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Music Council of Australia

The Secretary
House Standing Committee on Infrastructure and Communications
By email: ic.reps@aph.gov.au
February 25, 2011

Dear Sir/Madam

RE: Inquiry into the role and potential of the National Broadband Network

1. The Music Council of Australia is pleased to have the opportunity to make a submission on the important subject.
2. The Music Council is the national peak organisation for the music sector. Its membership of 50 is drawn from national organisations and distinguished individuals from across the entire music sector. It seeks to advance music and musical life in Australia by providing information, undertaking research, mounting advocacy and organising projects. It is the Australian affiliate to the International Music Council, based on the UNESCO campus in Paris.
3. This submission confines itself principally to the impact high speed broadband delivered by optic fibre to the premise might have in the delivery of music education and on the commercial music industry.
4. This submission will address the following Terms of Reference:

   (c) improving the educational resources and training available for teachers and students

   (f) impacting business efficiencies and revenues, particularly for small and medium business, and Australia's export market.
5. In addressing those two realms, some comment is made also on:

   (e) impacting regional economic growth and employment opportunities

   (h) facilitating community and social benefits

Introduction

6. The Music Council considers the NBN represents the roll-out of essential twenty-first century infrastructure in a way that is equitable for all Australians regardless of where they live or work.

7. The Music Council considers that much of the media commentary regarding the value or otherwise of the NBN has been regrettable. Almost countless column inches have implied or even declared that the only purpose of the NBN is for households to download movies. While consumers will undoubtedly do so, the Music Council believes such commentary misses the broad-ranging benefits the NBN will deliver to Australians including facilitation of the distribution of Australian-produced high definition audio-visual content, and ignores the needs of heavy data user sectors such as education and health services and the audio-visual and advertising industries. As Access Economics found at the end of last year, 'By industry, health, education, utilities and information, media and telecommunications have the greatest expectations at present'.[1]

8. The Music Council has followed the arguments that assert the NBN will be made obsolete by wireless services. However, while wireless will be complementary to the NBN, it cannot substitute for it.

9. The Economist Intelligence Unit[2] has ranked the broadband plans of the 16 countries that have announced broadband plans. Using a ranking of its own devising that considers cost, speed, roll-out schedule and regulatory framework, Australia's NBN ranks ninth with a score of 3.4 (of a possible 5), behind South Korea, Japan, Singapore, Sweden, Finland, Estonia, France, Spain and Denmark – all comparatively small geographically, but ahead of the United States, New Zealand, Italy, the United Kingdom and Greece. While South Korea has a population more than double that of Australia, it has a land mass of some 100,000 square kilometres compared with Australia's land mass of 7.6 million square kilometres. Similar disparities in population density are true of all the countries ranked ahead of Australia. The proposition that Australia's scheme is profligate can be considered in a context where provision in a number of other countries is assessed as superior.

10. The Music Council believes that the NBN reflects the realities of this market and that rolling out of the network in the manner now underway is appropriate. Tony Brown, of Informa Telecoms and Media, has observed that leaving roll-out to the private sector is not always the panacea it might seem, saying 'South Koreans are now asking whether a market of just 16 million homes really needs four broadband networks, or whether a more integrated approach would have made more sense.'[3]

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[1] Acess Economics, *Australian Business Expectations for the National Broadband Network*, Report for Macquarie Telecom, page ii, 16 November 2010, see online at http://www.aimia.com.au/home/news/member-news/macquarie-telecom-access-economics-report-on-nbn-business-expectations

[2] Full speed ahead: The government broadband index Q1 2011, Abridged Executive Summary, Economist Intelligence Unit, The Economist

[3] Brown, T, 'Pear-like shape of Korean broadband" in Sydney Morning Herald, 11 February 2011, see online at http://www.smh.com.au/national/letters/reverberations-of-abbotts-undignified-silence-20110210-1aohb.html.

Term of Reference (c): Improving the educational resources and training available for teachers and students.

