


Finding Public Service Media in a Global Mediascape

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Abstract

Findability is a pressing issue for PSM in an environment characterised by networked media and communications. This chapter analyses advanced website and network practices used by *The Guardian*, *The Huffington Post*, Nesta, and DuckDuckGo to illustrate nuanced approaches to ensure the findability of content on the web in various applications (tablets, smartphones, laptops, etc.). Building on earlier research (Jackson 2014), the author argues that the use of advanced database-driven platforms within the Internet offer opportunities for tagging content, for personalisation, prosumerism, and the recommending and forwarding of content. All of that increases visibility. Secondly, the author suggests the use of customer-relationship management systems, which enable storing and analysing user preferences. This is also helpful to ensure that PSM content is readily visible. The author is especially concerned about the need for PSM news to be easily findable as an independent high quality alternative to commercial online news aggregators.

Keywords: public service media, networked communications, visibility and findability, customer relationship management, news, aggregators, personalisation, social media 

Introduction

This chapter draws on research that has deconstructed advanced website and network practices observed in four organisations. The research is focused on findability and the results are useful for developing the visibility of public service media [PSM] in an online media landscape where national boundaries are increasingly less significant. The research project was done in response to a request from Victoria Jaye, Head of TV content for the BBC's iPlayer, at the 2013 Salford Media Festival. She called for research on ways to increase the 'findability' of PSM (Jackson 2014: 119).

The techniques deconstructed here are connected to improving more nuanced approaches to the selection, personalisation, promotion, and delivery of PSM content on the Web, as well as for tablet computers and mobile smartphones, which are creating a 'portable' Internet. Distribution on a variety of networks enables the 'reversioning' of

websites, for example, to better suit different regions or even different nations, which may run counter to the traditional PSM project that is closely tied to the nation state. This is, however, something the BBC has been doing for some time in distinguishing between the national www.bbc.co.uk and the international www.bbc.com in its website. To enhance clarity for those unfamiliar with much of the pertinent terminology, the 'Key Terms' section provides definitions and an overview of characteristics that describe the global Mediascape from cultural and technological perspectives.

The 'Mediascape' is an analogy to describe a networked media and communications 'landscape' that is constructed on the basis of computer code. It is increasingly characterised by the blending of database-driven websites and participatory platforms (such as game worlds), streamed or downloadable linear media (television programmes and films, as well as short video features), and social media and related communications. Today's mediascape is also characterised by participatory culture. It is fluid, recombinatory, multi-directional, and concerned with the diffusion of content. Material 'served' to publics online crosses national boundaries easily (unless deliberately blocked) and is embedded within a global network of interconnected computers – i.e. the network of networks.

It is impossible for contemporary media outlets to ignore the geographic effect of networks and browser-based selection. This follows Meyerhofer (2014) who elsewhere in this collection doubts that "...the concept of public service media as 'contained' in a nation-state framework and as a space opposed to external global market forces is a realistic vision in the digital era." For PSM this might offer opportunities to provide both national and international versions, as in the BBC example and the case studies we consider here. However it is managed, without some level of adoption of distribution systems based on computer coding, PSM firms risk becoming less 'findable' online than the historical ease of finding their contents in over the air broadcasting.

Firstly, we argue that the use of advanced database-driven platforms located within the network of networks (i.e. the Internet) offers opportunities for tagging (labelling) content, for personalisation, prosumerism, and the recommending and forwarding ('diffusion') of content to increase visibility. This refers to the 'spreadability' of content, a concept advanced by Jenkins (et al. 2013). Secondly, we suggest that the use of customer-relationship management systems, which enable storing and applying access preferences by users, could bring PSM more readily and visibly to variously preferred devices. Lastly, as in the broadcasting era per se, we contend there is continuing need for PSM to provide an easily findable and sufficiently broad range of independent high quality news as an alternative to commercial platforms online that mainly function as news aggregators.

