describing areas that we feel should be considered in more detail.

We feel that there are opportunities to build on nine years of substantial investment by central and local government that has connected over 99% of UK schools to a high-quality, broadband infrastructure. This schools infrastructure has a capacity an order of magnitude higher than that described in Digital Britain, with up to 30,000 establishments located in the community, even those in remote, rural locations. Broadband is helping to transform learning and includes personalised learning and anywhere, anytime learning. Digital Britain can help spread this learning across the whole community, by ensuring that broadband access is universal, of high quality and is safe.

Within our Content, Technical Strategy and e-Safety standing groups we have education, local government and telecommunications expertise with academic, management and practitioner experience. We ask if there could be an opportunity to submit further material after 12th March or even better would be to bring a small group to meet with the Digital Britain team.

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The National Education Network

The National Education Network (NEN) is the UK schools' broadband infrastructure. It serves over 99% of all UK state schools with a high capacity, reliable broadband network plus content and support services. The NEN comprises the broadband networks of the ten English Regional Broadband Consortia (RBC) and the regional infrastructures of the devolved administrations of Wales, Scotland and Northern Ireland.

The National Education Network is a dedicated education network; it harnesses the power of broadband technology to deliver unique content and services and enables users to share learning resources. The National Education Network provides many benefits to schools and offers a secure environment where issues such as e-safety and copyright are managed and where teachers, pupils and parents can work confidently together.

The National Education Network is a major ICT project funded by the DCFS, the devolved administrations of Wales, Scotland and Northern Ireland and Local Authorities. The NEN has been delivered on-time and on-budget and to a much higher specification than first envisaged in 2000.

The NEN standing groups on Content, e-Safety and Technical Strategy comprise representatives from each of the English Regional Broadband Consortia and from the Welsh, Scottish and Northern Ireland devolved administrations. We work closely with Becta, DCSF and JANET(UK). The Groups' objective is to advise on the strategies required to ensure such networks interoperate, provide best value and support teaching and learning.

National Education Network Services

We suggest that many of these NEN services, and the way we have developed them and their governance might be relevant to Digital Britain:

- Typically, primary schools are connected at up to 10 Mbps, and secondary schools at up to 100 Mbps. These connections are highly reliable, symmetric and uncontended and utilise fibre, copper and wireless as appropriate.
- The NEN provides connectivity to all schools in the UK irrespective of urban, rural, island or highland location. UK coverage is well over 99% of state schools, including good connectivity to virtually every village school.
- There is a concern to connect children and young people in wider settings including home, residential homes, looked after children, youth clubs.
- The regional broadband consortia (RBC) backbones typically have a capacity of 1 Gbps, with resilient topologies.
- The 13 regional networks are interconnected via the universities' JANET network which also offers aggregated, best value Internet transit.
- The NEN is a private network and therefore easier to keep safe and secure.

National Education Network

- Services provided over the NEN can include video conferencing, security, identity management, virtual learning environments, teaching and technical advice and support.
- The education and cultural sectors, with commercial providers have produced and identified a wide range of digital content. The National Archive, SCRAN are but two examples.
- The RBCs can assist local authorities in the “Intelligent Client” role in procurement.
- NEN colleagues have experience of the design of optimum networks despite rapid changes in telecommunications products and prices.
- The NEN community has considerable governance experience in bringing together up to 17 local authorities in a regional broadband consortium to gain purchasing power and share expertise.
- The wider public sector is increasingly collaborating with the RBC networks to share the high-quality facilities available at excellent value for money.

An Ongoing Challenge

It must be strongly stated that schools broadband is an on-going piece of work.

- Demand for broadband capacity is increasing by 30% to 50% pa as new educational uses come on line, including personalised learning, videoconferencing, streaming and peer-to-peer communications and collaboration.
- Networks are continually being re-designed and re-procured to achieve improved capacity, reliability and reach as dependency of learning on broadband increases.
- We need to ensure that funding is in place over the next five years to ensure the strategic development of the broadband infrastructure and the educational services running over it.