11. The Music Council has been engaged in a project to devise strategic use of the NBN in music education. Our job is not completed. This submission draws from that work. *We can offer further input some weeks ahead, if that would be of interest to the Inquiry.*

12. The music education submission follows these headings:

- The situation of music education
- Possible utilisation of the NBN in music education
  - *School children*
  - *Tertiary and career training*
  - *Professional development*
  - *Audience building*
  - *Community services*
  - *Effects on regional areas*
  - *Social networking*
  - *Risks and constraints*
  - *Technical issues*
  - *Other utilisation issues*
- Resources
  - *Competition among service providers*
  - *Government resources*

The situation of music education

13. We address the situation of music education in the context of the NBN.

14. Education depends in part on a transfer of expertise from teacher to student. In Australia, musical expertise is concentrated in the central cities.[4] Performers depend upon access to substantial audiences for a year-round living; in larger cities, an ecology grows around that which cannot be replicated in a city of 30,000. Teachers similarly depend upon a regular student body, which they may find via employment in a school or through building a private teaching practice. It is more feasible for teachers than performers to earn a living in small communities although for studio practice the smaller the community the less the possibility. Country living suits some music teachers but many prefer the musical stimulation of the cities and this also may limit the expertise available in the regions.

15. There is abundant access everywhere to music recordings and nearly everywhere to broadcast music and music delivered via the internet. Engagement with music through these media is however mostly a one way process. There is no opportunity to respond, to interact, except via the internet to an extent limited by slow speeds and asymmetry.

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[4] David Throsby: *You Don't Expect to Get Paid?* Sydney, Australia Council for the Arts, 2010

16. The increased capacity of the NBN will allow delivery of more complex information such as video in real time.

17. But it is the symmetry that most expands the possibilities. Every network participant, regardless of geographical location, can be equally a receiver and sender of information.

18. Despite the current slow speeds, there already is use of the internet in a number of the activities that will be enabled by the NBN, as described below. The feasibility and value of instrumental and vocal instruction, master classes, auditions, collaborative realtime performances has been demonstrated even within the present technical constraints.

19. It is noted that by the end of 2010 every primary school in NSW will have video conferencing facilities, albeit with some limitations because of low bandwidth.

Possible uses of the NBN in music education

Early childhood centres, schools

20. *Lessons on musical instruments or in singing from a teacher in a remote location.* The teacher can be of a type or quality not available in the classroom or neighbourhood.

21. *Classroom music instruction from a teacher in a remote location.* Ditto.

22. *Master classes from a teacher in a remote location.* The distance teacher works with individual talented students in a group setting

23. *Tutorials, non-interactive, via a pre-produced video,* available from e.g. YouTube

24. *Lessons in musical composition from a teacher in a remote location*. Students perform the compositions or show the written scores to the teacher. Could be individual instruction or instruction in a group setting like the master class.

25. *Auditions*. Students approaching graduation perform in live auditions and interviews over the internet for places in distant tertiary institutions.

26. *Online assessments.* It would be possible to assess students' progress remotely and to make and maintain records.

27. *Performance sharing*. Students in one location perform for students in another. Sometimes students have no opportunity to hear the instruments they are learning performed in an appropriate ensemble, so don't know where they are heading. Also an opportunity with schools with very different music performance programs such marimba ensembles, gamelan orchestras, steel pan drum groups and so on to 'share'.

28. *Performance collaborations*. Children can perform in real time with others in distant locations. With the increased speed of the NBN, problems of sound delay disappear. Steve Dillon from QUT has developed a special software (jam2jam) that enables students to perform with each other.[5] Children in

[5] http://www.explodingart.com/jam2jam.html Steve Dillon: Am about to start working with the NBN in Tasmania with network jamming project: http://www.jam2jam.com/ The project allows internet jamming in realtime of music and images using generative processes developed by the Australasian CRC for Interaction

remote areas, including indigenous children, and children in the cities can learn and perform together.