We are dealing with a degree of complexity that encourages beginning with an overview of the structure of today's global media network and how it facilitates the distribution of media and communications worldwide. This is necessary to ground the techniques and practices being developed by the four case studies: 1) *The Guardian* (a quality UK newspaper and companion online news service), 2) *The Huffington*

Post (a USA-based online tabloid-style news service), 3) Nesta (a UK-based charity supporting adaptation to the Mediascape), and 4) DuckDuckGo, (a quality, ethical, American search engine). Each case study was chosen because it demonstrates interesting technical, editorial, and economic responses to a range of distribution systems. Textual analyses were conducted across the website, tablet computer, mobile services, and Privacy Policies for each case. The presence of each organisation on YouTube and Facebook was also reviewed.

For PSM organisations the value of the study lies primarily in the identification of specific strategies being used to increase ‘findability’ within the World Wide Web [WWW]. The case studies were chosen to include at least two contrasting news outlets because this is such a critical function of PSM. The techniques used by *The Huffington Post* are highly related to many already used by commercial media firms operating online. *The Guardian* is useful as it has adapted successfully to the new Mediascape. Nesta was selected because, as a business accelerator, they support and demonstrate adaptation to the digital media business. The US search engine DuckDuckGo is included because it has developed an ‘ethical’ approach to the delivery of high quality content that doesn’t require the targeting of users through tracking, and also because it has a highly symbiotic relationship with the public as prosumers – something of potential interest to PSM.

In addition to these recent studies, the author draws on experience as a BBC web producer who was responsible for the BBC’s first database-driven content efforts. She was promoted to Editor of BBC’s Online Communities (forums, chat rooms and live chats) between 1997-2007.

Key terms explaining the structure of online networks

We begin – rather forensically – by assessing the technical architecture of the Internet as a basis for shared understanding. This requires deconstructing the software systems and platforms that drive web pages and social media systems.

The Internet is a global network that relies on a transmission control protocol [TCP]. This is the foundation for communicating between computers because it facilitates sending data of all types through networks of linked computers. Each computer is a unique network node and therefore is assigned an Internet protocol address [IP]. That is the digital equivalent of a personal post box in a sophisticated global network. The global computer network is divided into serving and receiving computers. Web producers use ‘server’ computers from which users can access content made available online or – increasingly – on other platforms and devices capable of receiving content delivered by Internet Protocols. These especially include tablet computers and mobile smartphones. All of the content is digitally encoded in hypertext markup language [HTML], which supports web pages and facilitates linking other documents, graphics, audio and video files.

Getting to a specific node, i.e. a particular website, requires the computer to have an installed 'browser'. The most popular options are Internet Explorer (Microsoft), Chrome (Google), Safari (Apple), and Firefox (Mozilla). A web browser retrieves pages from a server. Each page, even a single file such as a .pdf document (Adobe), will have a specific uniform resource identifier [the URI or URL]. This is the address for that page or piece of content. Advances such as HTML5 enable serving and receiving an expanding range of content across different kinds of hardware, such as televisions, computers, tablets, and mobile phones. Often the content must be adjusted to fit the screen, but HTML5 is 'responsive' and can do this 'automatically'. The system responds to the platform's screen size by adjusting the structure of a web page to optimise the content for the viewer. This responsiveness enables the same website and its content to be viewable across devices, and is essential to the development of 'cross-platform' narratives and applications.

Web pages are situated within a user-interface. This is the informational frame that allows a viewer to interact with the content. Just as every computer linked to the network has a specific IP address, each web page has an address known as its 'meta tag', which is written in HTML. The meta tag describes the page's contents and, if comprehensive, improves the 'findability' of that page when using a search engine.

Producers who work on content for the web often discuss 'platforms', a term describing the operating system or collection of software that directs a computer's operations, controlling and scheduling the execution of tasks and programmes. Virtual world immersive online environments including *Second Life*, *World of Warcraft* and *MineCraft* exist on computer platforms, for example. Every website and all web-based services are governed by computer software referred to as programmes. A programme 'communicates' through application programming interfaces [APIs]. APIs enable software programmes to inter-operate. The 'inter-operability' of the whole network is extremely important (Palfrey & Gasser 2012) because that determines the success or failure of an online offering such as Amazon, eBay or Facebook. APIs work in connection with computer algorithms, which are sequences of Boolean logic (if/then structures) that determine how a task is completed.