Suggested Areas for Discussion

- Achieving a world class broadband provision and usage for education.
- Building on a UK-wide network which reaches every rural village and town community. Given Alastair Darling's quote: "This a time when you have to support the economy, you will see us switching our spending priorities to areas which make a difference." (Telegraph Online, 19 Oct 2008) and the subsequent decision that £220m in capital spending for the Universities sector has been brought forward from 2010-2011.
- Exploring strategies such as integrating locally or regionally developed networks to create a national public sector network.
- Enabling the better long-term design of networks in changing regulatory, technology and pricing environments.
- Ensuring that schools broadband is sustainable, and thereby can continue to contribute to Digital Britain.
- The breadth of digital content and how it is created both by suppliers and increasingly also by users.

- The need for assured identity to protect users.
- Enabling children and young people to lead digital literacy – but in a safe environment.
- Pupils have choice as to where and when to learn, how the universal service commitment for broadband will reduce the digital divide.

Outline Comment on the Digital Britain Interim Report

The foreword by Stephen Carter

We welcome in the recognition that the digital information and communications sector touches all aspects of our lives, clearly our children and young people lead in this regard and have much to teach us.

We agree that we cannot rest on success; in particular education is continually striving to upgrade its wide area networks in response to rapidly increasing demand from pupils, and indeed parents, for learning and access to information.

It is also good to see the reference to the education and skills system's influence on the capabilities of those entering or working in the sector. Quality of use is as important as quality and capacity of access.

Children and young people must all have access to high-quality content, but we would also wish to emphasise the importance of content generated by users in collaboration and communication and the importance of safe online environments appropriate to age and experience.

Upgrading the underlying infrastructure is important, but it is also essential to enable agencies such as the education and public services to design optimal, high performance networks over this infrastructure with more accurate information on future technical and regulatory developments.

Digital Britain Introduction and Executive Summary

In general we agree with the picture painted of how digital technologies are and will continue to transform our lives. Where we urge caution is in the degree of difficulty presented by the need for every citizen to be included in our planning. Even our children and young people, who are major technology users, vary hugely in their understanding of what is possible and particularly in the high level of social awareness required to keep them safe on line. Technological advance must not exclude the elderly.

The recognition that the wired and wireless infrastructure will need to be upgraded is important, and that this will require an active and strategic approach from government. However we need to say that the requirements of education are already beyond what is being planned as "Next Generation Access". The DCSF set the National Education Network a target five years ago of a 2 Mbps, symmetric, uncontended connection to every primary school and 8 Mbps for a secondary school. This was achieved for 99% of schools in 2007. Demand from schools has exceeded these targets and we have adopted 10 Mbps for primary and 100 Mbps for secondary as working targets. With personalised learning and increased multi-media content, we fully expect to revise these targets upwards within a few years.

Fortunately the education sector has been able to contain costs through detailed work with suppliers to understand the best methods of delivery. The main strategy

has been to aggregate individual schools broadband requirements up to local authority and regional levels, reducing costs considerably. We have also aggregated schools with Higher and Further Education at regional and national levels, for instance in the purchase of Internet transit by JANET(UK).

Funding regimes must promote this strategic approach, and in this case, resist pressure to devolve funding to schools.

Digital Britain: Five Objectives

The Five Objectives for Digital Britain are fine as high-level statements. We would suggest that the definition for digital content is too narrow and need to include user-generated content and a discussion of quality, content discovery and provenance.

Digital Networks

Upgrading and modernising our digital networks is essential: This must include both the underlying infrastructure and the extensive overlaying networks constructed by education and the public sector, amongst others. Where appropriate, aggregation of these overlaying networks should be considered, particularly to enhance their sustainability and to bring advanced connectivity to smaller organisations that could not engage otherwise with Digital Britain.