29. *Performances by professional ensembles*. Orchestras, bands, other ensembles can deliver live performances, other educational materials to distant classrooms and music departments via the NBN, combine them with interactive workshops.[6]

30. *Self-directed learning*. Children use the net to find all sorts of resources: performances of pieces they are playing available on YouTube, software programs with various uses, and so on. The use of the NBN and the possibilities for interactivity coincide with the pedagogical movement towards "self-directed learning", "minimally invasive education", the softening of the master/pupil model. The physical distance between teacher and learner might further emphasise the independence and self-determination of the learner.

31. *Facilitate cross-cultural communication, understanding, and appreciation through music.* Through the NBN, children can actually be in direct audiovisual interactive communication with children from other cultures, whether within Australia or overseas, with music as the shared object of interest.

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design (ACID). It is possible with this software to also do live instrument work and improvisations. Project is currently in 12 countries.

"The practice of using collaborative digital media performance with systems like jam2jam we call, more succinctly, Network Jamming. We believe Network Jamming is innovative for music education in four ways.

1) It assumes that the computer can be an expressive live performance instrument.

2) Allowing performers to connect over a network to create ensembles that overcome geographic barriers.

3) Performances can be recorded, enabling sharing and discussion around the recorded artifact in class, for portfolio assessment, or on digital social networks.

4) It provides access to meaningful engagement with contemporary musical culture and all of its associated challenges in a way that simulates live music experience.

Some of the challenges of digital media culture include the legality, ethics and aesthetics of digital copying and reuse, use of an expanded set of sonic resources and means of transformation, and a closer connection to the shifting sands of the digital music industry and the entrepreneurship it requires." Andrew R. Brown and Steve C. Dillon: "Collaborative Digital Media Performance with Generative Music Systems."

[6] **Sydney Symphony Orchestra**

Online content for education department currently includes;

- Footage of workshops and masterclasses is currently uploaded to the website.
- Some resources for teachers
- Facebook and Twitter
- Produce 2 e-newsletters - one about the education program and one about the Australian curriculum.
- In partnership with big pond which means a number of their concerts are available for streaming.

The SSO Ed program is really at capacity and the department is not in the position to expand. Most activities are about face to face – whether it be regional in servicing, touring or Sydney based workshops and schools concerts.They would like to be able to do master classes on line at some point in the future and stream teacher training and Discovery programs. This is pending budget allowances.

Queensland Symphony Orchestra

Online content for education department currently includes;

- Running professional development activities for teachers using "Elluminate". Hoping that studentsand teachers from metropolitan regions along with those from rural and remote Queensland will log-in and interact with the QSO musicians, conductors and soloists.

They hope to be able to expand this offering to include on-demand versions of educational concerts for remote and rural teachers to use as a teaching tool, thus allowing more of Queensland to enjoy the state's orchestra. None of this is possible however without good reliable internet access for both parties.

32. *Enable parents to participate in their child's education through online learning and access*. This is one objective cited in the Commonwealth's Digital Education Revolution site.[7]

33. *Performance records.* Maintain video records of students' progress, make them available to authorised persons online.

34. *Bring the nation together*. The NBN can bring the nation together because everyone has access to all the differences of style or content found between one state and another.

35. *Realise cost-savings.* Appropriate online provision of services can save travel costs, provide some services to more people with more efficiency at less cost.

Tertiary and career training

36. Many of the school uses are found also in more advanced education

37. *Lessons on musical instruments or in singing from a teacher in a remote location*. The teacher can be an international virtuoso, even located in another country. Canberra School of Music already has such opportunities through a partnership with Manhattan School of Music in New York. The NBN should expand the quality and reach of those possibilities.

38. The slide below shows a student in Toronto receiving a lesson via the internet from Pinchas Zukerman in New York at the Manhattan School of Music Distance Learning Program.

39. **Error! Objects cannot be created from editing field codes.**

40. Classroom music instruction from a teacher in a remote location. Ditto.

41. *Master classes from a teacher in a remote location.* Ditto.

42. *Lessons in musical composition from a teacher in a remote location.* Students perform the compositions or show the written scores to the teacher. Could be individual instruction or instruction in a group setting like the master class. The teachers could be internationally renowned, based overseas, their services available directly to Australian students.

43. *Australian institutions offer online instruction overseas*. The instruction could suffice to itself, or be used also as promotion to attract international students to come to Australia for study.

