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Title	The emergence of the techno-elite audience and free/open source content : a case study on BBC Backstage
Authors	Lin, Y
Type	Article
URL	This version is available at: http://usir.salford.ac.uk/id/eprint/27351/
Published Date	2012

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The emergence of the techno-elite audience and free/open source content: A case study on BBC Backstage

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Abstract:

This paper, through a case study on the BBC Backstage project, argues that the continuing convergence of media and ICT sectors has encouraged a powerful elite audience group to emerge – what I term “*techno elite*” in this paper. The *techno elite* usually have access to the latest knowledge and cutting-edge hardware, and is equipped with good skills of manipulating, configuring and re-configuring digital tools. When free/open source data and content are made available, some people in this category have the competence of re-purposing, re-using, re-interpreting and renovating the data and content and (re-)generate values of the original data or content. This process can be quite innovative and sometimes result in unexpected and incalculable values. Drawing on discourse analysis and ethnographic fieldwork data, this paper will narrate the story of *BBC Backstage*, how it came about, how it engaged with the techno elite, how it envisioned the roles of the *techno elite* in participatory media. The concept of ‘*techno elite*’ will be illustrated and defined through examining the collective practices of the *techno elite* in this BBC-led project, looking at how they engage with free/open source content and data to re-create content and values. This practice-based perspective (on collective ‘elitist practices’) will avoid a static and categorical definition of an elite audience group and serve as a more robust analytical technique for understanding the roles of contemporary elite audience in today’s convergent, distributed and networked media industry. The paper will conclude with some provisional findings about the potential influence of this emerging elite audience group, the opportunities and challenges emanated in light of the changing media landscape.

Keywords: techno elite, elite audience, free/open source data, open content, data reuse, data visualisation, user-generated content, BBC, public values, Open innovation, media prosumption.

Introduction

The convergence of media platforms and conglomeration of media and ICT industries are taking place at an unprecedented speed as the Internet, peer-to-peer social media technologies and computing hardware prevail in the modern world. Content now is (re-)produced and delivered on a variety of platforms, and giant IT companies such as Apple, Google and Microsoft rightfully become members of media industries. The shifting media landscape, as Jenkins (2004) points out, “alters the relationship between existing technologies, industries, markets, genres and audiences” (p.33).

What we have observed is the continuing convergence of industries and content, and increasingly fragmented audience groups (e.g., “the long tail”) and changing media consumption and reception behaviours. While some audiences remain passive information recipients, in this convergent era where participation is key to convergence media culture (Deuze 2006), many viewers, readers, listeners are now taking part in content production and consumption. The line between content producers / professionals (various specialised roles such as authors, performers and spectators) and consumers / amateurs, as many have noticed, is becoming blurred (e.g., Jenkins 2006, Sundet and Ytreberg 2009).

Several conceptual frameworks have been proposed to capture this trend. White’s (2006) concept of ‘spectators’ that positions audience as those who are rendered and regulated by technologies and representations, for whom looking and the mediation of the screen are significant aspects of engagement emphasises audience’s embodied experiences, agency and identity. Gillmor (2004) identifies those reader-turned grassroots journalists as ‘We’ and argues that Big Media’s monopoly on the news can be dismantled through a collective process of knowing and conversing. Others follow up to highlight the empowerment contemporary audience is endowed with. For example, Wilson’s (2009) ‘media user theory’ aims to update the ways we understand the relationship between media and audiences who are becoming active and public minded. Macnamara (2010) says the 21st century media is ‘interactive or participatory’.

Meanwhile, new strategies for engaging with audience have emerged. Whereas conventional audience engagement methods such as audience workshops are still widely used (for example, Hardie (2011) studied the audience workshops that encouraged film audience to use words to express private viewing experiences for creating ‘live quality of interaction between storyteller and audience’ (p. 385)), nowadays audience (may it be radio listeners, viewers in front of the TV or online on iPlayer, readers following the BBC tweets or webpages) are actively invited to get involved in the content creation of a show by phone, texting sms, emailing, tweeting or messaging on Facebook. To enhance the increasingly popular second-screen viewing habit, media organisations have developed strategies for 360-degree production, commissioning and programming targeting at multi-platform content creation. Also, user-generated content has been increasingly integrated into programmes. Interactions with audience take place on various platforms – by phone, sms, email, twitter, Facebook messages, and in various different activities (song request, vote,

share personal experiences or memories or opinions). The trend has been exemplified in some recent episodes in the UK: the Guardian and BBC have respectively and repeatedly used different means of media (social media, phone, emails, sms) to collate and disseminate information at different occasions. For example, the content generated and/or contributed by users was collated and re-presented on the broadcaster's webpages in the forms of live updates, or made into beautifully visualised *infographs* when the riots happened across the country in August 2011, when airport traffic was disrupted by snow or volcano emission or by strikes.