Comment on Digital Britain Actions

Within this time scale, we cannot comment in detail, but we should like to flag some issues that we feel would benefit from a more detailed dialogue.

Digital Networks

Action 1: It is suggested that the Strategy Group includes the education sector.

Action 2: There are a number of areas such as dark fibre, duct sharing and charging which currently inhibit the implementation of optimal networks. In many cases education has made large investments to connect rural village schools, either by building local loop unbundled structures or overcoming dig costs for fibre. We should consider how this investment could benefit the wider community.

Action 9: We would emphasise that rural communities must not be disadvantaged through a switch to digital delivery of radio.

Digital Content

Digital content is central to learning in the 21st century. The report recognises the position of “creator” and “consumer” to which we would add, as a third fundamental position that of the “learner”. Learners may indeed be “consumers” and are indeed increasingly “creators” but for much of the time they occupy a different position which neither of these categories captures. As the report notes it may be that rules, business models and behaviour all need to change in the new digital and global environment; including ‘learning’ as a basic category would, we believe help that model to develop most effectively. We would also note that placing young-people at the centre of such work will bring a dimension of understanding and aspiration that older people, however skilled or far-seeing, cannot bring.

Action 10: We welcome the recommendation “to foster UK creative ambition” an aspiration central to school education.

From our education perspective we are somewhat surprised that reference has not been made the range of very high quality digital content being provided by the Museums, Libraries, Archives and Galleries sector, all DCMS responsibilities. This content has considerable learning and academic value and indeed through digital access the education sector including schools can assist in forming it for overseas markets and to aid development priorities. Content from this sector also contributes to the large leisure interest in history and genealogy, increasingly important dimensions of “citizenship” and substantially to tourism and students from overseas.

While user-generated content has yet to develop to the point where it’s impact on the economy is fully understood its exponential increase - in depth and breadth - should be recognised as a significant content generator of the future. In this observation we would also add that real-time media such as email, video conference, text and data entry are recognised as content and potentially just as important as more obviously publishable media.

Harvesting records - whether text, image or sound - from all the communities in the UK, enabled by broadband - will bring new realms of knowledge; will the UK be ready with the harvesting and analytical tools to read it, form it and add to the skills levels in the UK or will we depend on sources and services from other countries?

The UKs cultural sector provides digital access to world-class resources and the NEN is working with many institutions to bring them effectively to schools and homes. The challenge is to develop search and discovery methods that work across collections and can take this work further in an extensible manner at individual and institutional levels.

Action 12, Action 13: In the section on intellectual property and copyright we would like to express our support - as we have done in the NEN responses to the ‘Copyright Futures’ consultation - for the Gowers Review recommendations of “balance”, “format shifting” and the extension of exceptions to permit access through “learning platforms” (VLE) - a vital component if “home access” is to be meaningful.

We have suggested a much greater clarity regarding copyright regulation and different media in what is increasingly an instant-action, “multimedia” world. We also noted that the term “private study” which underlies ‘fair dealing’ and is used in the CDPA Act is difficult to relate to the learning culture of today and the group situation of the classroom that learners and teachers work in everyday. For young people “private study” or “independent learning” is a goal and not a starting point that copyright needs to be aware of. The move between types of learning and the groupings in which learning takes place: working on your own, with parents, with a teacher, peer to peer, in class, with your buddy school and with children in others countries are not a linear progression to be measured, as licensing commonly does, as market extension but as elements in the necessary education provision and the underpinning to “personalisation”. Time and again employer reports highlight the need for young people to have skills of communication and team-working – something copyright can, unwittingly make very difficult in schools. A new world requires a new framework.

These are amongst the considerations and measures that we believe are necessary for schools and parents and carers - you mention “home access” - to be able to use the opportunities of broadband deployment while developing “digital literacy” to the point of understanding that would support regulation and the rights of owners balanced with their own aspirations as users and learners, leaving “civic

enforcement” as a rarely used point of last resort and not as a main focus of what is essentially an education and social programme.

