

*Pre-print*

# Perspectives on networked music culture: Audio files, audiophiles, and the reflective musician

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## **Abstract**

Web 2 has impacted on all levels of music culture but this has been primarily visible in contested ideas about technology, media and file-sharing. Much less so has this phenomena been discussed in relation to its effects on career musicians and their place in an increasingly disintermediated recording industry. This article examines musicianship which has arisen since the massification of sound recordings 'as' music, and its adoption of audio engineering skills as an extension of artistry. It considers the ways in which music practices may not align with popular media conceptions of genre, stardom or value, and in how consumer technologies blur the boundaries around differing aspirations for musical engagement. Given the ongoing disintegration of the recording industry and parallel innovation imperatives from governments, it is argued that universities now occupy a unique role in responding to these challenges and opportunities for new musicianship and its future role in society.

## **Key words**

career musician • convergence • copyright • disintermediation • higher education • music culture • music technology • recording studio • web 2

## INTRODUCTION

This article is concerned with professional music practice in relation to the web 2 phenomenon. Here, 'professional' is not intended as a prestige term, but as a way of indicating differences of focus from those who exist at the margins of music-making and those who seek to maintain a full-time career as a musician. The article does not intend to take any polarized position between 'those that do' and 'those that don't', nor does it align with commentary that warns against cyberspace as a 'toilet wall' (Stevenson, 2007) or an amateur cult which places industries and jobs in danger (Keen, 2007). Rather, this piece aims to offer insights across a continuum where social networks, disintermediation, convergence and the notion of any 'record industry' have become contested ideas since the dot-com bubble. In this age of digital replication (with apologies to Benjamin, 1968[1936]), the work of music remains a solipsistic attraction for many, as Evan Eisenberg interprets,

All in this hall are experiencing the same event. Yet each is hearing it and seeing it from a slightly different angle, through a different screen of memory and desire. If the music is a palace or cathedral in time, it is also a gem of two thousand facets, one for each mind in the hall. Each mind sees its own reflection, dreams its own dream. If music is a cosmos, then contained in this room are two thousand parallel worlds. (2005: 237).

What niggles in the new media literature is the apparent dearth of input from practicing artists and music educators (who likely publish their respective works along disciplinary lines). What concerns some is that in such a MySpace future, young artists may indeed become famous for 15 minutes (Wharhol, 1997[1979]) but may not be able to further their livelihood without core disciplinary skills. While consumer technologies may bring liberating potentials for users to develop important generic attributes and admirable citizenship ideals, there is the concern that DIY culture lacks artistic depth, that 'expanded access to production and exhibition is only one in a set of necessary conditions that also include a critique, a goal, a community, and a context' (Judasz, 2008: para. 9). In the world of the career musician, there are significant matters of craft, technique, excellence and differentiation which apply to preparing and sustaining a living. There are musical histories and traditions which stretch back generations before the capitalist fascination with intellectual property, media and the Internet. There are aspects of definition where success may not be measured by the simplistic 'mega-stardom or bust' boundaries propagated by mass marketing hyperbole. The concept of a 'professional' remains ambiguous in a disintermediation discussion where high level musical skill has somehow been relegated to the camp of industry and the role of the consumer expanded to include new elements of interactivity, yet overall, makes little reference to the disintegration of artistic development and production structures.

### Orientation and approach

While Jenkins and Deuze convincingly argue that 'convergence . . . must be understood as both a top-down corporate-driven process and a bottom-up consumer-driven process' (2008: 6), in this article I want to examine the effects of such compression on those who aspire to become artistic leaders in this new future. As shop-floor labour becomes crowd-sourced by 'empowered' audiences, corporate pathology remains fascinated with the distribution and ownership of intellectual property (IP) yet decreasingly caring for its nurturing and invention. In parallel to these developments, western governments increasingly focus on 'forging closer links' between industry and higher education providers (for example, DIUS, 2008) where the latter are now seen as centrally responsible for the development of creativity, skills, and the innovation potential of projects and graduates.

This article therefore advances the position that I want to bring to bear my experiences as a career musician who later in life came to the university professoriate within a conservatorium of music. The first viewpoint is explicitly reflexive in that I worked as a professional in the Australian music industry from the 70s to the 90s as a performing musician, a composer and later in recording studio production. The second perspective brings that of an academic researcher and teacher of degree programs in music technology since the mid-90s. Thirdly, I include aspects of the literature from musicology, education, sound production and popular media as applies to this exploration of contemporary music culture. In what follows, these perspectives are integrated in order to offer a thick(er) description of practice and events (Geertz, 1973) as they unfold across a timeline which examines music's origins and practices, the rise of technologies and their impacts upon musicianship, and the ongoing effects which ripple across university teaching and the orientation of its students.