Some content can bypass the WWW and be delivered via Peer-to-Peer [P2P] networks that don't use the web or any media server as an intermediary. They are typically used to distribute very large files, such as complete television programmes or entire feature films. BitTorrent (www.bittorrent.com) is one of the best known. P2P technologies could become highly useful for PSM firms in the future as distribution mechanisms that are independent of other firms or intermediary sites.

An emerging feature of online technology is machine translation [MT], a programme that automatically translates webpage text from one language to another. Familiar examples include Google Translate and Babelfish (www.babelfish.com). Although crude at the moment because cultural nuances are often lost or absent, as MT improves language barriers will dissolve, enabling PSM firms to 'create once and use many times'. One of the case studies reported here, the 'ethical search engine'

DuckDuckGo, approaches the offering of multiple languages differently by encouraging its community of committed users to provide translations that are uploaded for the benefit of all. An important advance in accessibility is the possibility to localise web pages by offering closed captioning in different languages online.

Although specialists and enthusiasts are familiar with these terms and the related functions they fulfil in the Mediascape, we suppose a majority of broadcasters are not. This lack of understanding affects PSM firms in their capacity to handle 'diffusion' (the spreading of media by forwarding) that is offered by the multi-directional networks of networks and their characteristic features, and functions. This is one reason why network-distributed media is fundamentally different from the sender-receiver model of legacy mass media. The system as a whole is designed to facilitate cross-boundary, cross-border communications of diverse kinds, and to do this in super abundance.

This 'Mediascape', which is comprised of computer code, extends the potential creative palette for PSM and commercial operators alike, and offers the ability to 'tag' (label) and deliver personalised content at the right time and place for the user on the device he or she prefers. The system is participatory, connective, social, global and fluid. It can deliver 'old' and 'new' media alike, and actually juxtapositions the two. This opens the way for exciting additions to traditional television and radio programmes, including applications that rely on social media, archives, gaming, and immersive storytelling. PSM success within this complex system – in this Mediascape – depends on how well makers and managers understand the underlying architecture of networked media and communications, and the sociability they enable. If there is not a sufficient depth of understanding of the underpinning technologies, aesthetics, sociology, psychology and economics of the rapidly developing new Mediascape, PSM operators will miss valuable opportunities and (worse) risk becoming unfindable and therefore irrelevant.

The Mediascape

The Mediascape is conceptualised as a series of media platforms within the network of networks (the Internet). Its functionality is based on the competent use of computer code. The term is helpful for differentiating network-delivered media from earlier mass media systems that rely on the sender-receiver distribution model, which characterises broadcasting. As remarked earlier, the characteristics of today's Mediascape are sufficiently different from broadcasting to require the development of new approaches in marketing and distribution. Three scholars are particularly helpful in generating insights about the differences from technological, political, and cultural perspectives.

Lev Manovitch (2013) argues "the revolution in the means of production, distribution, and access of media has not been accompanied by a similar revolution in the syntax and semantics of media" (p.56); when we consider the emerging media landscape we need to use the lens of its constituent parts: computer code and the metadata that frame media files. Manovich uses the term 'Metamedia' to describe a

‘computer metamedium’ that “contains two different types of media. The first refers to simulations of prior physical media extended with new properties, such as ‘electronic paper’. The second type refers to a number of new computational media that have no physical precedents” (ibid: 110). In addition to navigable 3D spaces, and interactive multimedia, this metamedium also offers hypertext and hypermedia. Hypertext and hypermedia are texts that link to other texts. Through this Internet convention, and the use of meta tagging (the labelling of texts and files), content can be sifted, sorted, recombined, and forwarded across networks.

