

Revisiting the ‘double production industry’: advertising, consumption and ‘technoporn’ surrounding the music technology press

Samantha Bennett

Until recently, the role of sound recording and music technologies was scarcely acknowledged in musicological discourse, yet such systems are essential to the production of all music. In recent years, however, scholars such as Zak (2001), Katz (2004), Warner (2003) and Chanan (1995) have all noted sound recording and music technologies as playing a central role in the sound of primarily popular music recordings. Furthermore, the role of music technology and its ‘place’ in wider culture has been considered, particularly by scholars such as Eisenberg (2005), Taylor (2001) and Emmerson (2006) and through edited collections, such as Cox & Warner (2004), Lysloff & Gay (2003) and Gilbert & Pearson (1999).

Scholarly work pertaining to the role of the music technology and the audio industry periodicals that mediate such technologies to consumers is even rarer. Focus on the role of the media in disseminating technology is confined to the disciplines of journalism and mass communication, with notable works carried out by Nelkin (1995), Taylor (2007), Straubhaar, LaRose & Davenport (2006), Brennan (2005), Quirk and Toynbee (2005) and Ursell (2001). Within musicology, Paul Théberge’s seminal text, *Any Sound You Can Imagine – Making Music, Consuming Technology* (1997), remains the single source which contains any focus

on the relationship between music technology and the press. This chapter aims to extend existing work in the field by focussing on the role of the periodicals in the relationship between equipment manufacturing, marketing and consumption.

One key objective is to revisit what Théberge (1997: 130) described as a “cottage industry” of “double production”; that during the, predominantly digital, music technology acceleration of the late 1980s and beyond, equipment manufacturers built new technologies whilst the press created new consumers. Building on this, I investigate how the relationship between music technologies, periodicals and consumers has changed. The focus is threefold: firstly, correlating themes in the press of the late 1980s with those of present day. Secondly, the idea of ‘technoporn’ is discussed as a significant concept evident amongst the music technology press and its consumers. Finally, consideration is given to the presentation of technologies to consumers, discussing the consumer patterns that exist in the music technology market and the wider implications surrounding ‘the democratization of technology’.

Correlations between examples of advertising theme are critically discussed drawing on philosophical, musicological and socio-political concepts. Using a largely qualitative approach, iterative content analysis of periodicals past and present was carried out, with particular focus on journalistic tone and manufacturer advertisements. This included repeated analysis of the sound recording industry and music technology press (both UK and US publications) from the period between 1985 and 2010, including titles such as *Computer Music*, *Sound on Sound*, *Studio Sound*, *Audio Pro International*, *Audio Media UK*, *Future Music*, *Music Tech Magazine* and *Tape Op* amongst others. When considering ‘journalistic tone’, I mean the manner in which technologies were written about (positively, negatively, supportively, as being beneficial in some way etc). Commonalities between periodicals, equipment types, advertising theme and target consumers were noted and critically examined in both tabular and discursive form. Additionally, ethnographic work was conducted in the form of interviews with UK audio industry and music technology specialists. The results were cross-referenced with both the periodical analyses and underpinning socio-historical theory.

Throughout this chapter, much reference is made to cheap, or budget music technologies. For purposes of this chapter, the term ‘music technology’ is used to encompass the MIDI (Musical Instrument Digital Interface) technologies of the 1980s and beyond, including budget sam-

plers, synthesisers and sequencers, as well as the four-track analogue recorders of the decade. Additionally, the phrase refers to effects processors, software sequencing packages and desktop production tools of today. Furthermore, the term ‘sound recording technology’ is used to describe microphones, mixing consoles and high-end analogue and digital tape recorders.

The industry of ‘double production’

In *Any Sound You Can Imagine*, Théberge (1997) suggests that magazines attach all-important ‘meaning’ to technologies aimed at consumers. He also suggests that “without the simultaneous growth of the musicians’ magazine industry, it is unlikely that [digital music technology] would have achieved anywhere near the magnitude that it has today” (ibid.: 129). This is a vital observation; Théberge recognises the press as vehicle for the proliferation of cheap, digital music technologies in the 1980s. However, there is an underlying subtext: with so much emphasis on the technology itself and the consumption of it, the all-important *purpose* or *meaning* – the *point* of it – becomes effectively redundant. This is not to suggest that themes of purpose are not present in the marketing and advertising methods of music technology equipment manufacturers – they are – but such a message is attributed to the marketing of high-end equipment.

In correlating the music press and technology manufacturers, Théberge (1997: 130) theorises a ‘double production’ industry, with one feeding the other:

New technology has been reified as the tie that binds a community of musicians together, while, at the same time, it is the object of consumption whose success in the marketplace is essential to the survival of the electronic instrument industry. In the final analysis, there is a double production going on: One industry produces technology and the other produces consumers.

Ultimately, Théberge (1997) argues the periodical industry ‘created’ the consumer of the digital technologies created by the manufacturers. Undoubtedly, manufacturers created these new digital technologies, and although the press played a key role in the dissemination of such systems, a combination of other factors impacted on the increase in consumers

and consumption. The 1980s saw a marked increase in trade shows; large, occasionally expansive, events where manufacturers would ‘demo’ their new products to a large industry and consumer audience. Dave Harries (2009), director of the Association of Professional Recording Services (APRS) highlighted the importance of the APRS show throughout the 1970s and 1980s:

The APRS exhibition started in 1967. It’s older than the AES [Audio Engineering Society]. It went from a very small show and it got bigger and bigger every year – literally hundreds of exhibitors. It was hilarious; people used to argue about the stands because they all wanted the best position. It went on until 1992, which was the 25th anniversary. After that it dwindled because there were lots of shows after that.

Harries refers to both the AES and APRS exhibitions, both of which were specifically aimed at the professional audio industry. Whilst these, along with the annual National Association of Music Merchants (NAMM) convention in the US, were key events, other shows emerged and proliferated targeting an altogether different audience. One such show was the *MIDI Music Show*. Held in Hammersmith in 1990, the advert claimed: “Everything for the professional and the enthusiast under one roof” (Westminster Exhibitions Ltd., 1990: 69). The emergence of such shows aimed at the semi-professional and amateur market continued to grow throughout the 1990s, but the *MIDI Music Show* in particular epitomised the growth of a new technology consumer: the enthusiast. The trade shows of the late 1980s and early 1990s substantiated messages mediated through the music technology press; the focus was almost entirely on the technology itself. Intention, use value, processual interaction, potential output – the all-important *context* – became less of a consideration.

Indeed, trade shows such as NAMM and AES still exist today, albeit in a smaller format than in the 1980s. UK trade shows such as the *London International Music Show* (LIMS) and *Sounds Expo* have also decreased in size and in some cases, merged with musical instrument shows. This was the case in 2008, when LIMS integrated the technology-centric *Sounds Expo* with the *London Guitar Show* and *Drummer Live Show* (following 2008, the show was planned to re-occur in 2010 but has not yet materialised). This suggests that in the last 25 or so years, sound recording and music technology has been marketed away from audio professionals

and towards both professional and amateur musicians. Recent UK trade shows dedicated to music technology, such as 2011's *Music Production Show*, are smaller than the equivalent late 1980s events; compared to the hundreds of exhibitors present at 1980s APRS show and 1990s *Sounds Expo*, the recent *Music Production Show* had fewer than sixty exhibitors, eight of which were not technology manufacturers, but industry organisations or educational establishments. This is partly due to the 'invisible' nature of today's software-based digital music technology and a shift away from physical interaction with technology. The technology itself has become virtual as opposed to physical, but so too have the associated patterns of consumption and dissemination.

