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Expertise: A Scoping Study

(working paper)

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I. Introduction to the Scoping Study

i. Key questions/Key frameworks

This scoping study was undertaken for the CCN+ Digital transformations, communities and culture project. It explored how questions of expertise intersect with issues arising around culture and community engagement with digital technologies as the latter become increasingly pervasive. The study interrogated expectations around, barriers to, and ways to develop and encourage, more active and more skilled forms of use amongst cultures and communities of users in a digital era. To this end it asked what kinds of use are regarded as 'expert', how expert computer use engages other forms of expertise, knowledge, competency, and cultural capital. It set out to explore a range of ideas about what kinds of use are desirable, or expected, or cultivated; for instance, is basic literacy or the ability to actively engage prioritized? If so at what cost to over forms of use? It asked how pre-occupations with safety and security impacted have agendas to encourage fuller and more active – and more creative - forms of use.

The work was undertaken to gain a better understanding of how and what kinds of computer use and knowledge are developed or could be developed to inform further work on the CCN+ project, both specifically around users, and across the themes we are investigating more broadly. Our conclusions (briefly set out below) are to suggest that expectations (about the way users engage with digital technologies) can be raised – and we also begin to suggest routes to explore how this might be done in specific arenas.

Our study was developed to cross-cut and inform other work on digital transformation being undertaken across the CNN+ network (and of course elsewhere) in a series of spheres relevant to cultures and communities (in health and well-being, cultural production, digital heritage and everyday life contexts for instance).

We set out to do this by asking a simple set of questions: **What is expertise? How is it different from literacy? How can people be helped to become more expert with digital technologies? What does building expertise in a particular context mean? And what can digital experts produce in the contexts of cultures and communities?**

We intended that the study should:

- **Reassess the policy framework** and its connection to, and use of, particular frameworks for thinking about use.
- **Listen to the voices of users** (speaking as organizers and service users) in various contexts. Their opinions and understandings of use and its possibilities, and understandings of the limits and barriers to use in particular circumstances operate as commentaries on existing policy and existing use conditions.
- **Explore various academic understandings of levels and forms of use** (via interrogation of literary, native debates, and expertise itself from a series of different – and

inter-disciplinary - perspectives including those of social construction of science and technology, communications and computer science).

Through this series of activities the intention was to begin to:

· Gain a better grasp of key areas where further investigation is important – and of key questions for future research.
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· Critically interrogate how various factors – e.g. terms used, naturalized priorities and assumptions, goals set in one arena that bleed into others, may tend to direct research in certain directions and may thereby produce neglect in other areas.
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· Explore how framing questions of use in terms of expertise might produce new questions and shape new research priorities.

ii. Literacy as the norm?

One key starting point for the scoping study was a question about the degree to which issues of use-in-general have been assimilated into a discourse focusing very heavily on 'digital literacy'. Our concern was to ask what a focus on digital literacy might imply about levels of user competency - amongst the population in general and amongst particular groups. For instance, what kind of level of user competency, skill, expertise or computer knowledge, might be considered desirable – or 'good enough' for a particular group? What does the idea of digital literacy as an ideal say about the kinds of skills being prioritized: for instance those involving actively making media, those involving various forms of understanding, or those involving understanding internet risks or digital danger rather than those that might be involved in creative risk-taking? And what does a digital literacy agenda imply about how particular groups may lay hold of or gain skills and knowledge; for instance how do digital literacy debates and frameworks intersect with 'digital native' debates with their (ambiguous) focus on generation and/or age? These questions were pursued through the three routes set out below – and our findings did confirm an over-riding concern with safety, security, and base-level competency. The first two issues in particular heavily inform policy around digital transformation.

iii. Cultivating Expertise

The second key entry point in the study was then to step outside of the discourse of digital literacy and to ask how questions of use, skills, competency and knowledge could be explored through the vector of expertise. What is meant by digital expertise, how is expertise itself understood and investigated in multi-disciplinary ways? How can a shift towards expertise as a criterion for exploring engagement enable a re-assessment of how goals and priorities for developing abilities and attitudes towards use in cultures and communities might be understood? Is expertise a better tool for thinking through needs and generating engagements with digital technologies and their transformational possibilities for societies and cultures? Considering use – and expectations for use - in terms of expertise and its generation demands re-thinking how users may become experts, what 'computer' expertise is – and how it intersects with other skills and types of expertise people already have.

iv. Activities Undertaken

Work undertaken on the Scoping Study was divided into five parts:

1. Exploring Academic Understandings of Expertise: The study mapped out how digital media

literacy and expertise is understood in academic studies across a series of key disciplines – including computer science, media and communication studies, cultural studies and education[1].

2. The report scanned the policy landscape. It identified framing legislation documents and policy frameworks of the European Commission, considering UK policy actors and bodies. It explores several projects undertaken by civil society organizations, which implement EU and UK legislation and/or contribute in other ways to the framework within which debates around necessary skills and engagement for digital use and competency are held in the UK. **The optic here was that of expertise: it is this question that might lead to a reassessment of how 'literacy' discourses work.**

3. A series of pilot interviews, visits, and other empirical work, was undertaken with community organizations in and around Brighton and Hove. These interviews were designed to consider multiple framings of use and expertise in everyday life and culture and community contexts.

We conducted a series of pilot interviews and other activities with professionals and users at various projects which enable access to digital technologies for groups that may be marginalized, or have particular needs – and researchers also spent time at some of these locations observing and talking with users and helpers.

We also talked with groups who exploit digital technologies to undertake cultural activities.

These citizen voices – including expert and non-expert users were sought in part because they offered a commentary on official policy and what it provides (or does not provide) and gave a different insight into user priorities. Their input was also valuable in beginning to compile an index of good practice and to ask how various approaches might be investigated further - and generalized; **a key issue for us is how community engagement practices in various zones can more effectively mutually inform others.**

Interviews were organized with:

- · **Age UK Brighton and Hove** (workers and users interviewed). We are working with the Age UK Brighton and Hove IT Drop-In Centre, which aims to help users with computers, the internet, mobile phones and digital cameras.
- · **Worthing Society for the Blind** (organizers and members of a craft workshop interviewed). The objects of the Worthing Society for the Blind Charity are to promote the relief, general welfare, entertainment and provision of services including financial assistance, for persons who are blind or partially sighted living within the boundaries of the Borough of Worthing.
- · **The Migrant English Project** (organizers and users interviewed). The Migrant English Project (MEP) provides free and informal English lessons for refugees, asylum-seekers and migrants.
- · **Brighton Museum and Art Gallery** (staff members involved with digital operations interviewed).
- · **The Sussex Community Internet Project** (SCIP): (staff member/director interviewed).
- · **Fairlight School, Brighton** (IT staff and relevant teachers interviewed).

4. Animation Workshop School Series

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1   Indicative areas mapped included: Current initiatives of the European Commission on Media Literacy, such as the Audiovisual Media Services directive (AVMS); current initiatives in the UK on digital literacy; Programmes focusing on the protection of minors and learning, such as Ofcom, UKCCIS and the Byron Report Becta and FutureLab; the Digital Economy Act, initiatives led by the Department of Culture, Media and Sport (DCMS) and various advocacy organisations, eg. Media Trust, Age UK, RNIB.

The study did not set out to explore explicitly issues of formal pedagogy and digital expertise – but was rather interested in extra curricular forms of learning and crossovers between classroom and everyday life skills for developing a creative practice with digital media. To explore this we organized a series of four workshops exploring animation and computerized story telling, between a local Brighton School (Fairlight Primary School), Sussex School of Media, Film and Music, facilitated by Jane Dickson of Brighton City Centre Partnership for Education[2]. Four workshops took place (at the school and at Sussex). They were organized by to give young school children a chance to explore their sense of 'becoming expert' at making things with digital technologies, and to enable discussion with parents and children about their sense of computer expertise outside the official curriculum to be undertaken. It also provided an introduction to university to children from a school where many will not have experienced this as an option. The two films produced by children are available on the CCN+ website.

5. 'Expertise': A one day symposium

A one day symposium held at the University of Sussex in November 2012 (also supported by the Centre for Material Digital Culture) brought together; national and international academics from multiple disciplines (including those already engaged in the CCN+ network and those recruited into it through the symposium), professionals from various cultural organizations (including Brighton Museum and Art Gallery), medical education institutions (e.g. the Terrence Higgins Trust), and new media industry professionals. Those speaking were asked to comment on their sense of expertise as it related to their organization or their discipline; their interventions form part of the research (currently being collated and will be published on the Expertise Blog)[3].

In the following sections we explore in greater details aspects of some of the work done over the study period.

Part II: Levels of Use?

i. Introduction: Terms and Frameworks

The Scoping study considered how terms like (digital) literacy and (digital) expertise, are invoked in policy areas and by representatives of particular communities, and how they are understood by different groups of users – accessed through pilots studies.

Terms such as 'digital expertise' or 'digital literacy' are invoked broadly in relation to digital technologies - in policy spheres, in the academy, and across specific areas – notably education, industry, creative industries, third sector, community organizations. Along with other labels (notably the much invoked term 'digital native') they come to frame debates around digital transformation and its operations in many areas of cultural life. In particular, we conclude that these terms are used in relation to three key questions:

· In relation to **unlocking the potential** digital technologies may have to be used, by individuals and communities, to benefit communities, community groups, particular sectors of the community, and to build new forms of cultural activity. Here digital literacy or expertise – which is variously associated with the idea of education, training, creativity, or

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2 Animation workshops were designed by designed by Kate Howland, a computer scientist in collaboration with Caroline Bassett, Lee Gooding (MFM digital labs), and Fairlight staff.

3 Expertise? (15TH NOVEMBER, 2012. UNIVERSITY OF SUSSEX) A scoping workshop exploring expertise in the context of digital transformation in relation to culture and communities: A day-long workshop and symposium exploring Expertise and Digital Transformations. Part of a programme of activities designed to better understand what skills, knowledge, and competencies, cultural organizations and communities need to enable fuller and more autonomous engagements with digital media. http://expertiseepsrc.wordpress.com/workshop/]]

individual/group capacity – relates to how people may be helped to become better able to understand the implications of digitalized forms, better able to exploit digital tools (perhaps to create with them), and better able to understand how to operate and organize within digitally transformed environments.

- In relation **to barriers to the fulfilment of that potential** – variously defined - for various groups including those systemically tending to be excluded. Digital literacy is thus said to be lacking for various groups – and questions here concern how barriers to access to digital tools/environments (non literacy, non-expertise) can lead to further forms of exclusion. Digital expertise is similarly reported as lacking in some groups – some theorizations of digital native-ness for instance presume only certain groups can achieve true expertise.

- In relation to **risk, danger and appropriate use**. Users may be defined as experts or as literate if they understand, not only what digital technologies can do, but how they may be used in harmful ways, or how they may be exposed to risk through use. The obverse of this is that at times computer 'experts' are defined as over-skilled (hackers) and may be assumed by some to pose risks to the stability of networks or the security of intellectual property. Talent in this area has often tended to be negatively valued by various authorities even while it is valorized by particular user groups. Thus when digital technologies' potential for creativity is set against a potential risk to property, property tends to win out in policy arena. The outcome of this in the 'real world' is somewhat different - as the extent of downloading and ingenuity of downloaders would suggest.

The adoption of one or the other of these frameworks will tend to influence what forms of use are desired. That is they temper demands that might be made, expectations and assessments of potential and possibility, and change ideas of how communities and cultural groups and organizations within communities might best exploit digital possibilities. They may also determine whether the expectations or desires or demands are made for base level literacy or for a more active and engaged mode of use – explored here as expertise. In relation to this we note that though the terms expertise and literacy are sometimes inter-changeable in policy reports and in general use the latter is far more often used in debates around basic access (inclusion). It is rarely used - but is an under-lying framing (with a negative valence) - in discussions of 'risk to the system' set out above.

The policy bodies whose work we explored here have tended to stress questions of literacy - for a series of different reasons, both concerned with their remits and perhaps also due to particular understandings of technology and its use potential (see below for further consideration). Our focus however – as will be further explored below – is on expertise.

ii. Policy Framing Use and levels of Use

European Commission frameworks

Two recent major European initiatives have guided or intersected with programmes addressing questions of digital literacy and the audio visual industries in an era of convergence: the Audiovisual Media Services directive (AVMS)(2007) and the Digital Agenda for Europe (2010). The context of this activity were key European initiatives on the internet emerging from the 1990s on (see for instance Europe and the global information society: Bangemann report recommendations to the European Council, 1993) and activity around media literary in particular. More recently, the European Commission initiative on media literacy responded to requests to address media literacy made by the European Parliament and industry, together with a number of Member States (Media Literacy website, 2012). Between 2000 and 2005, in the framework of the Lisbon Agenda, the Commission organised three workshops on Media Literacy and provided 3.5 M€ of financial

support to some 30 projects (through the eLearning initiative, see Glossary) (see Appendix 1).