For PSM organisations it is increasingly critical to understand the nature of distribution via these networks. Manovitch’s work is helpful in providing a useful clarification of the constituent parts of the ‘computer metamedium’ 1) Media files (content) and 2) software techniques to improve findability, such as link, sort and search, as well as data analytic techniques such as artificial intelligence, Machine Learning, Knowledge Discovery, etc. This second category is medium-independent because it refers to techniques that enable digital media to be displayed in many ways and are therefore likely to operate in connection with algorithms.

Roger Silverstone (2007) is helpful due to his concern with the value of the Mediascape as a public sphere with potential to support deliberative democracy. His work provides a political-cultural perspective that is of interest for PSM, which is supposed to facilitate high quality debate and educational opportunities for active and informed citizens. Silverstone refers to the Mediascape as a ‘Mediapolis’ – a space for the consolidation of collective judgments through the provision of a wide range of information and media sources. For Silverstone, such breadth encourages looking with a ‘proper distance’ or perspective. In contrast, Google, the commercial search engine, has been accused of creating a narrow ‘Filter Bubble’ (Pariser 2011).

Aesthetically, the Mediascape offers a new kind of ‘fluidity’ in media and communications through its sheer variety of content, platforms, sociability, prosumer uses, distribution capacity, and the recombining of all these elements. The audience-participant is central to this kind of ecosystem, ‘remediating’ what producers have provided within a constantly changing selection, resulting in a feeling of immediacy and ‘liveness’. Fast-moving news websites could even be characterised as ‘hypermediated’ with producers “...arranging text, graphics, and video in multiple panes and windows and joining them with numerous hyperlinks” (Bolter & Grusin 2000: 9). Sonia Livingstone and Leah A. Lievriouw (2002: 9) are especially helpful for conceptualising ‘new media’ as phenomena that encompass hyper reality, virtuality, anonymity, interactivity, and – overall – being highly recombinant. According to Tiziana Terranova (2004: 1), this means the Mediascape is “...a cultural formation, a *network culture*, that seems to be characterised by an unprecedented *dance* of informational output and by an *acceleration* of informational dynamics.”

Thus, we can understand the contemporary Mediascape as a phenomenon comprised of three essential dimensions: 1) a metamedium that combines content with findability and analytics, 2) a mediapolis that is fundamentally social and therefore

which could support deliberative democracy rather than being merely a technological construct, and 3) supporting a network culture that privileges recombinatory production. All three dimensions are fundamentally about crossing, even collapsing, boundaries.

(The breadth of) news matters

The diffusion of content through computer-mediated networks is an intrinsic aspect of the Internet. According to Kadushin (2012: 137) this "...is a process through which elements are transferred, borrowed, or adopted into a social system". We argue that PSM could harness this expansive diffusion capacity to encourage audiences to 'like' and 'share' PSM content, including cultural, educational, and news material. In theory, this potential for diffusion offers a more sophisticated means of reaching the widest variety of publics, particularly if customer relationship management software is applied to account for previous interests. The key, however, is not to merely supply what the people think they want, but also and importantly what should be brought to their attention because it is in the public's interest.

Silverstone's largely positivist view of the Mediascape as a potential vehicle for deliberative democracy (a 'mediapolis') is obviously dependent on citizens having access to a sufficiently broad range of high quality news to make informed judgements. Because search has become a primary means of finding news it is important that search returns are not overly affected by the narrower self-interests of market forces. Lovink (2011) argues that one of the consequences of an increasingly crowded network is difficulty and complication in maintaining the coherence of narratives connected with the public sphere. In his view, "news media are, at best, secondary sources" (p.5). This makes it imperative to ensure that PSM content remains findable, otherwise it will no longer be possible to serve the public or compete effectively with commercial firms. Having breadth and visibility is necessary to ensure the continuance of independent high quality journalism that is deliberately produced as a service in the public interest, and to counter the growing dominance of online behemoths that especially include Google, Netflix, Amazon Prime, and YouTube.

In 2013 Mark Graham and Stefano De Stabbata at the Oxford Internet Institute in the UK, mapped the Internet to see how it is affecting the distribution of information worldwide. In their study, titled *The Age of Internet Empires*, Facebook emerges as the world's most popular site. According to a later study by Newley Purnell (27 June 2014), the use of Facebook in Indonesia has risen to 69 million users. Google is now the most popular website in North America, Europe, and parts of south Asia. Facebook is about sharing. Google is about finding. These are the two constituent elements that determine value in the emerging Mediascape.