An overview of the music technology and audio industry press

The audio industry and music technology press, the foci of this paper, sit broadly in a much wider set of music industry publications. A multitude of periodicals exist, and have done for decades, aimed specifically at instrumentalists. Others are genre specific publications, such as *Vibe*, *NME Scratch* and *RnB*. Business titles such as the UK *Music Week* and US *Billboard* convey the Anglo-American industry news, but the advent and growth of the music technology press has proliferated more so in the last two decades.

The emergence of audio industry and music technology periodicals happened almost simultaneously with the release of new technologies. Such new publications, from the mid 1980s onwards, contained equipment reviews, 'how-to' guides for setting up MIDI systems, as well as editorial pieces. Significantly, the magazines contained page upon page of equipment advertising. One of the key periodicals to emerge in 1985 was *Sound on Sound*, a magazine aimed at both project studio owners as well as home studio 'enthusiasts' and recording musicians. The magazine featured interviews with industry professionals, as well as equipment reviews and lists of books (usually guides to setting up home studios) that could be ordered by the reader. A letters page and "Q&A" ensured the magazine was accessible to its audience and encouraging of reader interaction. This publication rarely featured any advertising or reviews for 'high-end' equipment, although it associated itself with as many industry 'professionals' as possible, often printing interviews with well-known

producers and engineers. By contrast, *Audio Media* magazine began in 1990, containing information, technical reports and articles on high-end audio and video technologies and professional practice. This periodical was – and continues to be – aimed at a professional audience working in the audio and video industries. Manufacturers of high-end audio equipment often advertise in this magazine. Another key periodical is *Pro-Sound News Europe*. This magazine reports news and developments across a wide range of audio sub-sectors, including live sound, broadcasting, engineering, duplication and production. It is aimed entirely at the working professional involved in manufacturing or working in one of the audio sub-sectors. Reports on conventions, conferences and technical white papers feature heavily in the magazine, along with advertising by professional audio technology manufacturers.

Among magazines aimed at “recording musicians”, *Making Music*, a UK magazine in publication from 1987 to 2002 was a timely addition to the market. Featuring articles and reviews on budget recording technology and instruments, such as synthesisers, portable four-track recorders and guitars, this magazine also featured many advertisements for budget analogue and digital technologies. *Keyboard* magazine, a periodical established in 1975 and dedicated to keyboards and synthesisers, has more recently expanded to cover the wider aspects of computer music recording. The magazine also features heavy advertising by equipment manufacturers and is aimed primarily at musicians from electronic genres as well as home and project studio owners.

A significant amount of magazines and periodicals began post-1990; these publications, many of which are still in print today, often concentrate wholly on computer music production and home-studio recording. Three main titles, among many others, are *Computer Music* (est. 1998), *Future Music* (est. 1992) and *Music Tech Magazine* (est. 2003). All these magazines concentrate almost entirely on home and project studio set-ups, often featuring ‘giveaways’ such as free sample CDs, plug-in demos and other small ‘add-on’ programs. The main content focuses on DAWs (Digital Audio Workstations) and each month features large articles with “tips and tricks” for operating software sequencers. The magazines focus wholly on Avid’s Pro Tools, Apple’s Logic and Steinberg’s Cubase, as well as budget sequencers and audio programmes such as Reason, Fruityloops and Ableton Live. Equipment advertising makes up a large proportion of the content, in addition to reviews. Online versions of the magazines contain forums, reviews and blogs.

Today, the audio industry press spans four key publications: *Tape Op* (est. 1996), *Resolution* (est. 2002), *Audio Pro International* (est. 2005) and *Pro Sound News* (est. 1985). Two of these publications are re-brands; *Resolution* was formerly *Studio Sound* and *Audio Pro International* formerly *Audio Pro*. Whilst all these publications primarily report industry news, there are subtle differences. *Tape Op* concentrates on publishing interview material with key, professional recordists. There is also a strong editorial inclination toward analogue and vintage technologies and traditional recording methodologies. *Resolution* also places strong emphasis on practitioner interviews, recording facility reports, monitoring and acoustic issues. *Audio Pro International* reports the audio industry news; the focus is almost entirely on the business of equipment manufacturing, in-depth reports on PLASA (the Professional Lighting and Sound Association) and NAMM trade shows, as well as equipment reviews. Reviews of “new gear” also form part of the publication. *Pro Sound News Europe* reports news items to the professional, European broadcast, installation, live sound and studio industry. Whilst some attention is given to new technology releases – particularly by professional live and broadcast audio manufacturers – the editorial emphasis is on the practical information: the release dates, trade show appearances and demonstration opportunities as opposed to reviews of the technology itself.

Indeed, correlations can be drawn between the concurrent proliferation of consumer titles such as *Sound on Sound*, *Music Tech*, *Future Music* and *Computer Music* alongside the rapid technological advances in computer processing capability and software throughout the 1990s and beyond. Having positioned themselves in the music technology market at the point in the late 1980s where cheap recording technologies were becoming more accessible, the music technology press has continued to act, not as independent or impartial advisors to consumers, but as business partners with technology manufacturers.

It is, however, important to note that today’s technologies are mediated through the Internet. Online fora such as *Gearslutz*, as well as specific manufacturer website fora reinforce a culture of ‘talking about’ the technologies as opposed to implementing them through professional practice. This central theme, the focus on the technology itself, is intrinsic to the music technology press – both online and in print. Such an objectification of technology can be described as ‘technoporn’.

Technoporn

The origins of the word ‘technoporn’ are unclear, although in print media, early references can be traced to issues of *Wired* magazine from around 2006 (Beschizza, 2006). It is, however, likely the word has earlier origins. As provocative expression as it is, ‘technoporn’, derived from ‘technological pornography’, is a term often bandied about the audio and technology industry landscape in reference to the ubiquity of cheap digital equipment and the sexualization of music technology. Alluding to the voyeuristic, obsessive, perhaps glamorous nature of technology, the word ‘technoporn’ is not just a light-hearted critique of audiophilia but representational of a cultural shift in both the marketing and consumption of technology. Particularly in the last five years, such a shift is evident and has permeated the advertising methods and themes used by equipment manufacturers in the music technology press.