44. *Online workshops on music-related topics*. Examples are health issues for performers, music management, promotion, presentation, legal issues and so on. Some such workshops are rare in the cities and likely are never available in the regions. The NBN could make them available to all interested persons regardless of location.

45. *Auditions*. Students could submit to auditions and interviews over the internet for places in tertiary institutions or for employment in performing companies in Australia or overseas. Australian tertiary institutions could audition distant Australian or international students for admission to their programs. Students can be offered training through mock auditions, to prepare for the real thing.

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[7] http://www.deewr.gov.au/Schooling/DigitalEducationRevolution/Pages/default.aspx

46. *Performance collaborations.* Students can perform in real time with others in distant locations. With the increased speed of the NBN, problems of sound delay disappear.

47. *Performances by professional ensembles.* Orchestras, bands, other ensembles can deliver live performances to distant classrooms via the NBN, combine them with interactive workshops.

48. *Foster leadership, creativity, and technical innovation in support of new performance and educational opportunities.* An objective of the Manhattan School of Music Distance Learning Program.

Professional development

49. Many of the possibilities in the categories above also translate to the professional development area.

50. *Professional development workshops in music can be delivered to teachers* via the NBN. Already the Music Council has instigated such workshops for some hundreds of teachers with the NSW Department of Education as part of its Music. Count Us In project.

51. ***Special note*** *on the roll-out of the National Curriculum.* This resource becomes very important with the roll-out of the national curriculum. In most states, the workforce has not received the training that would enable it to deliver a credible music curriculum. Changes will be needed in undergraduate preservice courses, but they will not address the inadequacies of the existing workforce, especially that in the primary schools. It may be possible to provide professional development courses in music education via the NBN. Probably this would be relatively cost effective and also would bring competent instruction to people living outside the major cities.

52. *Professional support services*. Since much of the responsibility for music teaching in schools falls upon musically untrained primary school classroom teachers, it would be invaluable if they were provided with musically expert support. This might come online from system HQ in the capital city but also could be provided on a regional basis so that on occasion, it would be feasible to supplement online interactive support with physical visits.

53. *Masterclasses* etc can also be offered for practising professionals, as described above.

54. *Conferences etc*. NBN enables participation in panels online, with participants in different locations. Also participation in conferences as speaker or audience member, including active audience member. Tremendous savings in travel time and cost, equal involvement in the formal activities though reduced opportunity for informal face to face networking, which also is very important.

55. *Possibilities for leading research and innovation in teaching remotely using broadband.*

Audience building

56. *Performances, live or recorded, available via NBN*. NBN can of course be used for online broadcast to a general audience. It can also be used for transmission of rarely available musical works of any genre, or for

transmission to selected audiences. These performances can be presented in ways designed to build the audience.

57. *Include education*. Those strategies can work from the premise that the audience is built by educating it. They can be simple transmissions to the audience, or interactive.

Community services

58. *Various.* Various of the above can be adapted for presentation in libraries, hospitals or other specialised institutions.

Industry collaboration

59. The NBN makes the music industry and the education sector more accessible to each other. This includes the artists as well as the enterprises. Various things could become more possible that are rare now – e.g. online performances with school students at school and professional artists in another location; online workshops provided by suppliers of electronic instruments; participation in school projects by experts from relevant suppliers. Protocols would need to be followed to avoid inappropriate introduction of commercial motives.

Effects on regional areas

60. *Equalising of expertise*. Services can be provided by experts, wherever located, to others. In music, the greatest concentration in expertise is, by and large, in the centres of large cities. The NBN connection to less expert centres in e.g. the regions allows a transfer of knowledge and an increase in local expertise.

61. *Decentralisation.* As noted, musicians generally prefer to live in the cities because they depend upon a large audience pool for live performances and also they want the stimulation of contact with other musicians and the live art form. NBN will reduce the sense of professional isolation associated with living in regional centres and we may see more musicians do so, so creating a virtuous circle in which resident musicians offer more music education services and increase local live music activity.