Documentation of these various media content production activities involving user-generated, user-contributed, and user-distributed materials has mushroomed in academic publications. For example, Monk (2011) studied how period film audience in the UK receive, (re-)appropriate and remix key films originally released in the 1980s to 1990s to demonstrate their passion and identity. The special issue "Approaching the Online Audience: New Practices, New Thinking" edited by Hight et al. for this very same journal *Participations* (2011) also provides state-of-the-art "audience research that stems directly from the interactive audience experience of the digital media" (p.558).

For example, Hardy *et al.* (2011) analyse the interactive experiences constructed for users of the New Zealand online interactive drama Reservoir Hill (2009, 2010) on various prescribed forms of interactivity across multiple platforms. They found that prescribed forms of engagement were actively explored only by a small proportion of users and the real opportunities for co-creation of the core narrative for the audience were few. "There was also little to encourage forms of user productivity that might have fostered an online fan base external to the official website; no support for and acknowledgement of possibilities for user groups to develop their own fansites" (p. 639).

Zanker (2011) investigates how New Zealand child audience responded to interactive websites attached to popular New Zealand produced children's television shows, and how interactive web spaces were designed and developed to attract child audiences who are nowadays savvy web *viewers*, a popular contraction of the terms 'viewers' and 'users' that has gained circulation in relation to interactive media¹ through fostering playfulness between child viewers and the production team. He describes:

Children contribute content and reversion other content via social media, often with an intensity not expected by the production team. Producers solicit ideas from viewers, test new ideas, ask for content and market upcoming content on websites. They use social networking tools to talk to presenters, gossip about content on the television programme, make suggestions for better content and share new information gleaned from other websites and networks. Children are also enthusiastic prosumers who create their own media content which they upload to websites. Website visitors provide formative feedback for producers on the effectiveness of television content.

They respond to content in real time and suggest new content through a range of social networking tools including emails, chat, Facebook and Twitter. Communities build rapidly around the favourite shared elements. In such ways it can be argued that the New Zealand children who have access to broadband are being heard and seen more on screen via pictures shared and a wider selection of personal stories told than would ever be possible via television. (p. 679)

Zanker argues that “Participation is valued largely as a means of recruitment of new users, but it can be equally argued that it gave children a sense of agency and involvement in the look of ‘their’ show” (ibid.).

This existing body of literature shows that audience engagement and involvement takes place in various different forms and in different contexts. For example, it is common to invite audience to interact with the content produced by the professionals, or to produce peripheral / complementary / “glance-able information” on microblogging or social networking websites which is ‘snippets of information that are suitable to radio content that one wouldn’t want to stare at while listening to a show but will be useful if hearing something great and want to know what it is’ (Rashid, 2009). Whereas these audience interactions examined in the above cases have resulted in fun, greater enhancement of audience experience, and breaking news stories, it seems that the level of audience participation stays under the control of professional media producers. Although audience is portrayed as a group of people with agency, they appears to be treated as unprofessional, amateur, outsiders of the broadcast world and additional resources that can be utilised and exploited by media corporations. It is worth pondering whether or not, and if so, to what extent, the power relationship between broadcasters and audience has fundamentally changed given the popularisation of digital, web, mobile technologies.

As Carpentier (2011) suggests, the concept ‘participation’ has become a buzz word and requires a rethink, possibly through politicising and problematising the word ‘participation’. He notes that there exists difference between access, interaction and participation. He effectively argues that

Access and interaction remain important conditions of possibility of participation, but they cannot be equated with participation... [Through the] juxtaposition to access and interaction, participation becomes defined as a political – in the broad meaning of the concept of the political – process where the actors involved in decision-making processes are positioned towards each other through power relationships that are (to an extent) egalitarian. (p. 31)

Carpentier’s characterisation of different kinds of audience participatory activities is particularly useful for positioning the type of audience participatory activities that are to be

introduced in this paper. The case I am going to introduce below – BBC Backstage - would radicalise the discussion of media convergence, and better exemplify innovative production-consumption dynamics in a world where content production and consumption is truly interconnected and inseparable.