The Audiovisual Media Services directive (AVMS)

At the end of 2007, the Commission adopted a communication on media literacy which adds a further building block to European audiovisual policy and links to the provisions of the Audiovisual Media Services directive (AVMS General principles, 2012). The AVMS directive governs EU-wide coordination of national legislation in several areas, including accessibility for people with disabilities and the protection of minors. Article 33 in this directive introduced a reporting obligation for the Commission on levels of media literacy in all Member States. In 2008, the Council and the European Parliament adopted respectively conclusions and an own initiative report on media literacy. The implementation of the European policy is regulated through independent regulators, which in the case of UK is **Ofcom** (see below). The Audiovisual Media Services Directive is the European regulatory framework for broadcasting. It amends and replaces the Television without Frontiers Directive, providing less detailed but more flexible regulation. It also modernises TV advertising rules to better finance audio-visual content.

Digital Agenda for Europe

Apart for the AVMS Directive, the other major European initiative that has guided programmes addressing digital literacy, skills and inclusion in the UK (as a member state of the EU) is the 2010 **Digital Agenda for Europe**. The Digital Agenda for Europe is one of the seven flagship initiatives of the Europe 2020 Strategy, set out to define the key enabling role that the use of Information and Communication Technologies (ICT). The overall aim of the Digital Agenda is to deliver sustainable economic and social benefits from a digital single market based on fast and ultra fast internet and interoperable applications (see Appendix 1). The target groups of the proposed interventions amongst European citizens are primarily youngsters (through ICT education) and disabled people. Significantly, the Agenda aimed to implement the principle of universal (inclusive) digital service linked to the Universal Service Directive, which sets out web accessibility standards.

UK frameworks contextualizing approaches to digital literacy and use

The question addressed in relation to the UK context was simple: Who legislates or frames questions of internet use – **and therefore influences the setting of desirable levels of, qualities of, enabling of, access to, digital networks** - in the UK? In the UK key bodies engaged with developing policy around digital literacy and consumer and citizen access and use include various government departments and various other actors – notable here are Ofcom, the UKCCIS, the Digital Economy Act and Becta. These actors have been asked by the government to access the needs of local communities and disadvantaged groups of the British society, in order to implement the AVSD directive aims and to act upon the wider objectives of the Digital Agenda for Europe, in the UK. These actors and actions take up questions of use in different ways. They can be broadly categorised to encompass three key areas:

- Questions of security online when it comes to children and education;
- Questions of copyright enforcement and innovation in the media industry;
- Questions around public engagement and participation of disadvantaged groups.

Each of these is taken up and explored further below:

A. Children and education: Programmes focusing on the protection of minors and learning

Three important actors, albeit operating at different scales, to date appear to be key to the formulation of public policy, relating to the safety of children online and digital learning. These actors additionally provide charity organisations and community media organisations with evidence so that the latter can best target their initiatives (see below). These actors are Ofcom, the UKCCIS

(and the Byron review), and Becta (and the FutureLab handbook).

Ofcom

Ofcom, the British communications regulator which regulates the TV and radio sectors, fixed line telecoms, mobiles, postal services, plus the airwaves over which wireless devices operate, has been established as a statutory actor with the duty to promote digital media literacy (see Section 11, Communications Act, 2003). As part of this conducts research, it conducts research (with the support of Universities, e.g. LSE)[4] and further supports people working in this area to develop and **promote** media literacy (For more the regulatory functions and duties of Ofcom, see next section). Apart from conducting surveys and producing the annual report, Ofcom furthermore supports a number of UK and international Media Literacy websites focusing on safety and security online and on Understanding media, such as the Centre for media literacy and the BFI (see Appendix 3 for a complete list of websites).

Media literacy according to Ofcom's definition is: 'the ability to use, understand and create media and communications'. To this end, it focuses on two elements :

- · Providing an evidence base of UK adults' and children's understanding and use of electronic media.
- · Sharing the evidence base with a wide range of stakeholders internally and externally and support their work via research.

Specifically and in relation to children, Ofcom carries out an annual survey and report of children aged 5-15 and their media literacy, with trends over time since 2005. In the latest (Ofcom, UK children's media literacy, 2011) report, it is stated that:

> Media literacy enables people to have the skills, knowledge and understanding they need to make full use of the opportunities presented both by traditional and by new communications services. Media literacy also helps people to manage content and communications, and protect themselves and their families from the potential risks associated with using these services.

In earlier reports, Ofcom defined media literacy in terms of accessing, understanding and creating communications (See Ofcom Office of Communications, 2006, p.6). In this context, access had a much wider definition than take-up or accessibility; it involved understanding what each platform and device is capable of and how its functions can be used. So 'access' encompassed usage and competence in use, as well as issues with individual platforms. 'Understanding' related to how content (such as television and radio programmes, internet websites, or mobile video and text services) is created, funded and regulated. It also referred to trust in the internet, trust in news outlets and knowledge of regulations and funding of the media. 'Creating' concerns creation of content and interaction with others.

UKCCIS and the Byron Report

The 2008 review "Safer Children in a Digital World" or also widely known as Byron review (2008)[5], examined safety online, media effects of extreme violence in video games and bullying online. In doing so it directly guided digital literacy policies as it recommended the development of knowledge, skills and understandings (2008, p.8). One of the key recommendations of the report was the creation of the UK Council for Child Internet Safety. The UK Council for Child Internet Safety (UKCCIS) is a coalition of government, charities and industry. It was envisioned by the

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4   Under Section 14 (6a) of the Communications Act 2003, Ofcom have a duty to make arrangements for the carrying out of research into the matters mentioned in Section 11 (1). For the duties of Ofcom see http://www.legislation.gov.uk/ukpga/2003/21/contents

5   In 2007 Professor Tanya Byron was invited by the former Prime Minister to review the risks that children face from the internet and videogames.

review that it would:

- · Implement a strategy for raising awareness about internet risks
- · Create a system of evaluating and blocking these risks with companies.

Thus in December 2009 the UKCCIS launched, 'Click Clever, Click Safe: The first UK child internet safety strategy'[6]. Consequently, a progress review 'Do we have safer children in a digital world?' was published in March 2010, to mark the progress made by Government in creating a safer online environment[7]. The Byron reviews importantly link the development of skills with raising awareness about internet safety for children (through governmental campaigns and school regulations) and by providing information to parents.

Becta and FutureLab

Becta (British Educational Communications and Technology Agency) was the government agency leading the national drive to ensure the effective and innovative use of technology throughout learning, which however closed in March 2011 (See the Department of Education reform, 2012). It offered practical advice to teachers about how to develop digital literacy and how to put this aim into practice in the classroom, in combination with the needs of subject teaching (see Appendix 3 for more information). Futurelab, an independent not-for-profit organisation, was commissioned by Becta in order to undertake a digital participation project, in which researchers worked alongside teachers to explore the possibilities of fostering digital literacy within curriculum teaching[8] (for more information about FutureLab see Appendix 3).

B. Telecommunications and trade

Questions of literacy, access and use are integral to digital policy in general - and integral therefore to acts and legislation on the emerging digital economy. Three key developments here - each indicating an approach to, or opening a series of debates around questions literacy and expertise as they engage with other questions around digital transformation/digital industries were the Digital Economy Act (2010), the Hargreaves Report (2011) and the Communications Bill led by the DCMS. These discussions inform the landscape of the current review of the Communication Bill (to be introduced by the end of this Parliament) and the consultation (ending on the 14th of September 2012), which will inform a Communications White Paper (see Glossary).

Digital Economy Act 2010 (DEA)
The DEA of 2010, with an over-arching interest in digital property, copyright and infringements, dealt in part in and with questions of user knowledge, expertise or literacy. Of interest here was the degree to which this act, balanced ideas of encouraging 'making' with the idea of controlling 'use'. Ofcom contributed two reports in relation to online infringement of copyright, which served as the basis for the current regulatory codes[9]. These were a report on internet domain names and on media content (for more information about the DEA, see Appendix 4). There was significant criticism of this act. Notably, the **LSE Media Policy Project** argued that the DEA, with its focus on copyright enforcement, essentially suppresses creative peer-to-peer technology and therefore stifles innovation in the media industry. Similar views were expressed by Professor Hargreaves (for

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6   Under the Coalition Government, the remit of UKCCIS has been extended beyond purely delivering the recommendations made in the Byron Reviews. Its aim is to work in partnership to keep children and young people safe online.

7   More about the Byron Reviews in the UKCCIS website
http://www.education.gov.uk/ukccis/about/a0076277/the-byron-reviews

8   It should be noted that Becta's functions and services have now been transferred to the Department for Education (DfE) and Department for Business, Innovation and Skills (BIS), which continue key areas of Becta's work. Today and since 2011, FutureLab has merged with National Foundation for Educational Research (NFER) (see See http://www.education.gov.uk/aboutdfe/armslengthbodies/a00192537/becta).

9   The latter corresponds to the implementation of the AVMS Directive to require the UK and other Member States to regulate TV-like programme services on the internet, including on-demand

more information on the 2011 LSE Brief and Prof Hargreaves, see Appendix 4).

C. Public engagement, participation and disadvantaged groups

Public engagement, participatory culture and questions of accessibility are explicitly addressed in various policies of the European Commission and at UK level in the activities of various government departments and other organizations. It is striking that the understandings of what constitutes barriers to access varies considerably. Thus the Digital Agenda for Europe 2010, EU's strategy to help digital technologies, marked how acquiring ICT skills depended largely on whether users felt confident with new technologies (2010 review, p. 35-37). It suggested focusing in 'much greater depth on the potential benefits that the wider digital technologies provide' (p.39) because 'wider digital technologies that do not require PC-based internet technology can be utilised to reach out to those without access, skills or motivation to become otherwise digitally included' (p.39).

The 2007 report Digital Inclusion Team (DIT) (2007) identified **motivation** (whether the individual sees the benefit from or has interest in accessing these technologies) as an additional key barrier to inclusion (see Glossary). The 2008 Understanding Digital Exclusion Research Report, produced by FreshMinds for the Department for Communities and Local Government (DCLG), noted that to date, tackling the issues of digital exclusion had been focused on communications technologies, such as internet and digital television. In response the report advocated a broader strategy:

> '[...] the digital equality agenda must capture the disparity of access and functional usage for both the traditional communications technologies such as the internet, mobile phones and interactive digital television, and support new ways of working, managing information, improving the delivery of public services or enabling personal development through electronic gaming' (p.5).

Department of Culture, Media and Sport ([DCMS](#)) and the eAccessibility Forum

More recently Government initiatives on access have included work by the DCMS. Its key work has been to lead the Digital Economy Act and the Intellectual Property, Copyright and File sharing debates. The DCMS has also implemented the **eAccessibility Forum**. The forum aims to bring Government together with industry and the third sector voluntary groups to explore issues of e-accessibility, and to develop and share best practice across all sectors (More about the Forum aims in Appendix 4).

The Action plan of the forum is stated as being to 'ensure accessibility, affordability and equal participation for disabled users in the digital economy'. The Forum funded the campaign Race Online 2012, led by UK Digital Champion Martha Lane Fox's, which aimed to give online access to 10 million people in the UK by the end of the Olympic year 2012[10]. In June 2009 following the Digital Britain report, Martha Lane Fox was appointed Champion for Digital Inclusion, with the role of bringing the internet to deprived and disadvantaged communities. Race Online 2012 reflected the Action plan of the forum, which as to 'ensure accessibility, affordability and equal participation for disabled users in the digital economy'. Thus the Manifesto for a Networked Nation (see Glossary), suggested that lack of motivation, access and skills (which served as the basis for the Race Online 2012), could be addressed with the help from the industry and media partners, who could fund projects to inspire people to connect to the internet. Interestingly, Iain Duncan Smith, Secretary of State, Department of Work & Pensions is quoted in the report:

> 'Digital literacy is a great enabler of **social mobility**. It is a way for those who have had bad experiences of institutions to re-engage in learning, and it can break down feelings of social isolation. It is a powerful weapon in the fight against poverty'. (p.11).