Search is becoming the dominant means for finding news and information, but it is not an impartial mediator. The commodification of search results through the use of

predictive analytics (offering content influenced by previous searches, personal data, and purchasing behaviours) results in a potential narrowing of sources. Eli Pariser calls this a ‘Filter Bubble’ (2011). There is, as yet, no viable public service alternative. For PSM firms to exert a substantial intervention may require forming alliances with search engines whose model, ethics, and values are aligned (or at least not contrary to) these firms. The case study DuckDuckGo, discussed later, suggests interesting potential.

Iyengar and Kinder (2010: 122) define “news that matters” as that which “faithfully and wisely” interprets the “vital public issues of the day”, matching as closely as possible what is reported with what is (to the best intents and purposes) the reality. Not only is there a need to reflect reality and do this from an independent stance, but there is also need to offer news messages for a particular purpose – i.e. to serve the public good. Cushion (2012: 206) thinks the importance of public service journalism is not only in combatting market dominance or market failures, but also to “extend beyond the language of the market-place and relate to the broader impact it can have on democratic life.” This is about the relational mediation that is challenged in Manovich’s ‘Type B’ data (that which links, sorts, searches, and predicts) because that is most likely to either widen or narrow one’s worldview.

Mathias Döpfner, Chief Executive of the German publisher Axel Springer, was so alarmed by the growing dominance of Google that he wrote an open letter to Eric Schmidt, the Executive Chairman of Google, which was published in the German newspaper *Frankfurter Allgemeine Zeitung* on 7 March 2014. The letter asked whether Google was trying to create a super state where anti-trust and privacy laws don’t apply (Döpfner 2014). Döpfner also observed that there is no non-commercial alternative to Google’s search engine that would offer his company the same visibility. This reminds one of an observation made by Manuel Castells (2013: 6):

...the ongoing transformation of communication technology in the digital age extends the reach of communication media to all domains of social life in a network that is at the same time global and local, generic and customized in an ever changing pattern... There is, however, one feature common to all processes of symbolic construction: they are largely dependent on the messages and frames created, formatted and diffused in multimedia communication networks.

PSM framing will be increasingly challenged in the emerging Mediascape that produces continuous flows of predominant discourses and ideas. It is therefore critical for PSM producers to understand how they can harness and shape this diffusion, which implies the need for mastering a new set of skills. Jenkins (et al. 2013) suggest content is more likely to be shared if it’s available when and where audiences want it; if it is portable. The content is also likely to have a higher visibility if it is easily ‘grabbable’ so that it can be picked up and inserted elsewhere, and is thus easily reusable for multiple audiences as users who find it relevant. “Content that appeals to more than one target audience, both intended and surplus audiences, has greater meaning as spreadable media”, and may also be more likely to be spread virally” (ibid: 197-198). For PSM organisations

that have been traditionally tied to a particular nation state as their host domicile, being able to tag content for distribution firstly to a national audience and secondly, as an additional bonus, to an international audience, should be highly attractive. Such a strategy would certainly increase findability for the PSM project across borders. This is not to imply that doing so would be without complications, but only to say that it is a worthy pursuit in the light of the Mediascape that contextualises service provisions.

In summary, then, today's increasingly global computer network – this complex network of networks – is dependent on sophisticated control mechanisms that need to be understood in order to influence the framing of content in pursuit of media services for the public good. That is important because so far most of what has been accomplished is not about public service in media, but rather to advance commercial interests. To this point private companies continue to have the deepest understanding of network practices and are clearly predominant in the emerging Mediascape. A quote from Des Freedman (2014: 114) is especially pertinent here:

Corporate power, far from disappearing in recent years, is flourishing and has adapted itself to meet the challenges of the digital economy. Distributed technologies have led to the abolition neither of the laws nor the contradictions of capitalism, but have offered a range of both existing and new organisations the capacity to secure customers for their goods and services.