Methodology for studying the ‘techno-elite’

In the studies of audience segmentation, the elite-mass contrast is a popular line for categorising different types of audiences. Existing studies have used the elite-to-mass hierarchy (e.g., Goffman 1951, Mills 1956, Baltzell 1964) and an improved omnivore-univore spectrum (Peterson 1992) to conceptualise different media consumption activities, and the media effect on specific elite audiences (e.g., Davis 2005). While some contend that elite uses of media differ from those of the mainstream audience, just as elite readings of media texts can vary from mainstream readings (Livingstone 1998; Davis 2005), it has been acknowledged that the classification of elite and mass (or any classes) is often problematic (see e.g., Peterson 1992). Research based on categorical attributes cannot robustly capture the complexities and dynamics in today’s networked society where professional broadcast practices and audience behaviours are rapidly changing.

To improve our understanding of the kind of participatory audiences in contemporary society, this paper will focus on a group of active elite audience who is highly educated, media-savvy professional, who actively *prosumes* media. Specifically, this paper will examine the practices of one peculiar elite audience group, what I term “*techno elite*”,² coined for the convenience of the discussion in this paper.

There has been a considerable amount of discussion about how to categorise elite audience. Instead of employing a range of static groups defined by their occupations or incomes and presenting the ‘techno elite’ as a fixed category, this paper employs a practice-based perspective that will help avoid a static definition of this elite audience group and in so doing it is hoped that it will serve as a more robust analytical concept for understanding the roles of contemporary elite audience groups whose practices are enabled, enacted, empowered, and linked with digital technologies. A practice-based perspective is also inclusive in that it acknowledges possibilities of multiple and overlapping identities an audience may possess. Such a more flexible view would allow us to think more flexibly and realistically about contemporary audience, and effectively address the fluidity of identities in liquid modernity.

As we are going to see later, the techno elite audience holds more advanced technical knowledge and skills, and is able to configure, manipulate, re-cycle, re-use, re-appropriate, re-purpose media content for alternative use. In light of Carpentier (2011), they are engaging in meaningful participation, proactively extending the meaning of “participation” to a different level where innovation happens. In light of Mills’ (1956) “power elite” and Bourdieu’s (1979) “classe dominante”, the concept of ‘techno elite’ here offers an analytical element to underline the power of knowledge and skills in today’s

convergent media sector, and tautologically also insinuates politics (e.g., mass vs. elite culture; public ideas vs. audience tastes), potential power struggles in relation to the elite power/class structure, superiority, dominance and knowledge hegemony in the process of media content creation, distribution, globalisation and localisation. The concept of 'elite audience' encourages one to challenge the idea of a generic general public mass audience and highlights audience's individual tastes, habits, environments, and preferences.

Research Methods

Over the past years, the British Broadcasting Corporation (BBC) has been embracing and engaging different groups of participatory audience, and this has resulted in changes of professional practices (e.g., as discussed in Carpentier, 2003). As part of this ongoing transition, a five-year project initiated in 2005 at the event Open Tech 2005³ by the BBC R&D department to 'radically open up the BBC, publishing information and data feeds, connecting people both inside and outside the organisation, and building a developer community' (BBC 2010: 2), Backstage, heralded by the mantra 'use our stuff to make your stuff', had made content and data feeds available for people to build upon under a non-commercial basis.

During the course of the project, the participants had made many prototypes and many were inspired regarding open data and open content. The project had resulted in some unexpected and incalculable values. In order to understand this process, how BBC Backstage came about, how it engaged with elite audience, how it encouraged elite audience to innovate and to collaborate, this paper employs the method of case studies to understand this five-year project that has made a difference in the media sector in the UK, and for raising many discussion including the values of public broadcast.

The end-of-project e-book (commissioned by the BBC R&D department to document the project), the Backstage website⁴ and blog⁵, communications on the mailing list serve, blogs and tweets by the participants, the ethnographic fieldnotes taken at some BBC events, and informal chat with the key stakeholders involved are key data for this case study as they document many ideas, part of the interactions and innovation processes. Both the book and the blog serve as BBC's official position. The book offers 'a snapshot of some of the projects and events that Backstage was involved with, and of the legacy that it leaves behind' (ibid). The website and blog, maintained by the BBC producers, contained views from the insiders within the BBC. The content in the mailing list, open for the general public to subscribe, and is still documenting and facilitating the conversation between participants of Backstage or interested parties, provides narratives about how members from different parts of the world exchange their views, offer mutual help, and negotiate meanings. Document analysis was carried out mainly to understand the background of Backstage, the demography of the participants, and different kinds of participatory activities.