Arguably, ‘technoporn’ is nothing new and is part of a continuum of references to describe equipment fanaticism. Other terms, such as *technophilia* or *audiophilia* came before it; both of which refer to addiction to, or obsession with, technology. The conceptual origin of such terminologies is in Karl Marx’s (1992) ‘commodity fetishism’, as detailed in *Das Kapital*, and the continued centrality of the theory in the work of the neo-Marxist Frankfurt School of critical theorists. Indeed, the cultural theory of ‘commodity fetishism’ has evolved. Whilst it is important to acknowledge the roots of the theory here, the work of more recent theorists is perhaps more relevant. In his book, *Questioning Technology*, Andrew Feenberg (1999: 211) builds upon Marx’s commodity fetishism and argues that technology largely presents itself “through its function”. He goes on to theorize the importance of the *social* role of technology and the potential lifestyle made possible by it, concluding that:

The concept of function strips technology bare of values and social contexts, focusing engineers and managers on just what they need to know to do their job. Technology emerges from this striptease as a pure instance of contrived casual interaction. (Ibid.: 213.)

Feenberg argues that when the focus is entirely on the technology itself, with no reference to the all-important context and/or use value, engagement with it is superficial. By referring to technology as “naked” and interactions with it as “casual”, Feenberg (ibid.) identifies a sexualization of technology. Yet the objectification of technology has rarely been

acknowledged outside the realm of philosophy and critical theory. Such considerations as could be applied specifically to *music* technologies are indeed, rare. However, Théberge (1997: 152) recognises the “predominantly male, hobbyist orientation of these activities; the fascination with technology itself” that are mediated through both manufacturer marketing strategies and music press journalism.

David Mellor (2009), editor of *Sound on Sound* in the late 1980s, describes the psychological strategies used by the press in feeding the demand for cheap digital technologies:

I felt in the 1980s that if I didn't have these pieces of equipment, then I wasn't competing with the professionals. So I think the role of the magazine was that it just displayed it for you, you opened the pages and it was sexy, it was desirable and you want it and you look at the pictures and read the text and think “that guy's had access to that piece of equipment and I haven't” so there was this real feeling of envy. It made you feel bad, like you couldn't compete. The unspoken sub-text was that you needed this equipment. It's easy to get lulled into the myth that you need certain equipment to get the results that the top professionals are getting.

Here, Mellor describes how the press marketed technologies to consumers as a route into the professional domain. As previously pointed out, consumer periodicals concentrated more on equipment whereas the trade press would focus more on the studio or workplace. Neither approach appealed to the professional but these magazines built up a strong community of technology consumers. Through their Q&A pages, product reviews, glossy adverts and page upon page of technique advice, the music technology press drove an undercurrent of home and project-studio equipment consumption. Music technologies were – and still are – marketed as almost entirely separate entities to music itself. Rarely is equipment advertised or written about in its wider context. This reinforces a disconnection between the technology and its purpose, thus reducing the technology itself to an object waiting to be interacted with.

Today's music technology consumers interact more so via virtual fora than through print media. Perhaps the epitome of online music technoporn is *Gearslutz*, a site dedicated to the discussion of sound recording and music technology. From equipment troubleshooting to new technology reviews, classified advertising to “tips and techniques”, *Gearslutz* has evolved into a busy, excitable one-stop hub of music technology dialogue and consumption.

Gearsutz, with the strap line “Forum for professional and amateur recording engineers to share techniques and advice”, presents itself as a forum for all recordists. On further analysis, the reality is very different. For example, the most popular forum, entitled “So much gear, so little time!” contains more than 1.5 million posts, with threads entitled, “Gear porn thread – pics of your slutty setups” and “A little x rated audio porn”. Yet threads based on “question and answer” sessions with professional recordists appear to be the least popular and least interacted with. For example, the thread interviewing Daniel Lanois (recording engineer with credits including Bob Dylan, Willie Nelson, U2 and Peter Gabriel) contains just 78 posts. Like the corresponding print media, *Gearsutz* is a forum dedicated almost entirely to the technology itself, where the role of the recordist, purpose or *output* is rarely acknowledged.

The current culture of cheap, accessible technology, so explicitly marketed with ‘quick fix’ messages, amounts to a different ideology to what Théberge (1997) noted. Throughout the 1980s and, to an extent, the 1990s, the technology’s purpose was still quite clear, even when obviously commodified. In the aforementioned examples in the preceding sections, the tone has shifted into something beyond what Marx (1992) referred to as ‘commodity fetishism’ or Théberge’s (1997) ‘fascination’, because the labour, that link with the role of the recordist (producer) or workplace (studio) or purpose (music) is missing. The absent value of function as described by Feenberg (1999) has laid bare the technology itself as both seductive and addictive; ‘technoporn’ is an ideal description. It is the ultimate message of ‘technology for technology’s sake’. Furthermore, consumers engage enthusiastically with the casual, sexual terminologies associated with their technological interactions; technoporn does not appear to carry negative connotations.

The consumer

Having looked at Théberge’s (1997) ideas and the periodicals industry, as well as the ‘technoporn’ concept, the role of the consumer needs addressing in more detail.

The press almost certainly played a large part in the *emphasis upon* and *distribution of* equipment manufacturers’ products from the mid to late 1980s. However, whilst the target demographics were members of

the professional audio industry, such professionals rarely engaged with publications, as Malcolm Atkin (2009), current head of the APRS recalls:

I went round to his [Ian Davidson, manager of Olympic/Townhouse] office one day and there was a big pile of magazines in the corner still in the wrappers. I said “looks like my office!” I hadn’t read a technical or studio magazine in years! Didn’t need to. Why? Because we right at the top of the tree and if there was anything going on, we heard about it on the network, on the grapevine, long before the magazines picked up on it. I had manufacturers coming to me with this and that, at the same time we also considered that the magazines were more interested in advertising space than honesty.

Atkin highlights two important issues; firstly, that the high-end industry professional disseminated their knowledge amongst their own network. The professional recording community exchanged information through their organisations, industry contacts and directly with manufacturers. Often, high-end recording studios would beta-test emerging technologies, or see the products at the APRS trade show so, by the time the press were reporting on a new development, it was old news to the professional. Secondly, Atkin points out scepticism felt by some professionals towards the relationship between magazines and manufacturers. Steve Culnane (2009), former maintenance engineer at both AIR and Strongroom studios, also highlights this point:

[The audio and music technology press is] probably read by more amateurs than professionals, because professionals are too busy to read it. You’d phone people up and ask them; that’s how you’d get your news. The industry has never really paid that much attention to the trade press. The trade press has always paid more close attention to the industry.

Culnane substantiates the existence of a network of industry professionals and the irrelevance of magazines to it. However, he also makes a key observation in that the periodicals paid more attention to the industry. It could be argued that the music technology press that proliferated beyond the 1990s was not *intended* for the professional industry at all. Conversely, the former editor of *Sound on Sound*, David Mellor (2009), suggested there were polar focal points between the periodicals, saying that “when *Sound on Sound* came out, somehow it seemed to be the equipment that was exciting. With *Studio Sound* it seemed the studio was exciting”.

In the late 1980s and early 1990s consumers of budget analogue and digital technologies were not members of the professional recording industry. As will be discussed in the proceeding section, budget technologies were often targeted at musicians, project and home studio owners and perhaps most significantly, the ‘enthusiast’. Théberge (1997: 153) makes the following observation in relation to digital music technologies:

For the moment, the most likely outcome of rapid technological development is that consumption will be made even more attractive through the creation of new desires, thus reinforcing the image of human essence as one of infinite consumption. This latter possibility appears predominant in the world of digital music technologies, for, although it is possible in a capitalist market society that new technologies will be invented outside the immediate pressures of the marketplace, the innovation and diffusion of technology can only be justified on the basis of potential marketability.

