DIGITAL MEDIA AND ARTS IN WESTERN AUSTRALIA

Mining creative resources and seizing opportunities

CONTENTS

EXECUTIVE SUMMARY

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Creative Digital Content is the fastest growing sector in global media arts, and is revolutionizing the power and importance of creative industries in the 21st Century.

Since 2001 there have been numerous State and Federal Government reports advocating the need to develop the digital content industry.[1] These reports have repeatedly identified the economic and cultural benefits of developing Western Australia's digital content industry. This report builds on the work of its predecessors by exploring practical ways to leverage State based talent and training to build a viable digital media arts industry in WA by 2010.

Despite a small and isolated population, Western Australia is rich in creative resources. There is a diverse talent pool spread across the media, arts, science and technology sectors reflecting a wellspring of creativity, passion, inspiration and dedication. Television and film producers with international reputations, successful contemporary musicians selling music around the globe, fashion designers, ambitious video game developers, cutting-edge artists and academics – WA's creative industries already add considerable wealth to the State and it is growing rapidly. The recently completed report *Perth's Creative Industries – An Analysis*[2] estimates that Perth's Creative Industries account for 3.4 per cent of the output of all industries in Metropolitan Perth. The value added to the economy in 2007 is estimated at $2.6 billion. Creative Digital Media and Arts form a significant part of this output.

At the heart of such an industry is the ability to create, tell and sell our own stories, present cultural events, create and design objects, inform and entertain.

Digital technology offers tools to build WA's creative industries, to present their practitioners' work to the State's widely spread citizens, to connect and engage them in culture and media. It also revolutionises WA's ability to link with the wider world and create content for international markets.

ScreenWest and WA's production companies have already identified that Western Australia – a wealthy, highly trained, English speaking enclave on the edge of the Indian Ocean – is perfectly situated to create content for Asia and the wider world.

However, at present these opportunities are not being effectively leveraged in Western Australia, and this lack of action is putting the State's established gains in film, television, music, fashion, visualisation, creative arts and games at stake.

The approach of this report has been to identify the strengths in the State's existing creative media and arts industries and, through looking nationally and internationally, identify practical opportunities and methods to build on these emerging centers of excellence using the best and most appropriate digital applications available.

KEY FINDINGS

- WA's creative industries are lagging behind Eastern Australia and our key world partners in creating interactive and multiplatform media, and in contributing to the global media revolution.

- Digital content does not fit neatly into current funding structures and has generally not been considered a priority when it comes to funding the creative and cultural industries.

- The digital economy needs to be developed as a specific sector within the creative industries which harnesses WA's creative resources.

- Areas of greatest potential need to be identified in media and the arts and specific initiatives put in place by one or more agencies to foster practitioner development and industry "start up".

- State leadership programs and funding are required to stimulate this business and practitioner development. Production funding, training, marketing, and distribution support are required for digital industries. Further, there is a need to foster greater collaboration, entrepreneurship, and creative risk-taking by both practitioners and investors to be competitive in the international arena.

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1   For example: Independent Review of the Operations of ScreenWest, 2001; Creative Industries Cluster Study: Stage One Report, DCITA, 2002; The Role of Government Agencies as Marketplace Participants in Digital Content Markets, DCITA, 2003; Digital Communities: A Study to Determine the Feasibility of Creating a Digital Content Industry Cluster in Western Australia, DET/DoIR/DCA, 2004; Growing WAdigital Report, 2005; Australian Film Commission, Australia Council for the Arts and AFTRS Joint Submission to the House of Representatives Standing Committee on Science and Innovation, 2005; Unlocking the Potential: Digital Content Industry Action Agenda Report, 2006; ScreenWest Strategic Development Plan Phase III, 2006; The State Government's Role in Developing and Promoting ICT in WA, 2007; Strengthening the Creative Innovation Economy, Cultural Ministers Council, 2007.

2   Perth's Creative Industries – An Analysis City of Perth, DCA, DoIR, Dept Premier and Cabinet –Geographical Mapping and Qualitative Analysis for Creative Industries and Innovation 2007.

KEY RECOMMENDATIONS

This report offers a number of recommendations of ways for WA to achieve growth and establish itself as a global player. They cover the areas of Management and Services, Development, Production and Partnerships.

Overall, creative convergence and collaboration are key to WA's future success. DCA, ScreenWest and DoIR have an important opportunity to set an example for the creative industries. By working together to empower WA's media-arts to further embrace digital technology, they can help pave the way to a vibrant future. It is important that the three agencies work together to ensure that a diverse range of digital content is supported including the marketable areas of e-learning and Web 2.0 (e.g. social networking).

Although the report offers separate recommendations for the screen industry and the arts sector, the following key recommendations are advised for both sectors:

- Coordinate between government funding agencies
- Increase digital media expertise within government
- Market WA's digital creative industries worldwide
- Enhance digital skills through training initiatives
- Incubate innovation and support development of IP
- Foster partnerships and collaborations with market partners
- Encourage cross-platform production

SCREEN INDUSTRY SECTOR

The following key recommendations are offered specifically for WA's screen industry:

- Foster a new generation of highly skilled, versatile, work-ready digital content creators through post graduate practical courses
- Establish an online 'Knowledge Bank' with crucial industry information and resources
- Ensure adequate funding is available for 360° digital production
- Offer business development and start-up assistance and support

- Assist businesses and practitioners to access foreign markets
- Foster the development of children's media franchises
- Support Indigenous digital projects
- Support innovation of new content
- Attract offshore production and business relocation to WA

ARTS SECTOR

The following key recommendations are offered specifically for WA's arts sector:

- Develop funding programs that embrace both commercial and cultural outcomes of ideas
- Empower traditional artists and arts organisations to use multi-platform interactive digital technology
- Upgrade infrastructure in arts exhibition spaces and performance venues to incorporate new technologies and enhance capacity to operate in the digital realm
- Support the exploration of future forward digital 'Meta Art'
- Develop showcases for cutting-edge international digital media-arts

CONCLUSION

It is time for active initiatives. With the proper support, WA's digital media and arts practitioners can apply their strengths, surmount their weaknesses and master their challenges by embracing the opportunities of the new media world.

Initiating concrete programs now will build a new generation of creative content in Western Australia while helping extend the existing creative industries and ensure their continued success and growth.

SECTION 2.0

INTRODUCTION

INTRODUCTION

'Oh no, not another report!' This was the common reaction from stakeholders when contacted for this study. There have been numerous state and federal reports written over the past decade echoing the need to develop the digital content industry. These reports have repeatedly identified the tremendous economic and cultural benefits of developing the digital content industry, the fact that Western Australia (or, depending on the report, the country as a whole) is lagging behind the global market, and the desperate need for government support to achieve industry growth. And these reports have also offered numerous recommendations outlining positive steps to achieve growth and establish the digital content industry as a global market player.

Independent Review of the Operations of ScreenWest, 2001:
"The online market will increasingly become a video-rich broadband service, extending further the opportunities for the industry to place and develop creative material into new and potentially lucrative market environments. This development represents a significant opportunity for screen industry creators."

Creative Industries Cluster Study: Stage One Report, DCITA, 2002:
"Another key finding is the small scale of digital content and applications development activity in Australia. This presents a major limitation that must be faced in any strategy to position Australia's industries in global value chains...Australia's relatively small and fragmented domestic industry contrasts with the rising direct government support and increasing levels of vertical and horizontal integration observed in some industries overseas."

The Role of Government Agencies as Marketplace Participants in Digital Content Markets, DCITA, 2003:
"...our firm conclusion is that, while Agency spending with digital content and applications suppliers might be small, the multiplier effects on industry development and innovation are very significant and important."

Digital Communities: A Study to Determine the Feasibility of Creating a Digital Content Industry Cluster in Western Australia, DET/DoIR/DCA, 2004:
"Over the longer term the creative digital sector has other opportunities exporting product into the global educational and entertainment market. Provided they are given the opportunity to flourish, both of these clusters will provide high value employment opportunities to the WA community, and begin to position WA as the "State of Digital Innovation.""

Growing WAdigital Report, 2005:
"If Western Australia is to obtain its share of the benefits of the digital content industry it needs [to] raise its profile, and all the various fragments need to pull together and become a cohesive force."

Australian Film Commission, Australia Council for the Arts and AFTRS Joint Submission to the House of Representatives Standing Committee on Science and Innovation, 2005:
"...technological innovation and the pathways to commercialisation can only be achieved in today's global economy through engagement of the creative industries and adequate, targeted resourcing of the government cultural agencies which are dedicated to the development of these industries."

Unlocking the Potential: Digital Content Industry Action Agenda Report, 2006:
"In order to grow, the Digital Content Industry needs regulatory and investment frameworks that operate under technologically neutral principles and encourage interoperability, innovation, investment and competition."

ScreenWest Strategic Development Plan Phase III, 2006:
"Innovation and increased knowledge are essential for the future, if the WA screen industry is to penetrate new markets, raise its profile in existing markets or even maintain its current position in the marketplace."

The State Government's Role in Developing and Promoting ICT in WA, 2007:
"There is a need for enhanced digital content industry support schemes targeting management skills development, incubators, marketing and investment attraction."

Strengthening the Creative Innovation Economy, Cultural Ministers Council, 2007:
"Opportunities for the independent production sector in the interactive digital environment are enormous. They can be defined as creative, cultural and commercial in nature, having the potential to be realised in short, medium and longer term time frames. Once implemented, these initiatives will provide ongoing benefits to the society and the economy."

As we near 2010, it is time to move past the talking and writing phase and take action. It is time for WA's Government to take further steps to support and develop the State's digital content industry. It is time to empower the creative industries to seize opportunities to develop, produce, market and distribute outstanding digital work. It is time for the Western Australian Government to invest in the future and commit to achieving a financially and culturally valuable goal—growing WA into a vibrant world-class hub of innovative excellence.

Western Australia is rich in creative resources. There is a diverse talent pool spread across the media, arts, science and technology sectors reflecting a wellspring of creativity, passion, inspiration and dedication. From television and film producers with international reputations to successful contemporary musicians to

ambitious video game developers to cutting-edge artists and academics, WA's creative industries add considerable wealth to the State. However, when it comes to digital content creation, especially innovative Intellectual Property and engaging a broad audience, WA has not fully exploited its rich potential.

The benefits of partnerships between WA's industries have not been fully appreciated. Industry weaknesses like creative isolation and a prevailing sense of negativity will severely limit innovation and growth if they are not addressed. WA's creative industries need to be unified and inspired to leverage their combined talents and the tremendous opportunities offered by digital convergence. Government needs to seize the opportunity to offer leadership and financial support. Through Government action, WA can be united around a positive vision for the future and a fundamental belief in its creative power and potential.

A robust digital content industry offers economic and cultural benefits. Not only is there revenue growth potential in the short and long-term but also immeasurable cultural value in reaching audiences on a broad scale. It is estimated that by 2010, the Australian entertainment and media sector will be worth $29.5 billion.

" *Entertainment and media organisations that respond to the demands of Australians with flexible content, personalized service, networking opportunities and value for money will thrive in this new environment.*"[1]

Creative convergence and collaboration are key to WA's future success. DCA, ScreenWest and DoIR have an important opportunity to set an example for the creative industries. By working together to empower WA's media-arts to further embrace digital technology, they can help pave the way to a vibrant future. There is already agreement among the agencies that development of intellectual property and public engagement are paramount. Further, there is a willingness to develop an interdepartmental approach to support WA's creative industries as they face the challenges of a new digital era. By ensuring that innovation, entrepreneurship and creative excellence are recognised and supported, DCA, ScreenWest and DoIR can help foster growth and usher in a greater atmosphere of collaboration. Moving away from fragmentation toward creative convergence of arts, media and technology will help achieve the common goal of establishing a strong position for WA in the global arena.

In order to grow, the digital media industry and digital arts sector need to be empowered to leverage strengths, overcome weaknesses, seize opportunities and boldly face challenges. It is time for the Western Australia Government to address the needs of the industry and empower it to develop into a world-class competitor in the global market and ensure the future of media and arts in WA.

PARAMETERS

In August 2007, ScreenWest, DCA and DoIR commissioned a consultancy *"to scope and deliver a report on the level and methods of support required to further develop creative digital content production in WA."* The project entailed separate analyses for WA's digital media industry and for WA's digital arts sector. This included current status appraisals, reviews of opportunities for identified niches, worldwide funding surveys, and recommendations. Needless to say, the scope of the project could fill several books but both time and length constraints have necessitated a more curtailed discourse. It is hoped that the results will inform, inspire and instigate action.

Due to constraints and the ever-changing nature of the digital content industry, this report is intended as an overview of relevant work, developments and trends in digital media and arts locally, nationally and internationally. Ideally, it should serve as a creative catalyst for discussion, further research and new initiatives. An attempt has been made to include a range of examples that demonstrate innovation and excellence from Australia and overseas. It is by no means an exhaustive list nor is it meant to imply that these are the only examples and areas of opportunity to be explored. The niche areas of concentration for WA's digital media industry were identified prior to the commencement of this study and it is beyond the scope of this report to speculate on the long-term potential of these particular areas in the global digital content industry. Finally, it should be noted that leaders in the creative digital industry can change rapidly and the mention of particular brands are intended as examples. It remains to be seen whether iTunes, YouTube, Myspace, Facebook, Revver, Joost, and their cohorts will preserve their market share.

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1   "Australian Entertainment and Media Outlook: 2006-2010", Price Waterhouse Cooper, 2006.

DEFINITIONS

A word about definitions. This study focuses on a sub-area of the digital content industry as it pertains to the creative (or cultural) industries. The creative industries *"are knowledge and skills intensive and include the new media and digital content industries, film, television, music, design, publishing, computer games, advertising, architecture and the arts."* They are *"widely recognised as the engine rooms of the knowledge economies."* [2]

In other words, the subject of this report is 'digital creative content.' To differentiate the domains of ScreenWest and DCA, the digital creative industries are further sub-divided into 'digital media' (ScreenWest's funding domain) and 'digital arts' (DCA funding domain).

For ScreenWest, 'digital media' includes traditional media (movies, television) marketed and distributed on new media platforms (Web, mobile, console, portable), and digitally produced new media (e.g. interactive TV, webisodes, mobisodes, video games, podcasts, vodcasts, digital animation, simulations), with emphasis on innovative, story-based interactive multimedia.

For DCA, 'digital arts' includes traditional arts (fine arts and crafts, music, performing arts, fashion and publishing) marketed and distributed on new media platforms (Web, mobile, console, portable), art that uses digital technology as subject matter, and electronically produced arts, with emphasis on cutting edge, interactive, art/technology hybrids. The Austin Museum of Digital Art provides the following definition: *"art that uses digital technology in any of three ways: as the product, as the process, or as the subject."* [3]
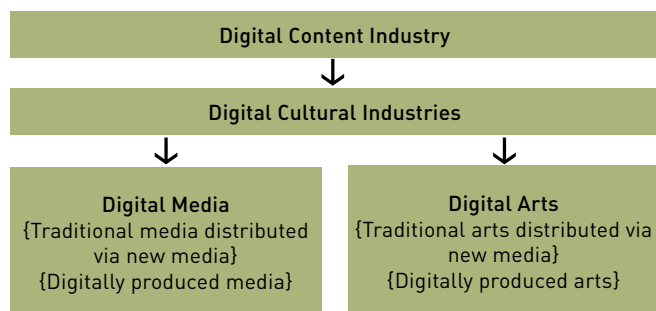
Although digital media and arts are focused on separately in this report because they are currently administered and funded separately, it should be noted that there is a great deal of creative linkage and opportunities for collaboration. In this age of convergence, 'arts' and 'media' and 'technology' and 'entertainment' and 'information' are no longer separate categories. It will become necessary to not only evolve the conception of media-arts as a hybrid discipline but also to reconsider agency responsibility for the range of multimedia projects. In the digital media world, it's all about content and the cultural industries are all part of WA's diverse creative community. There is *"an important, two-way,*

movement of people and ideas across not-for-profit activity in the cultural and community arena and the commercial world of creative content industries. It is evident that an environment in which such interactions and engagements can occur becomes an important factor in nurturing creativity and innovation in content development." [4]

It is important to mention that digital content falling outside the scope of ScreenWest and DCA also needs support, especially in the marketable areas of education and Web 2.0 (e.g. social networking). It is unclear at this time which agency is responsible for supporting strategic development of entrepreneurial businesses in these areas but it is recommended that the agencies coordinate to ensure they are not over-looked.

STRUCTURE

The report is broken into two main sections. First, there will be an overview of WA's digital media industry, the opportunities faced by ScreenWest's identified niche areas (factual, Indigenous, children, animation), national and international funding examples, and recommendations. Second, will be an overview of WA's digital arts sector, the opportunities faced by DCA's support areas (fine arts and crafts, music, theatre, dance, fashion, writing), national and international funding examples, and recommendations. The areas of opportunity sections mirror the Cultural Ministers Federal Working Group analytical framework incorporating 'Access,' 'Production,' 'Development,' 'Partnerships,' and 'Commercialisation.'

METHODOLOGY

Information contained in this report was gathered through a combination of field and desk research. It is a synthesis of qualitative and quantitative data including stakeholder interviews, government reports, industry trade reports, technology, business, entertainment and arts news reports, conference reports, venture capital investment reports, industry press statements, industry blogs, and the author's professional digital media-arts experience. That most of this information is readily available online demonstrates the ease with which market research can be conducted in the digital age. In fact, the major challenge is sorting through the massive amount of information and maintaining the perspicacity to distinguish long-term trend from temporary fad. (A complete list of sources is contained at the end of the report.)

ACKNOWLEDGEMENTS

Thank you to all who generously helped by offering your honest insights. And thank you to those who were not directly interviewed but shared your input in previous reports as well as your talent, energy and enthusiasm at organisation gatherings, industry events, exhibitions and performances, via blogs and online forums, and through your creative expression.

2   Australian Film Commission, Australia Council for the Arts and AFTRS Joint Submission to the House of Representatives Standing Committee on Science and Innovation, 2005.
3   http://www.amoda.org/about/digitalart.php

4   Cutler & Company. Producing Digital Content - Cluster Study Stage 2. DCITA, 2002.

SECTION 3.0

WA'S DIGITAL MEDIA INDUSTRY

WA'S DIGITAL MEDIA INDUSTRY: OVERVIEW

WA has a small, fragmented digital media industry that has not yet achieved its full potential. Interactive multimedia production currently lags behind the rest of the world where digital media has been funded and produced since the mid-late 1990s. Without a State commitment to sector growth, WA's future as a media player in the global market cannot be ensured. This section is an overview of the strengths, weaknesses, and challenges faced by WA's digital media industry. Because this report primarily focuses on opportunity, the next section will be devoted to reviewing the numerous possibilities open to practitioners.

" *The creative and media sectors are not highly concentrated within Western Australia although they do employ a large number of people and offer growth potential for a fairly large number of small firms.*"[5]

As previous reports have pointed out, it is quite difficult to reach an exact figure on the size of the digital media industry due to elusive definitions, fragmentation and isolation. There is a mix of small businesses and solo operations offering a range of digital services and content including simulations and visualisations (mining, architectural), television (animated series, special effects, advertising, rendering), film (animation, special effects, rendering), Web (business, TV property tie-ins, social networking, bookmarking, citizen journalism, e-commerce), games (casual, learning, massive multiplayer online, pervasive, mobile, locative, digital toys), mobile (e-cards, digital tarot, games), e-learning (games, Sci-tech presentations), and other cultural content (digital capture of Indigenous stories). Clearly, there is a great deal of cross-over with most practitioners working in a number of different areas. Much of the industry engages in work-for-hire to 'pay the bills' while developing original IP on the side. A number of stakeholders expressed a desire to produce and sell original content but require support to do so, especially accessing foreign markets. The end result is that few businesses in WA are developing digital franchises with multiple revenue streams.

STRENGTHS

Although the majority of stakeholders found it difficult to list any industry strengths, there are actually a number worth noting.

Passionate practitioners

When visiting online forums [Port80, Orange Zucchini, Independent Game Developers Association (IGDA), Siggraph Perth], organisation meetings [WAnimate, IGDA, Australia Web Industry Association (AWIA)/Port80, Digital Content Industry Reference Group], and talking to digital content producers [PIGMI (Perth Independent Game Makers Initiative), ADCA (Australian Digital Content Association)], it becomes clear that WA's practitioners are dedicated and passionate about digital content. There are a number of industry organisations that enable networking and provide support for particular practitioner roles within the industry such as programmers, designers, animators, game developers and producers. *"Digital content production appears to thrive where there are strong informal people networks and where not-for-profit organisations provide inclusive and stimulating meeting places."* [6] It has been repeatedly noted, however, that the industry lacks a single group that represents the diverse needs and common interests.

Entrepreneurial spirit

There are businesses in WA that have recognised the opportunities offered by digital media such as in the areas of animation, games, simulation, e-learning, and Web 2.0. They represent a mix of ages and experience but all demonstrate an understanding of the potential of the medium. The industry needs more risk-takers and creative leaders who do not simply follow the rest of the world and understand *"...the importance in creative industries of individual passion, commitment and the pursuit of an artistic vision."* [7]

Traditional media excellence

WA has established areas of excellence in TV and film that can be leveraged into the interactive digital realm. These include factual, kids, animation and Indigenous content. Overall production has doubled in the past four years for traditional media and the industry is described as "booming."

Partnerships

Some traditional media companies are sub-contracting digital production while others are forming partnerships with digital media businesses to create 'one-stop shops.' Partnerships are also being established between software developers and digital media producers. This positive trend of multimedia company formation to effectively produce content across a range of platforms, including original IP, will likely be increasing as 360° commissioning becomes the norm.

Collaboration in the form of co-work spaces has come to WA. The digital technology companies that rent space in Perth's Silicon Beach House work in an open atmosphere that encourages knowledge sharing. AWIA's Freelancer Fridays and the FTI Animation Centre's Squoodle on Sundays offer weekly open, collaborative environments for digital practitioners to connect, create, and bounce ideas off each other.

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5   Digital Communities: A Study to Determine the Feasibility of Creating a Digital Content Industry Cluster in Western Australia. 2004.

6   Cutler & Company. Producing Digital Content - Cluster Study Stage 2. DCITA, 2002.

7   IBID.

Plenty of work for certain areas

In terms of work, skilled practitioners are finding plenty of opportunities in advertising and marketing, mining, architecture, and in the growing games sector. Although some practitioners complain that there isn't enough regular work, this may be a reflection of their inflexibility in terms of the type of work they're willing to take on. Even large global production companies that produce series and film, supplement income by creating advertising content.

Culturally valuable digital media production

A notable example of cultural digital content is ScreenWest's Indigenous 'Community Stories' project. As will be discussed in the next section, this content can be leveraged by Indigenous creators in a number of areas.

Industry events

There are a number of international conferences and festivals held in WA [GO3 Expo, Graphite 2007, DAC, DIMEA, Revelation Film Festival] that feature expert speakers, draw international attendance and media coverage and offer excellent networking and deal-making opportunities. There are also numerous local industry gatherings and content showcases which help unite the industry [Perth Massive, Webjam, Barcamp, Podcamp, Byte Me! festival, ICT WA] and competitions that help drive innovation [Nullabar, WA Web Awards, WA Screen Awards].

Growing video game industry

Gaming is the fastest growing entertainment sector worldwide. Like film, games appeal to a diverse audience, encompass a range of genres and budgets and can also be powerful learning tools. But games offer something that traditional passive film and television cannot—cutting-edge interactive stories that engage audiences for extended periods of time. WA is starting to attract game developers from overseas and has the opportunity to expand Australia's game development reputation beyond Victoria and Queensland. A range of games are being developed locally such as massive multiplayer, casual, e-learning, mobile, pervasive, and location-based. The relocation of overseas game companies to WA has resulted not only in employment and training opportunities for local practitioners but is also attracting other companies.