Case study on BBC Backstage

BBC started a new venture named “Backstage” to encourage re-mix, re-use, re-appropriate, re-orientation of BBC content and data. As declared on its blog, a key protocol for updating news and communicating with the participants, the project was positioned as ‘BBC’s early adopter network to encourage participation and support creativity through open innovation.

According to the slides presented by Ian Forrester, Senior Producer at BBC Backstage from 2006 until its closure, at Google Developer Day 2007, the establishment of Backstage was motivated by the Governors’ response to the Review of the BBC’s Online services by Philip Graf committed the BBC to using open standards to allow users to find and re-purpose BBC content in more flexible ways. It’s said that within the BBC, there are two views: ‘One is the traditional view of centralised websites, and the other is more open, de-centralised and a mess. That is backstage and in there, somewhere, is the future of the BBC’.

Backstage was significance in terms of BBC’s online strategy. Documented in the end-of-project e-book, Forrester said that

Backstage marked the point when the BBC started to take online seriously. Although it had an extensive web presence in 2005, especially around news, there was no real sense of any radical agenda behind the corporation’s online presence. (p.6)

The initial idea of Backstage was to ‘get the BBC’s data out’. But later on, under different leaderships, it has been developed into a (cross-industry / cross-community) developer/designer network from the BBC, an opportunity for the BBC to offer some of the content and services, a way to share with 3rd party, non-commercial developers, and BBC’s way of stimulating creativity and innovation in the market.

This initiation has brought the notion of “participatory audiences” (Jenkins 2006) to another dimension through meaningful participation that Carpentier (2011) notes. Audience, in this case, does not just *call-in* or *second-screen*, waiting for their messages to be selected by media professionals; instead, they take initiative to utilise new technologies, choose useful and/or usable BBC content and data, create extra values out of them, and re-publish and re-distribute them on other media platforms. Through re-using, re-purposing and re-appropriating media content or data, the techno-elite generates new products and values that potentially contribute to a greater creative economy.

It was said that over 500 prototypes were envisioned and produced during the project (ibid: 2). To engage a community of digital artists, web developers and software engineers, Backstage (co-)organised a series of social gatherings (including the highlight - “BBC Hack Day” in 2007) across the country (in innovatively organic formats of “unconferences”⁶ or “barcamps”). The format of these events were usually in an informal, improvisational, open manner, allowing participants to collaborate, interact, exchange knowledge, skills and information, as seen in many Linux User Groups meet-ups (Huysman

and Lin 2005). At some occasions, BBC Backstage's Hack Day also coincided with other industry events, such as Yahoo's Open Hack, so as to engage with the Yahoo! Developer network. Additionally, the key project members also participated in local gatherings of digital media workers (such as the regular Manchester Social Media Cafes which sometimes were held at BBC Manchester's building). Such kind of events and indeed milieus were important for Backstage for expanding its audience base. After all, the project itself was first launched at OpenTech 2005 which bore much resemblance to these events. In addition to encouraging collaboration, hosting or sponsoring these events also gave the project publicity and helped 'getting the data out there'.

A majority of the participants at these hack events were young males working in ICT or media industries, who have access to the latest knowledge on the Internet, who were heavily engaged with Internet cultures and equipped with abilities of programming/coding and equipped with laptops, smart phones or high-end digital devices (as evidenced by a photo by osde8info on Flickr⁷ the blog by participants Premasagar⁸ and M@⁹ and an article in the Guardian¹⁰ about the Hack Day 2007). The Hack Day, as the participant M@ put it, 'is a 36-hour marathon of coding, pizza, beer and music sponsored by Yahoo! and the BBC'.