In linking music technologies with the notion of “infinite consumption”, Théberge specifically refers to *digital* music technologies, as opposed to analogue technology or sound recording technology. As exemplified in Appendices 1 and 2, such technologies have never been specifically targeted to members of the professional audio industry, which goes some way to explain why professionals such as Malcolm Atkin and Steve Culnane rarely took notice of the press. So, if industry professionals did not engage with technology periodicals, who did?

The 1990 *MIDI Music Show* was explicitly marketed toward “enthusiasts”. The reference to such a demographic is one of the earliest discovered, suggesting that a new type of consumer emerged during the late 1980s. However, it was not just trade shows that targeted this new, emergent group. The back cover of Mellor’s book *How to Set up a Home Recording Studio* (1990) was aimed specifically “for musicians, recording enthusiasts and students.” By 1994, entire texts were aimed at this demographic, including Michael Talbot-Smith’s *Audio Recording & Reproduction for Audio Enthusiasts*. Indeed, the presence of the ‘enthusiast’ around 1990 was that widespread, it became an entirely new, identifiable, target consumer.

With a technology-centric focus, as opposed to an audio industry line, the music technology press became the perfect fora for the enthusiast, providing an important means of access to technologies once associated with the professional recording domain. In recent times, the

differences between the ‘audio industry press’ and ‘music technology press’ have become clearer. Whilst the former focus on recordists (interviews with professional producers, recording and mixing engineers, mastering engineers), workplaces (professional and project studios) reviews of high-end, professional technologies, often ‘in situ’, the latter focus on the technology itself (equipment reviews, comparative ‘tests’, software ‘tips and tricks’); these periodicals are the very purveyors of ‘technoporn’.

Audio Industry Press	Music Technology Press
Tape Op (est. 1996)	Future Music (est. 1992)
Resolution (est. 2002) (formerly Studio Sound)	Computer Music (est. 1998)
Audio Pro International (est. 2005) (formerly Audio Pro)	Sound on Sound (est. 1985)
Pro Sound News (est. 1986)	Music Tech (est. 2003)
Audio Media (est. 1990)	

Fig. 1 Demarcation between industry and technology-focussed periodicals

What these points highlight is a clear demarcation between media intended for the professional industry and media intended for the semi-professional, home studio owner or enthusiast. Indeed a clear ‘split’ between professional audio industry and/or sound recording publications and the music technology press still exists, as illustrated in Figure 1. In the next section, the focus turns to periodicals and content: which ‘types’ of technologies form the central content within these sets of periodicals? The proceeding two sections on ‘technology and advertising’ exemplify the aforementioned notion of ‘technoporn’ as well as substantiating Théberge’s (1997) findings.

Technology and Advertising in the late 1980s and Early 1990s

Appendix 1 illustrates the correlations between equipment types, target demographics and advertising theme up until the early 1990s. Four distinct ‘types’ of technology and marketing method are evident. The high-end analogue was distinctly aimed at working professionals with accompanying themes of ‘hand made’, ‘high cost’, attention to detail and slow manufacturing process. High-end digital equipment, to include the proliferation of early DAWs, was targeted toward project studio owners, with a clear concentration on the themes of sound quality, technical specifications as well as the time and space saving benefits. Budget analogue four-track tape recorders, by manufacturers such as Tascam and Fostex, were still marketed towards musicians up until the mid-1990s. Advertising strategy concentrated on progression through the industry, ideas and demos, as well as affordability. However, as budget technologies proliferated through the 1990s, so too did the periodicals, full of adverts containing key themes of power, control, instantaneous results, presets, speed, low cost. Advertisements from these four distinct categories are analyzed in detail:

1. High-end analogue equipment – marketed towards the professional studio/engineer/producer.

Neve, a company making high-end analogue mixing consoles, used a general advert for their equipment in 1990. Accompanying an image of two hands measuring what appear to be the inner-workings of a channel strip, the advert implies a ‘hand made’ quality. The headline reads: “Another Neve Console speeds off the production line.” This is followed by a paragraph that starts: “Actually, we don’t have a ‘production line’ and as for speed, we’re as quick as perfection takes because at Neve, we understand the lasting value of quality and attention to detail.” This advert mocks the ‘production line’ manufacturing process and suggests that if quality and ‘perfection’ is what the consumer requires, only Neve can provide it. There is also a reference to the ‘human’ skill involved in creating a console. This suggests that Neve were trying to establish a line between ‘human’ and ‘machine’. However, these adverts were quite rare among the audio industry press. It could be argued this was because the company knew their target audience rarely read the periodicals.

2. Digital equipment aimed at ‘project studio’ dwellers, professional musicians, semi-professional producers or wealthy amateurs.

The late 1980s saw the rise of DAT as a professional studio recording technology. Consumer DAT recorders hit the market by 1987, but Sony had to convince an arguably stubborn consumer market into adopting its new format. This is reflected in their advert “Fact/Fiction” that appeared across a wide range of music and audio industry press as well as consumer magazines in January 1988. The advert shows a number of newspaper clippings bearing highly sceptical headlines about the DAT format, under the word ‘Fiction’. The DAT machine itself is shown under the word ‘Fact’. The paragraph underneath the imagery contains sentences such as “Quality must always be king” and “Forget the hype. Ignore the controversy. DAT is highly convenient and it works.” The paragraph ends by telling the reader, “You’ve read the fiction and you’ve got the facts. Now buy the product. There’s no turning back.” These terse statements illustrate how Sony, an audio industry stalwart, struggled to market DAT successfully. Desperate to make their DAT format work, they retaliated against the negative press by almost forcing the product at the consumer. Eventually, DAT worked out for Sony and became an essential recording format by the early 1990s.

However, there is a clear distinction between the advertising strategies of budget and high-end digital equipment. The Otari DTR 900 was brought to the market in 1988. The first adverts showed the Otari over the headline, “It doesn’t make a bad studio good, it makes a good studio brilliant.” This headline suggests they were aiming their machine at established studios with good reputations. They admitted the Otari was not the first digital tape machine, but that it was the “most advanced.” Like the high-end analogue manufacturers, they opted for a cost-focussed advert, “we’d like to warn you that the DTR 900 sells for a fairly serious sum of money.” What is unique about this advert is how it went on to suggest that engineering skills were more important than any machine:

And no recording machine – even one as advanced as ours – will make an average studio better than it is. But all we can say is that if your people have the skills, the DTR 900 will make them shine as never before.

Contrary to the aggressive ‘buy this machine, get a great result’ strategy used to market the budget digital equipment; the Otari advert suggested the opposite. It may be argued that Otari attempted to combat scepticism among traditionalist, analogue-based studios by mirroring the marketing techniques used for high-end analogue products; quality comes at a high price, no machine will make your studio better, only the skills of your employees can do that. Such tactics, in a technological age where scepticism was rife, were risky but must have achieved results, as the Otari became a popular addition to many studios by the early to mid 1990s.