This matters because information flows can be influenced, subverted, hacked, commodified, or curtailed. Shirky (2010: 206) argues for the better use of online tools in order to manage this fluid online activity, “because the social tools we now have can shape public speech and civic action, people who design and use them have joined the experimental wing of political philosophy.”

There have been far fewer large-scale non-commercial developments online, with the obvious exception of the Open Source movement and Wiki services. This lack of alternatives can only be redressed by a strong global counterforce, which is so far lacking. The result is growth in network channelling and geoblocking. Curran (2012: 9-11) addresses the global inequalities of the Internet, including an inability to access websites, the lack of a shared language, the lack of fluency in the dominant language (English), cultural differences, the strength of nationalism (internalism), authoritarian governments who may control what is presented as ‘the Internet’, and finally, inequalities within countries. Altering the information flow is therefore *tangibly* evident at national levels in some regions (e.g. the People’s Republic of China, Iran and North Korea), and *intangibly* adjusted at the level of commercial global media firms more or less everywhere.

It is therefore keenly important for democratic governments and regulators who are genuinely committed to the public interest in media to support PSM’s efforts to operate effectively in the contemporary Mediascape. For PSM this entails a steep learning curve, with considerable ‘unlearning’ as well, but the rewards to be gained make that worthwhile. These include continuing to be visible within the Internet.

So far, we have firstly argued that the effective use of network practices used by advanced database-driven online platforms will assist greatly in the improved diffusion of content in today's Mediascape. We have further argued that collecting and analysing public preferences could assist in the delivery of content to the right device at the right time for the broadest variety of publics. Lastly, we have foregrounded the importance of retaining the visibility of PSM as a project within the Mediascape because it offers the only obvious and sufficiently robust alternative to commercial dominance, particularly important for news and current affairs content.

We next consider how the challenge of assisting PSM in remaining findable can be met, beginning with a brief review of European initiatives to support the evolution from PSB to PSM. We then consider techniques successfully used by four media firms in their efforts to remain findable and therefore relevant in the context of networked communications.

Ensuring 'Findability'

Lacking visibility in a networked Mediascape means, in affect, being non-existent. In Europe a number of PSM firms are already restricted in the length of time their content can be available for use online. Germany is the prime example. More generally, pressure from commercial lobbies is strong in the European Union, encouraging still wider and stronger restrictions on the online activity of PSM operators. There has been some pushback, as evident in the 2012 Declaration issued by the Council of Europe (Council of Europe, 15 February 2012a) in which the author had the privilege of advising.

The Declaration and an accompanying Recommendation (Council of Europe, 15 February 2012b) strongly encourages regulators and governments in EU Member States to allow domestic PSM firms to expand activities in the provision of online content. The explicit purpose is to retain relevance and visibility "with the help of new interactive technologies" (2012b). Outside Germany, influential PSM firms have been expanding more easily so far. For example, in the UK the BBC announced (thedrum.com, 21 July 2014) that BBC3, the BBC's TV channel for 18-34 year olds, will re-launch as an online-only service in 2016. But commercial companies, including YouTube, Netflix¹, and Amazon Prime are investing in infrastructure to support online streaming, so the stakes are increasingly high.

The four case studies each exhibit technical, editorial, and economic adjustments to the Mediascape that have been made to increase 'findability'. Figure 1 summarises the findings. Analysis of the websites, mobile, and tablet content took place between 10-18 April 2015. The YouTube and Facebook channels, and the Privacy Policies of each organisation were reviewed between 31 October-1 November 2015.

