Andrew McStay

Commodifying audiences in web 3.0: the case of online behavioural advertising

Abstract

From the inception of the professional marketing industries at the turn of the nineteenth to the twentieth century, the value of audience attention has been understood. As Smythe (1977) and more recently Bermejo (2009) argue, audiences are the main commodity manufactured by media industries. This paper highlights recent developments in the history of audience-as-commodity by examining developments in online behavioural advertising, particularly in regards to advertising facilitated by deep-packet inspection (DPI) that has caused much consternation to policy makers in the UK, Europe and the US. However, rather than focusing on the well-trodden area of privacy issues, this paper instead offers an autopoietic understanding of online behavioural advertising so as to better characterise the nature of feedback relationships (Beniger, 1986; Elmer, 2004). Whereas traditional accounts of advertising tend to focus on representation as a means of understanding advertising, this paper eschews such an approach instead examining online behavioural advertising systems where advertising is served, data about audiences is generated, and advertising is again served on the basis of that data generated. What is then presented is a cybernetic account of control and self-regulating systems, although not one to do with mass or niche audiences, but rather a more intimate version based on longitudinal and semantic understanding of user preferences in Web 3.0, a version of the web that involves computers demonstrating greater understanding (or at least a passing-off) of information handled and displayed.

Introduction

This paper extends the audience-as-commodity thesis first articulated by Dallas Smythe (1977), critiqued by Jhally (1990) and reworked for advertising formats that extend beyond the cost-per thousand targeting techniques of traditional media formats by Bermejo (2009). It revisits the original notion, and explores the implications and critiques of this conceptualisation highlighting the centrality of users, audiences and consumers for the economy of advertising and media based on web 3.0 platforms. In particular it focuses on behavioural advertising facilitated by deep-packet inspection, a means of analysing internet traffic at deeper levels of the Open System Interconnection (OSI) Reference Mode layers. These are layers that tell a data controller more about the content of packets of information travelling across the internet. Deep-packet inspection represents the ability to drill down through layers that tell more about the content of the packets and the type of destination. This paper ends by advancing a need for closer examination of advertising feedback systems, particularly those predicated on extracting, abstracting and circulating semantic data.

History of audience as commodity debate

Tracing media history from broadcasting to Google, Bermejo (2009) situates contemporary notions of manufactured audiences in light of Smythe's (1977) now canonized Marxian proposal to focus on economic dimension of media industries in capitalism and to point to audiences as the main commodity manufactured by these industries. Concieving of the audience-as-commodity, otherwise known as the

"blindspot" argument, sees Marxist advertising commentators as concentrating on ideology rather than the economic dimensions of mass media and advertising. The audience-as-commodity argument stems from a dissatisfaction with purely textual approaches to advertising and with critical approaches, such as Marxian accounts of base and superstructure, that do not fully account for the practice of advertising, and how mass media under capitalism produce audiences. This is due to what Smythe (1981) perceives as misallocation of advertising to superstructural concerns of educational and cultural institutions, rather than the productive nature of the base. Smythe asserts, because 'audience power is produced, sold, purchased and consumed, it commands a price and is a commodity' (1981, p. 26). In the UK Curran (1981) and McQuail (1997) made similar observations about ratings discourses, the allocation of advertising, and how media competition for this allocation has influenced the character of the British mass media where media companies make revenue through selling audiences rather than content and programming. Such approaches rely less on message-based and symbolic approaches to one more interested in structures of media. Thus, a more materialist perspective was invoked. This is a view that sees information and services as a means of bribing audiences to offer their attention, time and labour to advertising. This argument, tending to focus on television (rather than press, radio, cinema, outdoor or what has in the past been labelled above-the-line advertising media), sees audience time as produced by television medium owners and audiences themselves, and measured and valorised by ratings organisations such as Broadcasters Audience Research Board (BARB) in the UK. In the traditional media sector this is based on less than perfect information. BARB for example employ RSMB, Ipsos MORI, AGB Nielsen Media Research and TNS to carry

out their surveys with samples of 5,100 households to represent over 25 million households with televisions across the UK (BARB, n.d.). In this view the audience, or at least their potential attention-time, thus becomes a commodity to be sold to advertisers. Although common sense tells us we may engage in other activities during televisual advertising, this is expected and discounted (Smythe, 1981). In traditional media studies the audience as market represents the first, and often neglected, stage of the advertising process and circulation of commodity culture.