Some of the prominent prototypes that had been developed at these 'hack days' were steered into two funded projects and continued after the closure of the Backstage project: the DataArt¹¹ and the Channelography.¹²

The DataArt project, a 22-month collaboration between BBC Learning Innovation and the Centre for Research in Education, Art and Media (CREAM) at the University of Westminster, funded by the UK Arts and Humanities Research Council (AHRC) starting from 1st November 2009, collected many of the infographic prototypes that visualised BBC-sourced data or content. It echoed a trend in the convergent media world where data and information are processed and (re-)presented in various forms such as diagrams, graphs and maps to facilitate and mediate understanding of (usually massive amount of) data and information. A classic BBC infographic visualised BBC news data feeds on a rotating globe. As declared on the DataArt's webpage:

BBC Learning recognises that the interpretation of this data is an increasingly important skill for us all and in this spirit the BBC DataArt project provides public access to interactive data visualizations of the BBC's online resources be they news information from around the world, web articles, music data or video. We will focus principally on BBC web sources but we will also be cross-referencing with other publicly available data.

To engage the interested parties (general public as the team assumed), the project provides

- access to visualisations of BBC information resources and provide commentary text and video material that show (webpage) visitors how to use,

interpret and explore them.

- learning resources for visitors to find out more about the discipline of visualisation, its history and other useful research resources.
- a collection of toolkits (tools, tutorials, computer code and access to copyright free data sources people can download and modify) for 'more experienced practitioners' (usually developers or digital artists) to exploit.

Apart from their project webpage and blog, the team also used Facebook to publicise their work and materials.

The Channelography project, or BBC Dashboard as it was later known, was also a spin-off from the Backstage prototypes. The BBC Dashboard was a daily view of television data collected via the Channelography project. It revealed a few key pieces of data, making them readable 'at a glance', in the manner of a car dashboard or office noticeboard. Data points included the daily level of repeated programming, by channel, the number of films being broadcast, and some of the top terms currently being mentioned in the news and in documentaries. The project was a commission from BBC R&D, and was designed to explore how detailed data could be aggregated upwards into a consumable, single screen front end. The project has now been retired as the idea has been integrated into BBC's running architecture.

As seen from the DataArt and the Channelography projects, data (in different forms and formats) is considered as the key to future media production. As one can see from BBC's job vacancies, data analysts (people with abilities to manipulate and analyse and present data) are much sought for these days. Audience engagement or audience analysis is now done behind the scene based on data, whether it's transactional data (number of views on iPlayer or traditional TV show ratings) or audience-generated data (such as Facebook messages or Tweets or posts on the BBC's Points of View's message boards).

The prototypes¹³ and ideas¹⁴ shared on Backstage's webpage reveal that the most used data are those in XML formats: such as travel, news, weather data. In a developer-led environment, these data can be (semi-)automatically scraped, aggregated, processed, presented/visualised at speed at large scale. Although there was also data or content that could be processed, edited and distributed using social media or video editing tools, it was less commonly observed at these Backstage events as the "audience" was mainly from the developers' community; they did not represent the ordinary mass audience. More personal or individual development of textual data (such as in the form of creative writing or editing) was also less commonly seen, compared to the provision of services for navigation and visualization of data. Instead, I have observed many prototypes that applied machine-learning or data-mining techniques on BBC's textual data, seeking for patterns in the data through clustering, text categorization, topic recognition, demographic/gender/age

identification, trend identification and tracking, time series forecasting, measuring predictability of phenomena. Again, these creations and the adoption of AI techniques could be linked with this specific group of audience's everyday practices in software development.

The Backstage's shot-for-web R&DTV¹⁵ also inspired an award-winning BBC documentary 'Virtual Revolution'.¹⁶ On its website, it is said that

R&DTV is a monthly technology programme made up of interviews from knowledgeable BBC developers, BBC project experts and experts from around the world. The show came in 3 forms: 1) A brief 5-minute video, containing all the very best bits 2) A longer 30-minute video, containing deeper conversations 3) The Asset Bundle, containing everything we used and didn't use to make the videos above. The clips in the asset bundle were raw straight from the team's cameras and although this may be too much for most people, they were great footage for those who want to remix and mashup our footage with their own or others.

Indeed, the whole R&DTV project was a strategic move of Backstage, specifically created to address the copyright issues emerged from the participants' needs of re-mixing and re-purposing BBC content. R&DTV's clips were released under a Creative Commons non-commercial attribution version 2 licence (CC BY-NC-ND 2.0),¹⁷ so that users can 'watch, rip, redistribute and remix' all the contents of Asset Bundle. The Backstage team also hoped the users could contribute back: 'We're pretty excited and ask you to please tell us what you do end up doing with the asset bundle, so we can learn what works and what does not work and fix it next time we release another asset bundle'.¹⁸ Ensued by the BBC R&DTV, the Virtual Revolution documentary also released some unedited professionally filmed footage from the series for audience to use, make their own documentary. These clips included interviews, aerial shots, graphics and music. Audience can download and reuse / remix them for free under BBC's Digital Revolution Licence¹⁹ (terms and conditions similar to CC BY-NC-ND 2.0) specifically drawn to reflect BBC's non-commercial nature.