Figure 1. Strategies to increase the ‘findability’ of content

Strategies to increase ‘Findability’				
Case Studies	<i>The Guardian</i>	<i>Huffington Post</i>	Nesta	DuckDuckGo
1. The Inclusion of the public				
Prosumerism	Blogging, Tweeting, photo submission, hosting of networks for professionals	Blogging, Tweeting, content creation	Blogging, Tweeting, activism, events, training, online tools to support innovation.	Content creation, public as language translators and moderators.
Nuanced distribution to suit audience profile	Print, Web, Mobile, Tablet	Web, Mobile.	Web, Tablet.	Web, Mobile, Tablet.
Personalisation	Member tracking	User-tracking for personalisation and + targeted advertisements.	N/A	N/A
2. Diffusion of content by both producers and the public				
Embedding	YouTube, Facebook	YouTube, Facebook	Facebook	Facebook
Sharing	Email, Facebook, Twitter	Email, Twitter, Facebook, Pin It, Reddit, Google+	Facebook, LinkedIn, Twitter, Google+, Storify	Twitter, Reddit, Blog, RSS Blog feed.
3. Evolution of business models/revenue streams				
Internationalisation	UK, US, Australian, and international websites.	13 separate national editions	22 European projects, 15 international projects	67 ‘regional’ versions (Asia, Africa etc).
Diversification	Dating, price comparison, and job websites	Huffington Live, a television channel and the website	Events, publications, online tools, reports, training, workshops	Micropayments from Facebook and Amazon for referrals.

The table reveals a clear narrative that, firstly, demonstrates the importance of including the public in the enterprise because diffusion by the public is the crucial success factor in the spreading of content through the Mediascape. The more each selection or message is liked, shared and recommended, the more visible it becomes – and therefore easily findable. Each of the case study firms has also taken a strategic decision to foreground one or two platforms over other options. This nuanced distribution is in response to the preferred platforms that particular audience segments use. For example, *Guardian* readers use print, web, mobile phones, and tablet computers. They are “affluent, young urban consumers” (Guardian 2015) and are likely to be interested in technology. However, many *Guardian* readers still prefer a paper version, which is therefore also provided.

In contrast, the consumers of *Huffington Post* are younger, with twice as many females as males, and a surprisingly high volume of users accessing the website from school (Huffington Post 2015). They like to access content on the move, so delivering content via mobile smartphones is very important. As a business accelerator, Nesta’s

audiences like to blend Web access with tablet computers, so both websites and tablets offer the ability to view and download charts and reports easily. For their part, DuckDuckGo users want a 'portable internet' and can therefore access the service across the Web, tablet computers, and mobile phones. An important point to be underlined is that the various case firms consider most essential web content is defined by users and use, not by the preferences of the company.

Both the Guardian and the Huffington Post use the 'live' tracking of audience data and are therefore able to match content to potential readers on a continual basis, greatly increasing the 'findability' of their material on a minute-to-minute basis. The Guardian frames their readers as members of a Guardian community, with higher subscription fees guaranteeing access to specialist content. They run events and training courses, even a dating site to enable Guardian readers to meet each other. The Huffington Post's audiences are highly tracked by in-house customer relationship management databases and tracking apps. This enables considerable personalisation of content and the offering of proximity advertising to marketers. The Guardian and the Huffington Post have dedicated YouTube Channels, likely reflecting future ambitions to expand video content and reach. The Huffington Post already runs an online video channel, 'Huffington Live', a daily talk show heavily featuring the audience alongside celebrity and expert guests. This demonstrates the capacity of the Internet to juxtapose 'old' and 'new' media.

Content analysis shows the Guardian has achieved a reasonable additional subscriber base of over 180,000 via YouTube, and more significantly over 4 million global followers on Facebook. The Huffington Post has 67,000 subscribers on YouTube and over 5 million followers on Facebook. YouTube is still a growing distribution network, whereas Facebook is more mature and of greater significance so far. Every firm in the case studies has Facebook pages, underlining the importance of social media for a wide range of audiences.

The Mediascape also offers opportunities to extend findability through the reversioning of websites to serve the various needs of different nations, or at least regions of the world. That is evident in three of the cases: The Guardian, The Huffington Post, and DuckDuckGo. By forming alliances with the two online marketplaces, Amazon and eBay, the search engine DuckDuckGo receives a micro-payment each time a user that was referred by the search engine makes a purchase. The Guardian has extended its activities to the running of a large jobs website and links through to affiliate websites that offer readers holidays, insurance or financial advice. The case studies that collect and use 'live' audience data benefit from having a greater understanding of how to reach consumers in a nuanced way.