If web 2 is indeed part of any answer, then this article seeks better questions (Thompson, 2006) by neither throwing out 'the bathwater' of the new social networking landscape (judged to be suspect by some) nor throwing out 'the baby' in the sheer depth of craft that is required of career artists (and apparently overlooked by non-musicians). To continue the analogy, as a musician and an educator I want to argue and draw conclusions about what an authentic 'bathtub' might begin to look like.

### **THE BATTLE FOR 'MUSIC'**

In web 2 there is a breaking apart of old alliances which were once accepted as the bedrock of industrialization, where in a Fordist assembly line approach to production, employees assumed creative, technical, and other specialist labour roles. And so, the term 'disintermediation' has been borrowed from the banking industry to describe the new on-line ecology (Wikipedia, 2008b). This includes the removal of superfluous agents in the supply chain, outsourcing of production and overall, striving to reduce the costs of servicing customers directly in 'long-tail' environments while purporting to benefit niche market creators (Anderson, 2006). Some observers are less than convinced about the underlying motives here, as Matthew Allen prods,

Web 2.0 . . . is itself open to significant criticism for the way it validates a kind of advanced, promotional entrepreneurial capitalism that binds users to profit-making service providers via the exploitation of those users' immaterial labour. Web 2.0 also serves as an ideology for the creation of new forms of dependence between individual humans and corporations who, by monopolising and controlling the network activities through which key forms of human sociality becomes possible, can therefore benefit disproportionately from that dependence (2008: para. 39)

Nowhere have these claims been more verifiable than in the music sphere where digitization unwittingly liberated the IP in sound recordings, firstly via CD then later in the MP3, a container technology perfectly 'designed for promiscuity' (Sterne, 2006: 836). The recording industry became the canary in the coalmine for copyright law (Carroll, 2005) and in doing so, clearly identified that the real battleground lay in claims to the ownership of digital IP (above infrastructure, craft and art). While popular musicians once toured to promote the sale of albums to return them royalties, by the late 1990s their income was derived mostly through concert ticket sales and merchandising (Frost, 2007). The collection of a bewildering array of 'rights' in sound recordings now dominates the industry: mechanical rights on radio, publishing rights in lyrics/score, performance rights, film synchronization, and digital rights around format shifting. This returns the majority of income to publishing houses and record companies where the ownership of the rights has been ever-extended by corporate lobbying and campaign funding of key politicians and stakeholders (Lessig, 2004). Through globalised

contracts, big media owns the right-to-copy musical artefacts (especially of boomer era stars) for 70 years plus the life of the author (which unfortunately may be very short, given enough 'entertainment' budget) or where career prospects may be abruptly terminated if newer artists fail to make returns on financial advances and elaborate on-costs (Albini, 1997). While so-called music wars now wage around massive shift in the relationships between corporations, musicians and audiences, at the heart of the cry 'file sharing is a crime' there are a range of conceptions that bear scrutiny.

### **What is music?**

It is only in very recent history that one might consider music as a replicable product and that sound recordings or printed music score actually 'are' music. In the case of scores, these are directions that indicate what a composer might broadly want a group of musicians to play. Of course, people are not merely playback machines and so there is an enormous amount of artistry and musicological commentary which has developed over the centuries around interpretation and the magic in the gaps between the composer's ideas, the performers' interpretations and the audience responses (for example, Britten, 1964) – be it in the contemporary rock stadium event or the Victorian music parlour. In the case of recorded sound and its mass production, what is most striking here is that such an artefact represents only one performance of the music, a single frozen example in time. In modernity then, a somewhat incomplete view of music has been commercialised so that while capitalist societies fascinate with sound/star culture, they do much less so in relation to the practices which brought us here. In order to draw conclusions about any future for music, its artistry and development, it may be best to turn to the past to understand music-making more fully.

### **MUSIC AS PRACTICE**

Music has occupied a unique role in society for millennia. Sound was ephemeral, non-capturable. It worked in tribal settings, in community building, in power and fantastic arts structures where it featured as an accompaniment to the rise and fall of empires and cultural powerhouses across the planet.<sup>1</sup> A *musica practica* was music by ear rather than music by artefact – the practice through which it lived and breathed, handed down through master-apprentice traditions, and which every generation modified according to its own needs by building on the shoulders of ancestors (Channan, 1994). Artisans became highly skilled and specialised, dedicating years of study and practice to become masters at composing and producing sounds on increasingly complex technologies such as the guitar, the violin, the horn and the piano. Like other languages, music began to be documented through the invention of score notation and so additional instructions could be delivered in the evolution of detailed and more stylised forms.