" Western Australia has a considerable competitive advantage in the digital content sector with the computer games industry in the state being creative, innovative and dynamic and having great potential for development and growth. This is one area the state government could nurture as part of its aim to strengthen the Western Australian ICT sector." [8]

Investment attraction

The relocation of overseas digital media companies to WA is an exciting development. It not only provides jobs but it also has a 'magnet affect' of attracting other firms as well as encouraging experienced ex-pats to return home. There is potential for WA to leverage the natural beauty and geographical positioning vis-à-vis Asia to help develop the State into a thriving digital hub. It should be remembered that one of the draws of Silicon Valley is the Northern California lifestyle. WA has a similar opportunity to leverage its sun, beaches, and relaxed atmosphere to draw those who are looking to escape from stressful big-city environments.

Geographic location

Some see WA's isolation as hindrance while others view it as an advantage. The latter group suggests that the State is a creative oasis enabling innovation. The competitive environment of the eastern States is described as stifling opportunity and risk-taking amongst practitioners. The other advantage for WA is the strategic proximity to Asia and the sychronisation of time zones. *"Australia's powerful strategic geographic position is no doubt why eight of the largest games publishers have their Asia Pacific Regional Headquarters in Australia, including Activision, Atari, Eidos, Electronic Arts, Sony Computer Entertainment, THQ, Take 2 Interactive and Ubisoft."* [9] As more overseas companies are looking to tap into the Asian market, WA has an opportunity to position itself as an ideal headquarters better positioned than the other states. However, it has been noted that there are not enough direct flights from Perth to Asian cities like Shanghai.

Training/Development

WA offers a number of multimedia, animation, game design, and programming training options including FTI, TAFE, AFTRS, Curtin, Murdoch, and UWA. FTI and AFTRS offer upskilling seminars and panels on digital media and the AFTRS National Centre for Screen Business Skills also posts all of their training content online—an excellent resource for the industry. The Laboratory for Advanced Media Production (LAMP) was held in 2006 in Perth and this type of incubator is needed to encourage cross-industry collaboration and innovation. Recent positive steps in terms of increasing the digital literacy of the industry include TAFE's game courses being developed in collaboration with industry and FTI's new website featuring a showcase of content and industry interaction.

There is a sizable advertising industry in WA that can provide training for early practitioners. This is a common model in the U.S. where indie filmmakers not only gain valuable experience producing short films for advertisers but many also continue to do so throughout their careers to supplement income. Also, the music industry can provide experience via the production of music videos and cross-media content. There is a big demand for short-form content for broadband and mobile distribution. These training opportunities can be leveraged to benefit the industry.

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8   The State Government's Role in Developing & Promoting ICT in WA. Economics & Industry Standing Committee, 2007.

9   http://www.gdaa.com.au/E3Australia/MediaCentre.html

WEAKNESSES

There is a pervasive sense of frustration among WA's digital media practitioners. They feel isolated and alienated within their own state and country. There is a belief that Government and its agencies do not understand and appreciate digital content in spite of numerous reports explaining its economic and cultural value. When queried, few stakeholders could suggest any industry strengths and did not have much faith in the future of the industry without significant support. Many businesses engaging in work-for-hire would like to be developing original IP and selling to overseas markets but are frustrated by lack of support and access. The industry is fragmented and there is not enough collaboration. Although many understand media convergence, they don't seem to have embraced the idea of creative convergence – the coming together of old and new media as well as arts, technology, science, information, and education.

Fragmentation

A collaborative atmosphere in the digital content industry and with the rest of WA's creative industries is lacking. There are separate organisations with different agendas that need leadership to realise their common goal—a robust WA creative digital industry that provides a steady income for its members and excellent work that everyone can take pride in.

" *Virtually all the people we spoke with about interactive television and new digital screen work raised the issue of the cultural divide between traditional film people and interactive television producers. Part of this divide relates to the need for different production techniques and values, or the opportunities with digital production to develop new formats and production values."* [10]

Brain drain

Content producers and IP creators are leaving the State because of a belief that entrepreneurship, innovation and excellence are not valued and supported enough. *"There is a perception of a lack of support for digital content developers in Western Australia, which leads to skilled people leaving the state."* [WA ICT 2007 report] It has been suggested that WA suffers from the 'tall poppy syndrome'—a kind of creative censorship which discourages risk-taking, self-motivation and aspirations to achieve excellence. In order to have a healthy, robust industry, WA needs an inclusive creative environment that values vision, talent and inspiration as well as diversity.

Not taking full advantage of opportunities

Perhaps the greatest weakness of the industry has been a tardiness to take advantage of digital opportunities in terms of development, production, marketing and distribution. An overview of a plethora of opportunities will be discussed in the next section.

Limited 360° project development

Although there is some interactive multimedia production, the development of truly convergent content across multiple platforms is limited. There is not enough new business development of multiple revenue streams, particularly among children's content producers and animation producers who could be developing mini-franchises.

Not enough IP development

IP is the golden goose of the digital content industry and can generate substantial revenue through licensing and sales. There is a need for innovation incubators involving collaborative teams from various industries and academia. This model has been successfully employed worldwide and is being funded by governments and private business to develop lucrative IP. Also, creators can be too willing to sign away rights and accept a work-for-hire status that does not adequately compensate their contribution to projects. There is a need for increased knowledge about IP and rights management as well as assistance with patenting and rights defence.

"To survive and grow, companies need to sell their IP into markets. This raises issues around the nature of the markets being sold into, channels to those markets and marketing as well as technical skills." [11]

Lack of government support for full range of digital content production.

There have been numerous reports reiterating the importance of digital content but not enough active support of the industry. Projects with commercial potential haven't been able to access funding because they didn't fall into traditional categories. It is unclear to practitioners which projects are eligible for funding and which agency supports new business development. Stakeholders have repeatedly stated their belief that Government, and its agencies such as ScreenWest and DoIR do not understand the digital content industry and do not recognise 'new market categories' and the potential of new businesses including Web 2.0 and other cutting-edge convergent content. There is a belief that Government does not support creative diversity. (Examples of how digital media industries are being supported elsewhere in Australia and the world can be found in the Funding section of this report.)

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10   Cutler & Company. Producing Digital Content - Cluster Study Stage 2. DCITA, 2002.

11   http://www.aimia.com.au/i-cms_file?page=1455/Digital_Content_Roadmapping_Study_FINAL_AIMIA_Version.pdf

Difficulty accessing private capital and foreign markets

A particular problem in WA (and Australia in general) is limited private investment, particularly venture capital.

" Funding remains one of the biggest problems for digital content developers, causing most to fall back on fee for service work to subsidise business development and to fund growth. As in the film industry, backers may be found for projects but there is little appetite for investment in corporate teams." [12]

Some companies are connecting to overseas investors but others are in need of assistance to diversify fundraising, form new partnerships and push into new markets. Supporting trade missions as well as conference and digital market attendance would help immensely. The Austrade TradeStart program was beneficial to the digital content industry but in 2006 the Federal Government reduced funding by 50 per cent for digital media exports through the program. This action has heightened frustration in the industry (and disillusionment with Government) since it occurred five months after the federal Digital Content Industry Action Report Agenda was launched and promoted as providing *"exciting industry development opportunities for Australia's Digital Content Industry which employs about 300,000 people and contributes $21 billion annually to the economy."* [13]

Skills and digital literacy

WA needs more highly skilled work-ready programmers, graphic artists, animators, and web developers. Stakeholders have questioned whether WA's educational programs are operating at international standards and graduating self-motivated students who aspire to excellence and are committed to life-long learning. Using successful training programs in other states and countries as models could prove beneficial—as well as exchange programs. Stronger partnerships between education and business have been advocated to establish traineeship, mentorship and apprenticeship programs to produce a job-ready creative workforce. The lack of gender diversity in the digital content industry has also been pointed out and the need to attract more young women to pursue careers in the industry. Increased outreach to secondary high school students has been suggested. A positive step in this direction is the Byte Me! festival featuring a series of digital technology events aimed to engage the younger audience as well as adults.

There is also a need for producers and project managers experienced at handling multi-platform projects as part of the overall upskilling needs of the industry.

" Commercial success in the industry relies upon the marriage of three very unique skills sets –artistic creativity + technical mastery + business management." [14]

To remain viable in this highly competitive global market, a keen awareness and understanding of the latest technology and trends is essential. There is a need for upskilling in digital business management and strategic development, production, marketing and distribution as well as IP and rights management. Although there have been events offered by AFTRS and FTI, low attendance has been noted as a problem, especially by those in the industry who are most in need of digital media upskilling. There is need to stimulate industry-wide motivation, inspiration and passion to push WA's output to a new level of world-class distinction.

CHALLENGES

Convergence

Hybridisation of media, multiplatform delivery and emergence of new genres make old category classifications increasingly irrelevant. Funding for digital media needs to be flexible and reflect the rapid pace of technological innovation and emerging content forms. Emphasis should be on the creation of cutting-edge, original content as opposed to platform [TV, iTV, IPTV, Web, mobile, portable] as audiences increasingly demand access to multimedia on multiple platforms simultaneously. 360° commissioning—the delivery of cross-platform content—requires that projects be developed from inception to reach audiences in multiple media.

Commissioners not allocating enough for digital content

A challenge faced by multimedia producers is that commissioners want digital content in addition to traditional media but are not sufficiently increasing the budget. Stakeholders have indicated that there is a lack of understanding of the costing of digital media production. Established budgeting guidelines and some 'push-back' when negotiating contracts may be necessary and digital media producers should be clear about what can reasonably be delivered for the proposed budget. A recommended 'trick of the trade' is to deliver proposals with three multimedia content options—low, medium and high budget. This helps clients understand costing while enabling them to choose.

Audience driving industry

With an ever-increasing array of media choice on demand, audiences can no longer be expected to simply 'tune-in' and be programmed. Understanding of demographics and market research are more important than ever and respect for audience needs to be the creative mantra for all content producers. In order to be

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12   Cutler & Company. Producing Digital Content - Cluster Study Stage 2. DCITA, 2002.

13   http://www.computerworld.com.au/index.php/id;395466268 http://www.itnews.com.au/News/NewsStory.aspx?story=36151

14   http://www.aimia.com.au/i-cms_file?page=1455/Digital_Content_Roadmapping_Study_FINAL_AIMIA_Version.pdf

successful, multimedia content needs to be interactive and easy to use, create, share, rate and discuss. However, it is important to note that audience diversity is affecting the market. As IBM's industry report "The end of television as we know it: A future industry perspective" states: *"Our analysis indicates that market evolution hinges on two key market drivers: openness of access channels and levels of consumer involvement with media. For the next five to seven years, there will be movement on both of these fronts—but not uniformly. The industry instead will be stamped by consumer bimodality, a coexistence of two types of users with disparate channel requirements. While one consumer segment remains largely passive in the living room, the other will force radical change in business models in a search for anytime, anywhere content through multiple channels. The tech- and fashion-forward consumer segment will lead us to a world of platform-agnostic content, fluid mobility of media experiences, individualized pricing schemes and an end to the traditional concept of release windows."* [15]

High-quality/ Low-cost
WA's challenge is to produce high-quality, low-budget digital media in order to secure a competitive position in the global market. This is key to branding the industry as a hub of excellence.

Trends vs Hype
Thorough market research and the ability to distinguish fad from long-term trend is necessary for shrewd investment of time and money. For example, clever marketing and public relations has reported registered users for "Second Life" instead of visitors and time-spent which are more realistic usage metrics. The actual users are in the tens of thousands, far less than the millions reported. Many advertisers have bought into the hype which is why this once innovative virtual world has become a virtual mall. As Chris Anderson editor of Wired and author of the seminal Web 2.0 book "The Long Tail" explains:

" *Why did I turn on Second Life, after not only paying to build a Wired HQ in-world, but also doing a book signing and interview there, and even being nominated for a National Magazine Award for our "travel guide" to SL? Well, partly it was the whole "there's nobody there" problem, which is of course just anecdotal. Like everyone else, I had fun exploring the concept and marveling at all the creativity. Then I got bored, and I started marveling at something else: all the empty corporate edifices...I couldn't understand why companies kept throwing money at in-world presences. Were they seeing something I wasn't?"* [16]

Infrastructure
Without sufficient technological infrastructure, the convergence of content delivered across multiple platforms will remain a theoretical construct. Both broadband and mobile coverage need improvement in order for more Western Australians to have ease of access to digital media and for companies to produce, market and distribute overseas. The issues of infrastructure are part of the symbiotic relationship between technology and media-arts. Isolation should no longer matter to WA's digital content producers looking to participate in the global market—as long as they have the technological infrastructure to access and deliver in order to be competitive. Also, the conversion of movie theatres to digital will change the balance of power and it is predicted that this will occur within the next decade. Currently, digital projection capability is limited within the State.

" *There are two reasons why we need a new creative strategy. Audiences are changing. And technology is changing. In a way, everyone knows this of course. What's surprising—shocking even—is the sheer pace of that change. In both cases it's faster and more radical than anything we've seen before."*

Mark Thompson, Director General,
BBC, Creative Future speech [17]

" *We estimate that the music industry lost between $US88 billion...and $US190 billion in its transition to digital. Television and film companies will be next if companies don't systematically navigate the media divide. Now is the time to determine changes in business models, innovate and re-evaluate partnerships. Media companies must take action before it is too late."*

Steven Abraham,
IBM media and entertainment [18]

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15   www-935.ibm.com/services/us/imc/pdf/ge510-6248-end-of-tv-full.pdf
16   http://www.longtail.com/the_long_tail/2007/07/why-i-gave-up-o.html
17   http://www.guardian.co.uk/uk_news/story/0,,1761065,00.html
18   http://www.theaustralian.news.com.au/story/0,20867,21226796-7582,00.html

WA'S DIGITAL MEDIA INDUSTRY: AREAS OF OPPORTUNITY

In order for WA to build its creative innovation economy and realise its vast potential, the creative sector needs to take advantage of the immense opportunities offered by digital media and the arts. An overview of opportunities for WA's digital media industry as a whole will preceed a narrower survey of the identified niche content areas of factual, Indigenous, kids, adult fiction, and animation. Although there is a separate section exploring the opportunities for WA's digital arts sector, much of what is discussed here is applicable.

ACCESS

One of the distinguishing features of the digital media industry is the transformation of content delivery. Audiences can be reached through numerous avenues presenting a dramatic opportunity for the mass consumption of digital cultural material. Through the development of innovative digital media, WA has the potential to powerfully increase its audience reach.

Another of the distinctions of the digital media industry is the primacy of the audience. The idea of media 'consumers' or 'users' speaks to the active role the audience now plays by choosing, viewing, interacting with, creating, shaping, commenting on and sharing digital content. Choice and control are hallmarks of the new media world where the passivity of programmed television and movie viewing is being replaced by content accessed 'on demand.' Audiences of diverse tastes and interests seek compelling content which is leading to the growth of niche markets catering to particular interests and tastes. *"Niche communities will exist…for every imaginable subject. Over time, aggregators will pull together diverse web efforts, blogs, and commentary. Members of the community will review the information, tag it, rate it, append to it. Over time, preferred channels will develop for each niche and become established. Whoever controls those channels, which are web sites, will, in effect, "own" the audiences to which they lead."* [19]

Easy content mobility across devices allows content to be experienced whenever and wherever the audience chooses and is increasingly expected. For example, creative content accessed online can then be viewed on a mobile device. [20] Providing accessible technology and content to audiences requires the creation of user-friendly interfaces. Easy access increases usage and engagement.

With the launch of *australianscreen*, access to Australian content is being offered worldwide. The Australian Film Commission has used special Federal Government funding to create a promotional and educational resource featuring the Australian film and television industry. [21]

Now that Australian screen production extends beyond the traditional two screens of television and film, one can imagine broadening this showcase to include the wealth of multimedia creative output. There is an opportunity here for WA to lead the way by creating a cross-platform showcase providing access to creative excellence in production for multiple screens where traditional media and new media converge and engage local, national and international audiences in innovative and exciting ways.

" So instead of talking about niches, maybe we should use a different language to drive things forward. Maybe we should begin talking about how we are distinct and how we can stand out from the crowd. What if we started asking filmmakers to make things that were radical, challenging, disruptive, controversial, creative, and outrageous? What if these became our words."
Graeme Watson, FTI Blog

PRODUCTION

In order to increase high-quality, low-cost output of digital media, WA's content creators need to seize the opportunity to avail themselves of the production possibilities. The first step in industry transformation needs to happen at the conceptual level. Instead of creating television shows or movies, producers need to think of them as properties. These story-based projects can be realised through a variety of media including computer, mobile, portable, games, television and film. The nature of the DIY (Do-It-Yourself) Revolution reaps rewards for those creators who have talent, self-motivation and an understanding of the digital media universe. The challenge for producers is to extend their creativity beyond development and production to the areas of distribution and marketing. Innovation needs to happen at every level in order to achieve excellence.

Convergence

The essence of convergence is story-telling across devices leveraging each of their strengths to reach the audience in the most effective way. It is about understanding and employing new forms of story-telling such as webisodes, podcasts, vodcasts, mobisodes, blogs, and vlogs. It is also about embracing new technologies such as interactive (iTV), enhanced and high-definition television (HDTV), broadband streaming or television on the desktop (TOD) or webTV or IPTV (Internet Protocol Television), content feeds (rss), portable entertainment devices and game consoles that also play other media. The list can go on but platform is less important than content—especially when there is no consensus as to which platforms will gain the largest market share.

19   http://www.ozco.gov.au/news_and_hot_topics/news/ptsotf_review/
      files/4845/mike_shatzkin_transcript.pdf
20   www-935.ibm.com/services/us/imc/pdf/ge510-6248-end-of-tv-full.pdf
21   http://australianscreen.com.au

" *I think the real win isn't to distribute TV over mobile devices—that's a niche service that isn't likely to morph into a massive consumer market. But giving people TV over the Internet generally, where they can consume it on a normal television, a PC and/or a mobile device? That's a killer product.*" [22]

" *Research firm Screen Digest forecasts that mobile TV will put gaming and music in the shade. It predicted that there will be 140 million global subscribers generating revenue of £3.1bn [$Au7bn] by 2011.*" [23]

" *IPTV services are likely to complement rather than replace today's TV delivery. What it will do is cause TV viewing to fragment even further. It will also start to effect release windows for feature films; when does the Internet release start to become more profitable than the DVD, and how does that model start to stack up?*" [24]

It is agreed that there will be a coexistence of media for the foreseeable future, content needs to be available in a variety of consumable forms, and incorporate interactivity. Content that is produced for multiple screens has the opportunity to reach the largest audience and generate the most revenue. As always, this content needs to be entertaining, informative, and memorable. It respects and enables the audience to interact with the story. Excellent digital content reflects a unique perspective and has cultural value. Whether non-fiction or fiction, drama or comedy, for kids or adults, it is in the telling of stories that the tremendous opportunity of digital media reveals itself.

Audience

An understanding of the target audience and their usage of digital media is crucial to designing engaging interaction. Developers need to explore the different ways their story can be told and methods of conveying the relevant information. Learning how to turn content into an active experience for the audience requires understanding innovative modes of discovery, sharing and commentary. Audiences must not only be respected and considered from the initial stages of project development but also be recognised as an active participant. With the rise of user generated content, interactive programming and video-on-demand and on-replay (DVR), audiences expect to create, control and choose stories.

Games

The emergence of digital games as a major market with audience reach across a range of key demographics has changed the entertainment world. The video game market is predicted to reach $46.5 billion by 2010. Using historical sales trends as a guide, titles with the greatest potential are those that *"build off a movie title, sport or a franchise that has already been built up."* [25] Video games now co-exist with film and television as a complementary entertainment form and are helping drive the demand for interactive entertainment. And games are not just being played by young people. *"If trends continue, by 2014 the average age of Australian gamers will be the same as non-players—42 years old—and the proportion of male and female players will be equal."* [26]

The popularity of console games, massive multiplayer online games, casual games, learning or knowledge games, health games, alternate reality games, and virtual worlds is reflected in the increasing development of hybrid content that includes some sort of gaming element. From reality show voting to social networking, friend collection to alternate reality film marketing or e-learning, gaming is an all-encompassing aspect of new media entertainment that can inspire creative innovation in audience engagement. *"It's like with film. We think first of using it for entertainment, but then also for education and advertising and politics and all that stuff."* [27] The e-learning and pro-social benefits of video games are recognised by Australian parents. *"Parents in game households say the positive aspects of game play are more than just enjoyment and happiness. 73 per cent say games help their children learn about technology, 68 per cent say games help their children learn maths, 64 per cent say games help children learn to plan."* [28]

High-quality/ Low-cost

With lowering cost of software and hardware, content producers have the ability to produce high-quality content with a small stream-lined staff at a relatively low budget. Although IP development can be a lucrative revenue stream, licensing software can reduce production time. Use of open source software can eliminate prohibitive financing issues altogether for independent developers. For smaller producers in this highly competitive industry, short time-to-market projects are often preferable as it can be incredibly risky investing time and money into a project that may prove to be less original than one anticipated.

22   http://www.techcrunch.com/2006/11/03/thinking-about-mobitvs-100-million/
23   http://news.bbc.co.uk/2/hi/technology/6639249.stm
24   http://www.iptv-news.com

25   http://www.pwc.com
     http://www.businessweek.com/innovate/content/jun2006/id20060623_163211.htm
26   http://ieaa.com.au/doc/Interactive%20Australia%202007%20web.pdf
27   http://www.nytimes.com/2006/07/23/arts/23thom.html
28   http://ieaa.com.au/doc/Interactive%20Australia%202007%20web.pdf

PARTNERSHIPS

Digital media producers are faced with myriad partnership opportunities. Convergence is not only the trend in digital content development and production but also in collaborations. Partnerships are being forged between different industries and resulting in innovative projects. It is in the balancing of talents and the meeting of minds that teamwork leads to excellence.

Audience

There is a vast audience out there who freely engage in content development, creation, marketing and distribution. The power of the audience as a partner should not be underestimated. Projects can grow and transform in ways that weren't even imagined in the development stage. Content has the power to become the cultural seed enabling the collective mind to grow.

Cyberspace Networking

Networking is increasingly taking place online which is a particularly positive development for media-arts practitioners in isolated areas. International business connections are being forged via websites like LinkedIn.com and 60Sox.org.au is a new network linking creative employees with employers in Australia and New Zealand. It enables practitioners to showcase work, interact with peers and industry experts, establish contacts and seek commercial opportunities. 60Sox is a result of a collaboration between the Institute for Creative Industries and Innovation (iCi) at QUT, Australian Research Council (ARC), South Australian Government (DFEEST/ TAFESA), Queensland Government (DETA and Dept of Premier's and Cabinet), Australian Interactive Media Industry Association (AIMIA), Billy Blue School of Graphic Arts, and the Southbank Institute of Technology.

Industry Partnerships

Collaboration within WA's media industry as well as with the arts, technology, science, education, and tourism sectors can be explored at the state-wide, national and international levels. As the AIMIA Roadmapping Study pointed out, collaboration within the industry can be particularly beneficial for companies targeting international markets.