If DRM or other technical measures are being discussed we would ask for consideration of their potential effects across education networks designed for young people, the safeguarding agenda and support for ‘Every Child Matters’ agendas.

We are concerned that understanding of copyright will be limited to an understanding of a new rule set developed by industry and industry and may lose engagement with the needs of digital literacy that are highlighted elsewhere in the report. The NEN uniquely provides a secure environment in which to build trust between users, rights owners and intermediary services. The NEN has five years of successfully providing creative school licences for music (Audio Network) and archive film (British Pathe) for all schools in the UK and we would suggest that this experience is considered.

In general we believe there is a direct correlation between an informed and content-literate UK community and the uptake of, including payment for, digital services and content. The strategies suggested in the section on “Media Literacy” are integral with the effective market development of content for UK and global consumption.

Universal Connectivity

Action 17: While accepting this action as necessary, we are concerned at the apparent limitations “will include options up to 2 Mbps”. For a pupil studying at home, with the contended circuits currently available, this may well limit the work that can be done in many locations that are remote from a telephone exchange. We hope that a more precise service specification is provided in the final report to include upstream and downstream bandwidth (both headline and minimum) and suitability for streaming and conferencing.

Action 19: The appointment of a Digital Inclusion Champion is applauded, and should include a detailed study of the barriers to uptake and quality usage that exist.

Equipping Everyone to Benefit from Digital Britain

Action 22: The ambition for a National Media Literacy Plan is welcomed and we support the intention to “recommend a new definition” that might reflect more fully the learning dimension of digital use as well as the delivery of services and growth of audiences. An effective Digital Literacy framework for the UK will depend on building on the general concepts of learning and social action involved as well as on a programme of particular skills and knowledge. The references to the Rose Review in this respect are very welcome, based as they are on a holistic view of experience and curriculum response beginning with the very young and the sort of active learning that will support industry’s need for communication, interpersonal and transferable skills. The Byron Review also presents this challenge of skills being embedded in wider understandings to ensure that all young people can work with the digital world safely and as contributing and responsible citizens.

The report’s three categories of skills and competencies indicate some aspects of the progression required within education, training and industry to meet the challenge of empowering the UK and reaching everyone wherever they are and wherever they may be in the UK. The reach of the NEN to 35,000 communities throughout the UK can assist in this process.

Enabling millions of people throughout the community to advance their media literacy skills will take time and resources, but is as important as developing the infrastructure and must happen at the same time. Empowering teachers and the workforce will require a cross-agency approach if both established teachers and those entering into the profession are to keep up with changes to the technology, regulation, and business practices in a global context.

The NEN, with the encouragement of BECTA, has begun to map all its work to the needs of Digital Literacy in a similar manner in which it has already done with e-safeguarding. We would welcome opportunities to work with partners in the education sector to inform the National Media Literacy Plan.

In our discussion of 'Digital Britain' we have wondered if this process would be served by bringing together agencies serving the school and FE sector including schools and Local Authorities on the focus of Digital Literacy to help inform the National Media Literacy Plan and form the channels through which it might be implemented more effectively.

The discussion and participation on child internet safety is vital. The RBCs, devolved administrations and Becta have played significant roles over the past twelve years in this area. The experience includes policy, support and guidance, technical safety features such as filtering plus the equally important area of helping to empower children through education. RBCs also develop awareness and responsible attitudes to on-line activity not only amongst school staff but in the wider community.

References

JANET(UK): The managing agency for the UK-wide JANET network.
www.ja.net

National Education Network: Using broadband for learning.
www.nen.gov.uk

Scran: Scottish online resource for educational use by schools, further education and higher education. It presents 360,000 images and sounds contributed by museums, galleries, archives and the media.

<http://www.scran.ac.uk/>