By the 1700s, the performer-composer was at the centre of a fledgling music industry. Gutenberg's printing press accelerated written literacy, the transfer of knowledge, and the idea that music might be understood as a physical product that could be mass-produced. Bach and Hadyn were in great demand for their state-sponsored works but Handel was one of the first to begin to freelance to run independent public events and engage in entrepreneurial activity (Carroll, 2005). Music copyright (literally, the 'right to copy') found its beginnings here as applied in the duplication of scores provided to concert organisers and in the creation of parlour music for an increasingly hungry audience of London's aristocracy and growing middle class, to be used in home entertainment and community gatherings. Simply, music copyright was conceived of as a way to extend and sustain the professional careers of artists, by revenues collected through publishing houses while the parliament provided the legislation to help maintain artists' livelihoods.<sup>2</sup>

In 1877 Edison invented the phonograph (and wax cylinder media), within another 10 years Berliner had devised the gramophone (and record media) and so the recording industry was born.<sup>3</sup> This capturing of sound was never intended for music, rather, more closely related to the telephone and could be used much like a dictaphone to provide, preserve and curate the spoken word as notes, educational materials and historical records (Read and Welch, 1976). Yet it was the recording of music that captured the public imagination and after a short period of format wars, the phonograph/record combination became the dominant technology, mass-produced and marketed and by Thomas A. Edison Incorporated, and from the outset, corporate spin promoted authenticity and fidelity as the essential values for consumers. Edison's 1916 premier of the phonograph 'performing' a duet with a live singer to a 2,500-strong audience in Carnegie Hall prompted the New York Tribune to gush,

Mme. Rappold stepped forward, and leaning one arm affectionately on the phonograph began to sing an air from "Tosca". The phonograph also began to sing . . . at the top of its mechanical lungs, with exactly the same accent and intonation, even stopping to take a breath in unison with the prima donna. Occasionally the singer would stop and the phonograph carried on in the air alone. When the mechanical voice ended Mme. Rappold sang. The fascination for the audience lay in guessing whether Mme. Rappold or the phonograph was at work, or whether they were singing together. (Cited in Thompson, 1995: 131)

For over a decade, similar events were staged across the USA, apparently convincing millions of people that 'it was actually impossible to distinguish the singer's living voice from its re-creation in the instrument' (Ibid: 132). Thus, households moved from performing to listening, evolved through radio, television and an advertising culture to drive assertions as to what constitutes quality, both in terms of certain musicians' stardom and through the marketing of fidelity as a means to authentically replicate the art.

### **Audiophiles, audio files, and the reflective musician**

Collecting and listening to albums became the major driver for the explosion of a new media consumption culture. Throughout most of this development, western classical music repertoire was a central reference point in defining the quality of listening experience where dynamic range, timbre, stereo image and depth became highly finessed considerations (Rothenbuhler and Peters, 1997). There were debates about perception, musical intangibles and reverence for an 'aura' in the art (Benjamin1972[1931]) which might be captured by mysterious means in prestige recording label facilities and represented through the ever more expensive status symbol of the audiophile's contemporary music parlour. In concert with consumers, industries were only too happy to oblige in this cycle and so specialist hi-fi stores and consumer magazines sprung up around the ethos. Like a hotrod fetish, the audiophile was forever refining and upgrading speakers, amplifiers, turntables and acoustic environment.

If we fast forward our attention to the present day, it is striking by comparison that clearly, many of these ideas about fidelity and reception have been rejected, just as MIX magazine's David Weiss questions in what he terms a 'consumer conundrum',

. . . the vast majority of the human race's interaction with music has nothing to do with producing it. They listen to music and acquire the media it is distributed on – sometimes paying for it, sometimes not. But in a time when audio engineers have broken new ground in audio quality with formats such as SACD and DVD-A featuring 24-bit/96k in 5.1, why is the consumer vote resoundingly on the side . . . of the less-inspiring sounds of . . . MP3-encoded audio? (2005: para. 4)

The combination of PC, Internet and small file sizes make access to MP3s convenient, it allows for collectable libraries and social networks around style and taste, while iPod culture can mobilize a proxy musical personality (what play-list are you wearing in Starbucks?). Agreed, the MP3 has become an important and defining cultural artefact of our times (Sterne, 2006). However, popular media value judgements generalise such social music attention, thereby underestimating these resources in terms of artistic interrogation and evaluation.