" *In this case, the partnerships provide a number of advantages, including achieving additional scale to win larger projects, gaining access to the customer relationships of collaboration partners and supplementing the specialist skills required to win a particular contract.*" [29]

Collaboration between film and television producers and games developers presents opportunities. "*In terms of future collaboration, a number of participants suggested that convergence of the film and games sectors would create opportunities for collaboration, and would be likely to involve*

the post-production, sound production and potentially animation sectors. However, there was a feeling that neither the games development nor the film sector had prepared itself to capture those gains.*" [30] In fact, the games industry is now poaching much of the traditional media talent. "*One interviewee commented on the high proportion of script writing graduates who now go straight into the games industry.*" [31]

By fostering industry collaboration, the problem of fragmentation can potentially be overcome. "*Smaller companies suggested the industry is experiencing increasing fragmentation. This is due to the rapid advances in technology, which have enabled sole operators to bid for and win, projects that were previously beyond the capacity of a sole operator or micro business.*" [32]

Commissioners

Existing relationships between WA's media industry and Australian commissioners, carriers and aggregators such as ABC and SBS can be extended into digital media. Partnerships with Nickelodeon, and Big Pond also offer multimedia potential. For example, Big Pond is looking for mobile content. "*We are inventing a new medium here and what I earnestly hope is that by giving them some slots and making them available to Australian producers to help us invent this whole short form of TV, that the folks will vote with their feet and they'll buy those shows, and those will become the most popular shows and so we'll produce more of them. That's what I hope.*" [33]

Asian Partners

Partnerships can be explored with overseas companies in order to establish production pipelines. In addition to Europe, Canada and the United States, relationships in Singapore and Hong Kong can be forged. WA has a unique opportunity to use its geographical positioning as a base of Australian-Asian multimedia co-productions. Australia has signed co-production Agreements with both Singapore and China which could potentially be extended into the multimedia arena. [34]

Participation in markets like Hong Kong's FILMART and trade missions to Asia can help establish partnerships and position WA as the hub of Asian-Australian multimedia collaboration.

Venture Capital

In terms of financing, tapping into the vast wealth of WA's resource sector can also be explored. A means of assisting WA's innovative businesses to connect with venture capital is needed. "*Corporate venture capital partnerships are vital to a robust global entrepreneurial ecosystem.*" [35] Although investment through state

29   http://www.aimia.com.au/i-cms_file?page=1455/Digital_Content_
       Roadmapping_Study_FINAL_AIMIA_Version.pdf

30   IBID.
31   Cutler & Company. Producing Digital Content - Cluster Study Stage 2.
       DCITA, 2002.
32   http://www.aimia.com.au/i-cms_file?page=1455/Digital_Content_
       Roadmapping_Study_FINAL_AIMIA_Version.pdf
33   http://www.abc.net.au/news/stories/2007/07/19/1983204.htm
34   http://www.afc.gov.au/filminginaustralia/copros/copro_update/fiapage_
       87.aspx
35   https://www.pwcmoneytree.com/MTPublic/ns/moneytree/filesource/
       exhibits/2007CorpVC_Release.pdf

or national capital would be preferred, access to international VCs should also be explored. According to the MoneyTree Report by PricewaterhouseCoopers and the National Venture Capital Association (NVCA), U.S. corporate venture capitalist investment in the first two quarters of 2007 rose to the highest level since 2001. Although investment in Internet companies dipped from US$1.4B (177) deals in Q1 to US$897M (160 deals) in Q2, there is still strong interest in the digital sector. [36] According to Rutberg & Co, venture capital financing of digital media was $4.4 billion in 2006, a notable increase over 2005 with an investment of $2.6 billion. This 66 per cent growth rate is significantly higher than the overall venture industry. [37]

" *The convergence of video games, computer-mediated social networks, and digital content services is creating new opportunities for venture capital investors and a broad array of incumbent companies.*"

Increased knowledge and understanding of private capital investment would greatly benefit WA's digital content industry overall.

COMMERCIALISATION

Properties extended into multiple platforms can offer diverse revenue streams. Instead of creating a show or a film, producers have the opportunity to create franchises. Potential revenue streams can take numerous forms in this opportunity-rich market. Digital content providers have trialed a variety of models with varying success. The challenge has been an audience more willing to pay for their devices—televisions, computers, mobile phones, portable media players—than for content. Yet, there are *"promising new monetization models such as in-game advertising, virtual item commerce, prepaid tokens, subscriptions, and digital content sales."* [38]

Since revenue generation is the most frequently expressed concern of content producers, a survey of options has been included. This is intended to provide some insight into the opportunities for digital content creators, particularly in the larger international markets. The digital media world is often characterized as reflecting the DIY Revolution. This Do-It-Yourself environment offers unprecedented empowerment for independent producers enabling them to develop, produce, market and distribute their own creative product.

The Niche Market
This era of DIY marketing and distribution empowers independent producers to challenge the risk-adverse mainstream entertainment industry. Targeting the niche markets of the "Long Tail" is the recipe for success in the digital media age. As Chris Anderson points out:

"Hits Aren't Dead. I never said they were. What is dead is the monopoly of the hit. For too long hits or products intended to be hits have had the stage to themselves, because only hit-centric companies had access to the retail channel and the retail channel only had room for best-sellers. But now blockbusters must share the stage with a million niche products, and this will lead to a very different marketplace." [39]

Content created for television or film that has proven successful can be leveraged into the digital space although acquiring rights can be a potential issue, especially talent and music. A small number of companies in WA are already exploring repurposing their television and film content on digital platforms such as streaming and downloadable video and games.

IP Development
In the digital media world, there is potential for revenue generation in the licensing of source code and software. As the AIMIA Roadmapping Study stated: *"One of the most significant findings in the quantitative phase of the project was that almost two thirds of companies nominated intellectual property as their company's 'most important main asset'."* [40] Intellectual property can be a by-product of client funded work-for-hire projects such as source code for an application or game. Not only can the source code be licensed to other developers but it can also be repurposed for additional clients. By retaining the rights to source code, digital producers can amortise the initial investment in R&D and leverage their IP into ongoing income. Production models are also increasingly being turned into brands and licensed for adaptation in local markets. This is seen particularly with the franchise growth of 'reality' programming like the "Idol" competition format. In terms of digital media, producers who develop unique models for interactive cross-platform series have the lucrative potential to license across multiple territories.

Exports
In terms of expanding its export market, the biggest opportunity for WA is to position itself as a reliable producer of high-quality content at a reasonable price with the added value of being English-speaking. As many have noted, WA's content producers have traditionally found greater market demand overseas than in Australia and there is tremendous opportunity for growth in this area, especially in Asia, Europe and North America. The AIMIA roadmapping study notes:

" *Of companies that sold products and services overseas, exporting typically accounted for about 18 per cent of their turnover."* [41]

In the global market, location matters less than the ability to deliver cutting edge content at a competitive cost with international appeal. Although competition is fierce, commissioners and aggregators are eager to feed the

36 IBID.
    http://www.dmwmedia.com/news/2007/08/06/vc-investments-in-internet-companies-goes-down-in-second-quarter
37 http://www.rutbergco.com/equity-research/analyst-quotes-2006.html
38 IBID.
39 www.thelongtail.com
40 http://www.aimia.com.au/i-cms_file?page=1455/Digital_Content_Roadmapping_Study_FINAL_AIMIA_Version.pdf
41 IBID.

demand for quality content. Licensing source code and interactive multimedia models worldwide offers great opportunities to those who lead creatively rather than merely follow current trends.

Distribution and Syndication

In the short term, the principal market for local companies is likely to remain offshoots of existing film and distribution networks and broadcasters such as the ABC, SBS and Australian commercial networks. However, a new range of global distribution and syndication opportunities are emerging which can benefit WA companies.

Content aggregation on multiple platforms has been supplementing and even replacing traditional distribution. Aggregators are becoming the major players in the digital distribution game which is why media companies now want to get in on the action. A variety of distribution models have been explored by media companies including exclusive deals with single aggregators (e.g. Joost, iTunes) or exclusive distribution of content via their own branded websites (e.g. bbc.com). The latest trend is distribution across multiple platforms with multiple aggregators which allows companies like CBS Corporation to maintain control over their content, avoid piracy issues and maximise revenue. CBS Corporation has established a diverse "Interactive Audience Network" which includes deals with numerous online distributors to offer the audience free content supported by advertising. CBS Mobile has forged agreements with the three largest U.S. wireless carriers as well as new mobile multimedia platforms such as Qualcomm MediaFLO. *"It's really all about the user and in building the CBS Interactive Audience Network, we are bringing our content to each unique platform of their choice."* [42] As new distribution technologies and platforms are developed, new opportunities for distribution continue to open up.

Programming for portable devices offers abundant opportunity, particularly with short-form content now that Mobile TV is finally arriving in Australia. BigPond recently launched mobile on-demand featuring Australian and overseas programming. Telstra has also commissioned two original mobile comedy series. A shift to free content supported by advertising is being considered depending on the success of mobile TV. *"As the audience grows, we think the ad-supported model could fly."* [43] Vodafone is offering a range of content such as entertainment, drama, comedy, fashion and music.[44]

Paid Content and Subscriptions

Distribution in the digital age is following the TV model in many ways. Content can be free for the consumer and either government or advertiser supported or the audience can pay a fee-for-service that allows access to content. Many digital media companies are using a combination of both free and fee-based models to attract and retain audience.

As an audio and video aggregator, Apple's iTunes has done well offering downloads at low, flat prices. This has appealed to the audience and offered distribution channels for independent producers but media corporations are looking for more flexibility in pricing and packaging.

Mobile content providers are trying to follow the cable television model by offering fee-for-service. The subscription model has proven successful for some media but this does not mean that all subscription-based content will succeed. What it does indicate is that the audience is willing to pay for quality. Blizzard Entertainment's massive multiplayer online (MMO) game, *World of Warcraft,* has been a runaway success in terms of subscriptions. So digital content producers who are disheartened by the rise of user generated content should take solace in the fact that quality content will not only draw an audience but also generate revenue. However, it appears that mediocre content will not. Warner Brothers Interactive Entertainment learned this harsh lesson after the flop of the highly touted Matrix Online. *"The troubles of Matrix Online were partly of Warner's own making; many players and critics agree that the game is a mediocre experience. But the online market used to make room for mediocre games...."* [45] The entertainment world used to make room for professionally-produced mediocre content in general but not in today's highly competitive marketplace. Amateur producers are churning out their own mediocre content so the onus is on professional digital content creators to provide high-quality entertainment.

Revenue Sharing

For media producers, a wide array of content aggregators are offering online distribution opportunities. Not only is this is a great way to market content and create WOM (word-of-mouth) buzz with short clips but video aggregators are increasingly offering revenue sharing deals. Both professional and amateur producers are benefiting from these new financial arrangements. Although some aggregators insist on exclusive deals for a set period of time (e.g. AtomFilms), most sites allow content to be offered elsewhere (e.g. Google Video, Joost, YouTube, Flixya, Metacafe, and Revver). In exchange for exclusivity, Viacom-owned AtomFilms offers royalities based on content popularity and a share of additional distribution revenues generated through partner deals such as for mobile video. AtomFilms has paid more than $3,000,000 to producers for content licensing and development deals for exclusive original content.[46] The online DVD renter, Netflix, has negotiated revenue share agreements with major film studios and distributors while sites such as Revver split ad sales with independent producers.[47] Revver recently announced that US$1M was distributed in the past year to video creators and

42   http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/ www/story/04-12-2007/0004564417

43   http://www.cnet.com.au/mobilephones/phones/0,239025953,339280252,0 0.htm

44   http://www.vodafone.com.au/Personal/VodafoneLive/ WhatIsVodafoneLive/MobileTV/MusicEntertainmentPack/index.htm

45   http://www.nytimes.com/2005/09/06/arts/design/06worl.html?ex=119017 4400&en=fef2e001e1e37d44&ei=5070

46   http://www.scottkirsner.com/webvid/gettingpaid.htm

47   http://money.cnn.com/2006/04/18/commentary/mediabiz/index.htm

publishers (e.g. bloggers who embed Revver content on their sites).

" *Smart advertisers are financing an online economy that supports these creators, and the top talent will build fortunes."*[48]

Some caution that payments are modest unless you have a rare hit but this has traditionally been the case in the entertainment world. Delivering content directly to the audience not only empowers independent producers but allows them a greater potential to generate revenue from multiple sources.

Marketing

Back in the late 20th and early years of the 21st century, cross-platform content was viewed as marketing intended to support and drive audience to traditional media. Websites and online games marketed movies and television shows. In the web 2.0 world, there is a convergence of marketing and distribution as digital content offers new opportunities to generate revenue. The Internet can be a means to get content noticed, generate an audience, create word-of-mouth, and even land a lucrative deal. Showcasing content on revenue-sharing websites can lead to bigger distribution deals in new and traditional media. Hollywood increasingly scouts digital media for talent. There are film festivals featuring online content such as Pixelodeon which is *"here to bridge the gap between independent online creators and traditional media here in Hollywood."* Pixelodeon is one of the many ventures that recognises: *"The current media landscape is changing so fast that these up and coming creators have a chance to help define its new foundations."* [49]

If you create engaging content, the audience will market it for you. This is known as word-of-mouth or viral marketing, the amazing phenomena of peer-to-peer sharing content, links, recommendations, tags, bookmarks and favorites. Advertisers and mainstream critics can be dismissed but a friend's review is trusted. Social networking has expanded the concept of 'friends' into groups and communities of like-minded souls which gives content creators the potential to reach, interact with and inspire a large fan base. Promotion on popular blogs, discussion in online groups and forums as well as podcasts, vlogs, and trailers are all key ways to target specific demographics.

Advertising

Now that advertisers are following the audience into the digital media realm and seeing the potential of targeting key demographics, there is a shift back to this familiar revenue model. Because they are particular about which content their brands are associated with, advertisers are helping to drive a demand for quality, dependable content and aggregators. Users want free digital content and studies have shown that the audience is more willing to accept advertising than pay for digital content. And the industry prefers this revenue model.[50]

Advertising in digital media is expanding into new areas. Not only video ads but content sponsorships and product placement are advertising models from traditional media that are being leveraged in the digital world. In-world and in-game advertising are growing as advertisers seek to expand their presence in virtual territory in the new area of 'v-business.' For the audience, it is all content and engaging ads can easily become viral videos that are passed around the world. The TBS cable network's veryfunnyads.com has delivered more than 63 million video clip views in the past year. *"It's a very straightforward premise: You're going to have a funny experience, and you're going to have it every 30 seconds."* This is part of a growing trend of 'brand-centric' content.[51]

Consumer Products

Although consumers are spending real money on virtual product, there is still a demand for old-fashioned offline products. Leveraging a successful brand into merchandise has a long history of generating revenue. Retail is a major income source for corporate entertainment franchises and independent producers can learn from the example. This is particularly true for merchandise leveraging popular kids and animated brands such as apparel and toys.

48   http://www.redherring.com/Home/22802
49   http://pixelodeonfest.com
50   http://www.nytimes.com/2007/09/18/business/media/18times.html
51   http://www.nytimes.com/2007/08/17/business/media/17adco.html

Now let's take a closer look at the digital media opportunities for each of WA's identified niche areas—factual, Indigenous, kids, adult fiction, and animation.

DIGITAL MEDIA OPPORTUNITIES: FACTUAL

" *This second digital revolution is going to enable the public to explore and investigate their world like never before. Programmes won't be shown once and then forgotten. They'll be there forever to be linked, clipped, rediscovered, built into bigger ideas.*"

Mark Thompson, BBC Launch of Creative Future Initiative

Digital media has introduced not only a convergence of platform and content but a hybridisation of information and entertainment. Enriching entertainment is a growing trend with vast cultural and e-learning potential. The opportunities for factual—or 'knowledge' content as the BBC refers to it—extend beyond the traditional boundaries of genre. Audience participation in this area is seen in the rise of vlogs, livecasts, citizen journalism, and video commentaries as well as 'reality TV' voting. Digital media is enabling documentaries to evolve into interactive stories and serious games that can reach a broad audience and enrich their lives in new and exciting ways. This is particularly true for the younger demographic which can be inspired to deeper cultural engagement in order to learn more about their world.

PRODUCTION

Documentaries

The key to creating successful convergent content is to develop a factual franchise from the beginning that extends the story into multiple platforms and progresses beyond the boundaries of linear storytelling. There is an opportunity to collaborate with the audience and allow them to participate in the creation of cultural documentation. In the digital age, documentaries become living projects that continue to grow and develop as the audience contribute their knowledge and experiences and stories and discuss and collectively discover and learn.

Major documentary broadcasters such as National Geographic, Discovery, BBC and PBS are all offering variations of 360° programming which inform and entertain audiences. They are diversifying their business models and offering a broad range of new products and services across multiple platforms. National Geographic is even reaching out to a younger audience with content on YouTube. [52]

Interactive and Virtual Documentaries

Although exploration in the area of non-linear, interactive factual storytelling is in the early stages, there is great potential. Whoseland.com is an interactive documentary funded by AFC and Cinemedia Multimedia 21 Fund. It explores "Land Rights For the Millennium" via digital timelines, video, text, and allows visitors to submit comments.[53]

Serious Games

The convergence of documentaries with virtual worlds, simulations and gaming technology is an emerging phenomenon allowing meaningful cultural engagement. Serious games are a fast growing market that adapt gaming technology to create enriching interactive content with tremendous e-learning potential. Also known as socially conscious or persuasive games, an example is *Food Force* released by the United Nations to help people understand the challenges of dispensing food in war zones.[54] Using immersive online environments, documentaries can become interactive stories enabling the audience to learn, explore and discover in powerful new ways. Technology developed purely for entertainment can now be utilised to create meaningful cultural content. For example, first-person gaming technology can enable the experience of another's life with far more emotional impact than passive viewing. "*Whereas the military was one of the first customers of Serious Games, it has been joined by a long line of users, including other government agencies, healthcare providers, schools (both K-12 and universities) and Fortune 500 companies (for team building, leadership training, sales training and product education, among others).*" [55]

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52   www.nationalgeographic.com
        http://corporate.discovery.com/brands/imedia.html
        http://www.amdoc.org/aboutus.php
        http://www.pbs.org/pov/index.html
        http://news.bbc.co.uk/2/hi/programmes/documentary_archive/
53   http://www.whoseland.com/
54   http://www.food-force.com/
55   http://elianealhadeff.blogspot.com/2007/06/serious-games-sizeable-market-update.html

The realisation that gaming provides a tremendous opportunity to engage, enlighten, provoke, instruct, stimulate learning as well as improve health has expanded an already vast market. Humans like all animals play to learn from an early age and digital media is taking learning to a new level with mental, physical, and emotional interaction with information. By embracing technology, documentary producers can extend their reach and have a profound effect through their work.[56]

Short-form Documentaries

The combination of info-on-demand, short attention spans, and portable media has created a need for short-form content. The market will continue to grow for mini-documentaries both for online, mobile and other portable devices. These podcasts, vodcasts, Bluetooth video and kiosk content will be part of the multimedia cultural content provided by museums, science centres, libraries, zoos, tourist bureaus, and performing arts institutions. Documentary producers are facing a large untapped market for short factual video on history, science and the arts including biographies, background, and behind-the-scenes information providing story and context and enriching audience experience. There is also a growing market for corporate, medical and consumer instructional multimedia.

'Reality' Content

There are mixed views about the long-term forecast for 'reality TV.' It appears to still be quite popular with audiences but some believe over-saturation of the market will lead to its demise. It can be relatively cheap to produce but it is ephemeral programming with no repeat or residual potential on the back-end.[57] Investment is being made in new ways to extend the genre including sms voting and other forms of interactive audience participation, contestant blogging, live real time footage online, virtual game versions, and reality-fiction hybrids.[58]

PARTNERSHIPS

Opportunities for collaboration with multimedia, game and animation producers exist for individual projects and on-going company partnerships. This can lead to the development of new hybrid product offerings and revenue streams. Partnerships can be explored with the e-Learning sector through The Learning Federation and with museums, arts organizations, libraries, schools, zoological and botanical institutions, travel and tourism to develop short-form downloadable documentaries. Multiple collaboration is possible with gaming companies, universities and nonprofits to develop environmentally and socially conscious interactive multimedia. Resource companies could be approached about financing pro-social content. Cross-media partnerships can be explored with ABC, SBS, BBC, National Geographic and Discovery. Other areas to explore include news media, citizen journalism, interactive politics and remote education.

COMMERCIALISATION

Online marketing offers the opportunity to reach the audience in new ways. Al Gore's *Inconvenient Truth* proved the value of viral marketing as a mass campaign tapped into political and environment groups across the web.

When it comes to financing, corporate sponsors like to be associated with enriching cultural content. This added value of cultural content can be leveraged by factual producers.

As the convergence of media and culture continues, the lines that separate documentaries and news and education will disappear and new media producers of knowledge content will discover expanded revenue opportunities when they push past old media labels.

There is revenue potential in the digitising of cultural content and the provision of supplemental and supporting content. Partnerships with the arts sector could lead to collaborative industry growth in this area.

Corporate multimedia production is a growth area. There is a strong market for digital business education—the next generation of corporate video or "industrials".

56   http://seriousgamessource.com
57   http://www.msnbc.msn.com/id/3073184
58   www.livehivesystems.net/tv.html
      http://ea.gamespress.com/link.asp?i=757&r=5114&r2=3075

DIGITAL MEDIA OPPORTUNITIES: INDIGENOUS

Digital media provides Indigenous content creators with the means to preserve, share, experience, and provide interaction with their cultural heritage in dramatic new ways. The vast knowledge of the Elders can be preserved, protected and passed on to ensuing generations. Digital media can help ensure the survival of the oldest living culture in the world. And it also delivers to younger members of the community a new pathway to their heritage and cultural pride. An Indigenous multimedia producer interviewed for this report who is developing virtual heritage spoke of how the Indigenous community is embracing digital media and how the Elders "get it." In the digital age, we are experiencing not only a convergence of media but of realities which confers a profound opportunity to express esoteric world perspectives. Through interactive multimedia a deeper level of understanding can be transmitted that transcends the physical into the spiritual. As digital storytelling moves into virtual space, there is an unprecedented opportunity for Indigenous and non-Indigenous to explore symbolic and metaphorical realms. Crossing the digital divide and interacting in cyberspace could lead to a new level of cultural comprehension and rapprochement.

PRODUCTION

Through ScreenWest's "Community Stories" pilot initiative, Indigenous stories and oral histories are being collected and preserved on digital video. This library can be developed into interactive multimedia that enables the audience to discover, experience, and learn such as interactive timelines and maps using Google Earth technology, serious games, simulations, and virtual worlds.

The following is a sampling of Indigenous digital media projects around the world and a brief look at the range of opportunity in the area of e-storytelling and the creation of dynamic story worlds.

Animated stories
The Dust Echoes series is a collection of twelve aboriginal dreamtime stories collected from the Wugularr (Beswick) Community in Arnhem Land in the Northern Territory, Australia. After recording audio versions of the stories, they were transformed into animated movies which have been screened worldwide. The website offers a range of multimedia content.[59]

Virtual Heritage
Digital Songlines is an Australasian CRC for Interaction Design project that is *"developing protocols, methodologies and toolkits to facilitate the collection and sharing of indigenous cultural heritage knowledge."* Project

collaborators include ACID (Australasian Cooperative Research Centre for Interaction Design) and its university partners, AIATSIS, DCITA, AICA, Land and Community Councils, Regional Media Associations, Language Centres, Museums, Libraries and Indigenous Online Technology Centres.[60]

One of the supported projects is *Virtual Warrane*, a 3D simulation of Cadigal culture developed by Cyberdreaming, an Indigenous multimedia company.[61]

Interactive Storytelling
UsMob is a noteworthy example of innovative Australian interactive online drama with 'choose your own adventure' style stories, games, video and text diaries, forums and user created content. Offline, there were synergistic workshops in Australian schools and community groups that taught video and new media skills and youth created content could be uploaded to the website. UsMob was part of the AFC and ABC New Media and Digital Services AFC/ABC Broadband Production Initiative.[62]

Game Design
The SimPä Project in New Zealand is part of a broad initiative to develop Māori digital storytelling using game design, preserve Māori knowledge, promote positive educational outcomes, and develop skilled Māori digital content practitioners. There are plans to leverage commercial opportunities by marketing the "SimPä toolkit" and design framework to Australia, Canada and the U.S. The project is part of a partnership between Otago Polytechnic and Te Whare Wānanga o Awanuiārangi.[63]

e-Learning
SILA is an Inuit culture e-learning website by Igloolik Isuma Productions, creators of the award-winning *Atanarjuat The Fast Runner*. The multimedia site features video, audio, photographs, and production blogs. It was funded by Telefilm Canada's New Media Fund.[64]

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59   www.dustechoes.com.au

60   http://songlines.interactiondesign.com.au
61   http://www.virtualwarrane.com.au
62   http://www.usmob.com.au/index.html
63   http://bitweb.tekotago.ac.nz/staticdata/papers06/papers/165.pdf http://www.digitalstrategy.govt.nz/
64   http://beta.digitaluniverse.net/portal/people_of_the_arctic

PARTNERSHIPS

There are opportunities for Indigenous painters, musicians, animators and multimedia producers to collaborate on projects that incorporate the vast richness of culture, story, and artistic talent in the communities.