Social networking

62. The direct provision of education can be supplemented by student and teacher social networking around the sites.[8]

[8] "Facebook and the like are tools for building *networks*, which are the opposite, in structure and character, of hierarchies. Unlike hierarchies, with their rules and procedures, networks aren't controlled by a single central authority. Decisions are made through consensus, and the ties that bind people to the group are loose. This structure makes networks enormously resilient and adaptable in low-risk situations. Wikipedia is a perfect example. It doesn't have an editor, sitting in New York, who directs and corrects each entry. The effort of putting together each entry is self-organized. If every entry in Wikipedia were to be erased tomorrow, the content would swiftly be restored, because that's what happens when a network of thousands spontaneously devote their time to a task. There are many things, though, that networks don't do well. Car companies sensibly use a network to organize their hundreds of suppliers, but not to design their cars. No one believes that the articulation of a coherent design philosophy is best handled by a sprawling, leaderless organizational system. Because networks don't have a centralized leadership structure and clear lines of authority, they have real difficulty reaching consensus and setting goals. They can't think strategically; they are chronically prone to conflict and error. How do you make difficult choices about tactics or strategy or philosophical direction when everyone has an equal say?"

Risks and constraints

63. *Copyright.* Because the internet will be used to access music, issues around illegal file-sharing arise. The users of the services in this case are educational institutions and it would be extremely inappropriate for them to breach copyright while using the NBN. There are difficulties around legal enforcement but if users participate in an appropriate ethical code, questions of legalities will not arise.

64. *Online ethics*. A new ethics is emerging from young people in their use of the internet. Educational use of the NBN needs to adopt an ethical practice but there probably will be a period during which this emerges and settles and there will be a need to reconcile the ethics of pre-internet generations and the new generation.[9]

65. *Spam.* Not yet addressed.

66. *Institutional policy.* "There is a clear disparity between how students *use* technology outside of schools and *how they can use* technology inside schools. In our research across many western countries we have found that institutional policy constrains access to the Internet." [10] These constraints are often a corollary of risk management programs initiated by the institutions as an aspect of their accountability. (Dillon & Brown, 2009).

67. *Lack of teacher expertise in relevant technologies.* "Another major impediment to uptake of technologies is not access but that many teachers do not yet have the expertise or comfort to use these newly emerging technologies in meaningful ways in the classroom." The introduction of these technologies is often disruptive to professional identity and thus resisted. (Dillon, 2007b).[11]

Technical issues

68. Manhattan School of Music is a leader in distance learning in music and has had to confront technical problems in achieving effective practice. It summarises one crucial problem. Videoconferencing technology was designed for speech and not musical sound nor the complexity of the multiple-layered exchanges between teacher and student. The sound quality of the music as transmitted through the systems was not satisfactory for music performing and training on a high level. MSM developed a list of characteristics needed to achieve a suitable system, including a seamless virtual environment conducive to learning/teaching/performing; true, accurate sonic representation of the functional and expressive elements of music; stereo sound; full-frequency

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Read more
http://www.newyorker.com/reporting/2010/10/04/101004fa_fact_gladwell?currentPage=4#ixzz14dhTpT6t

[9] Carrie James et al: *Young People, Ethics, and the New Digital Media. A Synthesis from the GoodPlay Project.* MacArthur Foundation www.macfound.org

[10] S. Alex Ruthmann and Steve C. Dillon. "Technology in the Lives and Schools of Adolescents."

[11] Ibid. "Leong's(2003) comparative study of Education policy in Singapore, Australia and Hong Kong suggests a supportive institutional policy combined with in-service training and genuine access is necessary for change. Institutions tend to *risk manage* the use of technologies through policy and system constraints. Additionally, teachers tend to develop comfort with and choose specific software they use in their own music making. A relational pedagogy requires teachers to understand and advocate for technologies and policies that will be supportive of students' musical expression and learning needs."

response (20Hz-22kHz). It commissioned a solution, which it describes in detail at http://www.msmnyc.edu/special/distancelearning/Music%20Performance%20and%20Instruction%20over%20High-Speed%20Networks.pdf

Other utilisation issues

69. *Pre-NBN problems* include time-delay; picture breaking up or freezing; worse if there is more action e.g. dancing and singing at the same time; building two way involvement in place of passive watching; technical difficulties generally, adding a great deal of time to managing the process.