For example, The New York Times perpetuates the MP3 fidelity argument in a recent piece, 'Hard to Be an Audiophile in an iPod World' (Tommasini, 2007). This makes somewhat of a leap when it claims that 'few musicians have been audiophiles' (para. 9) and that 'they do like their MP3s iPods . . . [if] the sound is acceptable . . . convenience is the selling point' (para. 15). Any idea that musicians are not audiophiles is a telling assumption. For generations, musicians by definition, have obsessed through practice to develop sound quality of timbre, articulation, dynamics, projection, rhythm and groove. Nowadays, artists prefer to record at high sample rates and bit depths as is common in modern production systems. They consider performance technique, sound manipulations and acoustics while closely evaluating musical and sonic attributes together as a whole.<sup>4</sup> These processes take place irrespective of any audio 'print' destination – MP3 is just one output option among many. In terms of 'acceptable sound' and 'convenience', the Times article cites but misinterprets Mark Katz (2004) in that 'working musicians understand the big gap between recorded music and the real thing. They can listen through the inadequacies of any recording and focus on what they want to hear' (para. 13). Here Katz refers to musical analysis, learning and the building of an essential aural library from which artists can draw upon in subsequent improvisation, composition, performance and teaching (Schippers, 2007). For musicians then, the MP3 delivers on the promise of Edison's vision that recording technology provides deliberate or random access to a wide range of portable notes, historical records and educational materials.

Since the invention of the phonograph, access to recorded sound forever changed musicianship. Artists began to reflect on recording in completely new kinds of ways, because until this point, in all of history *musicians never the opportunity to re-listen to their own performances*. This fundamentally altered how musicians approached their craft to accentuate new techniques and develop performance styles and/or instruments based on the artificial representation of the music through recordings (Ross, 2005). For example, now well-accepted vocal sound production had its beginning in 'crooning' (Channan, 1995) by the likes of Bing Crosby where soft, intimate singing was brought unnaturally forward against loud musical arrangements. In jazz and rhythm and blues, a whole new culture of interpretation and improvisation evolved and prospered though an aural tradition of sound recordings that could be shared and mimicked irrespective of literacy or social setting (Hamilton, 2003). However, it was popular music that drove this farthest by developing sound production as a art form and the studio as an musical instrument.

## MUSIC AS MACHINE

Post World War II, the music industry became highly ecological (Channan, 1995), its workings increasingly more intricate as pianist Glenn Gould observed in the 60s,

The technology of electronic forms makes it highly improbable that we will move in any direction but one of even greater intensity and complexity . . . many different levels of participation will, in fact, be merged in the final result [and] will permit a climate in which biographical data and chronological assumption can no longer be the cornerstone for judgments about arts as it relates to the environment . . . this whole question of individuality in the creative situation . . . will be subjected to a radical reconsideration. (1966: 55).

Inside the ‘hit machine’, record companies provided the technologies and the spaces, the Artists and Repertoire (A&R) managers to recruit music stars, lawyers to devise contracts, while publishing houses signed composers under arrangements for music/lyrics and ever-specialised teams worked in the recording studios. By the 1960s this included technicians to maintain expensive equipment, engineers to record and refine the sound, contracted song writers and music arrangers to develop and finesse the work according to prevailing commercial opportunities, and lastly, the performing musicians themselves. Some became highly skilled and sought-after ‘session players’, that is, those who possessed high-level performance craft and could quickly bring this to bear in a recording session on demand. A second group arose however, becoming known as ‘the producer’, similar in intent and role as the director of a film.<sup>5</sup> These musicians interfaced in not only song-writing, musical arrangement and sound production (Moorehouse, 2005), they began to drive the development of multi-track recording technology and redefine the entire creative process through approaching the recording studio as a musical instrument (Eno, 2004[1979]).

To place this in a contemporary context, ‘users [were] learning how to master these different media technologies to bring the flow of media more fully under their control and to interact (and co-create) with other users’ (Jenkins and Deuze, 2008: 6). From Les Paul’s multi-track harmonies of solo guitar, to the Beatles’ historic *Sgt. Peppers*, to Queen’s astonishing *A Night at the Opera*, sound production became an virtual art form quite different to earlier arguments about authenticity. Driven by the wealth of rock stars and the access this could buy, by the end of the 1970s artist producers and popular music became the vanguard in re-defining the power relationships between record companies and audiences, between sound and art, between musicians and other musicians, and between music and technology.