From the DataArt project that showed how BBC data could be visualised in a creative and informative way, to the BBC R&DTV that produced and made a series of raw video and audio footage available for remix, BBC Backstage illustrated some of the best scenarios where audience is proactively *participating* in the production, value-adding, innovation process. Because of the participants' active participation, many challenges (such as the limitations of copyrights, needs for APIs, good-quality data, BBC's relatively bureaucratic institutional policies) were identified and addressed to certain extent. As recognised in the end-of-project book, Backstage has 'changed the way people think, the way the BBC interacted with external designers and developers, and the way that they worked together... It isn't just a few data feeds and some blog posts. Backstage brought about permanent

change, for the people who worked there, for its community of external developers and for the BBC.' (ibid.: 2).

Interestingly, the advent of Backstage also arrived at a time when BBC was drawing up its new agenda around public values (see BBC 2004; Guardian 2004). The creation of Backstage seemed to symbolise BBC's willingness to experiment how to engage with audience in digital / technical communities by transparentising and opening up BBC's data feeds and content archives. In this context, allowing audience to re-interpret, play, re-appropriate and re-make BBC's data seemed to empower audience and enlarge BBC's public values (in that public values could be diversified, measured and approached from different angles in different ways to include a wide range of innovative, technical, artistic, cultural and economic values through creating added value services by re-mixing and re-purposing data and content). It urges people to ponder: How if the data can be reused, repurposed more flexibly? How if the data services can be freely created? And what will happen if audience is brought into the world of openness? What kind of audience will make innovation happen? However, it is worth thinking to what extent and in what way Backstage delivered public values. It seems that the values (and also the cultural capitals) generated were mainly for a group of techno-elite audience whose practices were highly technological-driven and mechanic.

The techno elite, their collective practices and shared epistemologies

Star and Bowker (2002) argue that an infrastructure contains three key elements: 1) practices in cultural and social contexts (practices); 2) technologies themselves and their design and development (artefacts); 3) at a more macro-level, institutional view of the ways that new media technologies and practices are organized and governed (social arrangements). The Backstage resembles an infrastructure in that it engaged with a "community of practices" where programming, coding, hacking practices and hacker cultures (Lin, 2005) are central. Members of this community of practices, loosely defined and bounded, often have access to cutting-edge technologies and have abilities to configure, manipulate and re-configure them. There is some overlap between the Backstage community and the broader open source software, open data communities and IT industry (e.g., events coincided with Yahoo Developers' Hack Days or Google Developers' Hack Days). Some social arrangements (institutional, legal, formal or informal), were established to enable and facilitate the play and experiments on BBC-sourced data and content. Conceptualising BBC Backstage as an infrastructure also insinuates that engagement with the techno-elite can be steered, engineered and mobilised. Strategies can be developed to engage with elite audience and power users to encourage reuse and remix and innovation, should they truly generate new values to existing artefacts and things.

Backstage illustrates how future media content creation and consumption, and media work environments are going to function. It suggests an imagination of an über-connected, ubiquitous, convergent media landscape where audience is not only media

prosumers (Toffler 1980, Tapscott and Williams 2006, Jenkins 2006, Bruns 2008, Fuchs 2011), but they may dictate how media content can be made and consumed in the future (with 360-degree open data).