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10 RaceOnline2012 has now ended and paved the way to GoOnUK, a cross-sector partnership. See
   http://www.go-on-uk.org /

The success of various initiatives designed to broaden access have been critically considered -and the progress of shared plans to broaden access and develop skills tracked and assessed by various bodies. This is particularly the case in relation to concerns around disadvantaged groups, but to some extent in relation to qualities of digital skills as well as basic levels. Two linked interventions here are (i) the Brief of the LSE Media Policy project on media Literacy and the Communications Act, by Sonia Livingstone and Yinhan Wang (2011), who provided evidence which supports the claim that progress and promotion regarding the development of digital skills in the UK has stalled. They noted that '[t]his is especially the case for the crucial dimensions of critical and participatory literacy' (Livingstone and Wang, 2011, p.2) and urged for a continuation of efforts. Providing additional evidence, in the third Policy Brief of the LSE Media Policy project (entitled [Emergence of a Digital Underclass)](), Ellen Helsper (2011, p.2) argued that **a digital underclass** is forming in Britain. She noted that,

> 'although there is some improvement in access, skills and use of the internet among those who have lower education levels and no employment, these groups remain far behind other groups. As the government plans to make public services 'digital by default' these individuals will be unable to access them, not because of a lack of infrastructure but because of a lack of(effective) take up of the available connections'.

A key factor, Helsper (2011) indicated, was age as well as income. The digital underclass consists of individuals who actually rely most on the government services that are now becoming 'digital by default'.

It should be noted that Helsper's (2011) point appears to be substantiated through evidence provided by the advocacy organisation JRF Poverty as early as 2003. In the report 'Information technology and job-seeking in rural areas', JRF Poverty stressed that there was evidence of a 'digital divide'.

> 'A minority of all job seekers had access to the Internet at home, but young people, the unqualified, the low skilled and the long-term unemployed were less likely to have access than others. These groups were also less likely to use the Internet to look for work'.

Interim Conclusions 1: The creative deficit?

Outside of specifically educational briefs (computer learning in schools) - and some attention paid to basic literary skills, there is little attention paid to cultivating or thinking about expanding the creative uses of digital technologies. It might be said that although some attention is paid to groups at risk of absolute exclusion there is strikingly little done to mind the gap between this very low level, and work within the 'creative industries' – aside perhaps from that specifically organized within the classroom (as part of curriculum based learning). An issue then is how to support or raise or levels of demand for expertise in communities and cultures – and how to mind that gap.

The general context are set by frameworks stressing safety and risk (personal) on the one hand and stressing the protection of property (e.g. the piracy threat) on the other. It is clear that much less attention is being paid questions of; enabling/promoting higher levels of expertise, cultivating/encouraging new kinds of use. The latter would include enabling creative forms of use amongst non- standard groups for whom access to higher levels of digital use is blocked by multiple or complex barriers - but who may benefit most from gaining the skills to become confident, creative users. Addressing this gap is not a luxury in what is being framed as 'Austerity Britain' (also true elsewhere) but is, in these conditions, the more necessary.

How to Mind the Gap?

* Think about digital skill as a skill 'in conjunction with' other skills – this is contrasted with the crude substitution of one skill with another. Old skills and expertise are not redundant – but are often thought to be.

* Develop the ability to extend community networks - with content that is desired and wanted - so that networks build themselves.

*Build a better understanding of expertise as a shared social construction – and one that therefore – and at all ages and levels – has to reach further out from formal sites of education.

* Find ways to help user groups concerned with enabling basic access to also develop ways to enable and encourage forms of use that engage with cultural organizations of all kinds.

iii. The Advocacy Environment in the UK

This section briefly points to the views of some influential advocacy organizations engaged in different ways with questions of digital inclusion, use by various communities, and with policy.

Advocacy Opinions:
The climate of opinion on questions of developing use and active engagement with digital transformation in the UK is conditioned by Europe, by government policy across a series of briefs, and by bodies such as Ofcom that operationize policy directions (referred to above). But also clearly important here is the work of advocacy groups of various kinds - this both at the policy level - but also through their work 'on the ground' where practical differences are made, and where work is undertaken and assessed; ground level activity clearly informs the groups in their advocacy role.

A distinction might be made here between the work of media-based organizations and those of advocacy groups for whom issues of digital exclusion are important but not defining.

The **Media Trust**, one of the leading communications charities in the UK, is an example of the former. It is active around digital engagement and inclusion. Its work involves a range of initiatives and partnerships between media organizations, charities and/ or NGOs as well as universities (for example Natalie Fenton's 2010 report, Goldsmiths, see below), media organisations and charities to 'enhance their communications and enable communities to find their voice and make it heard' (Community Voices Research and Consultation findings, 2009, p.1)[11]. **Community Voices**[12] has been the key project by Media Trust and it has generated research reports and consultancies, such

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11 The corporate partners at this stage were BBC, Channel 4, Daily Mail and General Trust, Disney Channel UK, Guardian Media Group, IPC Media, MTV Networks UK and Ireland, News International, Newsquest Media Group, OMD, Sky, Virgin Media TV, Warner Bros.

12 Community voices run between 2009 and 2011. This was selected by the department of Communities and Local Government (CLG) and the department for Business Innovation and Skills (BIS).

as Corporate Citizenship (a specialist corporate responsibility consultancy)[13] and the website www.communitychannel.org[14]. The consultation reflected the views of certain communities about the importance of digital media in their lives and their capacity to empower their voices. As one respondent noted:

> 'Enabling communities to express their views and opinions through digital media will ensure that they have an avenue, the means, and opportunity to engage and debate on matters of interest and to feel they can make a difference." This was echoed throughout the consultation process' (2009, p.15).

Accessing services and benefits are here again considered central for social and digital inclusion. However, unlike previous projects, which usually focus on skills and infrastructure, the consultation identified creative expression (for instance, through video, film or photography) to be hugely beneficial and therapeutic for some groups (for example, those that have mental health concerns or groups that have experienced gangs or violent crime) (p.16). In other words, the consultation brought forward the **benefits of the process** as well as those of the **output**. Finally this report identifies key target social groups (or communities of deprivation) to be mainly home-bound people and refugees/asylum seekers (for more information about Citizen journalism and Accessing impact for Media Trust, see Appendix 5).

Many other advocacy organizations - speaking for and enabling the voices - of various groups with disabilities have also spoken around questions of digital literacy, access and skills. Reports here include policy statements on digital inclusion, both embedded in other discussions and separately. One example is **Help the Aged** (Age Concern England and Help the Aged have joined together to form a single new charity dedicated to improving the lives of older people). Help the Aged revised the 'Learning for Living: Helping to prevent social exclusion among older people' report in 2008 where they urged for action to be taken:

> 'to ensure that people have the opportunities and resources to accumulate further skills and participate in learning as they grow older, and throughout old age, [as] there is a danger that the current inequalities within our society will multiply under the pressure of an ageing population' (2008a, p.1).

In particular they emphasised that learning and skills should not be limited to ICTs but also already acquired skills like **financial, health and citizenship literacy**. For instance, many older people, the report notes, are not able to grasp online and telephone banking[15]. What is more, the report stresses, there are barriers to citizen participation in decision making since the language and mode of operation of local authorities is becoming increasingly complex. Health literacy importantly introduces an element beyond participation in a competitive economy or governance, that of well-being. The report states:

> 'Health literacy' can include skills such as the ability to process and understand basic information needed to make appropriate health decisions, as well as having the knowledge, skills, beliefs and confidence to manage one's own health.

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13 Similarly to our scoping project and report, the Community Voices project performed desk research as well as a survey of grass root organisations to understand how digital media is being used on the ground. The aim of the research was to identify a range of projects that could meet this objective, to which Media Trust would provide a package of financial and specialist support. It further tried to understand how digital media can benefit isolated and disadvantaged groups, specifically in having their voices heard (2009, p.5).

14 According to the 2010/11 report (REF), it had 107,826 unique users in 2010, which complements the 136,237 unique users visited www.mediatrust.org. These numbers are provided in the same report as evidence of the organisation's impact.

15 The report urged the government to support and resource voluntary sector initiatives (such as the Help the Aged/Barclays Your Money Matters programme).

As noted in Help the Aged 2008 Policy document 'Education for Older People', Age Concern has warned that an overall aim of an 80 per cent employment rate cannot be reached unless the 50+ workforce grows by 1.5 million by 2018. It is important that one of the key barriers to learning for older people identified by Help the Aged (2008b) is other people's conception of age (p. 4). This often takes the form of age discrimination, even in governmental provisions, such as skills policy. For example, intermediate skills (Level 3) are free for under-25s but increasingly expensive for older adults – even those who never had a chance to gain qualifications at school or who are being forced by economic change to re-train in a new occupation (Help the Aged 2008b, p.4). Adding the fact that offered courses are in most cases solely available online and that 82 per cent of older people have never used the internet, makes learning essentially unattainable for them.

The Literacy Zone
A key finding to be pulled out here is that of necessity advocacy groups are forced towards arguing for basic levels of access - because these basic needs are not being met. The priority of these groups in relation to digital media and those they work with is thus also largely set in what might be termed the 'literacy zone'. What would happen if these aspirations could be raised so that the goal was expertize?

Research focused specifically on **digital inclusion**, and supported by BT, identified demystification and practical help as key to reducing barriers (Introducing another World: older people and digital inclusion, Age Concern and Help the Aged has worked in partnership with BT). Some of the practical solutions that were suggested in this report for building skills and confidence were peer training and on-going support. Importantly, the report concluded that priority audiences were those with long-term health conditions or mobility impairments; those who live in remote or rural locations; those who are socially isolated or lonely. Other relevant statistical data about digital inclusion and older people are summarised in the monthly factsheet Later Life in the United Kingdom, produced by Age UK (for instance, according to the October 2012 factsheet, it appears that single people over 65 are less likely to go online).

PART III Framing debates on skill, literacy, expertise

The policy discussions set out above are - more or less explicitly - informed by an over-arching understanding of computer use and/in social settings (issues of diffusion, technology and everyday life and culture), as well as by various understandings of/definitions of what digital literacy or expertise is. The latter draws on popular classifications (something coming close to genres of use perhaps), as much as on more rigorously pursued, or academically informed, understandings and distinctions. This section considers both relevant academic framings and different classifications adopted to define particular use - and users - in the public domain.

Relevant academic literature addressing themes of digital media literacy and expertise is concentrated in the fields of media studies, sociology of technology, computer education, and in the field of education itself. Key terms in this literature include the labels 'digital literacy', 'letteracy' and 'digital natives'.[16] The question of expertise is addressed specifically in work on the social construction of technology, media and domestication theories, A.I. debates, and also in work within cognitive science.

All these questions seek to understand 'using', using technology, forms of use, and skills demanded, required or measurable as operating at a particular level. Media Studies/Cultural

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16 Consideration of literacy as a general category rather than as it has been and is being attached to the qualifier 'digital' of course, opens up a vast field and is not considered in depth here.

Studies might an apt starting point to explore these debates - since it has long worked to understand the distinction between passive and active audiences - a distinction which certainly pre-dates the arrival of interactive media (see e.g. the work of Stuart Hall). It therefore provides some useful analytic tools to consider questions of use and engagement in relation to new media. Hall and others worked to understand the activity of media audiences in the case of television and as part of this they made a distinction between active reception (the work of the audience) and simple ingestion[17] (hypodermic needle theory) in social contexts. Early discussions of Interactive media (a 1990s term for digital media) often understood it to imply the end of passive audiences – and the beginning of expert makers perhaps. But it soon become clear that the use of interactive media did not necessarily or automatically entail or demand more skill from users, and active use did not necessarily produce a more 'active' decoding; a more 'creative' response Rather emerging new digital media systems could be accessed and used with varying different levels of skills and expertise. Moreover the degree to which new media could be creatively used (e.g. as an authoring rather than an 'audiencing' device) depended to a large extent on levels of expertise of the user group. Thus cultural studies – going back to Hall – directs us to the horizons and conditions of reception, insisting that these, as much as formal technological possibilities temper use - and by extension how use is judged.

Generally speaking consumer computing (today's computing) prefers to configure its systems to offer 'easy access' to users (who are also themselves thereby configured) by closing down access (black boxing) to many kinds of complex operations. Moreover, the constraints of code/software itself limit meaningful access to many operations (see e.g. MacKenzie). A starting point here then is that consideration of use and expertise and knowledge of digital systems is conditioned by material (code/software), and by the political economy of the computer industries and the social conditions of reception. Expertise is a techno-social system.