Term of reference (f): Impacting business efficiencies and revenues, particularly for small and medium business, and Australia's export market

70. The Inquiry will of course be aware of the disruption caused already to the music industry by the advent of the internet. The internet has enabled virtually global distribution of recorded music. The music industry can quantify enormous interest in music through estimating the number of downloads. At the same time, the great majority of these downloads are pirated and return no royalties to the copyright owners – the artists and the record companies. The trade in physical recordings has suffered a major reduction. The International Federation of Phonographic Industries (IFPI) reports a 31% decline in the value of the global recorded music industry, including both physical and online sales, from 2004 to 2010.[12]

70. As a consequence, the major record companies that have so long dominated the market are much weakened, while many wholly Australian owned independent labels have either closed operations completely or drastically changed their business models in order to survive. The independent labels are almost all micro-, small or medium businesses. They, in particular, support Australian artists – indeed, many are artist-owned.

71. IFPI estimates a fall in the unit sales of debut albums from 2003 to 2010 at 77%. This means that opportunities for new artists to reach the market through the record industry have receded significantly. The record industry now delays investment in new artists until they have built a significant audience through their own independent efforts. Emerging artists therefore have to find the means of survival for say an additional five or six years and also show entrepreneurial skills that are not in routine partnership with artistic skills. The artists are on their own. The upside is that the NBN will facilitate their access to the market.

72. The Australian Record Industry Association's (ARIA) 2010 wholesale statistics show legal sales of digital songs (including singles and songs appearing within albums) to total approximately 60 million units. IFPI estimates that approximately one billion songs are downloaded illegally in Australia each year. Although each illegally downloaded song does not necessarily represent a lost sale, the difference between the two demonstrates the scale of the problem.

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[12] *IFPI Digital Music Report 2011, Music at the touch of a button.*

73. New players have entered the field, most notably entities such as Apple's iTunes, supplying legitimate downloads paid for by the track. There are many variants. There is growth in the value of these paid downloads, reaching US$4.6bn in the latest figures released by IFPI. This represents 29% of total sales. Growth was 6% in 2010, less that the previous year.

74. Access to illegal music online has meant that the value of Australian traditional music sales through retail continue to fall by approximately 20% a year and while new players have entered the field, most notably entities such as Apple's iTunes, online revenue streams are far from making up for the loss of sales through piracy.

75. The emerging paradigm, predicted to supplant the iTune model of buying tracks for storage on the purchaser's own device, is a "cloud streaming" model. Tracks are not purchased. They are held in the cloud and are available on demand by those who have paid a subscription. Copyright holders are paid a royalty as tracks leave the cloud, somewhat analogous to royalty payments from radio. There are those in the industry who believe that this model will undercut piracy, basically because it is cheap and convenient. Early cloud streaming services have met some success but are yet to provide real revenue for labels.

76. In sum, the advent of fast broadband will facilitate positive growth in the Australian music sector but also expands the possibilities for online piracy. If these are not contained, we could see a continuing decline in the music sector and its problems emerge more comprehensively on film or other complex content.

Some future possibilities

77. Symmetry lowers the barriers to entry into the market at a technologically satisfactory level; it makes it more possible for small musical entrepreneurs and artists to offer their music directly to the market and to become financially viable

78. Symmetry enables fast uploading by both creators and audiences and the development of interactive relationship between the industry and the public; this could have so far unpredicted outcomes

79. Greater speed/capacity of the NBN will obviate the need to compress music and so enable downloading of music of high fidelity; this could have effects on repertoire downloaded – e.g. many classical listeners may find an MP3 of orchestral works unsatisfactory but become interested in online activity if it becomes possible to download high fidelity recordings; low speed as an obstacle to downloading albums disappears. This might have an effect on musicians' artistic objectives: if the audience would mainly receive music in low fidelity, then it is fruitless to be concerned about the richness of sound. However, these possibilities will probably have minor financial impact on the market.