Leveraging the digital capture stories into other media offers numerous partnership possibilities. Following the example of the Dust Echoes project, a collaboration with animators could be pursued. Involving game producers could lead to the development of interactive story-games.

The Arctic Portal is an interesting example of Indigenous collaboration including the Aleut International Association, Arctic Athabaskan Council, Gwich'in Council International, Inuit Circumpolar Conference, Saami Council and Russian Association of Indigenous Peoples of the North. *"This Portal will be developed and maintained by a team of leading scientists and other experts from the Indigenous communities around the Arctic region who are familiar with and knowledgeable about the major issues concerning the people, communities and organizations of indigenous peoples."* [65]

Partnerships could be explored with Indigenous digital culture projects in New Zealand, Canada, and the United States. Such cultural dialogue projects could involve working with UNESCO. Museums, universities, technology and resource companies all present opportunities for partnerships. Innovative results of such partnerships are exemplified by the Canadian *Inuit 3D* exhibition produced by the Museum of Civilization in collaboration with the National Research Council of Canada.[66]

There is an opportunity to establish a relationship with the National Geographic Society and the Living Tongues Institute for Endangered Languages. They are conducting a study and language preservation project which includes WA – languagehotspots.org

As described by the New York Times: *"In Australia, where nearly all the 231 spoken tongues are endangered, the researchers came upon three known speakers of Magati Ke in the Northern Territory, and three Yawuru speakers in Western Australia."* [67]

COMMERCIALISATION

Development of Indigenous digital culture delivers incalculable non-monetary rewards and there is also revenue potential for the communities.

Opportunities to generate revenue include Indigenous digital IP, e-learning materials, broadband video, animation, and games.

The international market for Indigenous art could be leveraged into digital product development. Indigenous digital cultural export and virtual tourism present possibilities worth exploring.

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65   http://beta.digitaluniverse.net/portal/people_of_the_arctic
66   http://www.archimuse.com/mw2002/papers/corcoran/corcoran.html
67   http://www.nytimes.com/2007/09/19/science/19language.html

DIGITAL MEDIA OPPORTUNITIES: KIDS

Trying to reach kids in the digital age requires an understanding of this unique demographic. Having grown up immersed in digital media, kids are tech-savvy and 'platform agnostic,' and easily adopt new technology. A recent global study by MTV, Nickelodeon and Microsoft found that kids are multi-taskers who are still watching television but they are online engaged in social networking and playing games at the same time. Technology is "organic to their lives" but only in terms of functionality. Kids don't use industry jargon like 'social networking', 'multiplatform' and 'web 2.0' but they do use their friends' advice.

" *A clear majority of young people asked said the majority of website links (88%) they viewed and the viral video content they downloaded (55%) came from friends' recommendations.*

Audiences also wanted more control of what they watched and when they wanted it. Young people expect content to be on all platforms; mobile, computer and TV. They want it to be searchable and increasingly expect it to be supplied on demand through services such as Joost." The study also notes that kids' relationship with digital technology differed by country, culture and climate. Mobile usage is higher *"in countries with a strong outdoor culture, such as Italy, Brazil and Australia."* [68]

It should be remembered that the kids audience is extremely fickle. Fads come and go quickly. This is an audience that requires engaging content to hold their attention. They love to learn and master new information and skills but content must be entertaining.

The industry is increasingly focused on reaching the 8 to 14 demographic, known as 'tweens.'

PRODUCTION
When it comes to the kids' market, it's not just about your product but the value of your brand. The challenge is to create a safe-haven that parents trust and is entertaining and engaging for kids. Kids online content requires constant moderation and maintenance to ensure that it conforms to privacy and safety standards. This ongoing cost should be included in budgets.

Franchises
Franchises leverage popular brands across multiple media as well as consumer products and even stage shows. Convergent properties include TV, Web and mobile series, video games, virtual worlds, interactive stories, and innovative hybrids of genre and media that involve interaction, personalisation, collection, sharing, socialising, gaming, comments, diversity and variety. [69]

A new trend is web-enabled toys with packaging codes that unlock digital content. Examples of this hybridisation of offline and online products include BarbieGirls, Webkinz, HotWheels, and SpotzGirl. [70]

Video games and virtual worlds
According to marketing studies, 86 per cent of tweens are playing games online, part of a growing $30 billion industry. This is why Nickelodeon is investing $100M USD over the next two years to expand its virtual world, Nicktropolis, and launch a casual games portal. [71] With a lower cost and faster turnaround, casual games allow regular content refreshing which is important to keep the young audience engaged. Virtual worlds for kids often include games in their immersive, interactive environments such as NeoPets, Club Penguin and Habbo.

e-learning and active games
The convergence of education and entertainment offers a tremendous opportunity to reach kids in ways that can captivate their imaginations and stimulate their minds. Teaching kids using interactive digital content is a burgeoning business along with using active games to improve health. Beyond the textbook lies an innovative new world of interactive multimedia education. In the U.S. schools are connecting with students using lessons on iPods, historical video games and assigning students to create video performances of novels and plays. [72] The challenge is executing fun, high-quality learning content that engages young minds. Red Knight, a company specializing in the creation of innovative learning solutions through games, simulations, and virtual worlds, calls it "Deep Learning." Their philosophy is that *"students" in all stages of life are more engaged with their subject matter when they are experiencing it instead of being forced to endure it." http://www.redknightlearning.com* [73]

The childhood obesity crisis is being combated creatively through physical fitness games. Active games such as the Wii system and *Dance, Dance Revolution* are being used in schools, gyms and homes to motivate kids to get up and move. Nintendo is developing Wii Fit, an active video game that includes yoga and aerobics. [74]

PARTNERSHIPS
The BBC is looking to enhance its offering for the young adult audience. *"We'll also launch a new teen brand aimed at 12 to 16 year olds which will be delivered via existing broadband, TV and radio services as well as mobile and other new devices—it will include a new long-running TV drama as well as comedy, music and factual output."* [75] Digital media for kids requires a high degree of creativity

68   http://biz.yahoo.com/prnews/070724/nytu109.html?.v=98
69   www.spongebob.com
      www.degrassi.tv
      http://icarly.com/

70   http://www.nytimes.com/2007/07/23/business/media/23webtoys.html
71   http://biz.gamedaily.com/industry/feature/?id=16845
      http://news.yahoo.com/s/nm/20070718/media_nm/nickelodeon_games_
      dc
72   http://www.nytimes.com/2007/10/09/education/09ipod.html
73   http://www.redknightlearning.com
74   http://www.msnbc.msn.com/id/7382025/
75   http://www.guardian.co.uk/uk_news/story/0,,1761065,00.html

and inspiration combined with technical skill. Multimedia producers, animators, software developers, comedy writers, game developers, educators and artists can all forge potential partnerships. The crucial quality is to be in touch with one's inner kid and be inspired to create for this audience.

Kids producers can partner with animators to create new live-action/cartoon hybrids. They can partner with factual and Indigenous content creators and educators to create e-Learning content. Museums, libraries, zoos and other cultural institutions looking to reach kids can partner with ARG developers to create fun, interactive learning experiences. They can also work with video game and software developers to create engaging interactive exhibits.

Partnerships with ABC and ABC3 (the new digital kids channel) as well as Nickelodeon and Disney is recommended.

COMMERCIALISATION

Consumer products sold via online 'shops' can include branded digital content such as casual games, mobile wallpaper, ringtones, e-cards, media player skins and social networking designs and offline merchandise such as clothing, DVDs and music. MTV is is marketing consumer products derived from its web content including *Rock Band*, a music console game developed in partnership with Electronic Arts and Harmonix for Xbox 360 and PlayStation 3. *Rock Band* includes a product placement agreement with Fender Musical Instruments Corporation and exclusively featuring its guitars, basses and amplifiers.[76]

The subscription model is feasible for the younger demographic because parents are willing to pay both for the security of a safe destination and vetted content as well as enriching and educational content.

Advertising is an established financial model for kids content including rich media, sponsorships and product placement. Advertiser content known as 'advergames' is used for all ages but particularly targets the young audience, encouraging kids to interact with brands.

" *Online, kids can return again and again to a product Web site, spend an unlimited amount of time interacting with specific brands to play games, join clubs, send e-mails, sign up for sweepstakes and, of course, watch the TV ads again and again.*"

According to a Kaiser Family Foundation study in the U.S., 85 per cent of the top food brands are convergently targeting children via traditional broadcast and online.[77]

Regulation of kids advertising has not been firmly established in the online and mobile spaces although the growing concern with junk food advertising on-air is extending into digital media as well.

76 http://www.ea.com/article.jsp?id=rockband

77 http://blog.washingtonpost.com/thecheckout/2006/07/advergame_advercate_advertise.html

DIGITAL MEDIA OPPORTUNITIES: ADULT FICTION

Digital media allows content creators the opportunity to reach the segmented adult audience in diverse ways. It is the upper range of distinctively high-quality content that offers the greatest opportunity for producers. With an overwhelming number of choices and the ability to select content 'on-demand', the audience can be jaded. Producers are advised to take creative risks in order to reap cultural rewards.

PRODUCTION

Just as post-production was forever altered by the introduction of digital, non-linear editing, production is being dramatically changed by digital non-linear storytelling. For some properties, television and film are but a part of the narrative with an extended world of the characters to be discovered online, in console games and via portable media devices. Various 360° models are being experimented with and the only limitations are that of imagination. *"Even the notion of a "film" has begun to seem a little quaint: Sure, there are still your standard 90-odd-minute narratives, and they may be around forever, but because moving images are increasingly being viewed in and over a variety of venues and devices—from 3-D high-definition digital theaters to TVs to laptops to PDAs, cell phones, iPods, and everything between—even that form is morphing. A film today might be a series of 3- to 5-minute episodes or a 20-minute short."* [78]

Digital media needs to be integrated from the development stage with writers conceiving of how it affects characters and story. Does the hero have a blog containing her inner-most secrets? Does the killer's mobile contain SMS messages revealing his guilt? Does the fictional company have a website that sells real products? With convergent interactive multimedia, there is not only backstory but front and sidestory. Fictional characters can come to life on a number of screens and even appear in audio podcasts. We can see their travel photos or videos or find out real information about their disease or the historical period in which they exist. This is more than simply throwing up some extra footage online—this is about carefully mapping out a story in multiple dimensions and enhancing the drama.

Convergent cross-platform storytelling

Extended and Alternate Reality Games are being used to allow the audience to discover and participate in the narrative. The *ReGenesis Extended Reality Game* developed the TV drama series over nine distinct websites, email, telephone, podcasts, video on demand and live events incorporating two hours of exclusive video footage shot on set with the principal actors. Online 'missions' converged with broadcast episode content and players saw their actions reflected in the series. The second season finale featured a simultaneous multi-camera broadcast and

webcast. The international, interactive Emmy award winning game was produced with the participation of the Bell Broadcast and New Media Fund and the Canada New Media Fund administered by Telefilm Canada. [79]

Mobile-online series

Ish Media's *Girl Friday* is a creative example of convergent mobile-online comedy produced in Victoria and distributed by Big Pond. *"Girl Friday's not like any of your normal TV shows—the story doesn't stop when the credits roll. You can find out heaps more about Girl Friday's life through access to the inside of her handbag where you can read her diary, emails, look at her mobile phone and much more."* [80] In the new media realm, the audience is no longer a passive voyeur watching characters but actively snooping in their lives.

Video games

The ascendancy and potential of video games as an entertainment and art form can be seen by the New York Times inclusion of game reviews in the same section as movies, television, theatre and the rest of the performing and visual arts. A recent review of BioShock marveled that it *"isn't simply the sign of gaming realizing its true cinematic potential, but one where a game straddles so many entertainment art forms so expertly that it's the best demonstration yet how flexible this medium can be. It's…a story that exists and unfolds inside the most convincing and elaborate and artistic game world ever conceived."* [81]

Virtual worlds

With low-cost technology and even no-cost open source, the development of new worlds becomes possible for independent producers. The idea of audience (and the advertisers who desperately want their 'mindshare') crowding into one virtual world like *Second Life* will likely become a quaint memory as the trend continues to move towards unique branded worlds appealing to niche audiences. Just as information is linked throughout the blogosphere, we are moving towards an inter-connected series of virtual worlds. Social networking convergence will allow personal information to be easily portable making storytelling via MySpace, Facebook , etc. infinitely easier. The Web3D Consortium, a non-profit, international standards organization, is working on inter-world integration so avatars can teleport between virtual worlds. [82]

78   http://www.fastcompany.com/magazine/107/open_revenge-of-the-nerds. html

79   www.regenesistv.com
      http://72.14.253.104/search?q=cache:46c2TtcS9cYJ:www.xenophile. ca/news/gemini_pressrelease.pdf+regenesis+extended+reality+game&hl =en&ct=clnk&cd=6&gl=au&client=firefox-a
80   http://www.girlfriday.tv
81   http://www.nytimes.com/2007/09/08/arts/television/08shoc.html
82   http://www.businessweek.com/magazine/content/07_33/b4046064.htm
      http://secondlife.reuters.com/stories/2006/11/09/ibm-accelerates-push-into-3d-virtual-worlds/

Mixed reality

'Mixed Reality' merging of 'real' and virtual worlds is also the next frontier. *"As stories transform from linear and passive plotlines into fully immersive interactive experiences, the collaboration becomes more dynamic and complex between director, performer, designer, composer and target audiences...Characters and stories will be breaking free of the silver screen and set-top box and enter into other aspects of our everyday lives with Mixed Reality. Story worlds empowered by Mixed Reality will be able to transform storytelling interactively in order to feel like a film, play like a game with the multi-sensory immersion of a theme park."* [83]

PARTNERSHIPS

A mobile comedy series would be a good way to tap into the demand for short-form comedy, leverage WA's comedy talent and partner with Big Pond. Mobisoaps are also a growing phenomena. There is also an opportunity to partner with ABC and put the Perth studio to use to develop a television/web hybrid series. Partnerships can be explored with game companies to develop interactive multimedia as well as with animators. Hybrid content offerings should be developed as collaborative projects incorporating factual, drama, and Indigenous elements. Content convergence is the trend and there are innumerable creative possibilities.

COMMERCIALISATION

Web and mobile are both distribution avenues to explore. With the advertising model becoming increasingly more prominent, the demand for professional content will increase. Advertisers prefer professionally produced content over user-submitted content because of quality consistency and predictability. *"Most of the video content today is unsellable. We are all in this industry looking at generating inventory that is higher quality."* [84] MySpace TV is challenging YouTube by focusing on professional content and this will be an increasing trend as corporate entertainment increasingly distributes in the online and mobile spaces. Protection of intellectual property through filtering software is intended to draw professional producers to MySpace TV and eliminate the copyright infringement issues of YouTube.[85]

Re-purposing longer content as short-form programming is a growing trend. Minisodes are 5-minute re-edited versions of popular television programs. There is an opportunity here to repurpose existing content if rights clearances can be obtained.[86] Sony's 'Minisode Network' offers shortened versions of television hits like *Fantasy Island* and *Charlie's Angels.* It actually links directly to MySpace since Sony has a distribution deal with MySpaceTV.[87]

Offering free downloads can help sell DVDs and increase distribution.

The Chaser's War "producers are thrilled with having the show online (they offer it on their own site and encourage people to upload it to YouTube) because it's helped them sell a lot more DVDs to people in Australia and has also helped them sell the show to networks in other countries around the world." [88]

Do-it-yourself 'guerilla' style marketing can lead to distribution opportunities. The creators of *Four Eyed Monsters* used digital media to create a virtual soap opera about the trials and tribulations of producing their independent film. With a daily online video diary and short behind-the-scenes podcasts, the audience became emotionally invested collaborators in the production. Like a number of indie producers, they solicit 'donations' directly from the audience—small amounts from a large enough group can quickly add up. The *Four Eyed Monsters* multimedia content has been viewed, shared and commented on by a large audience. *"It didn't take long for each new installment to attract 65,000 downloads via iTunes, YouTube, Google Video, MySpace, and other sites. As of late May, the first seven episodes had been downloaded about half a million times, unleashing a platoon of citizen marketers for the movie as the clips get posted on individual profiles, emailed down the line to friends, or played on iPods."* [89] The film won a Sundance Channel "Undiscovered Gems" showcase prize worth $50,000USD.[90] The filmmakers have become inspirational figures in the indie world and their website offers digital advice, including how to deal with the challenges of negotiating digital distribution.

The thriller, *Open Water*, demonstrated that low-budget independent digital filmmaking can generate an impressive box office. Two actors, three crew members and a lot of sharks ultimately added up to $100 million worldwide including DVD sales.[91]

83   people.ict.usc.edu/~morie/SupplementalReadings/Memoryscape%20Ismar%20100506-1.doc
84   http://www.nytimes.com/2007/06/27/technology/27video.html
85   IBID.
86   IBID.
87   http://www.sonypictures.com/tv/minisode/

88   http://www.techdirt.com/articles/20070614/013018.shtml
89   http://www.fastcompany.com/magazine/107/open_revenge-of-the-nerds.html
90   http://foureyedmonsters.com
91   http://openwatermovie.co.uk/

DIGITAL MEDIA OPPORTUNITIES: ANIMATION

Animation is the cornerstone of digital media creation. Because 2D and 3D animation are involved in nearly every aspect of digital production, animation is the area offering the widest range of opportunity for WA's creative industry. It acts as the convergent thread weaving through all media and tying together traditional and new forms of expression, information and communication. From television series, 3D film, CG effects, online webisodes, video games, mobile series, virtual worlds, e-learning, museum displays, music videos, machinma and other user created content, viral political cartoons, screensavers, and e-cards to advertising, architectural visualisation, mining simulations, and website interfaces, we see animation as an integral aspect of digital culture. As the recent Scoping Study on the Animation Industry in WA aptly stated:

" *Western Australia needs to look forward, think international and get into niche areas that can be serviced by small creative teams. These teams need to get innovative with styles, techniques, processes, formats and platforms. Additionally government needs to invest in infrastructure for this digital content brave new world."[92]*

PRODUCTION

Both digital 2D and 3D animation have radically changed the media industry. The introduction of 3D animation has transformed the live-action film industry including pre-production visualisations, post-production CGI and full-length features. It is also extensively used in video game production, virtual worlds and simulations. Led by Macromedia's Flash, 2D vector-based animation has enabled cross-platform development for the Web, mobile/portable, and casual games and has revolutionised the TV industry by driving down production costs for cartoon series.

Digital animation opens new avenues of storytelling allowing special effects filled spectacles like *The Matrix, Lord of the Rings* and *Harry Potter*. The consistent recipe for success has been the combination of excellent story-telling and high-quality animation. Pixar has repeatedly proven this with its hit film franchises. That a behemoth like Disney acquired Pixar for US$7.4B to revive its animation business exemplifies the value of outstanding storytelling in the industry.[93]

With the success of *Happy Feet*, Australia has joined the elite ranks of successful animation production centres which boosts the reputation of the entire country. With a worldwide gross of US$384M, *Happy Feet* is the 13th top grossing digital animation film in a field of powerful contenders *(Shrek 2, Finding Nemo, Shrek the Third, Toy Story 2, Shrek, Monsters, Inc., Toy Story, The Incredibles, Cars, A Bug's Life, Ratatouille and Ice Age).[94]*

Although WA may not be a player in the big budget film arena, there is plenty of opportunity in this vast industry. Both 2D and 3D animation are highly adaptable to 360° convergent projects delivered on multiple platforms. Increasingly, television and film producers are working with game developers and other product designers to create diverse properties. Digital content is seen not as mere marketing but as complementary lines of business generating additional revenue.

Episodic cartoons are ideal for web and mobile as both young and adult audiences are clamoring for short humorous digital content. Online cartoons are generating revenue through consumer products and being picked up by broadcasters. Hit properties demonstrate the potent mix of unique perspective, irreverent humor, teamwork, skillful execution, respect for the audience and a clever marketing and distribution plan. Animators who move past creating 'shows' to developing 'properties' have the opportunity to reap the rewards of franchises with multiple income streams.

The extensive use of 2D and 3D animation in game design has opened up many opportunities for highly skilled practitioners from casual click-through activities and e-learning to advanced massive multiplayer online worlds. Although it first appeared as user created 'mash-ups,' machinima is now being embraced by professional animators leveraging game assets and software to create compelling content. As a sign of the ascendancy of massive multiplayer online gaming and machinima, both *The Simpsons* and *South Park* have produced *World of Warcraft* episodes. *"By using the game to actually make cinema, Burns and his crew flipped a switch that neatly closed a self-referential media loop: movies begat games that begat movies."* Licensing can be an issue when creating content using a company's IP but gaming companies have generally embraced machinima as a means of user generated marketing and bundle the tools for movie creation with the game. *"Perhaps the most unusual thing about machinima is that none of its creators are in jail. After all, they're gleefully plundering intellectual property at a time when the copyright wars have become particularly vicious. Yet video-game companies have been upbeat—even exuberant—about the legions of teenagers and artists pillaging their games."* [95]

92   Vyvyan, Kate. Scoping Study on the Animation Industry in WA, ScreenWest & DoIR, 2007.

93   http://money.cnn.com/2006/01/24/news/companies/disney_pixar_deal/

94   http://www.the-numbers.com/market/ProductionMethods/ DigitalAnimation.php

95   http://www.nytimes.com/2005/08/07/magazine/07MACHINI.html

The possibilities for digital animation producers are vast, particularly for those with the foresight to push creative boundaries. Interactive cartoons hold great potential as game/story hybrids. Worldwide Biggies has raised US$9M in venture capital to develop "a new breed of gaming" called GameToons along with movies and webisodes.[96] *Video Mods* is an animated MTV2 show that combines music videos and video games and audience created content.[97]

PARTNERSHIPS

There are opportunities for collaboration between animators and drama producers and game developers to create innovative new digital offerings. Game developers in WA who are also creating machinima series should be encouraged to use WA animators. Live action properties can be re-envisioned as cartoons and visa verse. Filmmaker Richard Linkletter has produced two rotoscoped live-action films (*Waking Life* and *Scanner Darkly*) which have a surreal virtual world quality. Big Pond is looking for content, offering an opportunity for animators. Considering the popularity of sport in Australia, sport-themed cartoons for mobile/broadband/broadcast seems like a natural.

The Simpsons began as a series of 1-minute interstitials—a model that could be explored with Australian networks. Humor shows like *Chaser's War* would be perfectly suited for such content both online and on-air. Nickelodeon is casting a worldwide net to discover the next *SpongeBob SquarePants* and although the competition is fierce, WA has just as much potential to win the race as anyone else.

COMMERCIALISATION

Animators should take advantage of the opportunity to market and distribute their creations online. Work can be marketed and distributed and potentially get picked up for wider web distribution and broadcast. Both emerging and established animators are using the Internet as a means of showcasing work, gaining an audience and generating revenue through related product. Virtual world asset development is a growing side income for animators and graphic designers. iBloks is a virtual marketplace and community for 3D designers to sell their creations direct to consumers. OGPlanet publishes free online multiplayer games that generate revenue through the sale of virtual items in the game world and advertising.[98] Animated content can be monetised as paid downloadables for mobile and merchandise in the physical world. There is a strong adult market that leverages the kitsch factor of cartoon product, especially for cult hits.