3. Budget digital equipment aimed at musicians (of electronic genres) and amateurs with little money or space. Also aimed at a new consumer, ‘the home studio enthusiast.’

Budget digital equipment was often marketed purely on affordability, space saving capability and instantaneous results. One advert that encapsulated this group was for the EVS-1 sound module, manufactured by Evolution Synthesis. The advert showed the module and an index finger pressing a button on it marked ‘power.’ The caption read: “Add some creative power.” Inferring both creativity and power were available at the touch of a button, this was a common method of getting across the instantaneous accessibility of a piece of equipment. “You can’t beat the system – because no other sequencing system offers so much musical power with so much versatility and ease of operation,” claimed the first line of AKAI’s advert for their ASQ-10 and MPC-60 digital workstations in 1989. AKAI were one of the main manufacturers of budget digital technology in the late 1980s. The key providers of the quintessential 1980s sampler, AKAI employed highly aggressive marketing techniques in order to promote their technologies. In 1990, they used an almost identical advertising technique for their S-950 and S-1000 samplers. “For it’s sheer power, intelligence and accessibility – at a cost of only £2,999 – the S-1000 is unequalled.” All these examples of budget, digital systems have used the word ‘power’ in their adverts. ‘Speed’ was also one of the main selling points of budget digital equipment. “We’re that fast, we don’t even stop to edit,” proclaimed Steinberg in an advert for their Cubase software. “The fastest way to go from MIDI to Music!” was the headline for Brother’s MIDI Disk Composer in 1990. In reality, budget digital equipment was not easy to use and certainly did not

provide instantaneous results. The periodicals were full of articles on 'how to' topics, and letters pages contained substantial amounts of technical support questions. Unlike many of the high-end analogue equipment ranges, many of the cheap digital systems were accompanied by text-book sized instruction manuals and little, if any, technical support. With no Internet fora, email assistance or web help pages, this left the consumer frustrated and stuck in many cases. Digital equipment in the late 1980s was cheap to purchase, but there was a higher price to pay in terms of time and functionality. Correlations can be drawn here between the prices of equipment, marketability in terms of 'instantaneous' results and the *true* result, which was often a frustrated consumer.

4. Four-track recorders – aimed at musicians.

After Tascam's successful Portastudio in the early to mid 1980s, other manufacturers brought out imitations. By the late 1980s, many four- and eight-track recorders were brought to the market. Yamaha and Fostex, as well as Tascam, knew the potential of marketing their portable recorders at musicians. Such strategies included the four-track as an "essential" piece of equipment, like an instrument in itself, and the four-track's ability to take the musician to the "next level." Fostex used Abbey Road Studios as a selling point. In one advert for the X26, "Fast Track to Abbey Road" was the headline. It went on to say: "Each year, nearly 10,000 people make their first steps in multi-track. It could lead on to fame and fortune." This statement is rather far-fetched as it suggests the consumer will not only have a fast track ticket to one of the most renowned recording studios in the world, but that it could also bring them "fame and fortune." Fostex went even further; they used imagery of man walking on the moon for another X26 advert. Both these adverts suggest that by purchasing a four-track, the consumer will make a great deal of *progress*. Such extreme connections arguably worked; Fostex and Tascam had great success with their four-track recorders throughout the 1980s and 1990s. In the late 1980s, both of these companies manufactured MIDI compatible products in their budget ranges. In a possible attempt to shed their purely analogue image, Fostex advertised their MIDI controllable recorders with the slogan "MIDI spoken here!" and Tascam released their MIDISTUDIO under the headline "A New Age – A New Concept."

Technology and Advertising in the Late 2000s and Early 2010s

As technology has changed, so too have the periodicals, target demographics and advertising strategies used to promote them. In the late 2000s, budget analogue equipment has shifted to a second hand market and high-end digital and analogue equipment appears to have merged as more professionals incorporate high-end DAW platforms into the recording workplace. That is not to suggest the consumers have necessarily changed. What *has* significantly altered is the way in which manufacturers make a demarcation between professionals and ‘everyone else’. High-end analogue and digital equipment is often still marketed at a professional audience, but more apparent is the use of professionals in the advertising itself. Endorsements have increased as the role of the recordist (to use Albin Zak’s term) becomes a way of distinguishing between amateur and professional, therefore targeting professionals with members of their own peer group. Appendix 2 outlines the demarcation between high-end analogue and digital equipment by target consumer and advertising theme in the late 2000s to early 2010s.

1. High-end analogue and digital equipment marketed at professional recording studios, professional recordists (engineers, programmers, producers) and educational facilities.

High-end sound recording and music technologies are marketed quite differently now than in the late 1980s. Themes of high cost and attention to detail are rarities in advertising, largely because the large-scale console manufacturers do not appear to advertise as regularly. This is undoubtedly due to the contraction in professional recording facilities; over the last 25 years, the UK recording industry has seen a decline in the number of large-scale, commercial facilities and a simultaneous incline toward home and project set-ups. Today’s high-end analogue and digital equipment is marketed almost entirely using professional recordists as endorsers. For example, the 1608 console from API featured Joe Chiccarelli, who stated, “I just spent the last 2 weeks doing overdubs ... on the 1608. Wow, this is an amazing sounding console!” High-end A/D interface manufacturers Prism also use this technique. Their Orpheus interface advertisement depicted the computer musician/producer Deadmau5, quoted as saying, “Best A/D – D/A conversion I’ve had yet.” High-end, bespoke microphone manufacturers also regularly

use professional endorsers in the advertisements. Josephson engineering uses a quote from recording engineer Steve Albini: “Literally the only microphone I’ve used on every session.” SE Electronics advertises its multi-purpose, 4 polar-patterned 4400a microphone using a testimonial from producer Gil Norton, who states, “I can’t remember a single session over the last 5 years on which I haven’t used an SE mic.” The benefits of using professional recordists to advertise high-end, high cost technology are two-fold. Firstly, the manufacturer ensures the product is targeted directly at the peer group of the professionals featured in the advertisement. Secondly, it associates its product with a successful result. This not only appeals to professional recording workplaces and recordists, but to the semi-professional, student and enthusiast demographics too, because the message is one of aspiration.

2. Budget digital equipment marketed at semi-professional recordists, project and home studio owners, students, enthusiasts, musicians and hobbyists.

Today’s budget digital technology is advertised in a wholly different way. Again, continuing trends of the 1990s, themes of power, speed and control are all used as triggers. For example, the Sonar X1 DAW, manufactured by Roland’s Cakewalk, advertised with the strap line “Efficient. Powerful. Affordable.” Further descriptions include, “Imagine the power ... of an industry standard DAW ... all wrapped up in a brand new user interface which is ... dare we say it, beautiful.” Roland continued with the power theme in advertising its Juno-G synthesiser, “Juno synth power – welcome to a new era in music production”. Once again, such language evokes the futuristic and utopian ideologies in late 1980s equipment advertising.