Seeing content as a means of baiting consumers, though admitting of a dialectical tension between audiences and producers, the audience-as-commodity argument has to do with a feedback process in which content entices consumers, advertising is served, data about audiences is generated, and advertising is again served on the basis of data generated. Moreover this argument, as detailed by Jhally (1990), involves the conceptualisation of viewing time as labour. In the same way that working classes power capitalism, viewers also keep audience broadcasting in business too. Just as workers sell labour power, audiences sell watching power with wages equating to programming. Jhally (1990) also somewhat bluntly but accurately notes that both labour and watching commercials is unpleasant and people do what they can to avoid them. Thus whilst examination of content is useful, important and a key means to understanding advertising practice and promotional culture, semiotic accounts only take us so far in understanding digital advertising practices. Whereas in traditional forms of advertising, advertising has more to with a semiotic logic (Williamson, 1978; Wernick, 1991; Forceville, 1996; Odin, 2007) whose mode of address forcibly attempts to fuse often hitherto non-established links

between disparate signifiers and signifieds (i.e. the creation and maintenance of brand identities for products), in relevance-based and advertising tailored to user's behavioural profile, this fusion is often unnecessary and absent. As Odin (2007) describes, semiotic accounts of advertising have more to do with texts that are closed and frame an event already passed as determined by an idealised nature of the commodity-form. Branded advertising, as opposed to direct mail or classified advertising for example, involves the construction of unified spaces via the language of social worlds drawing upon cultural codes to frame a particular message. They act as mini-lessons in consumption that invite their audiences into the frame so as to adopt a particular subject position. Like zip files once engaged with, they open up an array of referents and a multi-layered information structure. This is not an abstract informational structure but rather one constructed in reference to systems of signification. They occupy a position within a matrix of meaning and are understood through relationships with other signs. Further, the role of the viewer or listener is also constructed in reference to this symbolic world that is to some extent a construct of this cultural world and acts as both receiver and producer of culture. As Williamson (1978) argues, the transactional space does not exist outside but rather we constitute the terrain through participation.

Feedback relationships then are not unique to behavioural advertising, though the speed with which such high quality data is processed and circulated is. As Stern (1994) highlights, traditional advertising texts deal in verisimilitude and virtuality, and have more to do with the arts than utterances as life is fictionalised in-text. Additionally, whereas traditional creative advertising is in many ways predicated on seduction and

simulacra, relevance-based online (and wider digital) advertising is more akin to an infant who knows little of the arts of misdirection, secrecy, intertextuality, semiotic trickery and holding one's cards close for the purposes of mystique. In some contrast, what is presented here involves less overt emotional or ideological investment, or visual and aural stimulation on the part of the user. Rather than advertising disengaging audiences and receivers from a natural flow of time into one where life and narrative is weighted and ordered to the ideological wishes of the advertisers (Williamson, 1978), behavioural advertising engages with the lived experience of its recipients, or it's durée: it does not seek to disrupt or distract, it seeks to inter-act and mingle. As Miles (2007) in discussion of cybernetics and advertising notes, it is in feedback-oriented models of advertising relationships where we may find modes of grasping contemporary advertising communication. Such approaches are of a different order to Debord's (1992) depiction of society that places the spectacle (involving advertising, news, entertainment and other elements of the communications industry) as the dominant model of life. Whereas Debord places the spectacle as the leading production of present day society, in the 21st century information and feedback systems are making themselves more pronounced. This is not to suggest succession, but rather deepening and extension. As the lessons of consumption and desire have long been learned, all that is required is the subtle channeling of desire that the user carries out on behalf of advertisers through autopoietic feedback relationships. As Baudrillard (1987) argues, ironically in discussion of television (the subject of much semiotic critique), there is no longer transcendence or depth but instead the unfolding of operations and the functional veneer of communications.

The case of behavioural advertising

Behavioural advertising draws less on users' reservoir of social and cultural references, and more on the aggregated wanderings of data-doubles. There are two types of online behavioural advertising that work somewhat differently, although both use past behaviour to determine advertising content. Profiles are used to target advertising to individuals more precisely. Unlike targeted advertising whose advertising targets the contextual material you are looking at, behavioural advertising tracks user movement across the internet offering advertising relevant to web page requests. The service is aimed at showing advertisements based on who is looking at a particular web page, rather than the content of the page itself. A scholar of media and cultural studies may then be presented with advertising for bookstores whilst searching for plumbers to fix a blocked drain. The first collects information from users' cookie enabled web browsers including types of sites visited and pages viewed to offer more highly targeted advertising. These companies are represented by search engines such as Google, Microsoft's Bing and Yahoo (in July 2009 Yahoo sold its search business to Microsoft but retained the rights to sell its own display advertisements), and advertising networks such as Claria, Doubleclick, Kanoodle - 24/7, Quantcast, Tacoda and Revenue Science who deliver advertising across a range of website publishers (for example The Daily Mash, CNN, The Sun, the Onion, ITV and other companies looking to extract revenue from their online offerings). The second form of behavioural advertising that forms the focus of this paper involves ISPs and companies such as Phorm who wish to serve advertising at the point of access. Recognising that the internet represents a network of computers and devices able to use internet protocol (IP), and that the web is a means of sharing information over the internet, behavioural