Revenue-sharing websites can provide income for top-rated animations. Advertising is not only a reliable revenue stream for production companies but working in the advertising industry is also an important training path and means of establishing a reputation for professional quality work. Commercial spots are essentially short films (as are music videos) and those that reflect excellence of craft can launch a career. Animal Logic, the producers of *Happy Feet* state that *"early success working with leading advertising agencies and television commercial directors provided a platform for a successful expansion into feature film work."* [99] "Advertising is the largest single market for content in Australia, and a key source of revenue for companies in the production, post-production, animation and special effects sectors." [100]

Popular cartoons that become viral videos passed between viewers can gain a large audience and launch careers. By 'breaking the mold' of traditional production, distribution and marketing models, animators can take advantage of the reach of digital media. One of the success stories is *Red vs. Blue*, an online machinima comedy series set in the Halo game world created by fans of the game. *"Red vs. Blue" is the first to break out of the underground, and now corporations like Volvo are hiring machinima artists to make short promotional films, while MTV, Spike TV and the Independent Film Channel are running comedy shorts and music videos produced inside games. By last spring, Burns and his friends were making so much money from "Red vs. Blue" that they left their jobs and founded Rooster Teeth Productions. Now they produce machinima full time."* [101] That a team of amateur animators in Buda, Texas can create a hit property should serve as inspiration to aspiring creative entrepreneurs everywhere. It doesn't matter if you live far from the global media centres in this creative democratic age of empowerment. Vision and determination are more important than location. It's important to remember that *South Park* began as a viral video passed among Hollywood executives. The TV series of "crudely animated, rudely scripted tales" has mutated into "a studio, a digital hub, a creative powerhouse in its infancy." The creators of South Park have recently negotiated an unprecedented new contract with Viacom giving them half of the ad revenue generated by their hit property.[102]

96   http://www.kidscreen.com/articles/magazine/20060501/biggies.html
97   http://www.mtv.com/ontv/dyn/video_mods/videos.jhtml
98   http://www.variety.com/article/VR1117952913.html?categoryid=18&cs=1

99   http://www.animallogic.com
100 http://www.aimia.com.au/i-cms_file?page=1455/Digital_Content_Roadmapping_Study_FINAL_AIMIA_Version.pdf
101 http://www.nytimes.com/2005/08/07/magazine/07MACHINI.html
102 http://www.nytimes.com/2007/08/28/opinion/28tue3.html

DIGITAL MEDIA: FUNDING MODELS

Overall, digital media funding worldwide focuses on project development, production assistance, business development, start-up assistance, incubators, cross industry collaboration, foreign market access, networking, mentorship programs, internship and attachment programs and industry development. Due to time and length limitations, this section is a brief overview and by no means an exhaustive analysis of funding strategies worldwide.

AUSTRALIA

Australian Film Commission (AFC)

The AFC funds a number of initiatives to support interactive digital media projects including interactive dramas, documentaries, animation, experimental works, video games, and "innovative educational projects providing professional development opportunities." They do not fund content used purely for marketing purposes such as film promotion websites. *"The AFC makes best strategic use of limited funds by primarily supporting cross-platform or digital media initiatives in partnership with other funding agencies, broadcasters or third-party investors."* [103]

- **Interactive Digital Media Development (Strand V)**
  Up to $15,000 with total annual allocation of $100,000.

- **Interactive Digital Media Production (Strand W)**
  Up to $100,000 with total annual allocation of $300,000.

- **Experimental Digital Production (Strand X)**
  Up to $20,000 with total annual allocation of $100,000. *"Applicants are encouraged to explore new and hybrid image-making in projects that may be interactive or non-interactive, narrative or non-narrative."* [104]

- **Broadband Cross-media Production Initiative (BCPI)**
  Launched in 2005, this AFC-ABC partnership provides $1.2M over two years to support collaboration between film and TV practitioners and new media producers to create interactive broadband documentary and factual content for ABC Online and ABC TV. This initiative follows on the heels of the Broadband Production Initiative (BPI), the 2002-2004 partnership between the AFC and ABC New Media and Digital Services. Funded projects included UsMob, The Dog and Cat News. *"The original BPI funding of $2.1M from the Australian Government leveraged further production funds, in addition to services and facilities, to a total value of $4M, to develop and produce seven groundbreaking projects for delivery on the ABC's Broadband Service."* [105]

- **Podlove Initiative**
  Developed and funded by the AFC and SBS Independent (SBSi), project featured five 5-minute experimental documentaries broadcast on SBS and an interactive website. Podlove 2 has upped the ante to two 25-minute documentaries, a website and an online game. [106]

Australian Government's Cooperative Research Centres Programme

A fund of $20-40M is to be distributed to CRCs over a seven year period with financing matched by cash and/or in-kind contributions (e.g. expertise and research facilities). [107] The Australasian Cooperative Research Centre for Interaction Design (ACID) was created in 2003 with a seven year CRC grant and is fully incorporated with shareholders from New Zealand who provide in-kind contributions. *"ACID's core focus is in research, development and commercialisation of technologies and content for the electronic games, digital art, performing and visual arts, design, film, television and multimedia sectors."* Research is conducted in smart living, multi-user environments, digital media and virtual heritage. [108]

Telstra Broadband Fund

Begun in February 2002, the goal is to *"stimulate and fast-track the development of new and innovative applications, content, tools or technologies with wide appeal for broadband delivery to Australian businesses and consumers."* Cash grants totaling $10M have been made available and non-cash grants of bandwidth allocations worth up to $20M. Telstra committed to match equivalent industry contributions to the Fund with further support of up to $15M over five years. The second round of the Telstra Broadband Fund saw another $2.53M invested into local broadband development, funding thirteen new projects. [109]

AIMIA Mobile Internship and Work Experience Program

This initiative is designed to offer real-world experience, train new talent, and increase job placement in the mobile content industry for students and recent graduates. It is currently available only to Sydney based organisations which include ABC, Amethon, Hyro, News Digital Media, ninemsn, Sensis, Telstra, The Weather, Tigerspike, and Yahoo7. [110] AIMIA's 2007 Patrons include Big Pond, BRW, Hill & Knowlton, I-Nex, IBM, Intel, KPMG, Microsoft, TressCox, Vividas, Sensis, Viocorp, LaVolta, Tourism New South Wales.

SoftwareAP.net

Global web initiative by Microsoft, Asian Venture Capital Journal (AVCJ), Group Intelligence Inc., Intel, and Red *"to bridge the gap between entrepreneurial high-tech growth companies and the complicated network of venture capitalist and government ecosystems. In the initial phase of*

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103   http://www.afc.gov.au/downloads/interactiveguidelines_final.pdf
104   IBID
105   http://www.abc.net.au/corp/pubs/media/s1436540.htm

106   www.afc.gov.au/podlove
107   https://www.crc.gov.au/Information/default.aspx
108   http://www.interactiondesign.com.au/
109   http://broadbandfund.telstra.com/
110   http://www.aimia.com.au/i-cms?page=3313

the global initiative, companies in Australia, Malaysia, New Zealand, the Philippines and Singapore will be offered the cross-border growth opportunities they often seek across the Asia-Pacific region." [111]

VICTORIA

In 1995, $13M was invested in multimedia over 2.5 years. Investment has been consistent since then with $8.9 M for 2006-7 to continue the Digital Media Fund and $2.8 M for the 2007-08 Next Generation Film Television and Digital Media strategy that includes $400,000 over two years from the Digital Media Fund to secure X/Media/Lab.[112]

Film Victoria's Digital Media Fund

In 2006, $4.05M was committed for 2 years to support Victorian digital sector to develop prototypes for game platforms, digital animation and innovative digital content for broadband, mobile and wireless.

- **Digital Media Scoping**
  Maximum funds available are $5,000 (digital media as primary platform) and $3,000 (secondary platform for a TV/ film project).[113]

- **Digital Media Prototyping**
  Maximum funds available are $250,000 for Sony PlayStation 3/ Microsoft Xbox 360/ Nintendo Wii and $150,000 for other platforms.

- **Digital Media Internships**
  Interns are employed by a digital media company for 28 weeks and receive $16,154 (based on a pro rata salary of $30,000) plus employee benefits for the term of the internship. Film Victoria contributes 60 per cent ($9,692) and the Host Company contributes 40 per cent ($6,462) of intern's salary. In addition, Film Vic provides a grant of $4000 towards expenses including hardware, software and an Intern supervisor. The program *"has a 98 per cent success rate for interns moving into full-time employment."* [114]

QUEENSLAND

Smart State Initiative

Queensland Government committed $2M to the games industry for skilling and $800,000 Interactive Games Industry Package for international promotion.[115] It is administered by the Information Industries Bureau within the Queensland Department of State Development working with the state's game industry and the Australian Games Developers' Association.[116] More than 40 per cent

of Australia's electronic games developers are based in Brisbane. *"With over 600 people already employed across more than 18 local games companies, and many more organisations providing related services such as music and animation, Queensland is the epicentre of games development in Australia."* [117]

Pacific Film and Television Commission Digital Media Scheme[118]

Intended to develop and produce marketable digital media projects; increase state production; expand work options for practitioners; offer training and skill refinement to help practitioners 'break in' to the industry; and foster new business development.

- **Development Investment**
  Up to $7,500 in projects that have market interest .

- **Production Investment**
  Matching market attachment and/or investment up to $90,000.

The Film, Television and Digital Content Skills Formation Strategy (FTVDC)

This project is an initiative of the Department of Employment and Training in partnership with the Pacific Film and Television Commission and the Department of State Development, Trade and Innovation. It is intended to encourage collaboration between industry, government and the education and training sectors to identify and implement initiatives to skill and develop industry. [119]

SOUTH AUSTRALIA

Mobile Entertainment Growth Alliance (mEga|SA) Incubator Program

Launched in 2006, mEga|SA is a collaborative group of industry, education and government bodies. The main project is a cross-discipline Incubator Program for recent university and TAFE graduates, creative professionals and business people to supporting mobile start-up companies.

South Australian Film Corporation Digital Animation Initiative

Partnership with ABC New Media and Digital Services to develop and produce 13x5 minute cross-platform animation series for young/young adult audience with $450,000 in funding plus in-kind investment from ABC.[120]

NEW ZEALAND

Broadcasting Amendment Bill

New federal bill to allow the New Zealand Government to fund a wider selection of digital content on a wider range of formats—NZ On Air and Te Mangai Paho can now fund

111 http://www.softwareap.net/
     http://www.microsoft.com/presspass/press/2007/apr07/04-
     18GLFDay1PR.mspx
112 http://www.dpc.vic.gov.au/domino/Web_Notes/
     pressrel.nsf/8c6a107c25fde2364a2562e600030477/
     39744f5fbb6c4d814a25629600221b50!OpenDocument
113 http://film.vic.gov.au/www/html/417-digital-media-scoping.
     asp?intSiteID=1
114 http://film.vic.gov.au/resources/documents/mediarelease_250506_fv_
     receives_$_from_government.pdf
115 http://www.investbrisbane.com/industries/ict-and-creative-industries/
     why-brisbane.aspx
116 http://www.cabinet.qld.gov.au/MMS/StatementDisplaySingle.
     aspx?id=49862

117 http://www.queenslandgames.com.au
118 http://www.pftc.com.au/pftc/_inc/uploads/177_Digital_Media_Scheme_
     2007.pdf
119 http://www.pftc.com.au/pftc/skills/content.asp?pageid=273
     www.pftc.com.au/pftc/_inc/uploads/273_FTVDC_Stage_One_Report_final.pdf

120 http://www.safilm.com.au/library/Digital%20Animation%20Guidelines.
     pdf

content for multiple media. *"The amendment will allow the agencies to fund such things as video-on –demand on the Internet, and to adapt programmes and other content for alternative platforms, like the Internet and mobile phones."* [121]

New Zealand Film Commission Screen Innovation Production Fund

A partnership with Creative New Zealand to *"provide grants to emerging and experienced moving-image makers for innovative, experimental and non-commercial moving-image productions."* The New Zealand Film Commission contributes $350,000 annually to the fund which was launched in 1996, replacing the former Creative Film and Video Fund which had been running since 1984. [122]

New Zealand's Screen Industry Online Showcase

NZ On Air is developing an online cultural portal to exhibit New Zealand's "rich audiovisual heritage" including television programmes, short films, music videos, new media and related content for Kiwis and the rest of the world. [123]

Department of Conservation Virtual Heritage Project

Animation created by 3D visualization experts, 4D Canvas, is being used by New Zealand's Department of Conservation. The company has received a Conservation Achievement Award from the Cabinet Minister in charge of Conservation, Housing and Ethnic Affairs. When funding becomes available, there are plans to repurpose the content as multi-user learning games. [124]

CANADA

Telefilm Canada New Media Fund

Launched in 2001, it replaced the former Multimedia Fund created in 1998 to support interactive digital cultural content creation and distribution. In 2006, the Department of Canadian Heritage allocated $14.5M per year for two years.

The Great Canadian Video Game Competition

Telefilm Canada's New Media Fund with support from the Department of Canadian Heritage, Electronic Arts, Ubisoft and Radical Entertainment enable game developers to compete for up to $2M in financing and industry mentorship. *"The initiative will take place in three rounds that mirror traditional industry financing. In January 2007, 10 companies will be selected by an industry jury to attain Round 1 status (Innovation) and receive up to $50,000 each in financial assistance to explore their gaming concepts, develop a visual identity and elaborate a plan to raise initial private-sector investment. In March 2007 at the Game Developers Conference in San Francisco, four of the 10 companies will score Round 2 status (Project Development), receiving up to $250,000 each in financing*

to create a playable prototype. In September, Telefilm will announce the winning company that will reach Round 3 (Commercialization), and receive up to $500,000 in matching funds from Telefilm to support the commercialization of its game."* [125]

Bell Broadcast and New Media Fund

Supports the production of Canadian digital media, partnerships and sustainable businesses, research and knowledge sharing and enhances profile of industry. The Bell Fund has invested in new media projects since 1997 and is supported by Bell ExpressVu's annual contribution of over $8M and investments generated by a $10M endowment resulting from the BCE/CTV Benefits. The Bell Fund is a non-profit organisation, certified by the CRTC as an independent production fund. [126]

Ontario Media Development Corporation (OMDC) Interactive Digital Media Fund

Provides *"a non-refundable contribution of up to $100,000 to a maximum of 50 per cent of the project budget to create a market-ready interactive digital media content product."* [127]

OMDC Video Game Prototype Initiative

Up to $500,000 as a repayable contribution to a maximum of 50 per cent of expenses for experienced video game developers with a track record to create a prototype to secure a publisher or attract financing for a market-ready, commercial video game product. [128]

New Media BC

A not-for profit industry association committed to advancing Vancouver and BC, with annual revenues over $1B, as the World Centre of New Media and Digital Entertainment. *"Through networking events, peer-to-peer mentoring programs, advocacy work and marketing, NMBC is building the new media community locally and promoting it abroad."* [129]

- **Fusion 2007**
  Financing forum in Western Canada enabling digital media companies to secure investment for business development. [130]

- **Vancouver International Digital Festival**
  "The event includes international business matchmaking, 'big picture' conference sessions on the latest trends and markets in digital media, a recruiting fair, high-level seminars for creators, designers, and producers, and loads of networking parties." Sponsors include Telefilm Canada, British Columbia Film, Seven Group Digital Media, Vancouver Economic Development, Canadian Heritage, Price Waterhouse Coopers, Nintendo, UK Trade & Investment, Bell Fund, IGDA, ACMSiggraph Vancouver. [131]

121 http://www.scoop.co.nz/stories/PA0708/S00505.htm
122 http://www.screeninnovation.govt.nz/about/index.html
123 http://www.nzonair.govt.nz/news.php&news_id=128
124 http://www.4dcanvas.com
     http://www.virtualheritage.net

125 http://www.telefilm.gc.ca
126 http://www.ipf.ca/Bell/English/BellFund.html
127 http://www.omdc.on.ca/PageFactory.aspx?PageID=3215
128 http://www.omdc.on.ca/PageFactory.aspx?PageID=4786
129 http://www.newmediabc.com/
130 http://www.thefusionforum.com/
131 http://www.vidfest.com/

- **Oppportunity Alert**
  An online worldwide business matchmaking service for digital media companies with a forum to present projects and ability to search for potential partners. This web 2.0 project was funded by NRC Industrial Research Assistance Program, Telefilm Canada and Bell Canada.[132]

British Columbia Film Digital Readiness Program

The program provides up to $10,000 to film, television or digital media companies for strategic planning. Supported activities include needs assessment, exploration of digital opportunities and partners, and the preparation of a comprehensive strategy.

EUROPEAN UNION

MEDIA Plus

With a budget of €755 M over seven years (2007-13), the programme supports the EU audiovisual industry through training, project development, distribution, promotion and festival support. It is jointly run by the Information Society & Media Directorate General and the Education, Audiovisual & Culture Executive Agency. Funding for new technology is focused on "Pilot Projects" and "Video on Demand & Digital Cinema Distribution." [133]

Media Deals

A non-profit association that unites private capital with professional media companies to create successful financial and entrepreneurial partnerships. Supporters include Cineuropa, MediaFinance, peacefulfish[134] and Angelsoft. *"This network was created based on the conviction that the media sector has huge growth potential although it is widely undercapitalised."* [135]

UNITED KINGDOM

BBC Innovation Labs

This collaboration between the BBC and a range of regional partners is also supported by NESTA, the National Endowment for Arts, Technology and the Sciences. *"The Innovation Labs are a series of creative workshops for interdisciplinary teams of professional creative technologists, application designers, software developers and interactive media designers."* The Labs have been open to Scotland, N England, London and S England and plans are to open up to all of UK next year.[136]

SMARTlab Digital Media Institute

Funded by the Arts Council of England with 60 partners around the world. SMARTlab manages creative fellowships and projects on behalf of National Endowment for Science, Technology and the Arts.[137] NESTA has endowed funds of over £300m. In 2006-7, nearly £18m was spent on funding innovation.[138]

FRANCE

Centre National de la Cinematographie Games Funding

Since 2003, €13M has been invested in pre-production for 85 projects with the medium amount of €153,000. Funding of €4-6M per year supports playable prototypes, production and events, meetings and festivals. (Pornographic and particularly violent games are excluded.)[139]

Directorate General for International Co-operation and Development (DGCID) French video game promotion

- **France Game**
  Launched in 2005, this international promotion portal for the French video game industry is intended to help develop international partnerships.[140]
- **The Rising Playground Campaign**
  International campaign to promote the French video game industry.[141]

Network for Research and Innovation in Audiovisual and Multimedia (RIAM)

Launched in 2001 by the Ministries in charge of culture, industry and research to provide support of over €20M for innovative projects arising from partnerships between public sector and private business with participants such as ICT professionals, researchers in technology and the social sciences, and educators.[142]

Video Game Tax Credit

French Government offers tax credits worth 20 per cent of the production cost for games (maximum €3M) provide a quality and original contribution to "European cultural diversity and creativity". *"EU regulators said they were concerned that the French definition of cultural value might be too large and that the tax break might give an unfair advantage to French companies over rivals."* [143]

UNITED STATES

Corporation For Public Broadcasting Public Media Innovation Fund

Grants range from US$5,000 to US$20,000 to support innovation amongst public broadcasters' projects that use Web 2.0 for community interaction, focus on a target audience, and contribute to new media best practice knowledge for broadcasters. Five recipients received approximately US$95,000 in Round One funding.[144]

132   http://www.opportunityalert.ca/
133   http://ec.europa.eu/information_society/media/index_en.htm
134   http://www.peacefulfish.com/index.php
135   http://www.media-deals.org/html/home.html
136   http://open.bbc.co.uk/labs/
137   http://www.smartlab.uk.com/2projects/index.htm
138   http://www.nesta.org.uk

139   www.medienboard.de/WebObjects/Medienboard.woa/wa/CMSMediaDownload/3345
140   www.france-game.org
      http://www.diplomatie.gouv.fr/en/france-priorities_1/internet-multimedia_2347/the-french-digital-media_2348/video-games_2349/index.html
141   www.therisingplayground.com
142   http://www.educnet.education.fr/eng/recherche/riam.htm
143   http://www.iht.com/articles/2006/11/22/business/techbrief.php
144   http://www.cpb.org/grants/grant.php?id=107

American Film Institute Digital Content Lab

AFI DCL offers a research and development environment to incubate new forms of digital entertainment by partnering design and technology experts with entertainment professionals. Sponsors include Microsoft, AOL, Corporation for Public Broadcasting, Adobe, IBM. Participants have included Time Warner (HBO, TCM and CNN), Viacom (MTV, Nickelodeon and Showtime), ABC/Disney (ABC and Disney Channel), NBC/Universal (Bravo, VU Games, Sci-Fi Channel) and News Corp (DirecTV).[145]

MacArthur Foundation[146] New Media Grants

Grants for Persuasive Games include US$1.5M to a professor of educational psychology at the University of Wisconsin teamed with GameLab, a New York firm. The Foundation has also given US$5M grant to PBS docu series 'Frontline' to expand online and develop content for cross-media platforms during the next five years. "Frontline" has been offering info and resources on the Web since 1995. The show plans to develop a video player. The MacArthur Foundation is already an underwriter of the "Frontline/World" series, along with Shell, the Skoll Foundation and the William and Flora Hewlett Foundation.[147]

mtvU Digital Incubator

MTV Networks in partnership with Cisco is looking to tap into the young talent pool through a national competition to inspire a new generation of digital innovators, act as development pipeline for MTV Networks, reveal cutting edge digital trends for Cisco and give college students a unique opportunity to jumpstart their careers. Every year the Incubator gives five student groups US$30,000 to develop innovative digital ideas. The group with the most potential for development into a sustainable business will be awarded up to US$100,000 to produce. They are looking for webisodes, mobisodes, animations, websites, games, social/community tools, short-form programming, podcasts, mobile phone-based interactivity—and any innnovative hybrid. MTV Networks has licensed an application from the first incubator program.[148]

SINGAPORE

Media Development Authority (MDA)[149]

In 2003, MDA was formed by merging the Singapore Broadcasting Authority, the Films and Publications Department, and the Singapore Film Commission to develop the media industry and transform Singapore into "a global media city." Strategic development initiatives will involve: (i) positioning Singapore as a media hub; (ii) exporting locally produced content; (iii) expanding digital media production; (iv) internationalising media enterprises; (v) building workforce; and (vi) fostering a supportive business and regulatory environment. Niche genres have been identified in the areas of digital animation, documentaries, business and education.

TV Content Industry Development Scheme

- Singapore is looking to form bilateral co-production agreements to develop new markets. "Projects need not be produced entirely in Singapore, and collaboration with foreign partners and talents are encouraged to bridge the shortage of funding and talents, and enlarge the audience and distribution base."