80. Similarly, downloading films will take minutes instead of hours, probably increasing trade in films provided piracy can be suppressed

81. Regional viability. Given the uploading capacity of the NBN, so far as operating on the internet is concerned, geographical location is irrelevant. Music can be produced in and marketed from regional areas to the world. In

principle, this facilitates location of recording studios in the regions and makes it possible for musicians and related occupations to reside regionally whereas at present they generally prefer to live in the cities alongside a large audience and peer group. We would expect that the preference for the city will continue but that because it becomes viable, some will move to the regions. Once there, they can also offer live performances and generally enrich cultural life. (See paras 60-61.) The regions become more attractive locations for other forms of business and residents.

82. International markets. In principle, as trade in recorded music shifts increasingly to the internet, some of the obstacles to Australian success diminish. Australian music could be less disadvantaged by our geographical location and the dominance of foreign record companies and distributors. In practice, the major companies are attempting to reassert their position and there are many other scenarios to play out. The symmetry of the NBN empowers small Australian players, which have the opportunity then to become larger.

83. As noted, those producing niche music such as experiments in classical music or computer-generated music, which by definition have very small local audiences, can reach global audiences of like interest and so increase income to some extent and a sense that what they are doing is worthwhile.

84. There are possibilities beyond the conception of lay people – or even of futurists. For instance, Steven Dalby of the ISP iiNet suggests:

> While the NBN will change the way we use telecommunications in Australia, I guess it is only one of many factors that will need to change to legitimately digitise music distribution. Once bandwidth restrictions are removed … mindsets will change. As a result, a range of opportunities will open up, including in the music world. The fact that NBN will be ubiquitous means the market is opened up and 'digital everywhere' will become a reality.
>
> For example, streaming audio delivered to digital signage with inbuilt face recognition (to estimate age and gender), will allow appropriate music to be played with a 'matching' advert - altering with each person who stops in front of the sign. You might get Pink playing over an advert for skin care products, while I get Santana behind an ad for a holiday resort. If any of the content industries can leverage the possibilities that come with NBN, I'd put my money on the music sector getting there first.[13]

The financial viability of the music industry

85. At every conference of the music industry for the last decade, the major topic is the decline in income due to piracy activities which, ironically, simultaneously demonstrate the enormous public interest in music. How can this activity be "monetised" so that artists and record companies can fund the creation and recording of new work?

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[13] Dalby, S. *The Hook: Will the National Broadband Network help the Australian music business?*, The Music Network, 22 November 2010, see online at http://www.themusicnetwork.com/music-features/industry/2010/11/22/the-hook-will-the-national-broadband-network-help-the-australian-music-business/

86. While we are heading down the road to broadband, Australian's legislative and regulatory framework remains appropriate to a rapidly disappearing analogue world. As Gerd Leonhard of The Futures Agency has said:

> a broadband initiative needs to be accompanied by a reset of public licensing structures for content, starting with music, and by the legal exploration of new, alternative remuneration based on access to content, not copies of it. Technology is good but its societal and cultural implications need a lot of attention and care, as well.[14]

87. The potential financial benefits accruing from utilisation by the music industry of the NBN will depend on solution of the monetisation problem. The industry itself must take responsibility. But it may be that key problems can be solved only be regulatory intervention by governments, especially the Commonwealth. It could, for instance, consider requirements of the ISPs to sanction illegal file-sharing by their own customers or to collect and distribute royalties on music that passes through their systems. The Music Council mentions these possibilities only by way of illustration. Whether or not they would be constructive and successful solutions, the fact is that until the problems are solved, the economic value of the music industry is in decline with negative consequences for, inter alia, the tax base.

Dr Richard Letts

Executive Director

[14] Leonhard, G, *The Hook: Will the National Broadband Network help the Australian music business?*, The Music Network, 22 November 2010, see online at http://www.themusicnetwork.com/music-features/industry/2010/11/22/the-hook-will-the-national-broadband-network-help-the-australian-music-business/