The discipline of computer science and within that theorists of human computer interaction also put much energy into 'configuring the user' (designing computers to elicit/enable particular responses). This work tends to stress issues of individual psychology rather than questions of the social world and/or contexts of social power and is therefore often more instrumental. What is has in common with the media/cultural studies approaches above is a focus on/emphasis on the user and on expertise as an affordance or relation (perhaps one that may be designed for)

A different tradition that of AI has explicitly explored what is required to generate 'artificial' expertise - through 'expert systems' - and has tended to configure expertise in terms of required internalization. Bodies of knowledge - or know how - that are first acquired as rule-based systems and used mechanically (invoked consciously) - later become deployed 'instinctively' or without explicit reference to the system. Examples here can be found in the work of those considering/exploring artificial intelligence (AI). This understanding of expertise tends to define it as an fixed rather than relational capacity (having the necessary level of knowledge and familiarity with a skill to become expert, or to be an expert is to rise above a particular, and objectively defined level of competency. This kind of approach to expertise regards it something that is measurable. Thus in this account there is no place to consider - for instance - the conflicting cultural valuations of different kinds of work - the kinds of social contexts might value one kind of work over another and that - in doing so - might bias what is understood to constitute expertise.

These disciplinary frameworks offer different ways of thinking about; levels and degrees of use, the evaluation of various kinds use and users as expert or non-expert, the utility or otherwise of seeking to raise expertise - or of making demands around demands for more of it. They are also connected to, and inform more or less closely, more general understandings of the capacities and capabilities of users. It is striking in fact that the latter cleave neither to entirely cultural, nor to entirely cognitive, explanations. **Categories of user, for instance, are often distinguished <u>both</u>**

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17 One reason why media studies in the UK has never been convinced by media affects theory is that it
     presumes passive ingestion (hypodermic needle effects) on the part of audiences.

by their levels of skill when this is regarded as measurable as an abstract capacity or when it is implied through early contact - e.g. early adopters, beta testers, hackers - <u>and</u> by their 'attitudes' and sensibilities - e.g. as geeks, or enthusiasts.

Key Terms in Public Debates:

Below we look at some of the frameworks used to define and understand different kinds of users and their skills more closely -moving out from purely academic discussions and considering key terms shaping public debates and common classifications and terms. There are in fact many terms which have been used to describe the skills and expertise required for effective use of digital technologies. Here some of the most important ones are discussed (Table 1 shows other key related terms):

i. Key Terms: Digital Literacy

Digital Literacy, one of the most prevalent terms, was brought into mainstream usage by Gilster (1997). He defined digital literacy as "…the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers" (Gilster 1997, p.1).

The term 'literacy' is also used to indicate the fundamental importance of these computational skills. In some cases it is used to mean that a deficiency in this area is equivalent to traditional illiteracy.

A stronger interpretation of the term suggests that the definition of literacy itself is changing such that it now includes digital literacy as a necessary component. Thus many researchers and educators have argued that there is a need for a broader definition of literacy which includes computer literacy, visual literacy and media literacy (Lankshear, Gee, Knobel et al. 1997; Goodwyn 2002). A relatively early and influential advocate was Papert, who argued for the need to recognize the extent to which being able to read and write alphabetical letters would no longer sufficient for literacy. Papert proposed renaming this skill as 'letteracy' in his work on rethinking education in the age of the computer (Papert 1993). He believes that outside the narrow definition of letteracy "will remain the opportunities, offered for the most part by…new media…, allowing students to become highly literate independent of their progress towards letteracy." (Papert 1993, p. 11).

Literacy, implies dual importance for reading and writing, but much of the focus so far in digital literacy has been on the reading aspect. Gilster argues that "[a]quiring digital literacy for internet use involves mastering a set of core competencies. The most essential of these is the ability to make informed judgements about what you find on-line" (Gilster 1997, p.2).

In addition to this content evaluation ability, further 'core competencies' are highlighted throughout Glister's work, including the ability to search effectively and create personal information feeds by using knowledge assembly techniques. Clearly then, Gilster gives more attention to reading and assembly of information than the creation of new content. "In contrast, although computers work their own languages… digital literacy doesn't mean we have to become programmers or learn to puzzle out long lines of computer code. It refers to a way of reading and understanding information that differs from what we do when we sit down to read a book or a newspaper. The differences are inherent in the medium itself, and digital literacy involves mastering them" (Gilster 1997, pp.28-29).

Web literacy	Links to information literacy. Focus is on searching for and assessing the reliability or value of online material (Sorapure, Inglesby and Yatchisin 1998). Despite using the term literacy seems to focus mainly on reading with no mention of writing/ creating. (Sutherland-Smith 2002)
Electronic literacy	Overlaps with web literacy and multiliteracies.
Multimodal literacy/ New literacies/ Multiliteracies/ Visual literacy	Recognition that writing is only one mode of communication and that people increasingly need to be able to read and write using other representational modes such as visual and audio. The term multiliteracies is used to reflect the extent to which the teaching of reading and writing is changed in the digital age (Cope and Kalantzis 2000).
Computer literacy/ Computer skills	More concerned with being able to use applications than other terms. http://psychology.wikia.com/wiki/Computer_literacy
Computational thinking	Focusses on understanding of key computational concepts and skills. (Wing 2006)
Technoliteracy	Used as a higher level umbrella term by some. Has been considered to be important in the context of democratisation of technology, and necessary for full participation in our high-tech global society (Kahn and Kellner 2005).
21st Century skills	Not well defined, but tends to focus more on cognitive skills such as critical thinking, problem solving and logical thinking skills, although can also include digital literacy as a sub-set (Trilling and Fadel 2009; Rotherham and Willingham 2010)

Digital literacy: policy and academic exchanges

Since Gilster's work was taken up and the term digital literacy popularised, there have been attempts within academic to draw on its 'real world' deployment to further specify how the term should be understood and what it should include - none of which has emerged as entirely dominant. Notably some more recent digital literacy definitions in academic literature derive from policy documentation of the European Union (EU) and their implementations in member states (see next section). Ng (2012) for instance applies the conceptualisation coming from the European Information Society (Martin, 2005, p. 135 cited in Ng, 2011: 1067):

'Digital Literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process'.

And secondly from the British Futurelab's handbook on Digital Literacy Across the Curriculum (Hague & Payton, 2010, p. 2 cited in Ng, 2011: 1067):

'To be digitally literate is to have access to a broad range of practices and cultural resources that you are able to apply to digital tools. It is the ability to make and share meaning in different modes and formats; to create, collaborate and communicate effectively and to understand how and when digital technologies can best be used to support these processes'.

In both of these definitions there is a stronger emphasis on creative and communicative activities with meaning-making highlighted as a fundamental digital literacy activity.

Yoram Eshet, writing from the field of psychology, technology and education, argues that digital literacy includes cognitive, motoric, sociological and emotional skills (Eshet 2012). The framework presented by Eshet highlights the following:

- Photo-visual skills (being able; to understand messages from graphical displays)

- Reproduction skills (utilising digital reproduction to create new, meaningful materials from pre-existing ones)

- branching skills (constructing knowledge from non-linear, hypertextual navigation).

- information skills (critically evaluating the quality and validity of information).

- socio-emotional skills (understanding the 'rules' that prevail in cyberspace and applying this understanding in virtual communication).

- real-time thinking (the ability to process large volumes of stimuli at the same time, as in video games or online teaching).

The only specifically creative category here is 'reproduction skills' (since this also involves recombinant making). Arguably given that the emphasis is on making use of pre-existing materials it does not reflect the full range of possibilities for creative and active uses of technology.

There are some more markedly active readings of literacy emerging from policy and crossing back into academic work. Of interest is the framework produced by DigEuLit (Martin, 2005), a EU initiative (1 January 2005 to 31 August 2006) which aimed to map out the conceptual landscape surrounding digital literacy, in order to promote shared understanding throughout Europe; to develop a framework for digital literacy, applicable across Europe, onto which existing and planned programmes can be mapped, and which would enable portability of qualifications; and to specify the elements of a toolkit which support providers of digital literacy (Martin, 2005, p.132).

The DigEuLit project is also an example of how, as much as academic scholarly papers can be seen to abide by the digital literacy definitions and terminology of EU policy documents, certainly various research projects and academic studies have informed EU policy. It proposes a wider definition of digital literacy to include 'elements drawn from several related "literacies", such as information literacy, media literacy and visual literacy' (Martin, 2005, p.135). Moreover it defines what is necessary - against native theory perhaps, and also against school focussed accounts, as some writing - something that can manifest as 'an on-going lifelong process developing as the individual's life situation evolves' (ibid). Thus the proposed definition assumes a pro-active attitude by the user/citizen towards a range of actions within all aspects of everyday life, including work, learning and leisure. On this basis, DigEuLit formulated the following brief definition:

Digital natives and digital immigrants?

One of the key circulating concepts in the digital literacy literature is that of 'digital natives/digital immigrants', which first appeared in Marc Prenky's (2001a) article with the same name. 'Digital natives' were in Prensky's article thought to be the generations of students born after 1980 and raised in environments where digital media were ubiquitous. The author assumed that these students adopted ways of learning different to those of previous generations. Familiarity with information and communication technologies (ICT), it is argued, triggers physiological differences in the brain, which in turn enables students to work in networked ways. 'Digital immigrants' are thought to be those who were introduced to the internet, to mobile and other digital media later in life and who, for this reason, acquire an 'accent'. Teaching 'digital natives' is for them, it is argued, especially challenging.

In later writing Prensky (2001b) advocates learning through the use of computer games, which are substantiated with examples of applying Playstation in educational settings.

There is serious criticism directed towards Prensky's ideas. Critique of the digital nativity thesis (Bennett, Maton, & Kervin, 2008; Brown & Czerniewicz, 2010; Helsper & Eynon, 2010; Kennedy, Judd, Churchward, Gray, & Krause, 2008) emphasises the lack of evidence in Presky's two articles and the focus of the thesis on age (post 1980). Bassett points failure to historicise computer histories and is one of many pointing to lack of precision around 'generation' in Prensky's argument.

Ng (2012) in "Can we teach digital natives digital literacy?" draws attention to issues of access and introduces the term 'new literacies', which he suggests can be used instead of digital media literacy. 'New literacies' are considered to be 'social practices that are shaped by emerging technologies' (Ng, 2012, p.1066).

'Digital Literacy is the awareness, attitude and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyse and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others, in the context of specific life situations, in order to enable constructive social action; and to reflect upon this process' (p.135).

ii. Key terms: Digital Competence

A 2012 report published as part of the European Commission Joint Research Centre project on Digital Competence presents and maps case studies that demonstrate the development, acquisition, assessment or certification of 'digital competence' (Ferrari, 2012). It puts forward a view of digital competence as a human right, and a requirement for citizens to be 'functional' in society. The report also finds that digital competence is at the convergence of multiple fields. The author argues that being digitally competent implies the ability to understand media, to search for information and be critical about what is retrieved and to be able to communicate with others using a variety of digital tools and applications. The disciplines highlighted as being particularly relevant to these abilities are: media studies, information sciences, and communication theories.

iii. Key terms: Multi-Modality and Literacy:

Most definitions of digital literacy do imply questions around or addressing what might be termed 'multimodal' competence. One key component is the ability to understand and make use of visual and other representational modes - and potentially to be able to develop skills to use these materials in new ways.

One academic approach approach to exploring this is through Multimodal theory - based on the premise that meaning-making does not take place solely (or even mainly) through language, but through the use of a range of representational modes including image, sound and gesture. The approach has its origins in social semiotic theory (Halliday 1978; Hodge and Kress 1988) which argues that meaning-making is socially situated and language is formed in specific social and cultural contexts.

Kress and Van Leeuwen introduced multimodality in contrast to the monomodality which
- they said - previously dominated Western culture (Kress and Van Leeuwen 2001, p.1). They describe how language once had a privileged position as "the central and only full means for representation and communication" (p.45). Whilst there were other key modes, these were seen as secondary to and separate from language. Respected publications such as academic articles, novels and official reports would invariably take the form of text with no illustrations. The specialist disciplines of art and music were seen as distinct from other modes of expression, and only professionals within these fields would express themselves using visual or musical modes. "Even though a multiplicity of modes of representation were recognised, in each instance representation was treated as monomodal: discrete, bounded, autonomous, with its own practices, traditions, profession, habits" (Kress and Van Leeuwen 2001, p.45). However, with the advent of multimodality, they describe how "[p]reviously distinct practices, the domains of distinct professions, the clear boundaries [have all] begun to unravel." (2001: p.47).

It is important to distinguish mode from medium. A mode is a representational resource for meaning-making, whilst a medium is the production vehicle of the text (Kress and Van Leeuwen 2001, p.21-22). For example, video is a medium, whilst moving image and speech are two of the representational modes used in this medium.

Kress argues that society has moved from a position where individuals develop competence in one specific practice related closely with a single mode (such as writing) to a situation where people need to develop a broader understanding of the use of a range of modes in order to design multimodal texts. "[C]omposition seen as competent performance is replaced by design seen as the attempt to make constantly varying rhetorical purposes effective." (ibid. p. 171, original emphasis).