The lessons learned from this project will be critically important and illuminating as production and consumption of creative work (may it be music, films, computer and online games, video, books, live performance, fashion) are constantly and rapidly reshaped by the introduction of new digital technologies (and consequent dynamics). The involvement of these “elite audience”, and “responses to diversity and change with new partnerships between data providers, data-users and data-creators”²⁰ has not yet been studied, and there remains a scarcity of evidence demonstrating the impacts of such *user-led open innovation* (von Hippel, 2005) in the creative industries. The boundaries between broadcasters and audience, makers / innovators / developers and users, producers and consumers are constantly re-negotiated if flows of resources and information are made more fluid and if the regulations of use/re-use of them are relaxed.²¹

The elite audience, especially those who are able to code and manipulate (and interact with) not only digital devices but also the data and content, seems to create more fiscally-measurable values (which could be ‘public values’) than those who participate in other peripheral or indirect ways. The emergence of technically savvy elite audience highlights the importance of programming skills and the ability of mastering digital tools in the knowledge-based society. Unlike the audience traditionally confined to certain time and space (programmes aired or broadcast on certain time at certain studios or auditoriums), the availability of open data and content ideally would encourage the participation of as many audience participants as possible. The physical locatedness of performance and spectator experience conventionally seen in media consumption has shifted to ad-hoc temporal events such as hack-days or spread out in users / audience’s spare time when they want to (re-)use the source of data and content. In the age of convergence where the ICT digital sector is tightly amalgamated with the mainstream media sector, where the virtual world collides with the physical world, where the online audience (netizens) reincarnate themselves in the physical world, the public values (of public broadcasters such as BBC) also need to be revisited and redefined. The notion of “techno elite” helps in that it prompts re-consideration and re-examination of contemporary elites in the digital convergent age. The netizens and elite audience are empowered to shape the media and generate new values.

The techno elite audience and their interaction with open data and open content can be seen as an extension of the free/libre open source software social world (Lin 2005) where participants have access to the source code of software and systems and are able to study, correct, change, amend, re-distribute the software lawfully without being punished due to copyrights infringements. As the studies on the Greco-Roman audience reveals, the audience, ‘as a set of spectators for public events of a secular kind, was *institutionalized* (McQuail 1997: 3). Different audience groups used media in different ways for different

purposes. 'The more educated assembled for literary and musical works, while a larger public attended fights, races, games, comedies, and circuses.' (ibid.)

In the contemporary virtual-physical hybrid world, this group of elite audience, usually from a younger generation familiar and comfortable with tinkering, manipulating and configuring digital technologies, also have their own customs, rules and expectations about the time, place and content of performances / practices, membership (as explored in studies on hacker cultures, e.g., op cit.). Having said that, the techno-elite not only shares collective practices, but also certain cultures, mindsets, attitudes and tastes (further analysis on the conversation on the mailing lists and other online protocols may reveal these). Owing to these variables, the content or data re-purposed and re-presented vary, conditioned against their social class and status, motivations, interests and beliefs.

In light of Bourdieu's theory of "cultural capital, taste and distinction", the prototypes and media products produced by the particular audience group under consideration in this paper - the techno elite - may be limited in terms of their diversity. It is not necessarily in the sense of favouring highbrow, middle brow or lowbrow cultures. It is more to do with restricting space for contested and conflicting epistemologies to exist, given that the majority of the prototypes created for BBC Backstage reflected the trend of computing, categorising, grouping and matching data and content. And that puts BBC Backstage's "public values" in question.

As also seen in the example of free/libre open source software development, releasing the data and content does not necessarily mean values would be automatically added, even if it does increase the chance of reuse and bug-reporting, bug-fixing and hence improvement. The 1% rule²² or the Sturgeon's Law²³ has been observed in many contemporary cases. In the case of BBC Backstage, even if the data and content released and the project's activities were not restricted to a specific type of audience group, and meant to engage the mass audience (as in 'the public'²⁴ rather than 'the crowd', Blumer 1946), not necessarily everyone is able to participate, re-appropriate and re-interpret data and content. While an infrastructure like Backstage has great potential of transforming the relationship between broadcaster and audience, it also has suggested that the future media landscape is going to be largely determined by this powerful techno-elite group. This raises a profound digital divide or inequality issue to be examined, questioned and thought through.

Conclusions and future studies

This paper contributes to creating a better understanding of new types of audience, particularly the techno elite. By no means has this case study on BBC Backstage completed the study on *media prosumption* activities of elite audience in contemporary society. On the contrary, the exploration has merely begun. Many more methodological and theoretical and empirical questions emerge through this study. For example, the concept of "techno elite" can be used to interrogate content ownership, analyse power relationships between media

professionals and audience, the struggles between different cultures (e.g., how the playfulness and practicality, two values usually associated with the free/libre open source software social world, are embodied in techno elite's collective, everyday practices related to media production and consumption).