However, despite the aforementioned examples, a marked shift has occurred away from ‘futuristic’ and ‘forward thinking’ themes that accompanied the press and journalism of the 1980s and 1990s and toward a more 1970s ‘sex and drugs’ approach. Such advertising examples exemplify the central theme of ‘technoporn’ in the music technology press. For example, Peavy’s HiSys XT system adverts boast “curves in all the right places” and goes on to say that “proven performance give you night after night the sound you love and the power you need”. Novation has also advertised using sex as central theme. Their 2009 advertisement for the Novation sequencer depicts a blonde, semi-naked woman in bed

with her partner. She has her arms folded and appears frustrated, presumably because he is interacting with his sequencer. Under the heading, “Fall back in love with your sequencer”, the advert implies that music technology interaction is better than sex. Korg, with their latest budget line of synthesisers, have advertised using strong drug themes. With phrases such as “analogue dependency”, “hooked from your first hit”, “analogue addicts”, “cravings” and “the ultimate fix”, Korg have reflected what I would argue are commonalities in their target consumers: young, male gadget addicts. This section has exemplified advertising themes, but can any correlations be drawn between such themes and general, journalistic tone?

Tech utopianism/tech pessimism

Having discussed the music technology press, advertising and consumption, it is clear how much the music technology industry relies upon utopian dialect in order to promote its products. Such utopian ideology permeates the entire chain, from the continual updating of technologies to appear ‘cutting edge’ or ‘of the future’, to how they are marketed, advertised, retailed and consumed, demonstrating a clear continuum. Once again, this exemplifies the concept of ‘technoporn’: the technologies are repetitively promoted, glorified and objectified so as to seem attractive to a primarily young, male audience. Indeed, in *Music and Technoculture*, Perlman (2003: 350) stated that the “audiophile press” act as “purveyors of a fantasy world”. From the outset, the press has adopted tech-utopian ideology. For example, in Issue 1 of *Audio Media*, Ian Gilby (1990: 2) wrote in the editorial that “any magazine dealing with leading edge recording technology must play an active part in the pro-audio industry – with so many changes going on, who can afford to be passive?” This is a typical example of the common tech-utopian standpoints taken by journalists. Themes of ‘keeping up’ with technological change, the so-called cutting edge and positive reviewing of most technologies are as prevalent in today’s press as they were twenty years ago.

Such tech-utopian ideology is not simply used as a communication tool, it is used as insurance; equipment manufacturers are kept on side, continuing to buy advertising space and keep the periodicals in print. I would argue that this is more prevalent amongst today’s press than

it has ever been; rarely does a product receive a negative review and almost all technologies are discussed as beneficial. Take, for example, Eric James' 2007 review of the Crookwood C2 monitor Controller. The heavily favourable review of this home studio piece of technology concludes with a list of pros and cons. The pros: extremely flexible, easily configured, glitch free, top notch, excellent value for money. The cons: there are none.

Théberge (1997: 128–130) has highlighted this “tension” between manufacturers and periodicals. He points out that manufacturers buy advertising space and in return, expect good reviews for their products. The editors are therefore, influenced by manufacturers in terms of financial gain. Indeed, discussions surrounding the standpoints of the audio and music technology press are problematic when their sources of funding are considered. Thus, the utopian rhetoric plays a central and important economic role in the manufacturing, marketing and consumption chain.

The use of tech utopianism as a mechanism for marketing technologies is ubiquitous, but that is not to suggest that the press never show any scepticism at all. During the late 1980s, the audio industry press often featured tech-pessimistic viewpoints put across by journalists who felt wary of a largely perceived ‘democratization’ of recording and production technology and skill sets. For example, Foister (1987: 67) suggested in *Studio Sound* that “as the roles of the musician and engineer disappear down 5-pin DIN leads, products are appearing whose benefits can be exploited by both: studio toys designed to interface directly with musical instruments”. Mitchell (1990: 5) corroborated these sentiments in a later edition of *Studio Sound* by suggesting that “although the future for the use of MIDI is unquestionably secure, the novelty will soon wear off and the record buying public will soon tire of hearing music that is on the fringe of supermarket muzak”.

Studio Sound was not a consumer publication, but an industry journal aimed at professionals. However, in recent times, technological pessimism has begun to infiltrate the music technology press. Paul White (2007: 5), current editor of *Sound on Sound*, wrote an editorial entitled “All the gear and no idea?” in which he suggested that the focus on technology had reached such a extent that all method, technique and purpose was in danger of being lost:

What I'm getting at is that, while we should endeavour to make recordings that are technically excellent, and choose the best recording equipment, we should never forget that music and performance are the key to making a great-sounding record.

Despite being the editor of arguably the most technology-centric periodical, White admits to the importance of the wider context. However, *Sound on Sound* has only given passing acknowledgement to the purpose of technology (musical output) or people (recordists).

Whatever journalists may feel about the tech-utopian ideology so prevalent in their publications, they are reliant upon it. The continuation of such publications relies more heavily on advertising revenue than subscriptions that to drop the tech-utopianism would arguably amount to commercial suicide. Indeed 'technoporn' works: consumers of budget music technologies are drawn to the equipment itself (as opposed to the role of the recordist or the workplace) more than ever before. Has this persistent tech-utopian dialect contributed to the 'democratization of technology'?

The role of the press in the 'democratization of technology'

Foister's (1987) and Mitchell's (1990) comments exemplify an underlying subtext of fear; an awareness that such cheap technologies (MIDI) pose a threat to traditional roles of producer and engineer. The 'democratization of technology' is a relevant area of discourse to acknowledge at this point. Indeed, scholars such as Andrew Feenberg (1991) and Tyler Veak (2006) have contributed large-scale studies in general technology and democratization, although apart from Théberge (1997), there remains little research into the specific democratization of music and audio technologies. The rare examples are much concerned with MIDI and samplers:

Nevertheless, many people in and around music would still want to maintain that, thinking through the kinds of development outlined in this article, in broadest terms, MIDI technologies are bringing about what amounts to a major *democratization* of music. (Durant, 1990: 193.)

The sampler, obviously enough, is – like the photocopier – a machine that lends itself to a Benjaminite analysis, since it facilitates and encourages the transformation of the reader into a writer, the listener into a musician, and blurs the distinction between originals and copies. The development of sampling clearly suggests an interpretation that stresses the democratizing effects of new technologies. (Goodwin, 2006: 279–280.)

Whilst MIDI technologies may have brought about what appears to be a democratization of music technologies, in the case of music and audio technologies, is such democratization real or perceived? This somewhat egalitarian idea that ownership of the ‘means of production’ can erase the distinction between a professional recordist and a hobbyist is certainly flawed. The nature of certain music technologies has certainly changed since the late 1980s, largely due to the adoption of almost entirely digital equipment. However, what remains constant is the clear distinction between professional recording technology, as manufactured, marketed and advertised towards the professional industry, and budget lines targeted at non-professionals. The music technology press have played a vital role in perpetuating the myth of democratization. For whilst the technology itself may have become more accessible to wider demographics of non-professionals, this is not matched with equal accessibility to artists, songwriters and musicians (ie. the music that is needed in order to ‘record’ or ‘produce’ in the first instance) or recording and production skill sets (ie. the techniques and expertise required in order to achieve a professional sound recording from such musicians) or the workplace (ie. a professionally acoustically treated workspace on a par with a commercial recording facility) The music technology press ignore such factors almost entirely, placing most of the emphasis on the technology, which in turn gives the consumer the (false) impression that technology alone is all that is required.