Whereas competence in one mode (writing) was previously seen as sufficient for communication,

this is no longer the case. To communicate effectively it is now important to be able to use a number of modes in conjunction with one another.

Questions of modality intersect with considerations of user skills and competences in relation to new media, multimedia, and its cultural productions in a series of other disciplines too - notably in communications, media and internet studies and also in the more traditional arts and humanities areas. These issues are indeed of long-standing concern reaching back to the mass media and considerations of earlier media technologies/systems. One example in music is, for instance, Jacques Attali's influential account of changes in music (where expanded access to editing through new technological tools, it is argued, transforms the political economy of sound and enables new forms of 'put together' culture.

More fundamentally, but of relevance here, are debates around the material of new media which have taken the form of debates around the materiality of code or software (that which can produce text, image, or other media streams) and debates in particular around its whether it has a 'language' or grammar. (see e.g. Lev Manovich's *The Language of New Media*) or work also work by feminists on performative ontologies in virtual worlds (e.g. Stone) have been influential in these debates.

iv. Key terms: hypertextuality, non-linearity, gaming

Attention has been paid in multiple disciplines to the question of the kinds of skills required for users to deal with the development of new cultural forms breaking with linear narrative (widely understood as a dominant cultural form since the emergence of writing and also within oral cultures). More interactive forms might at once demand more of the reader (in terms of story assembly) and make different demands of authors and producers (in terms of design).

Dealing with non-sequential texts, database interrogation and assembly, hypertext documents and structures (e.g. the web) all demand new skills and definitions of levels of skill – and new definitions of authorship and spectatorship, production and co-production.

In computer science this has produced work considering new demands placed on authors. For instance Braaksma et al. (2002) examined the cognitive activities involved in writing hypertext and linear texts and argued that planning and analysis occur more frequently in hypertext writing. Haas and Wickman note that when composing hypertext, the author must pay more careful attention to audience awareness as the reader has much greater agency than with traditional texts, and this changes the relationship between reader and author. (Haas and Wickman (2009). This suggests skill levels for authorship increase in relation to new media. However there are many counter-indicators: notably the rise of mash-up cultures (e.g. those involved in video blogging) where groups have become authors where before they were more passive consumers. These kinds of practices have been focussed on by cultural and media studies, which has explored what might previously been termed production 'from below'. Finally, of relevance here are claims that narrative is not transformed but is increasingly replaced – by database logics and by the instantiation of these logics in new cultural forms; of which the paradigmatic example is gaming. This produces new calls for the redefinition of and re-evaluation of, fundamental literacy skills.

v. Key terms: Computational Thinking:

In recent years there has been a drive to increase the level of the general population's 'computational thinking skills'. Wing brought phrase computational thinking to popularity, and has published a number of papers on the topic. Her original 'call to arms' article introduced the term and offered some initial suggestions as to what might count as computational thinking; defined as "…solving problems, designing systems and understanding human behaviour, by drawing on the concepts fundamental to computer science" (Wing 2006, p.33). Wings demand was that these skills should be learnt by everyone, not just computer scientists. For (Guzdial 2008) and others this

presents an important challenge for designers of programming languages – who need to produce languages aimed at novices. Others, such as Fletcher and Lu (2009) believe that computational thinking should be taught far in advance of contact with programming languages**.**

Demands for computational thinking have also been investigated in cultural studies and the humanities – notably in relation to critical theorizations of 'computational culture' within what is variously termed software or code studies (see e.g. Matt Fuller). Here it is striking that the demand is for a double intelligence; for computational skills to re-fresh other forms of literacy rather than replace them.

In both media and computer science consideration of computational thinking as a necessary skill has produced discussions not only of the tools to enable higher levels of engagement but also of investment. Thus Resnick, Bruckman and Martin (1996), in 'Pianos not Stereos' argued for the importance of computational construction kits which, like pianos, require hard work to learn to use, but have much richer and more complex possibilities for creative expression than the tool equivalents of stereos, which are simple to use but offer limited control and possibilities. In gaming and hypertext studies meanwhile there has been consideration discussion of investment, notably through discussion of 'ergodic' principles. (see e.g.the work of Espen **Aarseth**).

vi.**Key Terms: Expertise**

Questions of expert use and expertise figure in the areas already explored above and emerge in public debate. Expertise is a category that arises in relation to digital natives (natural expertise), in relation to literacy (in computational contexts is an expert user now somebody able to make), in relation to competency (what are 'sufficient' or 'good enough' levels of competency?) in relation to tool making/designing (what tools enable what kinds of competency to be achieved), and in relation to cultural forms involving pre-investment to unlock pleasure (expertise and labour). Questions of expertise are also implicit to broad debates around what be termed public culture – notably in debates around quality, taste, entertainment and in debates around de-skilling.

For some cultural critics digital media or computational culture – and the forms it produces (e.g. gaming versus film, social media versus face to face discussion, instantaneity versus considered production) produces a dumbing down of culture and a loss of cultural valuation of 'experts' or 'expertise'. This is related to the material of new media via considerations of activity (interactive production) versus reflection (reading). (see e.g. Stallabrass for an early example).

The other side of this debate (essentially the Jenkin's tradition) argues that new media systems (particularly social media and web 2.0 have democratized access to media production (mash-up culture) and enabled new modes of access. New tools have made it possible for users with relatively low expertise to create and disseminate their own content. However, a trade-off is operating here since these tools, simplifying previously difficult (expert) operations, also limit the options available and require users to subscribe to particular framings of their work. Expertise and Ease of Use often emerge as opposites in these debates.

In these debates in media and cultural studies issues of control – political economy – frame these debates, since what is at issue is not technology's potential but (also) its contemporary instantiation.

Other traditions within the humanities/social science have produced different understandings of expertise. Notably crossing everyday life traditions of media studies, cultural studies and anthropological approaches with studies of technology and cultural (e.g. various versions of SCOT and on) have considered expertise in more material terms. Essentially expertise can be framed as a techno-social construction. Of note here are feminist interventions which, exploring the social construction of domestic and other technology, have also considered how questions of skill are partly social constructions: what is constituted as/or valued as 'skilled work' or an 'expert job' or as

being an expert is something that is framed and conditioned by social realities (see e.g. Bassett, 2013).

These conceptualizations of expertise open the door to considerations of degrees to which expertise might be motivated by particular forms of desire (mastery, control, pleasure).

Digital Literacy and formal Education:

A literature review prepared for Becta in 2008, with a strong focus on formal education, examined academic work across a number of disciplines with a focus on models and evidence for the development of digital literacy in 0-16 year olds (Newman 2008).

This report placed creation as one of its five key stages, giving examples of creating "a presentation, digital image, podcast, video, web page, animation, game, or use desktop publishing software" (Newman 2008, Executive Summary, p.10).

The report has a strong focus on formal education, and envisages activities as initially being structured and scaffolded by a practitioner, but eventually taking place in a more open situation where the learner defines their own goals.

A key observation from this report was that it is a fallacy that digital literacy skills are inherent in the 'Google generation'. The author argues that whilst young people may be confident with ICT, they often do not have the required critical thinking skills. The author presents a framework which synthesises existing process and developmental model of digital literacy to capture the breadth of research in a tool which is aimed at learners and educators.

"Teaching pupils [digital literacy] is one goal, making school the ideal place to achieve this is the other. If school cannot offer this, then other institutions in our society — in particular, industry and the media — will take on this task. School would then be relinquishing its central mission, namely to provide education. We should not allow this to happen!"(Aufenanger, 2003)

Computer science, by and large, approaches questions of expertise very differently. Here expertise is cognitive capacity that is developed through the acquisition of a particular set of defined knowledge and skills. These are at first applied manually when required (through conscious recourse to the 'rulebook') but through use, as they become progressively interiorized, become instinctively deployed and drawn upon, so that conscious ratiocination is no longer demanded or required. (see e.g Dreyfus).

Understood in this way the process of developing expertise involves a process of learning but also one of 'forgetting' (conscious application of the rules does not constitute expertize but is an interim level). This cognitive conception of expertise is drawn upon in more culturally orientated or explicitly sociological accounts (see e.g. Bourdieu or work on acculturation and domestication in the Silverstone tradition).

Developing expertise requires investment and work to reach a specific level of ability to operate in relation to a defined field. As Cheng has put it to be an the expert is to 'step up'. This is a demanding definition – in that it requires work to be done. It also says that expertise may become interiorized (appear 'natural' and become 'embedded') but this capacity emerges through a process of work – and is therefore antithetical to digital native narratives.
In public debates expertise tends to be framed both in absolute terms (as a learned capacity to

operate at a particular level) and in relative (culturally specific terms). At times these different conceptualizations are consciously and consistently drawn upon, but at others hybrid approaches are used simultaneously.

Part III: Cultures and Communities: Voices

This section reports back briefly on scoping work involving engagement with various local communities and local organizations. The intention was to engage with – and listen to - a reasonably wide range of experience. All the groups we talked with have found ways to address some of the questions arising around expertise. Some have faced – and faced up to - some of the barriers to enabling digital expertise; these arise both for the organizations concerned and as an issue for those using and engaging with them (Worthing Society for the Blind, Age Concern, Refugee project). Others are asking how to fully engage with user demands to 'be' expert in relation to cultural productions and community engagements (SCIP and Brighton Museum). These reports are of necessity truncated – but give a flavour of how work is developing and user senses of priorities for future work.

1. **What do you want to remember how to do?: Worthing Society for the Blind**

In October 2012, we visited the Worthing Society for the Blind during a crafts class and interviewed[18] in total 10 people, aged largely over 60 - and many over 80. Among these 10 people were two volunteer helpers and the co-ordinator of the Worthing Society for the Blind. Participants were bussed into the centre and the class included coffee, chat and cake. Impairment ranged from relatively common eye conditions associated with old age - including macular degeneration, other forms of visual impairment - and combined issues; at least two of the interviewees had both sight and hearing impairment. The helpers were also visually impaired.

Analysis of the material gathered produced was undertaken using a coding framework designed to open up the following key themes:

Levels of expertise in digital technology
Barriers to use or engagement
Kinds of use (e.g. email, photos, TV, Skype)
Definitions of 'technology';
Learning and training
Use of digital technologies for community and social engagement; personal finances, shopping etc.
Motivation for engagement with digital media
Shared and social uses and practices, e.g. with other community groups (how and with whom use and uses skills are developed or not)
Digital practices relating to cultural life and events.

Cross-cutting thematics concerned:
Attitude towards digital technologies and learning.
Mood (contentment, satisfaction, frustration, unhappiness).
Demand (did people 'want' more, were they happy with what they had, and with the role computers played in their life and the level of the own knowledge and training, and place in the world).

Key findings:

The levels of digital expertise amongst the members

> *"To me all this … is completely foreign, because I hear these words, I mean I even had to ask my son months ago, is a megabyte bigger than a gigabyte 'cause it sounds as if it is."*
> *(Tina, Worthing)*

18Interviews were semi-structured. A list of Interview transcrip[...] an appendix. .

of this group varied. A number of women already had keyboarding skills, while some men had previous industrial experience such as inputting data or dealing with databases. However, most of the participants described themselves as people who don't know much about computers. But even though they didn't know the difference between a megabyte and a gigabyte for example, they have easily enough awareness of contemporary media technology to know, in part, what they are not doing - for instance the difference between MP3 and CD, that Skype is free, that they 'ought' to know certain things.

Not all of them defined their difficulties in engaging in terms of vision impairment but rather in terms of lack of knowledge about 'computers' or 'media'; which they thought might come from their acknowledged lack of interest of due to 'falling behind' or because of basic access, as much as ability to see the screen for instance.

The people we interviewed didn't - in the main - understand themselves as knowledgeable about the demands of the 21st Century - although they said they were often exhorted to join it by their children.

Many had been users of earlier keyboarding and computer technologies at work, but mostly this preceded the widespread popularization of the web and/or the net. As a result, they tended not to connect these earlier skills with whether they could use digital technologies in their everyday lives as elderly visually impaired people, for their pleasure and for practical tasks, such as paying bills or purchasing goods. For some of them computers today were just toys that younger (or just other) people use (e.g. for leisure, entirely separate from work, and even as replacements for other forms of social life). They were active professionally at a time when perhaps work and leisure were entirely separate fields and when being connected was not as common as it is today; therefore, they make different connections between work and leisure and this colours their sense of how they could, how they might might or wish to engage with new media.

Interestingly, they do regard people other than themselves as experts (or as more expert) with digital technologies. This includes for them, the non-elderly, and also perhaps people without visual impairment - and in the vast majority of those women we interviewed, their husband. It is striking that help for them came from those younger but not necessarily the very young (grand-children); it was more often referred to as coming from children (presumably middle -aged or older). The 'digital native' - so called - is 'relational'.