I would also like to critically engage with the concept 'techno elite audience' and examine this elite group more closely with regard to how this elite group is formed and what are their cultural tastes, behaviours and incentives. I'd like to know whether their cultural inclinations shape the digital tools they use or the ways they manipulate the data. How should the elite audience be studied best? How can we identify, sample them? This is particularly tied in with the current scholarly work on elite studies. In this dynamic and fast changing world, where social media is mobilising some class change, it would be interesting to see how to position the elite audience in this case. The concept of elites might bear some potential analytical value for understanding new types of audience in cross-media production, the relationship between users/audience and technologies (to what extent users are empowered, and are capable of re-configuring technologies).

Other questions concerning BBC's public values - whose interests do the observed phenomenon serve? How to measure the impacts and public values? How can these elite audiences be better engaged / motivated / mobilised to create greater goods? How about labour and payment (would they substitute professional media workers)?

Acknowledgement

The author would like to express her sincere appreciation to the two reviewers and the editors of this special issue for their valuable comments and suggestions to improve the paper. The author would also like to thank the audience at the Workshop of the EU COST ACTION IS0906 'Transforming Audiences, Transforming Societies' at Brussels (12-14 April 2012) where an earlier version of the manuscript was presented.

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Notes:

1 <http://en.wiktionary.org/wiki/viewers>.

2 These elitists, as it will be shown, are defined in the good sense of an open elite, based on meritocracy (reputation, do-ocracy).

3 <http://www.ukuug.org/events/opentech2005/> OpenTech is a series of low-cost, one-day conferences where people experience technologies from "Open source"-style ways of working to repurposing everyday electronics hardware. It is similar to 'hackathon' (<http://en.wikipedia.org/wiki/Hackathon>).

4 <http://backstage.bbc.co.uk/>.

5 <http://www.bbc.co.uk/blogs/bbcbackstage/> As declared on the Backstage's website, the blog is no longer updated but archived posts are available.

6 An unconference is an informal, improvisational conference with a less prescribed format. Conference programmes are not created beforehand by a programme committee but usually created on the first day with the contributions of all the participants against what they would like to share and learn. Some say that the first unconference was BarCamp. For more information about the unconference, see Wikipedia's entry at <http://en.wikipedia.org/wiki/Unconference>. For more information about the Barcamp, see <http://barcamp.org>, <http://radar.oreilly.com/2005/08/barcamp.html> and the Wikipedia's entry at <http://en.wikipedia.org/wiki/BarCamp>.

7 <http://www.flickr.com/photos/osde-info/563699963/>.

8 <http://dharmafly.com/hackhud>.

9 http://londonist.com/2007/06/the_smell_of_we.php.

10 <http://www.guardian.co.uk/technology/pda/2011/jan/05/bbc-backstage>.

11 <http://www.data-art.net/>.

12 <http://channelography.rattlecentral.com/>.

13 <http://backstage.bbc.co.uk/prototypes/>.

14 <http://backstage.bbc.co.uk/ideas/>.

15 <http://ftp.kw.bbc.co.uk/backstage/index.whtml>.

16 <http://www.bbc.co.uk/programmes/b00n4j0r>.

17 <http://creativecommons.org/licenses/by-nc-nd/2.0/>.

18 This quote echoes the ethics and practices as observed in free/libre open source software world (see Feller et al. 2005; Benkler 2006; Amant et al. 2007).

19 http://www.bbc.co.uk/virtualrevolution/licences/digitalrevolution_licence.shtml.

20 http://www.nesta.org.uk/home1/assets/blog_entries/how_big_are_the_uks_creative_industries.

21 On the other hand, the demography of BBC Backstage's elite audience also shows an imbalance in audience (lack of women participants and people from older generations). BBC Backstage demonstrates that the current development or path of data / content remix and reuse is very much developer-led and leads to a status of technological determinism.

22 [http://en.wikipedia.org/wiki/1%25_rule_\(Internet_culture\)](http://en.wikipedia.org/wiki/1%25_rule_(Internet_culture)).

23 http://en.wikipedia.org/wiki/Sturgeon's_Law.

24 As paraphrased by McQuail (1997), 'According to Blumer (1946), the crowd "is a non-cultural group, so likewise is it a non-moral group" (p.174). The "public" is a product of modern conditions, especially when seen as an element in the institution of democratic politics. It consists of a set of people who engage freely in the discussion of some public issue, with a view to advancing some opinion, interest, policy, or proposal for change.' (p. 6).