### **Playing on the outside looking in**

For those working musicians without power and wealth, these highly visible opportunities and art forms posed conundrums around an entry point into what had been discouraged from the very start of the recording industry. For example, the 1906 edition of *Edison Phonograph Monthly* describes an early recording studio’s separated spaces for musician and technology,

A recording horn projects through a curtained opening in [a] partition. The artists see only this horn into which they sing. The Phonograph attached to the horn stands back of the partition. How it is equipped and how it does its work are the department secrets that even the artists are not permitted to know. (Cited in Horning, 2002: 19).

Over time, this approach grew stronger with recording ‘control’ rooms and performance spaces ever-isolated and specialised. Musicians were separated by sound baffles and engineers on the other side of the studio observation glass could render judgements in the absence of the performer, then issue talkback instructions through headphones. Many musicians became dissatisfied with these power arrangements, armed as they now were with heightened artistic and intellectual dexterity (facilitated by the cultural capital of recorded works) and with increasing understanding of production techniques as artistic knowledge (driven through on-the-job training and exposure), as Alan Williams elaborates,

This helps to explain why so many musicians of any era have voiced their disdain for the recording studio. For newer generations, such structural impositions are out of sync with their own recording environments and practices, while older musicians have contributed their creative energies from the lower reaches of a hierarchical structure designed to prize those responsible for the capture of sonic energy, over those individuals responsible for the expression of musical ideas. (2007: 10)

In the 1970s, synthesizers came to the fore in 'super-groups' such as Emerson, Lake & Palmer and Yes featuring virtuosos who presented enduring images of arms spread-eagle to play multiple keyboards simultaneously. In this growing complexity, there became a need to better harness this production power and so Herbie Hancock was one notable artist who employed a technician to devise a system to control his array of devices (Author, 1999). Electronics specialists Roland and Yamaha saw commercial opportunities and in 1981 they combined their resources to devise a Musical Instrument Digital Interface (MIDI) based upon the serial protocols of early computers (Rothstein, 1992). MIDI was quickly exploited to allow computers and devices to synchronise, store and retrieve data and by the mid-1980s, MIDI-equipped devices and music sequencing software were in plentiful supply given a growing demand from musicians. Companies who manufactured high-end recording equipment further leveraged the opportunities and so the multi-track tape recorder became available as 'consumer' versions in 4, 8 and 16 track portable machines. Timecode protocols borrowed from the film industry were released down-market to synchronize tape recorders, computers, synthesizers and samplers (sound-recording keyboards) and soon, the small home facility began to rival the track count and interactivity of the commercial studios.

## MUSIC AS CRAFT

Inexpensive technology allowed career musicians a chance to be creative without incurring large studio costs. This independence also extended demands on technique: not only did musicians have responsibility for studying musical form and practicing their instruments, they now began to appropriate the language of technicians into their craft, for example: reverberation effected the way the timing or size of a drum was perceived; compression ratios were used to alter the dynamic range of a sound; a 'spectral solfege' (Fournier, 1987) approach to equalisation (pitch/hertz) separated or blended instruments to aesthetic effect; the 'art of microphoning' (Horning, 2004) utilised polar patterns and position to enhance timbre; tape speed could alter pitch or direction, audio 'punch-in' became a tool with which to experiment and compose, and tapes could be spliced together as new musical arrangements.

Conceptually, these new literacies were not far away from traditional musicianship: pitch, timbre, tempo, dynamics, acoustics and arrangement were all core to music-making, however until now, working musicians never had the opportunity to apply this closely in the production of their own sound recordings. By the 90s, increasingly powerful computers began to model many of the attributes of the recording studio within software and following the digitisation of sound in the CD, the production chain became entirely digital. While there have been many fidelity debates about digital versus analogue (for example, Rothenbuhler and Peters, 1997), the essential points to highlight here are artistic ones. Firstly, production tools were modelled within software and so the computer screen brought *new visual literacies* where musicians could directly manipulate sound via score, waveforms, pianola-roll editing, synthesis, digital sound processing (DSP) and automation. Secondly, digital editing was light years away from multi-track recording and splicing – music technologists could now arrange, re-mix and/or undo on the fly and so truly, *random access production allowed improvisation, composition, performance and listening to become one fluid and interactive process.*

## Portfolio careers

Some of those with small studios began to act as agents for others and soon local ecologies sprang up around advertising jingles, documentary sound tracks, budget albums and independent labels. This not only provided proof of concept and a low cost 'feeder' to the large record labels, it allowed musicians to support themselves through localised work in the production of niche products and services.<sup>6</sup> New models came about, driven by local

communities. Artists could choose to sell recordings or circulate materials as media CVs to promote their skills. Musicians often worked with regional groups in the production of theatre, church, school and ethnic events. Authenticity happened ‘on the ground’ and a notable feature was that this did not necessarily reflect popularised definitions of genre or image, but rather, assumed new musical meanings which lived and breathed on the shoulders of social networks. Jazz, popular music, classical, world and electronic traditions blurred and merged in their quality aspects of fitness for purpose and pleasure in engagement. Technological and creative expertise meant that some musicians became involved as specialist consultants and trainers, especially in the early days of the wholesale dumping of computers in schools with little support from bureaucrats who promoted technology access as automatically linked to knowledge production.