For PSM these findings suggest new approaches that might be used to increase the visibility and adjustment of content across platforms. This is possible through the use of network protocols that extend the Internet to mobile media devices. The function the public plays in the diffusion of content in today's Mediascape is also clear, placing the public quite centrally within the ecology and extension, with implications for the PSM enterprise.

Reviewing the four cases, key themes emerge in connection with internationalisation, spreadability, community emphasis, prosumerism, and diversification in business models. These adaptations increase findability, but they can also be seen as indicators of the ability of media firms to continue to respond in today's Mediascape that is characterised by iterative and recombinatory media content and communications.

Mastering the M in PSM

The question we have addressed is how PSM can become more 'findable' in an increasingly competitive Mediascape that is increasingly a borderless network of networks. Content can be delivered via Internet protocols (IP) to a variety of 'platforms', including the web, tablet computers, mobile phones and also SMART television sets. We have argued that PSM could take advantage of computer networks *provided that* these firms develop a deep understanding of the complex structures and characteristics of the Internet and the World Wide Web.

We have used the term 'Mediascape' to highlight a digital, networked, media and communications environment that is comprised of computer code and algorithms, and therefore substantially different in nature when compared with broadcasting. This environment offers opportunities for the multi-directional diffusion of content that will increase content findability and therefore PSM visibility. The diffusion of content is largely done by audiences, however, and therefore encouraging the public to share, like and recommend content is becoming a critical success factor.

The use of predictive analytics (analysis of previous choices) to determine which fresh selections of content to deliver to which sections of the public, and hence the growing personalisation of content, may result in a narrowing of material or the preferring of commercial messages. This indicates a continuing need for the PSM development project to provide non-commercial, independent, and high quality alternatives to commercial offerings. Any lack of breadth of news sources, in particular, would reduce the public's ability to achieve perspective on issues of national or international importance.

The Mediascape therefore offers opportunities for reinvigorating the PSM enterprise through the development of a closer and more nuanced relationship with the publics it is supposed to serve. Secondly, the growing sophistication of database-driven platforms and the intelligent tagging, storage, and retrieval of content offers the ability for PSM organisations to deliver material to the right platforms, at the right times for diverse segments of a general public. This could extend to the production of local, regional, national, and even international versions.

Such potential for development relating to PSM in the emerging Mediascape depends on developing competencies in the knowledge and use of tools, functions and capabilities that are fundamental to networked media and communications. Without the ability to harness such innovation the PSM enterprise will not mature and, ultimately, will be regarded as a relic of the broadcasting era – as a candidate for extinction.

To emphasise this chapter's focus with regard to the book's theme, findability is a need, function and purpose of supreme importance in the context of networked communications. In the online environment there are far fewer bordered boundaries of every kind are collapsing. This is a very different situation compared with the era when broadcasting predominated. The range and volume of competition is already very high and this is only the beginning.

PSM is arguably even more important and more needed in the emerging Media-scape precisely because of the public service principles and ethos that ground the enterprise. Quality news provision that adheres to the highest standards of professional journalistic practice is essential to democratic process and practice – at home and abroad. Comprehensive services are required to satisfy the needs of increasingly diverse populations. Interactive services are necessary to facilitate the exercise of personal prerogative in the interests, concerns and involvements individuals prioritise. The possibility of multiple revenue streams matters, as well, in the context of decreasing financial security among PSM operators.

In the end, however, if the contents and services provided by PSM can't be found then they aren't services and there is no public. Like it or not, deliberately working to cross boundaries and borders is an essential requirement for successful media enterprises today and the M in PSM won't be properly realised unless and until these firms master the environment outlined in this chapter.

Note

1. In a recent report Netflix's investment in original programming has outstripped both the BBC and the Discovery Channel. The company is also investing heavily in live streaming. According to Standard & Poors, as of 31 December 2014 Netflix had \$9.5 billion in commitments to streaming content, compared with \$7.3 billion in 2013.

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