Barriers to doing more with computers were summed up and expressed as including lack of consistent use – and perceived memory issues, lack of access, lack of expertise to find out more, the necessity to rely on other generations and on others to facilitate access. Many linked a lack of confidence to these issues – and a lack of confidence as a reason why they did not attempt more, or use computers more.

It is was striking that those interviewed felt that new media technologies were useful, if possible, or available for maintaining connections with immediate family, and for satisfying individual needs such as shopping. They had little sense of new media's potential for use behind that sphere, (e.g. for more active engagement in community life) - and perhaps for this reason didn't feel themselves excluded from computers, (perhaps because they felt excluded from community life but computers couldn't address that). They do think of this media as useful for media consumption (TV) and for one

> 'But I do believe that computers shouldn't be watched hour after hour […] I worked for an airline and had all the tickets and things, you didn't have to sit there watching it [the computer] and all that lark. They used to say, 'Stop now and go and have…' So I cannot understand why suddenly they stopped saying that, I thought they can't have changed the computers because they're still the same. (Elizabeth, Worthing)

to one communication (skype) but have little sense of it as a means of being more actively engaged with the world beyond their front door. (I don't need it I have the telephone).

The tone of the interviews, despite the demands made by individuals, was largely accepting of their relatively low engagement with computers, which they didn't see as having much relevance to their own condition and life (beyond the essentials that they sorted - with some difficulty - through their children etc.). However asked if they would like to know more, have more competence, or ease and familiarity with using, they generally very positive.

In relation to the workshop in which the interviews took place, a number said they valued the sociability and it was striking that computer training in the centre, was, due to resources, limited to a one to one console. It would be interesting to wonder how training itself could become a more communal and engaged activity. (e.g. see Age UK, or project-driven training research initiatives).

2. Remember, Remember: Age Concern

"'Are you 82?"..."Yeah...but I don't believe in time"...' John Bird/Age Concern

Fieldnotes and Key findings:

The empirical data collected at the ITea Drop In Centre in Age UK at Seven Dials in Brighton included informal chats and semi-structured interviews with two volunteers running the centre, with centre co-ordinator, seven participants. Also included were observations and fieldnotes obtained through visits to the the centre during four morning sessions in Autumn/Winter 2012.

On the first visit to the drop-in centre, a workstation room with mostly old desktop computers and two laptops on the first floor of the Age UK building in Seven Dials in September 2012, we talked with the IT manager, Luke, a 70 year old man. Discussions, partly around organizing sessions produced a consideration of basic access issues and of the workshop set up and format. One of the interesting points that the manager made in this meeting was that there is difficulty for Age UK to reach out to people who really need to be supported but don't show up at the IT centre. Other issues arising around infra-structure concern elderly technology (old PCs), lack of match with what people are using (desktop machines where users at home are adopting laptops), and issues of finding people capable of supporting new devices - iPads, smart-phones.

Observation at subsequent sessions – where workstations were often well-used – showed many using independently – rather than drawing on advice from helpers. Assistance asked for and provided was around a range of areas and was not always strictly technical;
Spelling advice, reassurance that computers were being used correctly, or that emails had 'gone through' was important to some. The range of use was abroad. For instance contacting relatives, tracking health issues and debates, maintaining a relationship with earlier professional discourses and debates – apparently for personal reasons (to do with sustaining a sense of oneself as a professional).

Many people come on a regular basis. One of these was Hannah, a 72 year old woman. She had come to the centre every Wednesday for the last 2 years or so, to type her book, which she had completed as a handwritten manuscript in 2009. As she explained during a chat, this is her second book. The first one is already in digital format, saved in her USB stick, which she keeps safely in her purse, inside a smaller purse. Dealing with her own memories competently Hannah had some trouble, and needs assistance remembering how to use the machine to write it up.

One of the key difficulties for people – and a reason they looked to the centre seemed to be memory (this is also prevalent in interviews) and motor ability – remembering how to do things,

learning how to use the new phone in order to do these things. For example, talking about his 90-year old mother in law, Luke noted:

> "although she could use a mobile phone and dial, she couldn't dial a local taxi because it involved too many steps. She could dial the number if she had it written down, you just dial the number, but to look it up was just a step too far for her." (Luke, 9 October 2012)

One such person is Elizabeth a 76-year old woman who was very inquisitive and wanted to learn why things needed to happen in the way they did. At some point during the morning there was a lot of fuss about how one can send a Facebook message to multiple recipients. The reason Elizabeth needed something more automated (like ticking names out of a Yahoo contact list) is that she can't remember everyone and needs to be reminded).

All these issues, combining to produce different issues to be addressed in order to clear the way to better and more expert computer use are perhaps to be expected in thinking through issues around technology and age. A more surprising use for the centre has emerged since it brought down the age group range to 50 and above: Since the centre changed it's policy to accept people over 50, rather than over 60, there are often many job seekers who visit the centre as a place that offers computer skills for free in a context that is more convivial and perhaps less judgemental.

3. Brighton Museum: Everybody is a Curator (Except me)

Interviews with Brighton Museum, undertaken in November, 2012, with Kevin Bacon, the digital development officer for the Royal Pavilion Museums, and with others, were undertaken to discuss how the museum understands its users and their various forms of expertise, how it builds these issues into developing plans to improve its digital infra-structure for example, by: encouraging user generated content in various ways, by looking at how open data can be released, and by engaging audiences in new ways through collections engagement. These experimental modes of engagement have been supported with funding from the Arts Council through the Renaissance in the Regions Programme. Central in these strategies was a consideration of how users had very varied senses of their own expertise.

One of the pivotal projects for the Museum has been the digital development project 'Map the Museum', which launched in March 2012 with help from Caper Digital Development Consultancy. This required the audience to generate content by placing 'pins', which narrated their experiences or depicted a location or object, onto a digital map (using History Pin web tool). The rationale behind this venture was to motivate the gathering of collective knowledge in a way that was fun. However, it was a challenging exercise. As Bacon noted in our conversation in November 2012,

> [...] the approach we took with that was to really talk about it as essentially being a mechanism for gathering collective knowledge, but is that a strong enough motivation for people to come in? Where does that collective knowledge sit? It's not entirely clear, and I think that may be an issue. And it's something that we've all continued to look out, how to actually look at those motivations and those behaviours and see if there's any way of really encouraging that.

Beyond that exercise, Bacon (2012) told us that the Brighton Museum aims to develop such platforms for meaningful audience engagement, in a way that represents a wider offer for the audiences and has for them educational value. One of the ways that this could be achieved is by giving some incentives to audiences through what he called 'gamification', in other words, through giving small rewards to users for their engagement. However, Bacon (2012) noted that 'there is a sort of a dark side to gamification, which is seen as being of a kind of a rather, perhaps, crass way of incentivising unpaid labour'. For Bacon there is need to revise the Museum's role and mode of operation of the cultural organisations more generally. This for him reflects a wider cultural shift – a shift that makes

us re-think the roles of the digital specialist and that of the curator. Although the idea of the content curator seems to challenge the authority of the museum, Bacon noted that this has yet to happen to the Brighton Museum. In terms of expertise, he added:

[T]here are new forms of expertise emerging, but much of those aren't necessarily linked to digital cultures or digital technology particularly. I think in a sense, where the new forms of expertise are arising is still quite hard to identify. My job is an interesting one because what we have seen over the last few years, is you do see digital specialists if you like, appearing, for roles within museums, where they're not dealing with ICT. I think about five years' ago, it was always seen as being particularly the online or digital activity. The museum would either be run by the ICT department or by collections managers and I think one issue that emerged with that, is that often it wouldn't have the kind of broad enough set of skills to deliver that to the fullest extent. So this is just making very crass generalisations, there will always be exceptions to this, but in terms of collections management, if your focus is on those very detailed, meticulous tasks of actually documenting your collections and keeping your data in a very rigid structure, it means that that role doesn't necessarily carry over very well to looking at things like audio to engagement.

4. SCIPping

An interview was undertaken with Mark James of Sussex Community Internet project (SKIP) in December 2012. SCIP is a longstanding project designed to assist community groups and organizations across a wide spectrum (including voluntary, funded and charity), to extend and develop their activities through developing better ways of using web tools – and now social media. One of the valuable inputs from the SCIP interview was that it provided a perspective on internet in the community over a relatively extended period. Mark James explained how their original approach had developed – and as a part of this, how they have increasingly been concerned to extend and develop expertise in others rather than to simply provide services. There was also discussion of issues arising around dissemination here; for instance given that community and charity groups become increasingly aware of how important it is that they manage and control their own web content. As James (2012) noted, different organisations have different preferences over what media platforms to use. For instance, for the Southwark Disability Forum

Facebook would be the most obvious social media platform because people can chat to each other, and I think we're actually setting up a closed group, that people have to become members of.

SCIP no longer provides group training - but it does offer training of web management on an ad hoc basis and this may mean that expertise is transferred not into a group as a whole, but to an individual. For example, James (2012) told us that now that the content management of the website is the responsibility of the user, the groups (charities etc) have to learn these new skills in order to maintain their website. James finds ways to motivate this learning:

I'm building one website at the moment for a home for people with …learning difficulties I think is the description that they use, and they've got a Christmas play on over this weekend and I want them to take photographs so that can be put up on the website.[...]

James adds that he is sure these users have become 'more confident and motivated' – but goes on to question how or whether this means they become more creative. 'that's the complicated bit'. At times he says, 'I actually need to take power away' in order to enable groups to undertake work they can handle.

Cross-learning?

The interviews with these groups and individuals each produced much material for future work and also, in some cases, for

Can the desire to use and demand for more interactivity, and the 'taking ownership' of exhibitions and objects, evidenced in some of the activity around Brighton and Hove Museum and Art gallery, where 'everybody wants to be a curator' be transplanted to other communities?

further elaboration via other publications. It also seemed important to us to consider the connections between the various voices we listened to – and to ask if various approaches, or conceptualizations found in some areas, were suggestive in others. For instance can the desire to use and demand for more interactivity, and the 'taking ownership' of exhibitions and objects, evidenced in some of the activity around Brighton and Hove Museum and Art gallery, where 'everybody wants to be a curator' be transplanted to other communities? Can a stronger desire to use and to learn be generated amongst groups of users who may be held back not only by physical access issues but also by issues of confidence and motivation to develop skills)?

The barriers to use which apply to various disabled or often excluded groups may arise not due to either technology or impairment, but as a complex combination of factors. Can it be that an understanding of this complexity be taken up to extend to wider audiences and users of cultural resources – such as libraries and museums? And finally how can the voices of those we spoke to be heard more clearly or be invoked to respond to the policy regime within which issues of expertise and literacy are being addressed?

Part V: Conclusions:

This scoping study sought to cross-cut and inform other work on digital transformation that is being undertaken across the CNN+ network (and of course elsewhere) in a series of spheres relevant to cultures and communities (in health and well-being, cultural production, digital heritage and everyday life contexts for instance) by asking a simple set of questions: what is expertise? How can people be helped to become more expert? What does building expertise in a particular context mean? And what can digital experts produce in the contexts of cultures and communities?

We conclude that in policy spheres attention paid to safety and risk (on the one hand) and focus on use-as-consumption (on the other), and on 'literacy' and 'basic access' have produced a neglect of the above questions. We suggest that not enough attention is paid to questions of (how to cultivate) active use, engaged use, expert use, creative and collaborative use. To suggest more expertise is desirable; this means to raise the bar; to demand more- to to find ways to design for more. We conclude that in many ways 'literacy' in relation to computing is a problematic term. In the context of reading, 'literacy' is invoked as that which is necessary to unlock the world. In the context of the digital – that is, in the case of digital literacy - this slip from reading to writing does not occur in the same way. Digital' literacy tends to suggest not the opening of possible worlds, but a form of instrumentality; the ability to operate at a low level or just 'adequately'. And this is a falling away - the promise of digital media after all, was that it enabled new forms of authorship and writing.

Asking how expertise can be cultivated produces questions about how expertise is to be understood. We conclude that 'expertise' itself is productively understood as a techno-social construction. Gaining or building expertise in a particular area demands particular kinds of cognitive activity and work. However, this process is also always contextualized within social contexts, which not only tend to define what constitutes the cut-off level (e.g. what constitutes expert coding?) where use shades into expert use, but that also temper or condition how expertise is acquired. Questions of confidence, investment and desire central to the acquisition of expertise are qualities that are unequally shared out in a society where cultural and well as economic capital is unevenly distributed.