The music technology press do, however, regularly contrast the use of budget technologies with the ‘results’ of the professional industry. One example of this is in the persistent use of Abbey Road Studios as both sonic and recordist benchmark through technological discourse at every level. Fostex’s advertisement for their four-track tape recorder as a “Fast track to Abbey Road”, implied career progress to a top music industry career. More recently, *Future Music* ran a front-page headline and main article “Master like Abbey Road”. The premise of the article being: Abbey Road mastering vs. a project studio master vs. a home studio

master. Whilst the methodology, involving three variable treatments of the same track, was subject to a certain amount of rigour, the conclusion was simply: log in to our website, listen to the tracks and vote. The article was, ultimately, unable to provide its readership with a tangible result. The music technology press make such links sporadically; these serve as a 'reminder' to the audience that the 'gap' between them and the professional industry is much smaller than in reality.

Conclusion

To conclude, in the late 2000s, equipment is apparently targeted toward specific demographics using clearly defined terminologies. It appears that Théberge's "double production" industry is more apparent than ever, but there is more going on; a continuum exists.

There is still a clear demarcation between the audio industry and music technology press. The audio industry press focuses almost entirely on reporting manufacturer news, practitioner interviews, studies into workplaces and facilities; little attention is given to technology. The music technology press bears no relation to such publications. Whilst sporadic acknowledgement is given to the professional industry (such as *Sound on Sound*'s regular practitioner feature interview or Future Music's Abbey Road 'test') such inclusions appear to act as aspirational reminders to their readership.

Budget music technologies are not marketed as 'tools of the trade' because there is no trade. Arguably, whilst the professional roles of sound engineer, programmer, and producer still exist, there is no such role for a 'music technologist' beyond manufacturing, retailing and reviewing. The consumption of music technologies has been reduced to a hobby, a game or a fun pastime, as the forum Gearsutz epitomises; casual and passive with little to no meaning or purpose. Indeed, the term 'technoporn' is a fitting description of such technological interaction. Théberge (1997: 122–125) noted consumer demographics as predominantly male. Whilst I am not a gender theorist, further research into the 'gendering' and/or 'sexualization' of technology would certainly assist in pushing this line of enquiry further. Whilst the purpose of this chapter was to revisit Théberge's work, 'technoporn' is indeed a significant finding. Further qualitative and ethnographic work needs to be undertaken for a

future article, whereby the notion of 'technoporn' can be fully analyzed as a central focus. Additionally, it would be beneficial to undertake more research into examples of each 'technology and advertising' category.

Professional recordists and musicians are being used more frequently in the late 2000s to advertise products to their peer group. It appears that these marketing techniques are becoming more important tools to – often boutique – manufacturers, who remain keen to target professional recordists. Indeed such techniques are more prevalent than in the 1980s or 1990s, quite possibly because the elite recording industry is smaller.

A question remains as to the so-called democratization of music technologies and whether this is real or perceived. For professional recordists, technologies are 'tools of the trade'; one aspect of a much bigger picture that relies just as heavily upon musical and recording skills and techniques, as well as the specificity of production projects in order to achieve a tangible result. Budget digital technologies have undoubtedly become more accessible to non-professional consumers, so on the one hand a democratization of technology has occurred. Yet on the other, high-end, high-cost technologies remain almost wholly in the realm of the professional recordist.

What is evident here is a sort of micro-economy existing within the wider audio and music industries. We have at one level manufacturers creating high-end equipment being purchased by professional individuals and workplaces for a purpose, resulting in tangible outcomes: professional sound recordings. At the other end of the scale, there are manufacturers creating budget lines of cheap technologies; historically MIDI, samplers and sound modules and, more recently, software bundles, which are then aggressively marketed and advertised through the press and consumed by altogether different demographics. Manufacturers, budget technologies, the music technology press and 'enthusiast' consumers all form part of a cyclical micro-economy; rarely is there any real purpose or outcome, but once again, this is rarely part of the marketing strategy. As Mellor previously suggested – and what is wholly evident now – is a chasm existing between titles aimed at professional industry recordists and periodicals targeting 'everyone else'. As Théberge first noted, the use of tech-utopian ideology to 'push' music technologies on the non-professional consumer remains central to sustaining the economic cycle of manufacturing, retailing, reviewing and consumption. Ultimately, the music technology press operates as part of a self-serving micro-economy. It has grown beyond a 'cottage industry' of 'double

production'; that is, music technology manufacturing and consumption can no longer be considered in parallel, but as part of the same, cyclical micro-industry.

References

Advertisements

- AKAI (1987). Just a sample of AKAI genius. *Sound on Sound* 1:12, 13.
 API (2010). Pro. Tools. *Tape Op* 78, 52.
 Cakewalk (2010). Sonar X1 Less Work. More Flow. *Music Tech* 93, 132.
 Evolution Synthesis (1990). Add Some Creative Power. *Sound on Sound* 6:1, 25.
 Fostex Corporation of America (1990). "Fast Track to Abbey Road". *Making Music* 55, 18.
 Josephson Engineering (2010). e22S Side Address Cardiod. *Tape Op* 78, 25.
 Korg (2010). The Ultimate Fix for Analogue Addicts. *Future Music* 233, 132.
 Neve (1990). Another Neve Console speeds off the production line. *Studio Sound* 32:1, 11.
 Novation (2009). Fall Back in Love with your Sequencer. *Sound on Sound* 24:4, 101.
 PrismSound (2010). Deadmau5 logical choice of interface. *Tape Op* 78, 24.
 Roland (2010). Juno-Gi Welcome to a New Era in Music Production. *Music Tech* 93, 117.
 SE Microphones (2010). Perfect Take, Every Time. *Music Tech* 93, 41.
 Sony/HHB (1988). Fiction, Fact. *Studio Sound* 30:1, 8–9.
 Steinberg (1990). We're that fast, we don't stop to edit. *Sound on Sound* 6:1, 35.
 Studiospares (2010). With great power comes great response ability. *Music Tech* 93, 90.
 Westminster Exhibitions Ltd. (1990). Tomorrow's music technology – today. The MIDI music show. *Sound on Sound* 5:4, 69.

Reviews

- Foister, D. (1987). ART DR1. *Studio Sound* 29:1, 67.
 James, E. (2007). The Crookwood C2 Monitor Controller. *Sound on Sound* 22:10, 94–96.

Personal interviews with the author (MP3 recording in possession of the author)

- Atkin, M. (2009). 1 Jul 2009.
 Culnane, S. (2009). 21 May 2009.
 Harries, D. (2009). 11 May 2009.
 Mellor, D. (2009). 1 Aug 2009.