Mixed Reality Lab Singapore

Based at the National University of Singapore, MXR *"is aiming to push the boundaries of research into interactive new media technologies through the combination of technology, art, and creativity."* Work has won numerous awards and been featured in museums and press worldwide. One of the companies they've spun off, Brooklyn-Media, is commercializing digital games and mobile entertainment IP and MXR Cubes recently received over $1.4M dollars of private investor funding. *"By exploring commercially creative new media art works...we aim to bring about this vision and bring the future of new media into reality. It is also an aim to make Singapore one of the main global cross-points and nuclei of new media and the exporter of new media in the Asia Pacific region. Thus, one of our main goals is to invent the future through the visualization and realization of new media ideas. This continues the tradition established at Xerox PARC, Disney Imagineering and the MIT Media Lab and by visionary individuals such as Douglas Englebart, Alan Kay, Brendan Laurel and Jaron Lanier."* [150]

HONG KONG

Hong Kong Digital Entertainment Association

Established in 1999, this non-profit organisation is dedicated to supporting the local digital entertainment industry. HKDEA organises the Hong Kong ICT Awards, a video game conference, local and overseas marketing, development assistance, training, and a resource centre. The association is based at The Hong Kong Polytechnic University (PolyU) and was initially supported through a grant by the Innovation Technology Commission of the Hong Kong Special Administrative Region (HKSAR).[151]

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145   http://www.afi.com/education/dcl/default.aspx

146   Foundations are the largest financial supporters of non-profit digital cultural initiatives in the U.S. Other funding sources for U.S. non-profits include public granting agencies, corporate support, membership fees, in-kind contributions, earned income, endowments, licenses/subscriptions of electronic resources, gifts, donations and individual contributions, conference income, and government appropriations. There is a growing trend amongst Foundations to discontinue arts programs and focus more on health. Foundations are criticized for being "very willing to give seed money for projects but unwilling to provide general operating support to sustain those projects once they are up and running. Foundations were also taken to task for being collections-driven, rather than user-driven, in their funding. They were thought to be "behind the curve" in understanding digital humanities projects and needs. The time between submitting a proposal and receiving a grant was deemed too long for digital projects. Respondents commented that this lag, which is particularly long with federal grants, precluded organizations from responding to an emerging digital initiative in a timely fashion." http://www.clir.org/pubs/reports/pub118/part2.html

147   http://www.nytimes.com/2006/07/23/arts/23thom.html

148   http://www.digitalincubator.net

149   http://www.mda.gov.sg/wms.ftp/media21.pdf

150   http://137.132.165.250/index.php?option=com_content&task=view&id=40&Itemid=71

151   http://www.hkdea.org/?language=en

Cyberport[152] is a US$2B (HK$15.8B) project owned by the government of the HKSAR. The complex includes the Digital Media Centre, Cyberport Institute, iResource Centre, Hong Kong Wireless Development Centre and will house a strategic cluster of approximately 100 IT companies and 10,000 IT professionals. (It also includes four office buildings, a five-star hotel, a retail entertainment complex and a deluxe residential development.)

- **Cyberport Digital Entertainment Incubation-and-Training Centre (Cyberport IncuTrain Centre)**
  Goal is to incubate digital entertainment and multimedia companies in Hong Kong, with initial focus on digital game and film animation. Intended to promote entrepreneurship and competence for commercialisation success; create a cluster and foster business development of small to medium size companies; reinforce Hong Kong's leading position in digital entertainment; enhance collaboration with game developers in Mainland China; groom new talent; and enhance industry cohesion and networking.[153]

- **Cyberport Institute of Hong Kong (Cyber.i)**
  Established by the University of Hong Kong at the Cyberport for IT training and business development and offers collaborative opportunities between academics and the IT industry.[154]

Digital Pioneers Initiative

International mentorship programme is a partnership with British Council to nurture a new generation of digital media entrepreneurs. Each year "six young digital pioneers who demonstrate leadership potential and international vision will win a chance to work with and learn from top players in the industry in both Hong Kong and the UK." *"The British Council has been developing Young Creative Entrepreneur programmes since 2003. We have experience of fostering creative industries development in over 20 countries...The UK has established itself as a creative hub for Europe—Hong Kong is well positioned to be a gateway for Greater China and Asia. Through this programme, future leaders of digital sectors from Hong Kong and the UK can build on shared experience and form an international network."* [155]

CHINA

Cyber Recreation District

This massive digital media industry investment by the Chinese Government combines virtual and physical entertainment and business. In the 'real world,' CRD is an 85 square kilometre precinct in Beijing for digital entertainment and media companies, hotels, restaurants, theme park and gardens. The CRD has spent $US200M ($A233M) developing the virtual world of Dotman which is scheduled for launch in 2008. Based on the Entropia Universe platform from Swedish developer MindArk, Dotman will be a virtual business world allowing companies to 'break into' the Chinese market without physically traveling. David Liu, the founder and president of the CRD, recently visited Australia to speak at the X Media Lab forum in Melbourne and connect with Australian companies interested in working with the CRD. Dr Liu believes the Dotman virtual world will accelerate the development of companies and self-employed "dot-men" creating an estimated 10,000 jobs. *"In the CRD area now we have more than 200 cyber recreation companies, most of them focused on online and handset games and new media. And Australia has a lot of good companies focused on these areas, and I do hope these companies can expand their business to China's CRD area and we can help them to expand their business opportunities."* [156]

Microsoft Research Asia

Located in Beijing, research areas include Digital Media and Digital Entertainment. Asia Pacific University Relations include Australia and research themes include Internet Services, Mobile Computing in Education, Gaming and Graphics. *"MSRA and Microsoft Australia invests not only funding but also a considerable amount of time and resources to assist academics in their research collaboration, curriculum innovation, talents fostering, and academic exchange."* [157]

152 http://www.cyberport.com.hk/cyberport/en/home/home_flash.html
153 http://www.cyberport.hk/cyberport/en/home/facilities_n_services/incu/
154 http://cyber-i.hku.hk/
155 http://www.britishcouncil.org/hongkong-creativity-and-society-digital-pioneers

156 http://www.crd.gov.cn/en/crdEnglish_news.asp
     http://www.smh.com.au/news/web/joining-the-dots-to-new-virtual-worlds/2007/08/06/1186252627367.html
157 http://research.microsoft.com/ur/asia/sub/australia.aspx

WA'S DIGITAL MEDIA INDUSTRY: RECOMMENDATIONS

While working on this report, numerous issues, ideas, and questions were discussed with industry stakeholders. One question that came up is of particular note. What can the digital media industry learn from the success of WA's contemporary music industry? First, it was important to consider why WA's contemporary music industry has been so successful. Responses included: (a) natural wellspring of talent, (b) collaborative nature of industry, (c) regular honing of craft through 'jamming,' (d) embracing of digital media to increase market share, and (e) the WA Government's support and commitment to growing the contemporary music industry by investing in a significant long-term funding package. No doubt all of these factors have contributed to success but the State Government's support has been the key piece of the puzzle. Just as the Contemporary Music Industry Taskforce used WA's wine industry as a model for strategic development, the digital media industry now has two success stories to follow. In both cases, it's been shown that State support and investment have led to industry growth and increased national and international market share. The Contemporary Music Industry Taskforce concluded that support should be "both flexible to allow for a range of activities and opportunities and continuous to support practitioners at all stages of their career. Further, "nurturing the independent, entrepreneurial dynamism of the industry" should be the most important aspect of the development policy. [158] This report recognises the Music Taskforce's sage advice and advocates a similar approach to the digital media Industry.

A successful digital media industry with long-term growth potential requires a combination of innovation, creative excellence, collaboration and business acumen. In order to grow WA's creative innovation economy and cultural wealth, the digital media industry needs to be empowered to develop, produce, market and distribute high-quality, low-cost interactive multimedia. Overall, it is recommended that ScreenWest be given additional funds to include digital media as a key component of its mission to: (1) foster the development and production of quality, marketable content; (2) extend the creative and professional development of Western Australia's content producers; and (3) promote Western Australian screen culture. Ensuring WA's content producers are competitive in the global market requires that they move beyond the traditional categories of film and television and embrace the wide range of digital storytelling opportunities. To achieve this goal, significant funds need to be designated for three areas: (I) Management and Services, (II) Development, and (III) Production and Partnerships.

MANAGEMENT AND SERVICES

Government funding coordination

A consistent issue mentioned by stakeholders is that current funding does not cover the range of digital content being developed in WA. It is recommended that ScreenWest, DCA and DoIR establish a clear set of funding guidelines to ensure that a diversity of digital innovation is supported by the State, and that each of these agencies receives adequate funding to support a set of appropriate initiatives. This report addresses digital media and arts but there is also a need to support IP and business development for digital content that does not fall under the auspices of ScreenWest and DCA. Particular support should be for innovative web 2.0 businesses with strong market potential to develop solid business plans and enable them to gain access to venture capital and foreign markets. These businesses could be in the areas of content aggregation, social networking, e-learning, simulations, and digital advertising.

Streamline funding application process

Clear guidelines should help improve funding efficiency along with online submission and clear requirements.

Digital Media Project Manager

A lack of understanding of the digital industry by Government has been repeated as a major problem by stakeholders. ScreenWest needs an experienced Digital Media Project Manager who understands multimedia development, production, marketing and distribution and can interact with industry.

Industry review panel

As with ScreenWest's peer assessment procedures in funding film and television projects, there should be a panel of digital media peers taken from a large rotating pool to consider funding applications. This could help encourage a better sense of collaboration in the industry but it will be crucial to protect confidentiality, avoid conflict of interest and IP infringement.

Digital media guidelines

An oft-repeated concern is that content producers who are not experienced with digital media are unaware of the cost and time required to develop and produce animation, websites, games, and other interactive content. In order to ensure that the work of digital media practitioners is properly valued, there should be a pay scale and set of cost minimums for digital content creation. These should be based on AFC's digital media guidelines and a survey of WA's digital media practitioners.

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158 Contemporary Music Taskforce Report. DCA, 2002.

Marketing

WA's visibility and position as a global player in the digital media industry needs to be strategically enhanced. A marketing strategy incorporating the following components is recommended.

- **Foreign market presence**
  A presence at high-profile international digital markets such as MIPTV featuring MILIA and MIPCOM in Cannes increases WA's visibility as a player in the global arena. There appear to be a growing number of pitching competitions that are a great way for innovative producers to gain worldwide exposure, e.g. Content 360 International Pitching Competition.[159] The BBC Categories are now open to Australians in the categories of (1) Teenage Drama and Entertainment, (2) Cross-Platform Documentary, (3) Children's Content, (4) On-Demand Participation, and (5) Localness. Although Australian projects pitching in the BBC categories are not eligible to win monetary prizes, there is still a great opportunity for exposure and networking.

- **Awards**
  Accumulating prestigious awards that showcase WA's digital media capability would help bolster the State's reputation. Submitting Indigenous digital media projects to the World Summit Awards is a possibility.

- **Events that attract international attendance**
  Support should be given for conferences, festivals, workshops, labs and incubators in WA that draw international attendance. Holding an X|Media|Lab in WA should be explored.

- **Branding Campaign**
  A branding campaign could help establish WA's niche in the global marketplace. The State's current content strengths—kids, documentaries, Indigenous, and animation—could be leveraged into the digital domain by branding WA as a hub of excellence for "enriching entertainment." This speaks to the web 2.0 convergence of entertainment and information and evokes the image of positive cultural content that engages the audience, stimulates imagination, provokes thought, and enhances understanding of the world. "Enriching entertainment" is food for the mind and heart. And there is a growing appetite for this kind of food around the globe.

- **Online showcase**
  This content showcase and tourism portal would feature WA's culture and life via the web to a worldwide audience. It is envisioned as a collaborative community project with professional and user generated content that demonstrates the innovative excellence of the State. It's a great opportunity for State-wide partnerships including ScreenWest, DCA, DoIR, WA Tourism, industry organisations, cultural institutions, and schools.

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159 http://www.miptv.com/App/homepage.cfm?appname=100526&moduleid=286&campaignid=12340&iUserCampaignID=41522103

DEVELOPMENT

Industry

To grow WA's digital media industry, upskilling will be necessary in project and profitable business development as well as industry development. Just as the Government has helped, through funding ScreenWest and other agencies to develop a group of independent film and television production companies in WA, support will be required to both assist these companies to evolve, and to build a new generation of digital media companies.

This will include 360° project development, technological knowledge, cutting-edge, cost-effective production techniques, multimedia project management, business plans, business diversification and franchise creation, market research, audience demographics and usage, budgeting cross-platform projects, raising capital from diverse sources, multi-platform contract negotiation, intellectual property (IP) and rights management, marketing, and distribution.

Highly skilled workforce

In an industry like WA's with limited budgets and stream-lined production staffs, practitioners must be well-trained, efficient and versatile. The inconsistency of any one kind of work necessitates that WA's digital content producers be flexible. For example, animators should be able to work in a range of jobs such as advertising, simulations, series, games, film and web design. Training needs to include art, animation and programming with traditional drawing and 2D cel, graphics and design, vector-based animation, and extensive 3D animation.

In terms of training models, it is worth examining international programs that have outstanding success rates. For example, California Institute for the Arts has trained many industry leaders in a stimulating, creative atmosphere that combines (1) self-motivated, intellectually curious and creative risk-taking students, (2) outstanding faculty of professional artists and technicians, (3) extensive and regularly upgraded facilities and equipment, and (4) collaboration between different art disciplines.[160]

Work-readiness

WA's schools need to graduate highly-skilled workers with the flexibility and work ethos necessary to gain employment in the industry. The media industry is the most competitive in the world demanding the 'best and the brightest.' Students need to be pushed to take creative risks and develop innovative work and be self-motivated to seek a level of international excellence. And be prepared to pay their dues because hard work and long hours await them. Only those who wish for an easy route believe it is a matter of luck. Talent rises to the top but it needs to be supported, nurtured, encouraged and pushed. A good teacher prepares students to work with future creative directors and producers who will expect them to generate excellent content under tight time constraints.

Alumni networks, Internships and Mentorships

In the U.S., a key reason for attending prestigious training programs like NYU, USC, and CalArts is that they facilitate job placement by helping graduates 'break-in' to the industry. A degree from a prestigious school helps get you 'in the door' and shrewd job applicants tap into extensive alumni networks. WA's schools need to establish stronger alumni networks to help with job placement. In addition, there should be internship programs for school credit and/or payment—this avoids any 'indentured servitude' type situations. It is advised that traineeship and mentorship programs also be established in conjunction with WA companies for graduates. Early career content creators need to go through the apprentice stage and learn from those who have more industry experience how to hone their craft, work to deadline and budget, keep clients and media executives happy and produce excellent work.

Enhance workforce

This includes outreach to secondary schools to encourage entry into the industry. It can entail attendance at job fairs, industry lectures and content showcase as well as contests to leverage young people's interest in user generated content into a career in the creative digital content industry.

This also includes practitioner attraction from outside the State leveraging WA's natural beauty and relaxing lifestyle. There is a potential to turn WA into a Northern California, Seattle or Vancouver—a culturally vibrant area that avoids much of the stress of the rest of the world.

Support industry diversity

Encourage young women to enter digital media industry, especially as programmers and developers.

Promote career-long learning

An environment of self-motivation and continual craft development needs to be fostered. Like medical practitioners who regularly upskill to keep pace with fast-changing knowledge, techniques and technology, the media industry must also commit to career-long learning through seminars, classes, conferences, and e-learning via news sites, blogs and online tutorials.

There appears to be a problem in WA that practitioners who need upskilling the most aren't attending seminars and other events. It has been conjectured that this is due to a combination of lack of time and a disinclination to embrace digital media. It is suggested that an easily accessible aggregation of online resources in a Knowledge Bank (described below) and upskilling incentives are solutions. The latter would make development funding contingent on proven upskilling. Again, the medical industry is a model where proof of upskilling is a requirement to ensure that a level of excellence in practice is maintained.

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160   http://www.calarts.edu/filmvideo/

Knowledge Bank

There should be an online resource centre and database for WA's digital content industry featuring an aggregation of links and pertinent information including local, national and international industry news, business development, funding, blogs, conference reports, organizations, employment opportunities, online networking, festival and competition information, and content showcases. Leveraging existing resources by expanding FTI's website and linking to AFTRS' extensive offerings makes the most sense. There should be an online-offline convergence of resources, including having all upskiling seminars, classes, panels, and conferences featured. To improve information exchange and collaborative knowledge building, those who received funding to attend conferences, festivals and markets should be required to share their experience online. Industry-wide networking and dialogue should be encouraged by rotating industry bloggers, discussion forums, and linking to existing industry blogs, groups, content and profiles.

Inclusive Digital Content Industry Organisation

A number of respondents identified that lack of a single organisation to represent the industry. There are a number of digital industry groups in WA—AWIA, Siggraph, IGDA, WAnimate, Creative Digital Content Industry Reference Group, and ADCA—but no single inclusive body that represents all creative digital practitioners at all career stages. Although ICTICC is broadening to include content producers, it is recommended that there be a separate body representing the creative end of the industry that reflects its focus and interests. Observations have been made that the most successful organisations are those that are connected to international bodies like IGDA and Siggraph or national ones like AIMIA, SPAA, Writers and Directors Guilds.

A possibility is for some of WA's existing organisations to converge and consider partnering with AIMIA (Australian Interactive Media Industry Association) which would help connect WA's industry to the rest of the country. AIMIA has been in existence since 1992 and has a proven track record as an industry advocate to Government, leader of foreign trade missions and pre-selection for the WSA awards. However, this really ought to be a decision made by WA's digital industry independently of government. Government should encourage the industry to organise and identify their spokespeople.

Conference and trade-fair attendance

Travel support should be given for producers to attend national and international events. In the interest of fairness, this funding should be rotated throughout the industry and those who attend should be required to share their knowledge via an online report such as an industry blog.

PROJECT DEVELOPMENT

Innovation incubation

A new generation of business-savvy creative digital entrepreneurs needs to be groomed to ensure the survival and future growth of WA's digital industry. Innovation comes from risk-taking entrepreneurs who dare to blaze new creative trails. With so many new media success stories arising from inspired university students and post-graduates (Microsoft, Google, YouTube, MySpace, Facebook, etc.), the technological knowledge and vision of WA's young creative resources should be respected and nurtured. Incubators have proven to be an effective means of developing the best talent and mentoring profitable business development. Partnerships between Government and private business should be explored to empower technological and creative leaders.

Co-working spaces can act as organic digital labs. Government support of co-working spaces in key creative areas throughout the State (e.g. Northbridge, CBD, Fremantle) deserves consideration.

BUSINESS DEVELOPMENT

Strategic development

For existing companies, support should be given to diversify and develop profitable new business models based on solid market research and testing.

Start-up assistance

This needs to be reserved for companies with marketable IP and strong business plans to enable the seeking of venture capital and access to foreign markets.

Diversified fundraising

WA's content producers need help extending their creativity to the area of fundraising. It may be necessary to bring an expert to teach people how to raise capital from diverse national and international sources including Government, private business, foundations, and venture capital.

Access to foreign markets

Assistance in accessing overseas markets is key to industry growth. A number of businesses are looking to break into the American and Asian markets particularly. Hong Kong and Singapore have been identified as areas of opportunity as well as China.

PRODUCTION

Collaboration incentives

To counteract the fragmentation of WA's creative industries a collaborative environment should be fostered. This could be achieved in part through partnership incentives that give priority to production teams that incorporate traditional and new media producers. Business collaboration can lead to lasting partnerships, the formation of new hybrid companies which can be more powerful competitors in the global market.

360° Production

As commissioners increasingly demand convergent content, it is crucial that projects be produced across multiple platforms. Convergent projects that extend stories into different media—television, web, mobile, games—in innovative ways need to be supported. This funding should be reserved for creatively integrated digital projects that offer audience interaction and engagement and are equally compelling in all media.

Kids franchises

Those who are developing content for the younger audience need to understand that this demographic is platform agnostic and uses multiple media simultaneously. There is vast commercial potential for kids content that is both entertaining and informative and WA's producers need to be inspired to build diverse franchises with multiple revenue streams.

Indigenous digital projects

Capturing Indigenous stories on digital film is a project of immense cultural value and the content can be used into a wide range of interactive multimedia. Indigenous producers should be encouraged to explore the myriad opportunities presented by digital media to extend their audience reach and develop new income sources.

Developer Kits

Victoria is helping to provide game developers with subsidized vendor platform developer kits following Queensland's example. It is something that WA should also consider.

"...the Game Developers Association in conjunction with the Victorian Government has developed an innovative role in brokering agreements with platform vendors like Sony for subsidized access to developer kits under the aegis of the Association. This is not only about lowering the costs of access to these kits but is just as much about reducing the credentialing barriers faced by new developers." [161]

PARTNERSHIPS

Networking opportunities

Networking and personal connections lead to partnerships so it is important to foster interaction at the state, national and global levels. Incubator labs can help bring together WA's creative industries (media and arts), technology sector and education as well as networking events. Events co-sponsored by different industry organisations would help encourage the mixing of different creative communities. Conferences, festivals and markets can help practitioners make national and international connections.

Commissioners

ScreenWest currently supports companies that have domestic partnerships with ABC, SBS, the Nine Network, and the Seven Network. International partnerships include BBC, National Geographic, Discovery, Channel Four and the Disney Channels. ScreenWest should expand current relationships and seek new partnerships domestically with companies such as Telstra, iiNet, Optus and internationally with Animal Planet, Comedy Central, the Media Development Authority in Singapore and the Digital Media Centre and Cyberport Institute in Hong Kong. Establishing relationships with Australian divisions of international corporations such as Nickelodeon, Microsoft, and THQ could be an inroad to overseas markets. By expanding their pool of partners, ScreenWest can offset the cost and help grow WA's digital media industry while establishing the State as a respected player in the global market.

Private Investment

WA has vast wealth from the resources sector that is not being fully accessed. Some cultural media investment can offer monetary gain while other types of support can provide positive public relations. The latter can be more valuable to a large corporation since good PR ultimately contributes to financial stability and growth. Although WA's digital producers are increasingly looking to overseas venture capital, it is still worth exploring ways to keep investment within Australia.

Offshore productions

Attempts should be made to attract more offshore production to WA. Post-production and animation are two key areas.

Business relocation

Attracting the relocation of businesses to WA would help expand the State's digital media industry. The addition of overseas talent and expertise would help bolster the industry and establish it as a vibrant hub of creative excellence.

It is hoped that these recommendations will lead to the funding of initiatives that allow ScreenWest to grow the industry and ultimately become a supporting body for creative innovation on multiple screens without limitation by category or genre.

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161 Cutler & Company. Producing Digital Content - Cluster Study Stage 2. DCITA, 2002.

SECTION 4.0

WA'S DIGITAL ARTS SECTOR

WA'S DIGITAL ARTS SECTOR: OVERVIEW

" *Over the next 10 years, it is important that strategies are put in place to ensure that the strong base from which Australian media arts began is strengthened and broadened. There must be a focus on developing an environment for artists and organisations that enables the best and most inspirational media arts, no matter how technically challenging, to be created and then exhibited to the widest possible audience, as a normal part of the programming of most institutions and venues."* [162]

New Media Arts Scoping Study Report to the Australia Council for the Arts

The beauty of art is that it exists everywhere, even in the most isolated locations. No matter where you go on the planet, you will find artists—people with a unique perspective and an ability to express it in such as way that it creates a profound reaction in the audience. One interviewee commented that WA can be viewed as an artists' colony—its isolation is a benefit for those looking to create meaningful work outside the commercial demands of large cities.

It is difficult to ascertain the exact amount of digital art creation in WA due to elusiveness of definitions, fragmentation, and the fact that many artists "fly under the radar" as one artist described it. However, there is some work including digital mapping and visualization projects, museum podcasts, online writing, experimental digital video and animation, virtual communities, and online sales. The contemporary music industry is effectively leveraging digital media but their fellow artists do not appear to be taking full advantage of new technology to push creative boundaries, increase audience reach, market and distribute. This section is an overview of the strengths, weaknesses, and challenges faced by WA's digital arts sector. The following section will explore the opportunities for leveraging digital technology for production, marketing and distribution.

Note that much of the information previously presented regarding the digital media industry is applicable to the digital arts sector. An attempt has been made to avoid repeating too much information.

STRENGTHS
Creative energy
WA has a small but vibrant arts community filled with inspired creators and content. It is evident when you hear screams for local bands, laughter for native comedians, cheers for local theatre performances, and amazed applause for the resident ballet. It is evident when you witness people marveling at WA's museum exhibits, moved by the work of home-grown authors, proudly pointing out the shop of a local fashion designer, and hearing people express outrage over a provocative art exhibit.

Some use of digital technology
Contemporary musicians are effectively using digital technology for marketing and distribution. Online networking is also being used by other artists to raise international profiles, for example WA's experimental audio artists. Symbiotica has efficiently leveraged the online presence of the bio-art community via blogs, forums, and e-groups to connect to academia and international festivals. Other limited online offerings by WA's artists and arts organisations include websites that feature text and image-based content such as schedules, show info, blogs, photos, and downloadable wallpaper. E-commerce includes online ticket, merchandise and some artwork sales.