advertising that uses deep-packet inspection involves the use of software and hardware installed in internet-service providers' networks to intercept webpage requests generated by subscribers as they peruse the internet. This is the more novel version of the two behavioural techniques, and certainly the most controversial. Although Phorm in the UK, and the now defunct NebuAd in the US, have received attention from regulators and privacy groups, they represent only the visible surface of a range of companies interested in access to network infrastructure as means of delivering advertising. Online behavioural advertising is a Web 3.0 form of advertising due to its remit of refinement and understanding of semantics. As highlighted in McStay (2009), expressions such as 2.0 and 3.0 are problematic, slightly controversial, and subject to gurus creating marketing real estate for the purposes of hype and consultancy revenue. They are however a useful shorthand that neatly encapsulate ways of organizing, distributing and processing applications, services and protocols that connect these together. Feedback systems find more robust expression in the semantic web, or what has been dubbed web 3.0. Web 3.0 involves computers demonstrating greater understanding (or at least a passing-off) of information handled and displayed. It allows for exponentially more cross-referencing between different documents and data. The path we are on then is a constructivist one where through personal media technologies, applications and feedback we may facilitate and create a tailored perspective of how we see the world, at least as mediated through new media.

Behavioural advertising and the audience-as-commodity thesis

Jhally (1990), along with other commentators from the 1980s (also see Neuman, 1991),

notes the rise of narrowcasting and describes increases in surplus value generated thorugh refined categorisation and profiling. This value is increased in behavioural advertising, not only thorugh precision of targeting but also through perception of relevance and the fact that behavioural advertising received higher click-through rates and brand engagement with consumers. For example, a market report cited by Phorm utilising a demographically diverse sample of online users who have made one online purchase within the year of being sampled highlights that 41 per cent of internet users pay more attention to personalised advertising (ChoiceStream, 2008). Mosco (2009) argues that new media amplify Smythe's (1977) arguments and the recursive nature of digital systems expands the commodification process. This is true, at least in regards to web-based behavioural advertising (as contrasted to DPI and advertising placed whilst passing through ISP gateways) where signifiers of identification are given through the use of cookies. This is then a feedback and reciprocal process involving audiences, advertisers and media companies. Though the business of audience-as-commodity has increased significantly along with the reliability of data on them, users are configured differently from real world demographic and psychographic referents that have less relevance today. More important than the ideological positioning of content, at least for a critical understanding of contemporary advertising, are the production and sale of audiences as commodity (in the true sense of exchange value), and also the symbiotic relationship between organic (users) and inorganic (advertisement-servers). Users are immanent commodities in that they are constituted by, and aid in constituting, the cycle of feedback and commodity production in real-time. These audiences only exist in a simulational and cartographic sense of course, and even with advertising predicated on behaviour,

aggregation processes must omit much detail and only include what is deemed necessary for the pre-determined goal. This materialist argument is of more use, at least in regards to behavioural digital advertising, and perhaps more broadly, than one that oscillates between understanding audiences as somewhere on a continuum between being inert, active or co-producers (Ross and Nightingale, 2003). Although users are a key part of constituting the features of behavioural advertising, being based on their behaviour, ideological examination of texts and audience positioning is far less important than awareness of delivery systems and the power and privacy relations that exist beneath hybridised behavioural advertising-machines. Refinements in techniques of aggregation result in less perceptions of less overt targeting and remediated (Bolter and Grusin, 1999) advertising whereby traces of targeting, planning and overt solicitation are removed. This offers greater usability and smoother media flows without the jerky interruption formats of yesteryear.

Deep-packet inspection

What DPI represents then is the ability to scan all Open System Interconnection (OSI) Reference Mode layers so to understand more about the nature and content of data in transmission. Comprised of seven layers they are split into two stacks. Four of these are the transport set (layers 1 to 4) and three are the application set (5 to7). The transport layers involve (1) physical properties of the network (such as voltage); (2) data and the type of physical protocol that needs assigning to the data; (3) network and the manner in which the data will be sent to the recipient device; (4) transport where flow control of data is managed, errors are checked for, and data is examined to see if it coming from

more than one application so as to integrate each application's data into a single stream for the physical network. Deep-packet inspection represents the ability to drill down through the application set, the three layers that tell more about the content of the packets and the type of destination. These are (5) session that maintains and ends communication with the receiving device; (6) presentation that takes information from the application layer (the next) and converts this into a form that all the layers below can understand. Last then is (7) application which interacts with the operating system, or application brought into play when a user wishes to transfer files, read messages or perform any other network activity (also see Blank, 2000; Erickson, 2003). Privacy concerns have been raised by groups such as the UK's Open Rights Group and NoDPI due to the potential for DPI equipment to look inside all of these packets and put them together them to form a legible record of e-mails, web browsing, VoIP calls, and passwords. The Saudi Arabian government, amongst others, is buying such technology from companies such as Narus (Anderson, 2007). Phorm are adamant that users are stored as a "unique random number" rather than a name, that it does not gather personally identifiable information and it does not store IP addresses.