Literature

- Beschizza, R. (2006). Technoporn: Greek Fire. *Wired* 14:12, 52.
 Brennan, M. A. (2005). *Writing to Reach You: The Consumer Music Press and Music Journalism in the UK and Australia*. PhD Thesis. Brisbane: Queensland University of Technology.
 Chanan, M. (1995). *Repeated Takes: A Short History of Recording and Its Effects on Music*. London & New York: Verso.
 Cox, C. & Warner, D. (Eds.) (2004). *Audio Culture: Readings in Modern Music*. London & New York: Continuum International Publishing Group.
 Durant, A. (1990). A New Day For Music? Digital Technologies in Contemporary Music Making. In: P. Hayward (Ed.), *Culture, Technology & Creativity in the Late Twentieth Century* (pp. 175–196). London: John Libbey.

- Eisenberg, E. (2005). *The Recording Angel*. New Haven & London: Yale University Press.
- Emmerson, S. (2006). *Music, Electronic Media & Culture*. Aldershot: Ashgate Publishing.
- Feenberg, A. (1999). *Questioning Technology*. London & New York: Routledge.
- Gilbert, J & Pearson, E. (1999). *Discographies: Dance Music, Culture and the Politics of Sound*. London & New York: Routledge.
- Gilby, I. (1987). Welcome to issue 1. *Audio Media* 1, 2.
- Goodwin, A. (2006). Rationalization and Democratization in the new Technologies of Popular Music. In: A. Bennett, B. Shank & J. Toynbee (Eds.), *The Popular Music Studies Reader*. New York: Routledge.
- Griffiths, D. (2010). Master Like Abbey Road. *Future Music* 233, 36–46.
- Katz, M. (2004). *Capturing Sound: How Technology has Changed Music*. Berkeley & London: University of California Press.
- Lysloff, R. T. A. & Gay, L. C. (Eds.) (2003). *Music and Technoculture*. Middletown: Wesleyan University Press.
- Marx, K. (1992). *Capital Volume 1: A Critique of Political Economy*. London: Penguin Classics.
- Mitchell, J. (1990). Compose Yourself. *Studio Sound* 32:2, 5.
- Negroponte, N. (1995). *Being Digital*. New York: Vintage.
- Negroponte, N. (1998). Beyond Digital. *Wired* 6:12, 288.
- Nelkin, D. (1995). *Selling Science: How the Press Covers Science and Technology*. New York: W H Freeman & Company.
- Perlman, M. (2003). Consuming Audio: An Introduction to Tweak Theory. In R. T. A. Lysloff & L. C. Gay (Eds.), *Music and Technoculture* (pp. 346–357). Middletown: Wesleyan University Press.
- Quirk, T. & Toynbee, J. (2005) Going Through the Motions: Popular Music Performance in Journalism and in Academic Discourse. *Popular Music* 24:3, 399–413.
- Straubhaar, J., LaRose, R. & Davenport, L. (2006). *Media Now: Understanding Media, Culture and Technology*. Boston: Wadsworth Cengage Learning.
- Taylor, T. (2001). *Strange Sounds: Music, Technology and Culture*. London & New York: Routledge.
- Taylor, T. (2007). The Commodification of Music at the Dawn of the Era of ‘Mechanical Music’. *Ethnomusicology* 51:2, 281–305.
- Théberge, P. (1997). *Any Sound You Can Imagine: Making Music/ Consuming Technology*. Hanover: Wesleyan University Press.
- Ursell, G. D. M. (2001). ‘Dumbing Down or Shaping Up? New Technologies, New Media, New Journalism. *Journalism* 2:2, 175–196.
- Veak, T., J. (Ed.) (2006). *Democratizing Technology*. Albany: State University of New York Press.
- Warner, T. (2003). *Pop Music, Technology and Creativity: Trevor Horn and the Digital Revolution*. Aldershot: Ashgate.
- White, P. (2007). All the Gear and No Idea? *Sound on Sound* 22:10, 5.
- Zak, A. J. (2001). *The Poetics of Rock: Cutting Tracks, Making Records*. Berkeley: University of California Press.

Equipment type	Consumer	Advertising Themes	Examples
High-end analogue (Expensive audio equipment aimed at professional, commercial recording services, including studios, hire companies and professional recordists. For example: large-scale mixing consoles, 16/24 track analogue tape recorders, outboard effects processors.)	Professional Recording Studios Professional Recordists	Lasting value High cost Quality Attention to detail Slow manufacturing process Technical specifications Hand made manufacturing Commitment to excellence	Neve (1990) Tascam ATR 60/16 (1990) JBL Compressors (1990)
High-end digital (Expensive audio equipment aimed at professional, commercial recording services, including studios, hire companies and professional recordists. For example: large-scale digital mixing consoles, 16/24 track digital tape recorders, outboard effects processors.)	Project studios The 'artist/ producer' Semi-pro producers	Sound quality Technical specifications Time saving Space saving High cost	Sony DASH (1988) DAT (1988) E-Mu Proteus/2 (1988) OTARI DTR-900 (1988)
Budget digital (Cheap audio equipment aimed at the home studio market. For example: budget samplers, digital effects processors, small scale digital recorders, synthesisers, sequencers and budget software)	The 'home studio' enthusiast Musicians (electronic genres)	Affordability Power Instantaneous results Time saving Speed of use Space saving Presets & functions	Evolution synthesis EVS-1 (1990) Steinberg Cubase (1990) AKAI S-1000 (1989) Digidesign Sound Tools (1989)
Budget analogue (Cheap audio equipment aimed at musicians. For example: budget 4-track analogue tape recorders)	Musicians (amateur and professional)	Progress Ideas & demos Affordability Career moves	Tascam Portastudio (1988) Fostex X26 (1989)

Equipment type	Consumer	Advertising Themes	Examples
<p>High-end analogue and digital equipment</p> <p>(Expensive analogue and digital audio equipment aimed at professional, commercial recording services, including studios, hire companies and professional recordists. For example: large-scale mixing consoles, microphones, high-end DAWs [eg. Pro Tools HD], audio interfaces, outboard effects processors.)</p>	<p>Professional recording studios</p> <p>Recordists</p> <p>Education facilities</p>	<p>Professional endorsements by:</p> <ul style="list-style-type: none"> - producers - engineers, - studio owners - commercially successful musicians 	<p>API Consoles - Joe Chiccarelli (2010)</p> <p>SE Microphones – Gil Norton (2010)</p> <p>Josephson Microphones - Steve Albini (2010)</p> <p>Prism Orpheus audio interface – Deadmau5 (2010)</p>
<p>Budget digital</p> <p>(Cheap audio equipment aimed at the home studio market, students and enthusiasts. For example: budget samplers, digital effects processors, small scale digital recorders, synthesisers, sequencers and budget software)</p>	<p>Semi professional recordists</p> <p>Project studio owners</p> <p>Artist/ producers</p> <p>Students</p> <p>Enthusiasts/ hobbyists</p>	<ul style="list-style-type: none"> - Sex - Speed - Power - Affordability - Drugs 	<p>Novation (2009)</p> <p>Korg (2010)</p> <p>Cakewalk Sonar (2010)</p> <p>Roland Juno-Gi (2010)</p> <p>Studiospares Amplifiers (2010)</p>