Musical activity is now highly diversified. By nature musicians are freelance creatives, but technological emancipation brings more strings to their bow in defining their role as knowledge workers in an increasingly disintermediated environment (Drucker, 1994). Working as a professional musician involves keeping a variety of small jobs afloat, including performances, recording sessions, consultancies, and teaching music, all while actively seeking out new prospects by auditioning or tendering for upcoming work. Career musicians need skills in self-management and marketing, the ability to pace and manage highly variable fluctuations in finances, an understanding of technologies for performance, recording or composition and the empathy to variously interact with, motivate, retain or manage co-workers with similar lifestyles. Above of all, musicians need to continually inform, refine, and update their craft, striving to learn new repertoires and practicing diligently to maintain and improve their musicianship. Career musicians need to be multi-skilled and flexible – they *do work* rather than *have a job* (Author, 1999).

## MUSIC AS ECOLOGY

Like in the 1700s, full-circle, technology and musicianship puts the performer-composer at the centre of the musical world. Or does it? While much music practice has moved from tribal to consumption and back to community production once again, its logical extension in web 2 ecologies allows for opportunism by entitles who shark at the edges of zero investment and a shallow journalism which scavenges for pickings. In TechCrunch’s ‘These Crazy Musicians Still Think They Should Get Paid For Recorded Music’ (Arrington, 2008) the writer makes the assertion that ‘recorded music is nothing but marketing material to drive awareness of an artist’ (para. 11) by attacking UK musician Billy Bragg’s response (2008) to the US\$850 million sale of web 2 music site Bebo.com to America on Line. In this, Bragg questions the ethics of such crowd-sourcing,

The musicians who posted their work on Bebo.com are no different from investors in a start-up enterprise. Their investment is the content provided for free while the site has no liquid assets. Now that the business has reaped huge benefits, surely they deserve a dividend (2008: para. 7).

This follows a trend that after a decade of denial by media cartels’ file sharing law-suits, failed DRM, spyware or other compliance schemes (Author, 2007a), corporates are now applying what CEO Universal Music terms ‘digital IQ’ (Mnookin, 2007). Just as in the Bebo case, cash speaks volumes for intelligence and web 2 start-ups are being bought-up *en masse*, for example, from News Corporation’s engulfment of MySpace, to CBS (out of the music business for over a decade) buying out the music ranking service Last.FM (Kiss, 2007). As Braggs agues, free user content provides proof-of-concept and opportunity while an unfortunately labelled ‘wisdom of crowds’ (Surowiecki, 2004) delivers unprecedented, high-

value data-mining capacities via search engine technology as witnessed in the extraordinary rise of Google and in the relentless hostile takeover attempts of Yahoo by Microsoft (Liedtke, 2008). Contrary to the TechCrunch claims, to date it would appear that the major value of web 2 content has not been to benefit artist's livelihoods, but rather to covertly drive awareness of social networks' preferences and consumption patterns to corporations. Moreover, as this article has argued, the act of music-making and the art of sound production are so much more than mere marketing material to many of their creators and audiences.

### **Audiophile and prosumer**

An audiophile can be generally defined as a person dedicated to achieving high fidelity in both the recording and playback of music (Wikipedia, 2008a), so in this sense the new literacies include an expanded role for the music technologist as audiophile. Now attuned to the studio as a creative instrument, many aspire to ever upgrade and customise superior production toys (much like the hotrod fetish of the earlier music parlour audiophiles). To place this in context today, an off-the-shelf Apple Mac Pro computer provides eight, 3Ghz processors armed with inexpensive memory and disk storage to provide virtually unlimited track count. Mature software packages such as ProTools and Logic Pro model a vast array of production processors/instruments while an extensive selection of microphones, studio monitors and add-ons are available – former boutique hi-fi stores and magazines have been replaced by burgeoning music technology shopfronts and audio production publications.<sup>7</sup>