Conclusions

This paper has sought to redirect attention from ideological and textual approaches to advertising to one based on a materialist premise that acknowledges the wider system of production. However, this paper departed from both analysing texts and chains of production as recommended by Jhally (1990) instead preferring to drill down further into the nature of consumer/advertising system relations. The current condition of

behaviourally-targeted advertising involves less need for semiotic analysis (understood in terms of Debord's spectacle) and more on data-driven relations between behavioural advertising producers at an internet-based level (e.g. Phorm) and web-based operators (e.g. Revenue Science). Here feedback systems are intensified far beyond traditional systems of (re)production and involve autopoietic modes of production where systems produce more of themselves (behaviourally personalised advertsing). Accepting web 3.0 as a definition for a panopoly of semantic practice, applications, and monitoring techniques the audience-as-commodity thesis comes to the fore with renewed vigour.

Reference list

Anderson, N. (2007) Deep packet inspection meets 'Net neutrality, CALEA, *Ars Technic*a, http://arstechnica.com/hardware/news/2007/07/Deep-packet-inspection-meets-net-neutrality.ars, date accessed 23 August 2009.

BARB (n.d.) *Television Measurement Service*, http://www.barb.co.uk/about/tvMeasurement, date accessed 29 October 2009.

Baudrillard, J. (1987) *The Ecstasy of Communication* (London: Sage).

Beniger, J.R. (1986) *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge, Mass.: Harvard University Press).

Bermejo, F. (2009) Audience manufacture in historical perspective: from broadcasting to Google, *New Media and Society*, 11 (1&2), p. 133-154.

Blank, A.G. (2000) *TCP/IP Foundations* (Chichester: Wiley).

Bolter, J.D. and Grusin, R. (1999) *Remediation* (Massachusetts: MIT Press).

ChoiceStream (2008) 2008 *ChoiceStream Personalization Survey*, http://www.choicestream.com/surveyresults/, date accessed 30 October 2009.

Curran, J. (1981) The Impact of Advertising on the British Mass Media, *Media, Culture & Society*, 3 (1), 43-69.

Debord, G. (1992) *Society of the Spectacle* (London: Rebel Press).

Elmer, G. (2004) *Profiling Machines: Mapping the Personal Information Economy* (Massachusetts: MIT).

Erickson, J. (2003) *Hacking: the Art of Exploitation* (San Francisco: No Starch Press).

Forceville, C. (1996) *Pictorial Metaphor in Advertising* (London: Routledge).

Jhally, S. (1990) *The Codes of Advertising: Fetishism and the Political Economy of Meaning in the Consumer Society* (New York: Routledge).

McQuail, D. (1997) *Audience Analysis* (London: Sage).

McStay, A. (2009) *Digital Advertising* (Basingstoke: Palgrave-MacMillan).

Miles, C. (2007) 'A Cybernetic Communication Model for Advertising', *Marketing Theory*, 7(4): 307–334.

Mosco, V. (2009) *The Political Economy of Communication* (London: Sage).

Neuman, W.R. (1991) *The Future of the Mass Audience* (Cambridge University Press).

Odin, P. (2007) *Advertising in Modern & Postmodern Times* (London: Sage).

Ross, K. and Nightingale, V. (2003) *Media and Audiences* (London: Open University Press).

Smythe, D.W. (1977) 'Communications: Blindspot of Western Marxism', *Canadian Journal of Political and Social Theory*, 1 (3), 1-27.

Smythe, D.W. (1981) *Dependency Road: Communications, Capitalism, Consciousness, and Canada* (New Jersey: ABLEX).

Stern, B.B. (1994) 'A Revised Communication Model for Advertising: Multiple Dimensions of the Source, the Message, and the Recipient', *Journal of Advertising,* 23(2): 5–15.

Wernick, A. (1991) *Promotional Culture: Advertising, Ideology and Symbolic Expression* (London: Sage).

Williamson, J. (1978) *Decoding Advertisements: Ideology and Meaning in Advertising* (London: Boyars).