Digitalization is transforming many cultural forms and practices and institutions – raising new possibilities and producing new forms of culture. It is also producing new closures (loss of control) and new exclusions. A response to this is to recognize – and find ways to develop and design for – active expertise, to ask how engagement can be fostered and built through communities in local and networked cultures at new levels.

Amongst the issues arising are specific research projects based around these vectors:

How to learn from the new practices of audience engagement and crowd-sourced knowledge that are tried out by museums, to open up opportunities for engagement in groups that are not usually targeted by such initiatives?
How to understand combinations of barriers to fuller engagement – and that these may not relate specifically either to primary disability nor to physical access issues, but be the result of complex combinations.
How to consider computational capacity not in terms of generation, but in terms of life long learning? And at the same time to consider how formal learning can intersect with home and other everyday spheres in more productive ways.
How to develop and sustain digital extensions to community and cultural services in ways that do not replace but extend existing forms of provision.
How to help groups offer expertise rather than free tools etc. How to make more social and more inclusive the sharing side of code culture – which may at best point to ways to build inclusive forms of expertise?

Finally a clarification is necessary. The calls made here for the fostering and enabling of expertise - which constitute our response to the material we have researched and the groups and individuals whom we have talked to in pilot interviews and other organized forms of capture – do not presume to over-play the influence of the media – even of this kind of pervasive media – in the social world.

Digital transformation - and policies and activities to democratize that process - clearly cannot over-write existing social dynamics (inequality, life chances, cultural capital distribution). Digital media systems are part of the social order and of social dis-order and exclusion. However, we do believe that digital networks produce new possibilities as well as – potentially – new forms of exclusion. More, we believe that all groups should have a chance to access these possibilities at more than a basic level.

Our intention is to disseminate the research done here to the CNN+ network via the Expertise blog and via the CNN+ website. This will archive the report and connect in to the CNN+ work as a whole. In addition researchers are preparing three papers for academic journals and will contribute to a special edition of Convergence (commissioned/accepted) on Expertise to be produced jointly by the CNN+ investigators.

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Glossary

The Digital Inclusion Team (DIT) (2007): The report describes the landscape of digital inclusion activities in England. Prior to this, the report Inclusion Through Innovation: Tackling Social Exclusion Through New Technologies, November 2005 by the Social Exclusion Unit was a key step in linking technology to the social exclusion agenda. Further to this, Helen Goulden (2007) 'Beyond the digital divide: focusing technology on delivering social inclusion' in Richard Berry and Dave McLaughlin (eds.), Localism and the Information Society, Knowledge Politics highlights a number of potential benefits technology can bring to helping local Government tackle social exclusion. Skills and confidence – whether the individual is able to, and feels able to, make affective use of technologies, were also considered key barriers. Concerns about security also fell into this category. 'A lack of skills leads to a lack of confidence, which in turn leads to a lack of trust of technologies. Credit card protection is the main concern for internet security and there is a correlation between lack of confidence and reluctance to use personal information over the internet' (p.34). The report further manifested how digital inclusion aims were met when local communities of socially disadvantaged groups (carers, young people, older people, rurarly deprived, illiterate, unemployed, low income, on benefits, isolated, homeless, disabled, poor health, victims of crime, offenders, addicts, ethnic minorities) became involved with these technologies through various projects, such as E-LAMP (targeted at traveller children), Significan't (deaf people) and so on.

eLiteracy: eLiteracy are initiatives by the European Commission. They have proved to be very effective in helping media literacy organisations and practitioners from different European Countries to establish contact and create networks which are a first step to a steady and profitable exchange of knowledge and experiences (http://ec.europa.eu/culture/media/literacy/act_prog/index_en.htm).

Manifesto for a Networked Nation: 'The 10 million people in the UK who have never been online are already missing out on big consumer savings, access to information and education. They will be even more isolated and disadvantaged as government and industry expand ever faster into digital-only services. We must change our mindset from one that shields people from using the internet to one that helps empower them to get online and enjoy all the benefits'.

Review of the Communications Bill

The review is led by Department of Culture, Media and Sport (DCMS). The consultation was structured around a series of seminars http://dcmscommsreview.readandcomment.com/

The review aims to:
- ♁ promote growth and evolution in the communications sector
- ♁ to meet consumer expectations of high-quality content and services delivered in a variety of ways
- ♁ to improve connectivity and speed
- ♁ to ensure sufficient protection from unfair practices and inappropriate content

Appendix 1: Media Literacy in the European Commission

Other relevant initiatives are the Recommendation of the European Parliament and of the Council of 16 November 2005 on film heritage and the competitiveness of related industrial activities. Member States are urged to promote the use of film heritage in education and fostering and promoting visual education, film studies and media literacy in education at all levels. Relevant is also the Proposal for a Recommendation of the European Parliament and of the Council on the protection of minors and human dignity and the right of reply in relation to the competitiveness of the European audiovisual and information services industry of 30 April 2004. This stresses the importance of Media Literacy and Media Education programmes. More information on the 2002 and 2003 projects.

Since 2003, an informal group of national regulators in the broadcasting area has been convened by the Commission for a yearly meeting in Brussels. The meetings are attended by independent national regulatory authorities of the Member States, the candidate countries and the EEA countries.

Projects have received European financial support in with the objective to:
- ♁ **analyse** media representations and media values in a multimedia perspective;
- ♁ **encourage** the production and distribution of Media Literacy related content;
- ♁ **stimulate** the use of media in order to improve participation in social and community life;
- ♁ **intensify** networking around media education related issues;
- ♁ **concentrate** on the implementation of media literacy initiatives bridging the media industry and the education world, in a "hands-on" approach.

Two of the supporting programmes at Commisison level are the MEDIA 2007 programme and the Safer Internet Plus programme. The MEDIA 2007 programme has, among its operational objectives, the education and creation of an audience for European cinematography. The proposal underlines the importance of Media Literacy and Image Education initiatives and in particular those organised by festivals for a young public, in close cooperation with schools and other institutions. The full exploitation of the economic and cultural potential of the European audiovisual sector depends also on the integration of the European audiovisual heritage within the educational and cultural policy frameworks of the Member States. The Safer Internet plus Programme builds on the previous Action Plan, aims to empower parents and teachers with internet safety tools. It also covers other media, such as videos, and explicitly addresses the fight against racism, and "spam". It will focus more closely on end users: parents, educators and children.

Digital Agenda for Europe

The Digital Agenda is built upon wide consultations, in particular on inputs from the Digital

Competitiveness Report 2009 - COM(2009) 390; the Commission's 2009 public consultation on future ICT priorities; the Conclusions of the TTE Council of December 2009, the Europe 2020 consultation and strategy; and the ICT Industry Partnership Contribution to the Spanish Presidency Digital Europe Strategy:, the own-initiative report of the European Parliament on 2015.eu and the Declaration agreed at the informal Ministerial meeting in Granada in April 2010. Particularly in section 2.6 (p. 24-27) of the document it is outlined how, by 2011, Member States should implement a series of policies targeting areas such as:
• Long-term e-skills and digital literacy policies and promote relevant incentives for SMEs and disadvantaged groups;
• The provisions on disability in the Telecoms Framework and the
Audiovisual Media Services Directive;
• Mainstream eLearning in national policies for the modernisation of education and training, including in curricula, assessment of learning outcomes and the professional development of teachers and trainers.
For more information see: http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm

Additionally, based on the experience gained from the first "European e-Skills Week" (1-5 March 2010), the Agenda called out for:

> multi-stakeholder partnerships, increased learning, recognition about digital competences in formal education and training systems, as well as awareness raising and effective ICT training and certification outside formal education systems, including the use of online tools and digital media for re-skilling and continuing professional development (European Commission, 2010, p.25). This call links to a proposed Action to launch a multi-stakeholder sectoral council for ICT skills and employment to address demand and supply aspects and results from priority given to the "New skills for new jobs" Flagship launched in 2010.

Consequently, the **key actions** proposed in the Agenda concerned the development of tools to:
• Promote a higher participation of young women and women returners in the ICT workforce through support for web-based training resources, game based eLearning and social networking;
• Develop in 2011 an online consumer education tool on new media technologies (e.g. consumer rights on the internet, eCommerce, data protection, media literacy, social networks etc.). This tool will provide customised information and education materials for consumers, teachers and other multipliers in the 27 Member States;
• Propose by 2013 EU-wide indicators of digital competences and media literacy;
• Systematically evaluate accessibility in revisions of legislation undertaken under the Digital Agenda, e.g. eCommerce, eIdentity & eSignature, following the UN Convention on the Rights of Persons with Disabilities;
• Based on a review of options, make proposals by 2011 that will make sure that public sector websites (and websites providing basic services to citizens) are fully accessible by 2015;
• Facilitate by 2012, in cooperation with Member States and relevant stakeholders, a Memorandum of Understanding on Digital Access for persons with disabilities in compliance with the UN Convention.

In practice this meant that EU Member States should:
• Implement by 2011 long-term e-skills and digitalliteracy policies and promote relevant incentives for SMEs and disadvantaged groups;
• Implement by 2011 the provisions on disabilityin the Telecoms Framework and the Audiovisual Media Services Directive;
• Mainstream eLearning in national policies for the modernisation of education and training, including in curricula, assessment of learning outcomes and the professional development of teachers and trainers.

Appendix 2: NATIONAL PROVISIONS COMMUNICATED BY THE MEMBER STATES

CONCERNING:
Directive 2007/65/EC of the European Parliament and of the Council of 11 December 2007 amending Council Directive 89/552/EEC on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities (Text with EEA relevance) (http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:72007L0065:EN:NOT#FIELD_UK)

United Kingdom:
Transposition deadline: 19/12/2009
    1. Audiovisual Media Services Regulations 2011
Legal act: Gibraltar Regulations, number: Legal Notice 207 of 2011; Official Journal: Gibraltar Gazette, number: 3885, Publication date: 20/10/2011, Page: 01590-01623, Entry into force: 20/10/2011; Reference: (MNE(2011)57339)
    2. The Audiovisual Media Services Regulations 2010
Legal act: Statutory instrument (SI), number: 2010/419; Official Journal: Her Majesty's Stationery Office (HMSO), number: SI 2010/419, Entry into force: 18/03/2010; Reference: (MNE(2010)52259)
    3. The Copyright and Related Rights Regulations 2003
Legal act: Statutory instrument (SI), number: 2003/2498; Official Journal: Her Majesty's Stationery Office (HMSO), number: 2003/2498; Reference: (MNE(2009)55383)
    4. The Television Broadcasting Regulations 2000
Legal act: Statutory instrument (SI), number: 2000/0054; Official Journal: Her Majesty's Stationery Office (HMSO), number: 2000/0054; Reference: (MNE(2009)55381)
    5. The Broadcasting Act 1996
Legal act: Act of the UK Parliament, number: Chapter 55; Official Journal: Her Majesty's Stationery Office (HMSO), number: Chapter 55; Reference: (MNE(2009)55380)
    6. The Copyright, Designs and Patents Act 1988
Legal act: Act of the UK Parliament, number: Chapter 48; Official Journal: Her Majesty's Stationery Office (HMSO), number: Chapter 48; Reference: (MNE(2009)55382)
    7. The Ofcom Broadcasting Code
Legal act: Administative measures; Official Journal: Administrative measures, Publication date: 16/12/2009, Entry into force: 16/12/2009; Reference: (MNE(2009)55404)
    8. Concordance table
Legal act: Concordance table; Reference: (MNE(2009)55319)
    9. An Agreement Between Her Majesty's Secretary of State for Culture, Media and Sport and the British Broadcasting Corporation
Legal act: Administative measures, number: Cm 6872; Official Journal: Her Majesty's Stationery Office (HMSO), number: Cm 6872; Reference: (MNE(2009)55318)
    10.   The Wireless Telegraphy Act 2006
Legal act: Act of the UK Parliament, number: Chapter 36; Official Journal: Her Majesty's Stationery Office (HMSO), number: Chapter 36; Reference: (MNE(2009)55317)
    11.   The Communications Act 2003
Legal act: Act of the UK Parliament, number: Chapter 21; Official Journal: Her Majesty's Stationery Office (HMSO), number: Chapter 21; Reference: (MNE(2009)55316)
    12.   The Audiovisual Media Services Regulations 2009
Legal act: Statutory instrument (SI), number: 2979; Official Journal: Her Majesty's Stationery Office (HMSO), number: 2009/2979, Entry into force: 19/12/2009; Reference: (MNE(2009)55315)
    13.   An Agreement Between Her Majesty's Secretary of State for Culture, Media and Sport and the British Broadcasting Corporation
Legal act: Administative measures, number: Cm 7853; Official Journal: Her Majesty's Stationery Office (HMSO), number: Cm 7853; Reference: (MNE(2010)52262)
    14.   The Audiovisual Media Services (Product Placement) Regulations 2010
Legal act: Statutory instrument (SI), number: 2010/831; Official Journal: Her Majesty's Stationery Office (HMSO), number: SI 2010/831, Entry into force: 16/04/2010; Reference: (MNE(2010)52261)
    15.   The Communications Act 2003 (Disclosure of Information) Order 2010