Meanwhile, department store chains provide a massified approach to consumer electronics and a DIY culture has grown to include digital still cameras, DV handycams, DVD burners, Hi-Def television and surround-sound home cinema.<sup>8</sup> For music production, any enthusiast can just plug into a laptop and go, bundled as they now are with sound recorders/editors, audio loop libraries and automated music tools (all of which have convenient upgrade paths to more powerful computing). Clearly, here we see old ploys about the consumption of authenticity re-bundled as the consumption of production tools for empowered and variously labelled 'prosumers' (Tofler, 1980) and 'producers' (Bruns, 2003). Content dissemination expanded through broadband access enables a hybrid media ecology (Benkler, 2006) within which diverse interests interact with each other in increasingly complex ways, yet also where many dream that a long-tail economics of attention (Lanham, 2006) promises a career, or least fame of some kind or another. Such rhetoric muddies the water around the rise of the disintermediated career musician identified herein as ever-expanding their artistic competencies. As Adorno (1975) and others have argued, technological democratisation inevitably devalues music when traditional skilled techniques and musical practices are replaced by electronic machines – and marketing claims strikingly similar to those of Thomas A. Edison Incorporated at the turn of the last century, that 'it is actually impossible to distinguish professional artistic craft from its re-creation in the instrument'.

### **CONSEQUENCES**

Recent press continues to profile popular musicians who are leaving record labels in droves. Artists such as Courtney Love (Foege, 2007), Nine Inch Nails (Goldmeier, 2007), Prince (Allen, 2007) and RadioHead (Sherwin, 2007) all certainly aim to secure a better income, but as the interviews also reveal, the primary move is to reclaim artistic independence outside the confines of industry control and media distortion. In the case of young aspiring artists, this presents a confusing picture – neither confident enough to go it alone, yet attracted to a surreal global fame culture, while competing in a sea of those who naively imagine burgeoning technologies and networks as a substitute for talent and artistry. Perhaps unsurprisingly then, the music education sector attracts increasing numbers of students eager to

create and prosper through technology. For example, the UK's University and Colleges Admissions Service indicates that some 298 music technology specializations exist across Britain's colleges and universities (UCAS, 2007), while in Australia, universities attract and graduate significant numbers of artists, steadily growing at the rate of some 2–3% per year (DEST, 2007). So-called 'digital natives' (Prensky, 2001) now bring often irreconcilable expectations to challenge their teachers about what constitutes contemporary music craft and literacy. In the Australian context, while any coherent response remains in flux, the confounding issues are best summarized here by responding to the themes of this article:

- *The battle for 'music'*. Music copyright laws are imposed on universities under similar restrictions which apply to radio stations and bars (Author, 2008a). Subject to significant compliance costs and usage limitations, music licensing reflects a catalogue that is dominated by The Big Four record labels while classroom practice reveals that a majority of desirable cultural and historical source material is unavailable through these arrangements. Left to their own devices and networks, subsequent student productions often comprise derivative works which mimic what is marketed as quality in popular culture.
- *Music as practice*. There remains a kind of sub-disciplinarity that perpetuates across music education departments (Author, 2005) where various traditions cling to idiosyncratic methods and imperatives that often compete for potentially common resources. Some prefer to teach within the development of performance craft, others focus on theoretical studies in historical or commercial settings, while some engage exclusively in technology production. To date, there has still been no visible integration of craft, culture, technology and context as a musical whole.
- *Music as machine*. Consumer culture undoubtedly has had a large effect on students. While most now have access to powerful personal technologies, there is a certain kind of goal-displacing behaviour (Wadsworth, 2005) which rejects the idea of long hours in musical practice, or the value of studying musical heritage further than recent video music clips or MP3 playlists. While the Internet convincingly brings new ideas about style and world culture into the classroom (Author, 2007), rather than drive musical analysis, it tends to provoke upgrade lust that enquires about the right new tool to create the right effect.
- *Music as craft*. Whilst a participatory culture (Jenkins et al., 2007) continues to be evolved through local internships (Author & Hitchcock, 2006) and the hidden curriculum of peer collaboration and on-line review, many still tend to regard these mechanics as light-weight social pastimes, even openly rejecting web 2 models when incorporated into projects, their assessment and/or examined as career options (Author, 2008b). Despite all evidence to the contrary, young music technologists (perhaps only naturally) limit their aspirations to the confines of machine dependency and popularised stardom.
- *Music as ecology*. With an imperative by the Australian government for universities to innovate and form closer ties with industry (DEST, 2005), there also comes a drive to implement this as quickly and inexpensively as possible. Across the higher education sector therefore, value arguments continue in rivalry for scant funding (Author, 2007b), on the one hand, in the plight of performing arts providers (which some view as outdated ivory towers), on the other, through the branding of 'creative industries' as the only way forward (which some distrust as the appropriation of art to boost company profits).