Web 2.0 art
Concrete Dialogues is an interactive, collaborative mapping of WA's writers using Google Earth technology. It is supported by the Federal Government through Australia Council and the State Government through ArtsWA.[163]

"The Broth" is an online art community created by Perth entrepreneurs that enables creative collaboration between visitors from around the world. A blogger/ social media Professor from the University of Sydney enthused: *"There must be something in the water over there–Perth is rockin', Web 2.0-wise. Hmmm maybe I should move there."* [164]

Indigenous art
e-commerce websites have enabled Indigenous artists in remote communities to market and sell their work worldwide.

Inclusive funding
DCA's funding is open to new media work. DCA has also been noted as being "flexible" and willing to work with artists to accommodate innovative projects. There is also funding that directly encourages hybrid work and use of digital distribution.

- **Research and Development Fund**
  Initiative to support interdisciplinary work devolved from DCA to the Perth Institute of Contemporary Arts

162 http://www.ozco.gov.au/news_and_hot_topics/news/new_media_
     scopstudy_report/files/4144/New%20Media%20Scoping%20Study%20-
     %20FINAL.pdf

163 http://www.dialogues.concrete.org.au/
164 http://www.thebroth.com/
     http://silkcharm.blogspot.com/2007/08/australia-thebroth-art-
     community.html

(PICA) providing up to $15,000 to hybrid projects. *"PICA plays a key role in Perth's creative community and seeks to provide support to artists at all stages of their career through programming, development, mentoring and advocacy opportunities. In many aspects of its operations, PICA might be understood as an incubator: providing resources, mentoring and support for both emerging and established artists whilst promoting new and emerging ideas, forms and practices to the broader community."* [165]

- **A Few New Words Poetry Publishing Initiative**
  Designed to encourage emerging and established WA poets to publish new, short works in a range of media including Web and portable.

Organisations and Festivals

A number of DCA supported organisations and festivals feature new media including the Centre for Interdisciplinary Arts (CIA), PICA, Artrage, BEAP (Biennale of Electronic Arts Perth), skadada, AWESOME Arts Australia Ltd and Buzz Dance Theatre. However, stakeholders have repeatedly stated that a richer selection of cutting-edge cross-platform electronic art could be featured.

Collaborative projects

- **SymbioticA**
  Located at UWA, the Art and Science Collaborative Research Laboratory explores the convergence of life science, biotechnology, society and the arts and draws a range of scientists and artists. The first research laboratory that "enables artists to engage in wet biology practices in a biological science department" and winner of the 2007 inaugural Golden Nica for Hybrid Arts in the Prix Ars Electronica. [166]

Partnerships

There are some digital arts partnerships which demonstrate the potential and need for more. For example, ABC Perth Radio offered a podcast tour on its website for the WA Museum exhibit "National Treasures from Australia's Great Libraries Exhibition." This is a great first step in digital museum content but it is lacking reciprocity—the podcasts are not currently available on the museum website which is the obvious place for visitors to look. [167]

WEAKNESSES

Not taking full advantage of opportunities

Like the digital media industry, there has been a tardiness to take advantage of digital opportunities in terms of development, production, marketing and distribution. An overview of opportunities will be reviewed in the next section.

Lack of digital content

There is an absence of rich multimedia content on WA arts websites which primarily offer online text-based content and static images. There is a scarcity of audio and video, interactivity, digital education resources, and audience building community tools. These sites could be leveraging Web 2.0 content to extend their reach to audiences with on-demand multimedia content for Web, mobile and portable media players that can be shared and the opportunity for audience comments, creation and sharing. The myriad opportunities to extend reach and develop new revenue streams through digital marketing and distribution are explored in the next section.

The websites that do exist need better Quality Assurance testing as a number of them are riddled with broken links. For both the arts and media sectors, it is crucial to ensure that content is working properly for optimum user experience.

Limited exhibition of electronic art

Cutting-edge electronic art means more than simple video and multimedia art which has been around for decades. WA's exhibition spaces need to be motivated to push their creative boundaries to commission and deliver art that is as provocative as the content audiences are already accessing online and via mobile devices.

Limited digital arts experimentation

Although DCA's diverse funding is open to digital art projects, there appears to be a limited number of artists taking advantage of the opportunities in this area. The next section explores some of the areas that could be explored.

Public engagement

Contemporary art and technology exhibits such as bio-arts have been characterized as 'highly theoretical,' 'academically oriented' and 'inaccessible to the public.' This suggests that artists and arts organisations need to develop a keener consideration of the audience in both presentation and curation. Engaging the audience requires particular focus, especially when exhibiting intellectually challenging work.

Need for digital literacy

There is a limited understanding and appreciation of the creative potential of digital technology and how it can ensure the future survival of WA's cultural offerings by engaging the audience in exciting new ways. Artists, arts organisations, funding agencies and sponsors need to be inspired to question preconceived notions in order to become future-forward leaders embracing a diversity of digital practice. Upskilling and training can help the arts community better utilise the potential of digital technology to increase audience reach locally, nationally and internationally. This includes an understanding of web design, digital marketing and leveraging of social networking for audience development and outreach. Collective imaginations require stimulation in order to conceive of a future where engaging in the arts is a convergent cross-platform experience. Curators and artistic directors should be empowered to embrace the radical transformative nature of contemporary art.

165   http://www.pica.org.au
166   http://www.symbiotica.uwa.edu.au/
167   http://www.abc.net.au/perth/stories/s1951741.htm

Through creative upskilling, the traditional conceptions of performance and exhibition need to evolve beyond time-space constraints. Digital technology offers the incredible power to stretch the canvas, page and stage to infinite proportions. This should be a source of excitement. Enhanced understanding of convergence can help WA's arts sector ensure the co-existence of traditional and digital art through the synergy of live events and physical spaces with new media platforms such as the Web and mobile devices.

Difficult for WA artists to get exposure

Stakeholders have repeatedly stated that there is a lack of respect and recognition for WA artists in Australia and it is often easier to exhibit internationally. It has also been noted that there is lack of critical review and feedback in WA and it is difficult to secure coverage in national journals and press. Establishing a critical forum in WA could motivate a higher standard of artistic excellence and the Web could be better used to increase exposure and interaction. Involving the community through citizen journalism and the blogosphere can inspire passionate debate. Web 2.0 links and tags enable local coverage to extend internationally in an interactive dialogue involving art professionals and the audience.

Limited collaboration

WA's creative industries are not collaborating enough with each other and with other local industries to leverage their mutual strengths in the digital arena. The arts sector could have more extensive partnering with digital media practitioners, technology, and universities to reach cultural and financial benefits.

CHALLENGES

The traditional arts are being fundamentally challenged by audiences increasingly used to content that allows interacting, controlling, commenting, creating, and sharing. *"The implications for the arts are clear. If they don't embrace personalisation, or offer consumers the chance to tailor their experience and co-produce creative products, they increasingly won't be seen by a large proportion of their future potential audiences, growing up digital. The traditional arts may be happy to survive on the patronage of an ageing gerontrocracy, disaffected audiences will not be."* [168]

Audience driving change

It is getting increasingly difficult for artists and arts organisations to create in a vacuum without consideration of the audience. The older audience used to passive watching and listening is being replaced by cultural consumers who expect more active engagement. The desire for on-demand access to content at any time affects not only media but arts as well.

360° Art on demand

Audiences familiarised with digital media expect multi-platform content that they can control and interact with. Artists and arts organisations need to move past the space-time limitations of exhibits and performances to offer interactive digital art 'on demand.' Projects require conception on multiple levels that offer engagement in the physical world as well as online, mobile and portable device content such as audio and video, user reviews, community interaction like forums and 'send-to-a-friend' features, behind-the-scenes production and background information, blogs, and the ability to review, create and share content. This is not simply ancillary marketing but more robust and engaging realisations of creative projects. Convergent art experiences can take place in physical and cyberspace with each synergistically enhancing the other.

Funding for digital media-arts

It has been suggested that budgets for Arts Development are not currently sufficient to cover rich digital content. Funding will need to be re-examined including flexibility of categories as there will be an increasing convergence of development, production and marketing content.

Audience attraction

It is increasingly difficult to draw audiences to live cultural events with so many entertainment choices competing for their attention. Creative new methods need to be employed to develop and expand audience.

Conveying the importance of the arts

Traditional arts are seen as 'elitist' and inaccessible and the public does not appreciate their importance. It is not considered worth the time or money to attend cultural events because the arts are not seen as relevant. Making art accessible and relevant are the major challenges for those working in the arts sector.

Funding

Arts organisations are already find it challenging to finance their work and now they must face the burden of budgeting for digital content. A fundraiser for the WA ballet commented that they can barely pay for the productions and can't even begin to think about offering digital content. There is a need for increased understanding that investment in digital marketing, distribution and strategic development offer cultural and economic rewards.

Diversifying, evolving and embracing change

The challenge for traditional arts organisations is to understand that digital content offers opportunities to expand audience and develop new revenue streams through marketing and distribution.

Infrastructure

Older exhibition spaces and performance venues are not equipped for digital projection, wireless and sophisticated multimedia work. This means that cutting-edge art projects can only be fully realised in a limited number of venues and the creative diversity of older institutions is limited.

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168   Knell, John. "Whose Art is It Anyway?" Intelligence Agency, 2006.

WA'S DIGITAL ARTS SECTOR: AREAS OF OPPORTUNITY

Digital technology offers tremendous opportunities to WA's arts sector including visual arts and crafts, theatre, dance, writing, and music. Digital technology is even affecting fashion. It can help increase appreciation for the arts and expand audience while enabling artists to create, market and distribute in innovative ways. And as a subject, digital technology provides a wealth of creative possibilities.

It should be noted that the idea of audience interaction is by no means a new concept. The popular or so-called 'low arts' (e.g. improv comedy and contemporary music) have traditionally engaged audiences, giving them input and control by suggesting ideas and requesting content. In some ways, digital technology is returning the arts to their roots. We are recalling a time when audiences engaged more closely with performers and creative expression was a community endeavor with the entire village painting, making music, creating costumes and performing.

ACCESS

Perhaps the greatest potential of digital technology is the ability to make the arts more accessible and comprehensible to the public. For example, people living in remote areas can access the arts through online and mobile content including live streaming of performances. By interacting with multimedia content, audiences young and old can increase their understanding of the meaning and importance of artistic expression and cultural heritage. There is also a great potential to preserve cultural archives for future generations as well.

The director of the Miller Theatre in New York said of their digital offerings:

" *Our next step is to begin streaming concerts and our radio program, and add more podcasts (video and audio) of interviews with artists. What this means to us is greater outreach, i.e, our concert hall holds about 900 people, radio reaches the NYC metro area, but web is, of course, world wide…We give and get info, educate, entertain, provide resources—all digitally."*[169]

The following are some other examples of how the arts are being made more accessible through digital technology.

Live streaming performances
The Australian Film Commission (AFC), the Australian Ballet and the Sydney Opera House partnered to broadcast live performances of The Nutcracker to regional audiences in Australia via satellite using the AFC's Regional Digital Screen Network (RDSN). *"This is the first time in Australia that digital cinema technology has been used to give regional audiences the opportunity to experience a live performance by one of Australia's flagship arts companies on the big screen at the same time as an audience in a metropolitan area. This unique partnership between the AFC, The Australian Ballet and the Sydney Opera House represents an important step in making live performance more accessible to all Australians and shows how digital technology can transform our life experiences."*[170]

Video can be streamed online as webcasts and on mobile devices. The Sydney Symphony has partnered with BigPond to offer on-demand live streaming video.[171] Missy Higgins recently performed Australia's first concert simulcast live online and over a 3G network, also streamed by BigPond. *"This also demonstrates the enormous potential for mobile and online delivery to dramatically increase audiences and exposure for Australian artists."* [172]

Interactive exhibitions
In 2002, the Tate Modern was the first gallery to offer a wireless multimedia tour. It also features an extensive online learning area with over 300 hours of video and tutorials on art. This includes artist interviews, archive tours, resources for the visually impaired.[173] The Metropolitan Museum of Art offers free downloadable video and podcasts from their website with exhibition previews, history, background, and behind the scenes information. Users can subscribe to automatically receive the latest episode.[174] The Te Puia galleries in Rotorua, New Zealand use digital technology to enhance indigenous cultural tourism. Based on extensive research and consultation with key Te Arawa kaumatua (Elders), the Whare Tapere gallery incorporates 3D game technology and multi-user interactive storytelling. The Think Maori gallery delivers an immersive experience combining animation and interactivity to reflect Maori culture through Whakarewarewa landscape.[175]

PRODUCTION

As in the case with digital media, digital arts offer immense opportunity for increased audience engagement. The biggest overall trends are interactivity, convergence, experimentation, and imaginative use of technology. Digital arts content can include streaming and downloadable audio and video for PC and portable media players such as previews of shows, podcast museum

169 Petzold, Roxanna. Director, Miller Theatre. via email.

170 http://www.if.com.au/PR/View.aspx?newsid=365
171 http://sydneysymphony.bigpondmusic.com/
172 http://www.themusic.com.au/im_m/display.php?s=christie&id=158
173 http://www.tate.org.uk/modern/eventseducation/talksdiscussions/9811.htm
174 http://www.metmuseum.org/
175 http://www.lumendigital.co.nz/gallery_whare_tapere.html
     http://www.lumendigital.co.nz/gallery_think_maori.html

tours and artist statements, short documentaries on the history of an exhibit or performance, and mobile video and audio. Interactive content can include audience reviews, discussion forums, artist blogs, social networking profiles, online educational resources, games and activities, and audience created content.

The following are examples of how digital technology is being used for artistic creation, promotion and expression.

Citizen art

The popular phenomenon of user created content has challenged the notion that art is the arena of the privileged elite. Technology has empowered people to create and share content like original stories, experimental video, photographs, and music while modifying existing art such as in games and virtual worlds and mixing audio and video as creative 'mashups' or remixes.

Multimedia performance

- **The Trial of K**
  Produced by Synaesthetic Theatre in New York and adapted from Kafka's work the performance blended physical theatre, dance, live streaming surveillance video and original music with German Expressionism and classic Film Noir.[176]

Interactive performance

- **Emergence**
  This cross-media interactive experience combines immersive theatre, live film, music, and online content. The audience collaborates in a genetic engineering experiment to build their own beings and engages in a "choose your own adventure" film. Created by Synarcade Audio-Visuals in partnership with Video Australasia, Metro Screen, 3 Minute Angels, it's supported by the Australia Council and sponsored by The Studio, Sydney Opera House, Arts House, North Melbourne Town Hall, City of Melbourne with Schweizer Korbas, Hayley Hill, Irnin Kahn, Sydney Film School and Mabuzi Art. [177]

- **iOrpheus**
  The public opera project incorporates podcasts, live performances, and installations in public spaces and is performed on iPods, mobile phones, laptops and an assortment of instruments including *"PitchWeb, a multi-user musical instrument that can be programmed into a mobile phone allowing the user to have an entire orchestra at their fingertips."* Created by media artist Nora Farrell and composer William Duckworth, it is part of their Cathedral Project which has featured interactive music and art online since 1997. Partners include Queensland Conservatorium Research Centre and Griffith University and the project is supported by The Fulbright Foundation, South Bank Corporation,

Hotel Saville South Bank, Apple Computer Australia, Acoustic Technologies Professional, Avid-Digidesign, MusicLab, National Film and Sound Archive, Zen Zen Zo, Physical Theatre, Brisbane, Queensland Museum, Building Musical Futures and Griffith University. Developmental support was provided by Interdisciplinary Arts and Performance, Arizona State University, Absolute-MIX, Tokyo and The Linnaeus Estate, Byron Bay, Australia.[178]

- **The Brain Opera**
  "Created at the M.I.T. Media Laboratory, this musical experience incorporated online and live audience participation and was presented simultaneously in physical and cyberspace."[179]

Mixed media

- **ITIN Space**
  This Web 2.0 art blog incorporates painting, drawing, photography, animation, video, audio, digital publishing, mashups, collaborative art, and social media. It is created by Alex Itin, virtual artist-in-residence at the Institute for the Future of the Book. *"This blog is a scroll on which my brain is splayed."* [180]

Hypermedia

- **The Endeavour Project**
  Web-based non-linear historical project focused on James Cook's Pacific voyages and intended to provide standards for scholars working with historical documents in digital formats. It was created by the Centre for Cross-Cultural Research State Library of New South Wales, Canberra School of Art, H-Net, Online International Network for Humanities and Social Sciences.[181]

Mobile and GPS Art

Mobile/portable/wireless/GPS devices are not only being used to deliver additional exhibition content like walking tours and artist statements but can also be an integral aspect or expression of the artwork. Content can be downloaded onto portable devices or delivered in real-time via Bluetooth and GPS (Global Positioning System) technology.

- **pixel play**
  ANAT's pixel.play is a South Australian program for young people that teaches digital media skills through creating artwork for mobile phones. Young artists develop creative projects such as SMS poetry, pixel drawing, audio, animation and short film. Partners with ANAT include the Australia Council, Country Arts SA, The South Australian Film Corporation, South Australian Youth Arts Board and Motorola.[182]

176   http://www.synaesthetic-theatre.com
177   http://www.buildyourownbeing.com/lab/1.html
      http://www.smh.com.au/news/arts-reviews/
      emergence/2007/08/13/1186857390706.html

178   http://www.iorpheus.com/
      http://www.monroestreet.com/Cathedral/main.html
179   http://park.org/Events/BrainOpera/
180   http://www.futureofthebook.org/itinplace/
181   http://coombs.anu.edu.au/~cookproj/
182   http://www.anat.org.au/pixel.play/flash/index.htm

- **the-phone-book**
Based in the UK, this creative media agency specialises in the learning, creation and distribution of mobile phone content and wireless interactivity. They produce convergent art using old and new technologies and educational programs. These include a mobile film competition for young adults, portable electronic news and mobile documentary scheme, mobile compliant WIKI project, artist commissioned ringtones and logos, and ultra-short literature for mobile delivery.[183]

- **GPS-Trans 8**
An audio/video installation, this work involved four streams from Chicago, Krakow, Luxembourg and Warsaw projected on four screens in the Bunkier Sztuki gallery in Krakow controlled by three cars with GPS systems running simultaneously in Chicago, Luxembourg and Krakow. Video material provided an accompaniment to the live performance of dance and music with the movement and sound controlling the video feed in the four cities. [184]

Virtual reality painting

- **The Brown Cave**
Developed in the scientific visualisation lab at Brown University, the project features user friendly digital tools to create immersive, physical, 3D painting and drawing. In the Brown Cave, a 2.44m x 2.44m x2.44m four-wall space, the artist's body becomes a virtual paintbrush. *"The artist can make imagery that is life-sized, in an ambient, interactive, ambulatory environment. The work is vital because we all know that the big hammer in the digital revolution is that the body is too often a nearly immobile and vestigial remnant of the imagination. No one in their right mind wants to sit in a chair the rest of their life...Potential future applications include fine art practice and interactive experience in rarified environments, gaming interplay in close or distant overlapping virtual spaces, range of motion training for specialized human or robotic tasks, macro and microcosmic visualization immersion, together with new forms of invention based on touch and motion visualization."* [185]

Multimedia Video Game Symphonies

In a bid to draw younger audiences to hear live classical music, there are two competing companies with world tours featuring hit video game scores performed by full orchestras with choirs and video. *"The arts really do need a kick in the butt, and this helps shake things up."* [186]

Visualisation

Striking digital mosaics are being created that represent actual information gathered through such techniques as data mining. Some examples of digital mapping projects:

- **Black Shoals Stock Market Planetarium**
This live representation of the world's stock markets is fed by streams of financial data and features companies represented by stars. In the animated night sky stars glow brighter when their stock is traded and move, clustering or drifting according to company behavior. It was exhibited at the Tate Britain Planetarium and sponsors and collaborators include Nikolaj Copenhagen Contemporary Art Center Planetarium, Reuters, Apple, Copenhagen Stock Exchange, London Arts, Arts Council of England, The Danish Arts Council, The Committee for Visual Art, Nordic Interactive, Innovation Lab and a number of businesses.[187]

- **Cyto-Viz**
An artistic real-time performance monitoring statistical information gathered during gigabit network transfers to the Scalable Adaptive Graphical Environment (SAGE) with data streams *"mapped to cellular organisms defining their structure and behavior as autonomous agents."* An event-specific component displays nearby Bluetooth mobile devices as 2D animations overlaid on the 3D world. CytoViz was presented at international conferences in the U.S. including iGrid2005 and SC05.[188]

- **Wikipedia Hot Spots[189]**
Researchers from Indiana University in the U.S. developed a real-time mosaic of network dynamics for Wikipedia's topics and editing patterns. This practical data mapping allows Wikipedia's administrators to identify editing wars and lock up pages if necessary until info battles subside. There are plans to sell high quality art prints on SciMaps to fund further visualisation research.[190]

Mixed reality (MR) and Augmented reality (AR)

The merging of physical and virtual worlds is being explored around the world.

- **ISMAR – International Symposium on Mixed and Augmented Reality**
Sponsored by IEEE, The Virtual Reality Society of Japan and ACM. *"Mixed Reality (MR) and Augmented Reality (AR) allow the creation of fascinating new types of user interfaces, and are beginning to show significant impact on industry and society. The field is highly interdisciplinary, bringing together signal processing, computer vision, computer graphics, user interfaces, human factors, wearable computing, mobile computing, computer networks, displays, sensors, to name just some of the most important influences."* [191]

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183 http://www.the-phone-book.ltd.uk/projects.htm
184 http://www.gps.art.pl/gpsart-e.php
185 http://arts.siggraph.org/features/cavepainter
     http://www.cs.brown.edu/people/dfk/dfk_iweb/Art.html
186 http://www.washingtonpost.com/wp-dyn/content/article/2006/08/02/AR2006080201889_2.html
     http://www.play-symphony.com/
     http://www.videogameslive.com

187 http://www.blackshoals.net/description.html
188 http://www.evl.uic.edu/core.php?mod=4&type=3&indi=322
189 http://abeautifulwww.com/2007/05/20/visualizing-the-power-struggle-in-wikipedia/
     http://www.newscientist.com/article/mg19426041.600-power-struggle.html
190 http://scimaps.org/
191 http://www.ismar07.org/

- **Singapore Mixed Reality Lab**
Projects include human-computer interaction, wearable computers and smart spaces. *"The mixed reality project will allow humans to interact with each other in ways that now can only be imagined in movies or television, and will allow humans to interact with computers in a way that goes beyond the desktop computers we have now. It will allow us to create a mystical world that man has never experienced before. There will be applications in a great variety of areas."* [192]

- **University of Central Florida's Media Convergence Laboratory**
"MCL uses artistic and scientific capabilities produced by basic research to create imaginative scenarios, enabling community learning, physical and cognitive rehabilitation, military training, and next generation entertainment." Their goal is to *"melt the boundaries between reality and the imagination by creating compelling, interactive, simulated group experiences that spark the imagination, enlighten the mind, immerse the body and engage the spirit."* Their 27 partners include Education (Carnegie Mellon Entertainment Technology Center, Museum of Science-Boston), Industry (Canon, Universal Studios, Nickelodeon Studios) and Government (Office of Naval Research) and Community (Florida Film Festival). [193]

Fashionable technology

Wearable technology or smart clothes incorporate intelligent features such as information technology and use special fibres which react in unconventional ways.