Legal act: Statutory instrument (SI), number: 2010/282; Official Journal: Her Majesty's Stationery Office (HMSO), number: SI 2010/282, Entry into force: 09/02/2010; Reference: (MNE(2010)52260)

16.   Code on the Scheduling of Television Advertising

Legal act: Administative measures; Official Journal: Administrative measures, Publication date: 14/07/2009, Entry into force: 14/07/2009; Reference: (MNE(2009)55384)

Appendix 3:

Ofcom:

 The complete list of websites Ofcom supports:
Beatbullying http://www.beatbullying.org/dox/what-we-do/what-we-do.html
CEOP http://ceop.police.uk/About-Us/
Childnet http://www.childnet-int.org/
Direct Gov (internet safety)
http://www.direct.gov.uk/en/Parents/Yourchildshealthandsafety/Internetsafety/index.htm
FOSI http://www.fosi.org/
Get safe online http://www.getsafeonline.org/
Gridclub http://www.gridclub.com/
Insafe
http://www.saferinternet.org/web/guest/home;jsessionid=8654FCA897C505D06CCEB12286EAEF 0E
IWF http://www.iwf.org.uk/about-iwf
Kids and Media http://www.kidsandmedia.co.uk/
Know the net http://www.knowthenet.org.uk/
Phonebrain http://www.phonebrain.org.uk/
T-Mobile advice http://www.t-mobile.co.uk/help-and-advice/advice-for-parents/
UK Safer Internet http://www.saferinternet.org.uk/
UKCCIS http://www.education.gov.uk/ukccis
Virtual Global Taskforce http://www.virtualglobaltaskforce.com/what-we-do/
Wisekids http://www.wisekids.org.uk/

The complete list is:
BBC Newswatch http://news.bbc.co.uk/newswatch/ukfs/hi/default.stm
BFI http://www.bfi.org.uk/education/
Childnet (Know it all) http://www.childnet-int.org/kia/
Centre for media literacy http://www.medialit.org/
Emedus http://www.emedus.org/
Film Education http://www.filmeducation.org/
Film Street http://www.filmstreet.co.uk/
ICO: online and computing
http://www.ico.gov.uk/for_the_public/topic_specific_guides/online.aspx
Know the net http://www.knowthenet.org.uk/
Media Awareness Network http://www.media-awareness.ca/english/index.cfm
Media and Learning news http://news.media-and-learning.eu/may-2012
Media Ed http://mediaed.org.uk/
Mediawise Trust http://www.mediawise.org.uk/www.mediawise.org.uk/index-2.html
Media Smart http://www.mediasmart.org.uk/
Media Literacy Project http://medialiteracyproject.org/about
NAMLE http://namle.net/
Switch On http://stakeholders.ofcom.org.uk/market-data-research/media-literacy/archive/medlitpub/switch-on/
The Media Society http://www.themediasociety.com/
The Stanhope Centre http://stanhopecentre.org/2007/

The 2011 Ofcom report provided data about:

(a) **the take-up of media** (for example the indicators about smartphone ownership amongst children aged 5-15, game consoles and other platforms used to access the internet),

(b) **the use of media** (for instance hours spent online at home, social networking activity, watching audio-visual content online and making calls),

c) **Knowledge and understanding of media among 8-15s** (for example critical judgement about search engine results or hierarchical judgement of information and understandings of privacy),

(d) **Parents and childrens attitudes and concerns** (which includes confidence from parents in terms of their attitudes towards trusting their child, the benefits of the internet, and whether their child has been taught about online safety at school),

(e) **Parental mediation strategies** (for example these concern rules set by parents about internet use or the use of multichannel TV, the use of internet controls or filtering software)[19].

BECTA

In April 2008, Becta launched a major research programme to support the Harnessing Technology strategy. There are three main projects, each with a different theme:

⚑ The learner and their context

This research is concerned with topics such as learners' experience outside formal education; learner voice; online cultures; as well as developments and trends in learners' behaviour and experience.

⚑ **Pedagogy and the curriculum**

This research is concerned with a broad range of topics such as assessment; teaching approaches; formal and informal learning; personalisation and differentiation. It encompasses research into approaches resulting from, and afforded by, technology developments.

⚑ **Business processes for delivery**

This research is concerned with processes, support and services at a local, regional and national level. This includes funding mechanisms, procurement approaches, training and professional development. An important aspect of this research is the development of an understanding of successful approaches taken in other sectors and markets, and identifying how similar benefits can be realised within education.

See the archived website:

http://webarchive.nationalarchives.gov.uk/20110130111510/http://research.becta.org.uk/index.php?section=rh&catcode=_re_mr_hts_03

Futurelab aims were to teaching and learning, making it more relevant and engaging to 21st century learners through the use of innovative practice and technology. It produced the 2009 'A report for educators on using games for learning' and the 2010 report 'Digital literacy across the curriculum'. Similarly to what the Byron Reviews recommended, Futurelab(2010, p.16) noted:

A focus on digital literacy in schools can help to address concerns about e-safety by furnishing students with the ability to engage safely in multiple practices surrounding the use of technology.

Digital literacy according to FutureLab is a wide-ranging set of practices that enable students to create, share and understand meaning and knowledge in an increasingly digital age.

To be digitally literate is to have access to a broad range of practices and cultural resources that

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19 A further analysis whose purpose was to provide additional demographic information about the parents/carers who are using various types of online mediation for their child's online use, compared to those who don't, was released in 2012- See Children and Parents Media Literacy Tracking Study – 2011Parental mediation -profile information, Publication: 1 February 2012 [available from http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/additional-analysis.pdf accessed 3 September 2012]

you are able to apply to digital tools. It is the ability to make and share meaning in different modes and formats; to create, collaborate and communicate effectively and to understand how and when digital technologies can best be used to support these processes.

 The key points of the Futurelab (2010) report 'Digital literacy across the curriculum' are:
- That digital literacy can be important not only in supporting students to become independent, critical learners but also in narrowing the gap between children's lived experiences inside and outside of school.
That digital literacy can be developed alongside subject knowledge in all classrooms at both primary and secondary level.

This report focuses on how to support young people to be confident and competent in their use of technology in a way that will enable them to develop their subject knowledge by encouraging their curiosity, supporting their creativity, giving them a critical framing for their emerging understandings and allowing them to make discerning use of the increasing number of digital resources available to them. In 2009, The Independent Review of the Primary Curriculum recommended the introduction of a new primary National Curriculum for England, Wales and Northern Ireland, which 'represents a shift in the way in which digital technology is viewed in the curriculum. Far from focusing solely on functional skills, it sets out an entitlement for children to develop digital literacy and the skills, knowledge and understanding that foster independent, discerning and safe technology use' (p.15). These skills have been set by two previous policy documents, a) the 21st century work skills set out in the 2006 Leitch Review of Skills, and b) the 2009 Digital Britain report, published by the departments for Culture, Media & Sport (DCMS) and Business, Innovation and Skill (BIS) . See Department for Culture Media and Sport and Department for Business, Innovation and Skills (2009). Digital Britain: Final Report. London: HMSO. Digital Britain report available online:
http://webarchive.nationalarchives.gov.uk/+/http://www.culture.gov.uk/images/publications/digitalbritain-finalreport-jun09.pdf.

Appendix 4:

As explained in CHAPTER 24 of the document, the Digital Economy Act 2010 is
'[a]n Act to make provision about the functions of the Office of Communications; to make provision about the online infringement of copyright and about penalties for infringement of copyright and performers' rights; to make provision about internet domain registries; to make provision about the functions of the Channel Four Television Corporation; to make provision about the regulation of television and radio services; to make provision about the regulation of the use of the electromagnetic spectrum; to amend the Video Recordings Act 1984; to make provision about public lending right in relation to electronic publications; and for connected purposes'. See http://www.legislation.gov.uk/ukpga/2010/24/introduction

Brief 1, entitled 'Creative Destruction and Copyright Protection, Regulatory Responses to File-sharing' (Cammaerts & Meng 2011, p.2) further notes that: The brief is available from http://blogs.lse.ac.uk/mediapolicyproject/2011/03/21/media-policy-project-policy-brief-1-creative-destruction-and-copyright-protection and http://www.scribd.com/doc/51217629/LSE-MPPbrief1-creative-destruction-and-copyright-protection

- Providing user-friendly, hassle-free solutions to enable users to download music legally at a reasonable price, is a much more effective strategy for enforcing copyright than a heavy-handed legislative and regulatory regime.

- Decline in the sales of physical copies of recorded music cannot be attributed solely to file-sharing, but should be explained by a combination of factors such as changing patterns in music consumption, decreasing disposable household incomes for leisure products and increasing sales of digital content through online platforms.

LSE Brief

The LSE Brief (2011, p.13) proposed that a 'reform of copyright enforcement provisions takes account of changing cultural practices and rapid technological innovation. The legal framework for copyright needs to be better aligned with the potential for innovation in the online everyday practices of consumers and citizens'.

The **view that digital techno**logies constitute opportunities rather than threats to the creative in^dustry was echoed in the review of intellectual property and growth, by **P^rofessor Hargreaves** in May 2011, entitled Digital Opportunity: an Independent Review of IP and Growth'. See also the Government's response to the review, which sets out the Government's broad acceptance of its recommendations. The response also indicates the way that online copyright infringement will be tackled, both through the Digital Economy Act and through voluntary action by responsible businesses. http://www.ipo.gov.uk/ipresponse-full.pdf

Eaccessibility Forum:

The Forum reports to the Minister for Culture, Communications and Creative Industries and supports the work of the UK Digital Champion and RaceOnline 2012.

As stated on the DCMS website, the Forum aims to:
- ✍ make sure disabled people in the UK have equivalent access to ICT networks, services and equipment in line with new EU legislation
- ✍ support business in exploiting expertise in e-accessibility in the EU and globally
- ✍ produce and implement an eAccessibility Action Plan that addresses the issues of people with particular needs so that they can partake fully in UK digital economy.

Appendix 5:

The Media Trust marks its **impact** in the field of digital inclusion and media literacy using the following numerical **indicators**: Training courses and conferences, followers who receive advice, tips and links about communications from the Media Trust Twitter feed, television viewers throughout the UK watched Community Channel, number of charities, communities and young people who were supported by media professionals, number of stories from charities and communities which were distributed to newsrooms across the UK by the free Community Newswire service. Note that there is a shift in the aims of the organisation as well as the ways it registers impact, from the 2007/08 annual report. For instance then, the BTCV's campaign received support from Media Trust Campaigns in order to communicate 'Spring into Action' message. This encouraged involvement into local environmental activities. 'Our task was to target harder-to-reach people, specifically those over 25, with no formal qualifications, a disability or limiting long-term illness, or those who belong to specific Black and Minority Ethnic groups. We adapted BTCV' existing campaign materials translating them into three different languages and reached the heart of our audience through grass-roots community marketing. We took part in a successful launch event that featured Charlie Dimmock, ran road shows in a Community Channel branded bus, offered a free telephone helpline through Learn Direct and the Chinese Mental Health Association and secured good coverage in targeted press as diverse as London's Metro, the Doncaster Star and Pardes Weekly'.

Looking at citizen journalism and participation, Media Trust commissioned a team led by Professor Natalie Fenton (2010), to report back about community needs. This particular report calls for **local news hubs**, supported with funds from local authorities and foundations, which would bring together communities, professional journalists, volunteers and technicians. Although these suggestions do not directly link to digital skills and expertise, they were thought by the Media Trust to 'drive new community online and digital initiatives, giving local communities the inspiration and

drive to get online and "digi-organise"' (p.4).

Other organisations for digital inclusion for disadvantaged groups:

Action for Blind people (RNIB Group)
Citizens Online http://www.citizensonline.org.uk/
Community Media Assoc http://www.commedia.org.uk/
Community TV Trust http://www.communitytvtrust.org/
Delivering digital inclusion (2008)
http://www.communities.gov.uk/publications/communities/deliveringdigitalinclusion
Digital inclusion Wales http://www.digitalinclusionwales.org.uk/
Digital Unite http://digitalunite.com/
Get it Together (BT) http://www.bt.com/includingyou/getting-online.html?s_cid=con_FURL_getit
Go ON UK http://www.go-on.co.uk/

Ends.