## Conclusion

To return to the opening questions of this article, while ‘the baby’ and ‘the bathwater’ continue to collide in ways outlined above, these reoccurring contemporary themes begin to unveil just how ‘the bathtub’ of public-funded music education must evolve, that is, via a careful interrogation of these same features to produce a set of conditions that authentically contextualize technology, media, community and heritage in relation to the critique and development of independent musicianship and artistry. Fortunately, young people continue to challenge our preconceptions, provoke life-long learning in teachers, and bring ever-moving opinions, new skills and a relentless enthusiasm for the future. Just as David Sliver (2008) offers, this is a generation who know how to create, share and converse about content, often simultaneously ‘. . . and it’s hard not to be hopeful about that’ (para. 11). These are early days yet for web 2 to fully deliver on its potential to enhance citizenship, negotiation, judgement and creativity as so well outlined by Henry Jenkins and his colleagues (2007). If web 2 is any solution, then perhaps Alexander Solzhenitsyn offers answers to better questions in his evocative expansion on artistry and the shoulders of ancestors thesis. He writes,

No new work of art comes into existence (whether consciously or unconsciously) without an organic link to what was created earlier. But it is equally true that a healthy conservatism must be flexible both in terms of creation and perception, remaining equally sensitive to the old and to the new, to venerable and worthy traditions, and to the freedom to explore, without which no future can ever be born. At the same time the artist must not forget that creative freedom can be dangerous, for the fewer artistic limitations he imposes on his own work, the less chance he has for artistic success. The loss of a responsible organizing force weakens or even ruins the structure, the meaning and the ultimate value of a work of art (1995; p. 3).

Given an information revolution, some commentators assert that educators stand to lose their privileged position as experts, theorists and practitioners (Bruns, 2007). While is true that personal technologies bring musicians exceptional advantages never available before, the compounding restriction on any idea of ever-faster knowledge production is that luxuriant access to infinite resources forces any human mind (be it boomer or Gen-Y) to self-defend, to selectively filter as it best sees fit (or as some unknown agent dictates). Universities must therefore evolve their notions of higher learning to provide thoughtful boundaries which steer a student’s capacity to select, review, adopt and create in tandem with skill and personal authority. ‘The time has come to stand up and be counted’ (with apologies to Thompson, 2006) and we need people who can see beyond the web 2 hype and simply make *great* music.

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## Notes

- 1 For a in-depth account of the cultural origins of sound and its eventual reproduction, see Jonathan Stern’s fascinating exploration in *The Audible Past* (2003).
- 2 The history and evolution of music copyright law is wonderfully detailed in Michael Carroll’s extensive *Keeping Score: The Struggle for Music Copyright* (2005).

- 3 Michael Channan has written a number of works that focus on music (<http://www.mchannan.net>), but relation in the history of the recording industry in particular, I highly recommend his *Repeated Takes* (1995).
- 4 These observations come from personal experience as a record producer and from closely observing many of the students I have taught over the years, and in reading their lengthy essays about the trouble to which they go to ensure the best quality recordings.
- 5 In filmmaking the role of ‘the director’ is clear – actors do not simply recite a full script while a camera records them. However, sound ‘recording’ remains an unfortunate term which does not do justice to the art of sound production and may represent the activity as a passive exercise, ‘to record’ as if there were no considerable artistry in finessing and arranging the sound(s). For more on this, see works by Hamilton (2003), Horning (2004) and Moorefield (2005).
- 6 These reflections arise from my own career in the studio, especially during the 85–95 decade where recording went through a similar technological emancipation as what has been seen in the web 2 phenomenon. These changes, the subsequent impacts on my craft, career and curriculum design are more fully detailed in my PhD thesis (Author, 1999).
- 7 While music stores once presented a traditional range of acoustic instruments, maintenance and teaching facilities, these days one would be hard pressed to find an outlet without a significant specialisation in sound technology and budget recording systems. Similarly, magazines such as MIX, Audio Technology, Electronic Musician, Sound on Sound and others do enormous business as essential reading for the music technologist. The content is more often driven by technology company advertising and interviews with famous artists who use these tools.
- 8 Digital systems like ProTools natively record sound in formats used in the Hi-Def TV market, yet to date, this has been puzzlingly underleveraged by independent producers. With the divergence between iPod/MP3 (portability) and home theatre (fidelity) culture, the future may bring interesting music-centric developments for the latter.

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