- **CuteCircuit**
Based in the UK and the U.S., this Interaction Design and Wearable Technology company produces products like the "The Hug Shirt," a wearable Bluetooth mobile accessory that allows the transmission of physical sensation and "Skirteleon" which changes color and pattern depending on actions and mood of the wearer. *"CuteCircuit is the first company that merges the wearable computing and the telecommunication technology fields to create a new market and new interfaces for personal telecommunication. We think that this is the greatest innovation after the personal computer and the world wide web."* [194]

- **R&D center Clothing+**
Located in Finland, the interdisciplinary enterprise partnered with the fashion company Reima to develop a hands-free phone worn like a small bag. Clothing+ has also worked with Polar Electro to develop a heart rate monitoring system consisting of a small transmitter unit and a textile strap which wraps closer to the chest than conventional plastic straps and enables more accurate monitoring of the heart. [195]

Convergent Experiences

- **Blast Theory** [196]
This successful British artists' group creates multimedia performances, installations, and cross-platform experiences incorporating online, mobile and live events in theatres, clubs, galleries and the street. Their cutting-edge use of technology includes the award-winning Can You See Me Now?, Uncle Roy All Around You and I Like Frank—the world's first mixed reality game for 3G phones. Blast Theory has been employed by governments, museums, corporations and broadcasters to create films, television programs, radio programs, web sites, games, performances and exhibits. They are represented in the U.S. by Creative Artists Agency, one of Hollywood's top talent agencies.

- **Location-based and Pervasive games**
Location Based and Pervasive games engage audiences in public spaces and across multiple media. These innovative offerings are being used for active learning and cultural tourism incorporating offline and online content and mobile technology. Newish Media's Scootgame in Melbourne was a treasure hunt incorporating major cultural and sites including ACMI, State Library of Victoria, Melbourne Museum, the Arts Centre, National Gallery of Victoria. Created by artist Debra Polson and produced and presented by a team from Queensland University of Technology and the Australian Centre For Moving Image (ACMI) in collaboration with State Library of Victoria, Melbourne Museum, the Arts Centre, National Gallery of Victoria. The September 2006 event was funded by the Cultural Broadband Network. It is supported by the Victorian Government through Arts Victoria and the Community Support Fund. Scoot is also supported by Artplay and is developed with support from QUT Creative Industries Precinct, Australasian CRC for Interaction Design. [197]

Collaborative art

Virtual Playa is an interactive, collaborative, virtual, 3D extension of the Burning Man Festival uses the Microsoft Flight Simulator platform. It was created by California artist, Andrew Johnstone, and is available for free in keeping with the no-commerce, gift economy philosophy of Burning Man. *"When we work in a gift economy, the world stops being a poker game and we become free to share, cooperate and encourage each other."* [198]

Sonic art

Electronic sonic art includes computer music, sound environments, installations, audiovisual performance, interactivity, sound sculpture, visualisation and kinetics.

- **body>data>space**
This group combines audio-visual environments, live interactive performance and wearable technology. *"Converging artist-led content with architectural*

192 http://137.132.165.250/index.php?option=com_content&task=view&id=90&Itemid=37
193 http://www.mcl.ucf.edu/
194 http://www.cutecircuit.com/now/projects/wearables/
195 http://www.tekes.fi/eng/news/uutis_tiedot.asp?id=2492&paluu=
      http://www.boston.com/news/local/articles/2007/10/08/look_out_logan_software_is_soft_wear/

196 http://www.blasttheory.co.uk
197 http://www.acmi.net.au/scoot_bleep_this_city.htm
      http://scootgame.com/
198 http://www.virtualplaya.org/
      http://www.burningman.com/
      http://www.wired.com/culture/lifestyle/news/2004/01/61732

expertise to create both public and commercial outputs, body>data>space has created a business that thrives on the cross-pollination of ideas and practices between arts, creative industries and commercial sectors." [199]

The Arts Council England supports sonic art through **Cybersonica**,[200] London's annual festival of electronic music, sonic art and audiovisual fusion, and **Sonic Arts Network**[201] which offers festivals, events, commissions and education projects. [Other Sonic Arts Network sponsors include PRS Foundation For New Music, BBC Radio, Youth Music, The Paul Hamlyn Foundation, and the Contemporary Music Network. Other Cybersonica sponsors for 2007 included Tate Britain, Kinetica Museum, Enter_Unknown Territories, body>data>space, Epson, and Cybersalon.]

Glitch art
Glitch art explores the aesthetics of digital corruption.

" The images, which at first might appear bewildering, were created from computer crashes, software errors, hacked games, and megabytes of raw data turned into coloured pixels." [202]

Digital publishing
Digital technology is having a growing effect on the world of publishing. New innovations include online self-publishing, downloadable books, author blogs, podcasts, virtual booktours, interactive storytelling and online book communities and clubs. Authors and media artists are experimenting with interactive fiction, also referred to as hypertext, collaborative, or participatory novels. These digital progeny of "choose your own adventure" books are nonlinear stories that allow the reader to control the flow and outcome of the story. Increasing hybridisation of media and genres is seen in the convergence of stories and games as well as collaborations between poets and musicians and experimental video artists. As an example of digital convergence, the first cybertext written using a mobile phone was recently published on Lulu.com, one of the growing number of self-publishing websites. [203]

Publishing has been resistant to change and less affected by the digital revolution because the industry is not dependent on advertising and the user experience of reading a physical paper book is not easily translatable into other media. In spite of predictions that they would transform the industry, e-books have not taken off because the aesthetics of an electronic device do not compare to a traditional book. However, the industry is changing and reading on screens has become the norm which encourages the shift to e-books. *"Book publishers, particularly consumer book publishers, have managed to keep their product and their business practices pretty close*

to what they've been for a century. I don't think the next 15 or 20 years will be quite as change-free." [204]

Culture jamming
As provocative social commentators, artists are finding numerous creative ways to use digital technology. This can be seen in such playful practices as machinima video game movies, animated political cartoons, media hoaxing, subvertising, reality hacking, cyberpunk art, street art online, and underground digital art. For example, the Surveillance Camera Players[205] help raise awareness about the pervasiveness of cameras while the No Social Networking Project challenges the notion that we all need to be connected in cyberspace.[206]

- **Hactivism**
  Virtual reality hacking or "griefing" is employed as a provocative commentary on contemporary culture and technology. It was used to poke fun at the commercialisation of Second Life when a parade of animated flying giant phalluses interrupted an in-world press conference by a cyber real estate mogul.[207] The creator of the parody site **Get a First Life** stated: *"If I'm building a Brave New World, I don't want PR flaks in my utopia."* [208]

  Commissioned by Rhizome in New York, AddArt is a Firefox extension which replaces advertising images on web pages with art images from a curated database. A working prototype of AddArt has been developed at the Eyebeam OpenLab.[209]

- **Street Art**
  The appreciation for the power of street art is increasing through exposure via digital technology and support by groups like **The Graffiti Research Lab.** *"The goal of GRL is to technologically empower individuals to creatively alter and reclaim their surroundings from unchecked development and corporate visual culture."* [210] Photo sharing sites like Flickr[211] and numerous blogs [212] are acting as virtual exhibition spaces for this form of physical-world art. Street art extends far beyond name tagging to a political movement that defies the elitism of traditional exhibition spaces and challenges the notion that only paid advertisements should be allowed on public spaces. There are virtual exhibitions that feature free citizen art around the world including WA.

- **Video Game Art/Machinima**
  As discussed in the earlier animation section, machinima or video game art is a growing area. Artists

199 http://www.bodydataspace.net/
200 http://www.cybersonica.org/
201 http://www.sonicartsnetwork.org/
202 http://beflix.com/works/glitch.php
203 http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=109&STORY=/www/story/07-26-2007/0004633449&EDATE=
204 http://www.ozco.gov.au/news_and_hot_topics/news/ptsotf_review/files/4845/mike_shatzkin_transcript.pdf
205 http://www.notbored.org/the-scp.html
206 http://nosoproject.com/press/ http://www.abc.net.au/4corners/content/2007/s1876134.htm http://www.theregister.co.uk/2007/01/08/survivor_recovers_enough_to_sue/
207 http://www.abc.net.au/4corners/content/2007/s1876134.htm http://www.theregister.co.uk/2007/01/08/survivor_recovers_enough_to_sue/
208 http://www.getafirstlife.com/ http://www.darrenbarefoot.com/archives/2007/01/my-project-du-jour-getafirstlifecom.html
209 http://www.addart.eyebeam.org/
210 http://www.anat.org.au/grl/?page_id=37
211 http://www.flickr.com/groups/68588025@N00/pool/
212 http://graffitiperth.blogspot.com/

have grasped the potential for using this popular entertainment media to reflect our current culture. Created by a Chinese visual artist, Q4U is a customised version of the first-person-shooter game Quake III. The work features his multiple clones killing each other.[213] Another artist produced a film of himself committing suicide inside 50 different video games.[214]

Nano-Art

It has been said that small is the next big thing in the artworld. It doesn't get much smaller than work created using nanotechnology. These miniscule sculptures include **The Bull,** created in 2001 by a group of Japanese artist/researchers at Osaka University who used twin laser beams to sculpt a bull 10 microns long, the width of a human hair.[215] IBM responded by scripting 'NANO USA' and 'IBM' in single atoms on a copper canvas.[216] IBM's latest endeavour is an image of the sun made from 20,000 microscopic particles of gold. The sun painting was etched on a silicon chip by manipulating each gold particle, 60 nanometres or 60 billionths of a metre in diameter.[217] Nano-art was featured at **ENTER3,**[218] the Prague festival for arts, sciences and technologies including **Midas**, a visual and sonic installation focusing on nano level experience. It was created by a WA artist based on research developed at SymbioticA and the Nano Research Institute at Curtin University of Technology.[219]

Transhumanist and Extropic Art

These interdisciplinary fields explore the evolutionary and transformative potential offered to humans by current and future technologies such as artificial intelligence, nanotechnology, superintelligent machines, and space colonisation. Human nature is viewed as "a work-in-progress" developing towards a "posthuman" state with highly advanced capabilities including life extension and augmented intelligence enabling an enhanced peaceful existence. The Transhumanist Art Manifesto was launched into space aboard the Cassini Huygens craft on its mission to Saturn. A subgenre of Transhumanist Arts, Extropics *"represents an aesthetic culture of transhumanity—ideas about super intelligence, superlongevity, biological-technological interface, intelligence and creativity augmentation, space exploration, the Singularity."* [220]

- **Stelarc**
  An Australian artist, Stelarc explores the interfacing of the human body and technology using medical imaging, prosthetics, robotics, VR systems and the Internet in a combination of live performance and virtual installation.[221]

Future-Science Art

This mode of artistic expression focuses on conscious creation through the manipulation of creative energy. Developed at the Arcos Cielos Research Center in the U.S, the goal is the creation of "Living Artforms" through energy manipulation that can profoundly affect humankind in Science, Education, Fine Arts, Global Ecology and Human Potential Development.[222]

PARTNERSHIPS

There are numerous opportunities for WA's arts sector to develop partnerships locally, nationally and internationally with other artists, universities, technology, multimedia companies, business sponsors, and media commissioners. Online networking offers opportunities to showcase work and connect internationally. 60Sox.org is attempting to unite the creative industries in Australia and New Zealand. However, physical world interaction is also important to forge collaborative relationships.

"New media is an artistic field that has developed around cultural development projects, with the computer playing a central role as the medium for production, storage, and distribution. It has also influenced a number of new models of authorship, which all involve different forms of collaboration. This challenges the romantic notion of a solitary author of an artistic artifact, though...solitary authorship actually occupies a very small place in the history of human culture while collaborative authorship represents a norm rather than an exception." [223]

Technology and Science

Collaboration and convergence are integral aspects of digital art. The technology and science industries are increasingly tapping into the creative minds of artists to inspire innovation through residence programs, innovation labs and incubators. Much of it takes place within university settings. An example of a computer science and design partnership is the collaboration between Brown University's computer science department's visualization lab[224] and the Rhode Island School of Design to offer 'Virtual Reality Design for Science.' Another example is the Canada Council for the Arts (Canada Council) and the Natural Sciences and Engineering Research Council of Canada (NSERC) New Media Initiative. *"Collaboration among artists and scientists and/or engineers in the field of information and communications technology often involve the design, production and application of software and hardware for IP networks and broadband optical networks; (tele)robotics; cognitive systems; artificial life agents; data visualization; bioinformatics; wearable computing; and advanced materials and devices such as active fabrics, sensors and microprocessors."* [225]

Fields of experimental research can include nanotechnology artificial intelligence, and genetic

213   http://www.maap.org.au/artist_profiles.php?id=30
214   http://www.virgilgallery.com/v2/?ikDirId=1064 http://www.nytimes.com/2005/08/07/magazine/07MACHINI.html
215   http://www.petitemort.org/issue03/27_nanoart/
      http://www.nanotech-now.com/Art_Gallery/ghim-wei-ho.htm
216   http://smartmoves.questacon.edu.au/newmoves/technology.asp?subTech=Nanotechnology+-+Nano-art&supergroup=Nanotechnology
217   http://www.smh.com.au/news/technology/ibm-nano-art-is-just-gold/2007/09/11/1189276765941.html
218   http://enter3.org/index.php?lang=en&node=110&id=51&act=detart
219   http://www.nanovip.com/node/1170
220   http://www.transhumanism.org/index.php/WTA/more/transhumanist-values/
      http://www.transhumanist.biz/index.html
221   http://www.stelarc.va.com.au/

222   http://www.arcoscielos.com/project-5
223   http://72.14.253.104/search?q=cache:GvxTVit5ZM0J:www.humantechnology.jyu.fi/articles/volume3/2007/halonen.pdf+open+source+artists&hl=en&ct=clnk&cd=7&gl=au&client=firefox-a
224   http://vis.cs.brown.edu/
225   http://www.canadacouncil.ca/grants/mediaarts/rl127223008646562500.htm

engineering. There is a designated field of bio-arts for those exploring the convergence of art and science. WA's SymbioticA focuses on this area. *"Bio-artists use live tissues, bacteria, living organisms and life processes to create works of art that blur the traditional distinctions between science and art. Most of these works tend toward social reflection, conveying political and societal criticism through the combination of artistic and scientific processes."* [226]

Open Source and Creative Commons

Collaborative creation is a growing movement to develop projects, and make free software and content available in cyberspace. Open source projects like virtual reality Metaverse[227] and collaborative Wiki information enable the creation of content leveraging the talent and knowledge of users worldwide for mutual benefit. Free user created content includes photographs, stories, non-fiction blogs, video, music, clip art and animations, game mods, media player skins, e-cards, and social media design.

Creative Commons is the voluntary use of flexible copyright by artists to allow creative collaboration and modification. By loosening copyright restrictions from "all rights reserved" to "some rights reserved," such phenomena as fan fiction, game and virtual reality design mods, audio and video remixes and other modifications are permitted. By allowing the audience to collaborate, artists are increasing their reach since the sharing of modified new work essentially acts as free marketing and promotion. Started in the U.S., Creative Commons has also been introduced in Australia.[228]

"Media art is based on cooperation to a greater degree than are many art forms that can be created alone. The bases for creativity and innovation are the media laboratories, networks, and production teams, and this collaboration creates difficulties when determining who the author is. For open source artists, the concept of authorship differs from the traditional copyright ideology. So when copyright is no longer the main means to compensate creative work, there is a need to find new means to compensate for artifacts." [229]

International networks

Networking and showing internationally is important for digital as well as traditional artists. Conferences and festivals include SIGGRAPH, ISEA, Mediartech, and Ars Electronica. Tapping into international collaborative networks can help boost the digital arts sector. For example, the Pixelache Network is an informal network of electronic art festivals for electronic art and subcultures that feature experimental media and technology projects and focuses especially on international grassroot communities such as VJ community, media activists, open source community and demoscene. The main Pixelache event is held annually in Kiasma Museum of

Contemporary Art in Helsinki and also travels to other destinations including Bratislava, Stockholm, New York, Montreal, Paris and Medellin. The organiser of Pixelache Helsinki is non-profit organisation Piknik Frequency and the international Pixelache events are organised in close collaboration with local partner organisations.[230]

Media industry

The distinction between arts and media is disappearing. Arts education increasingly includes digital production with hybrid and mixed media arts becoming prevalent. There is more and more cross-over between fine arts and multimedia. Both BEAP (Biennale of Electronic Arts) and the Revelation Film Festival could become more inclusive media-arts showcases that unite the industry.

There are many opportunities for the arts sector to collaborate with the media industry to create innovative digital content. For example, museums can partner with documentary filmmakers to create short-form video to provide added enrichment for exhibitions to be displayed on kiosks, portable players, mobile, and the Web. There is also potential for the creation of multimedia cultural e-learning through games and other interactive content. Animation filmmakers are using motion capture of dancers *(Happy Feet)* and actors *(Lord of the Rings)* and using rotoscope to create live-action/animation hybrids *(A Scanner Darkly, Waking Life).* The Interactive Film Lab in Amsterdam brought together 11 dancers, choreographers, film makers, and new media artists to explore interactive dance film at the Interactive Dance Film workshop @ Cinedans.[231]

The arts sector is a potent partner for animators. The music industry has embraced animation and it is used in numerous music videos. Created out of a collaboration of a musician and a cartoonist, *Gorillaz* is a popular virtual animated band that has become a digital franchise with online and mobile games and even an opera. *"Featuring music and visuals by Gorillaz co-founders Damon Albarn and Jamie Hewlett, the opera was written by and will be directed by Chinese-born, American-based opera star Chen Shi-Zheng. The production will feature martial arts by Shaolin monks and singers from the Peking Opera."* [232]

Local, national and international media commissioners (ABC, SBS, Big Pond, BBC, etc.) also offer potential partnerships for cross-platform content including TV, Web and mobile. As 'arts on demand' grows, there may be specialised aggregators for such content in addition to current media aggregators (iTunes, Joost, etc.).

Business

There are opportunities for arts organisations to leverage their existing partnerships into the digital realm and develop new partnerships. It will be important to communicate to businesses that digital content increases the reach of the arts cultural value and enhances the sponsorship. The resources and wine industries that have traditionally supported the arts can be extended

226   http://www.msnbc.msn.com/id/17387568/
227   http://metaverse.sourceforge.net/
228   http://creativecommons.org.au/
229   http://72.14.253.104/search?q=cache:GvxTVit5ZM0J:www. humantechnology.jyu.fi/articles/volume3/2007/halonen.pdf+open+source +artists&hl=en&ct=clnk&cd=7&gl=au&client=firefox-a

230   http://www.pixelache.ac/network
231   http://www.mediamatic.net/artefact-11289-en.html
232   http://www.cbc.ca/arts/story/2006/04/25/gorillaz-opera-berlin.html

into the digital realm and companies like Apple and Microsoft Australia can also be approached. An example of successful business partnership was between the TATE Modern and BT, the global communications company, to create "i-Map" imaging for the visually impaired.

COMMERCIALISATION

Digital technology empowers artists and arts organisations to market and distribute current work and archives in creative new ways. "Long Tail" niche markets can be tapped into increasing audience reach and enabling the development of new revenue streams.

Marketing

It is not enough to create a website and wait for potential audience to visit, arts practitioners need to spread their content and target their key demographics across multiple media. Through "viral marketing" such as user recommendations and file sharing, the arts sector can access and extend audience. Social networking allows video, audio, stills and written text to be transmitted worldwide via 'citizen marketers.' Virtual book tours have become prevalent with writers being interviewed on a series of blogs. Podcasts such as artist statements and museum tours engage the audience and enhance experience.

Distribution

Online sales have freed fine artists, writers, and musicians from dependence on galleries, publishers and record labels. There are many online sites that will sell traditional artwork for a monthly fee or sales commission but it is important to research which has the highest traffic and sales. [233] Self-publishing no longer carries the stigma it once held and through websites like Lulu.com, authors can get IBN numbers and be carried on mass distributors such as Amazon.com. Contemporary music artists are experimenting with creative distribution. Some are using digital content as marketing for concerts and providing it at low-cost or even for free. Radiohead is offering a digitally downloadable album and telling fans "it's up to you" what they pay for it. [234]

The Metropolitan Opera

In 2006 after extensive negotiation with unions, the Metropolitan Opera in New York announced ambitious new electronic distribution plans. The Met Opera is the first major performing arts institution in the world to use digital distribution to reach a global audience by offering cross-platform content such as live broadcasts in high definition to movie theatres, live webcasts, digital radio, video on demand, opera ringtones, and instant CDs following performances. The Met is also distributing its historical archive and has entered into a range of media partnerships including National CineMedia, Cineplex Entertainment, Odeon/UCI, RealNetworks, PBS, and

Thirteen/WNET.[235] This is an excellent example of the potential for the arts to reach a broader audience, build new revenue streams, leverage archive material, and establish media partnerships through the distribution of electronic content.

New merchandise

Digitised cultural content and arts-based e-learning materials offer revenue potential. Mobile ringtones, CDs, DVDs, and iPod downloads of live performances can be sold to exiting audience members or available online after the show. There are opportunities for digital commissions. For example, a digital artist was commissioned by the US Census Bureau to create a site-specific data visualisation installation in Washington, D.C.[236] Virtual design is a potential income source due to the growing cyber market for avatar clothing, accessories, physical customisation as well as architecture and interior design. 'Mini-me' fashion through online/offline converence allows consumers to buy matching clothes for their avatars and themselves. And online 'shops' can carry offline consumer products such as clothing and other merchandise.

233   http://emptyeasel.com/art-market/comparison-chart/
234   http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2007/10/01/bcnradio101.xml

235   http://www.ncm.com/cms/articlefiles/604-The_Metropolitan_Opera_Reaches_Groundbreaking_Agreements_with_its_Unions_and_Develops_an_Extrordinary_Range_of_Media_Partners_to_Build_Audiences_and_Expand_its_Reach.pdf
236   http://salavon.com/AmVar/AmVarStudy_Stills.php

DIGITAL ARTS: FUNDING MODELS

A range of funding initiatives are being employed worldwide to support digital arts. Overall, there is support for collaborations between the arts, technology and science sectors, creative experimentation, innovation, hybrids, audience outreach, education, cultural preservation, technology upskilling, project and craft development. Some arts funding bodies nationally and internationally do not have specific grants for digital or new media arts though they do support it. This overview primarily focuses on funding that specifically targets digital arts.

AUSTRALIA

The Performing Arts Multimedia Library (PAML) Pilot Project

This joint venture in 1998 between DCITA, Multimedia Victoria and Cinemedia aimed to explore the *"legal, technical and industry practice issues in the production and distribution of performing arts in the digital environment."* Under the project, performing arts companies produced digital products using live performances and the outcomes were used to create a website with digital arts production information.[237]

Australia Council

New media art and hybrid art is supported through grants programs across its artform boards and through the Inter-Arts Office.[238] The ArtLab initiative is intended to foster innovation, experimentation and collaboration between artists from multiple disciplines.[239] Inter-Arts Grants support practitioners in interdisciplinary art, hybrid art or new artistic practice and include fellowships, residencies and projects.[240]

SOUTH AUSTRALIA

Partnership incentive

The Australia Business Arts Foundation, Harris Scarfe Australia and Arts SA have teamed up to offer matching sponsorship incentives to encourage partnerships between SA small businesses and arts organisations.

ANAT (the Australian Network for Art and Technology)

Based in Adelaide, the non-profit is assisted by the Australia Council and Arts SA. It offers Travel Grants up to $3000 and the still/open emerging technology lab, portable worlds touring exhibition of mobile art, and pixel.play supporting young artists to develop mobile and digital projects. ANAT is an Industry Partner with the Australia Council for the Arts, Museum of Contemporary Art, Artspace and Patrick Systems & Technology on a Synapse Australia Research Council Linkage Grant.[241]

Thinkers in Residence

The program brings creative minds to Adelaide to assist in strategic development and promotion of the state.[242]

QUEENSLAND

State Library of Queensland

Artists' books online provides access to images from artists' books from its collection.[243] The State Library provides access to more than 25,000 online photographic images and manuscripts and more than 5,500 online magazine and journal titles and operates in partnership with Local Government and Community Councils. Initiatives include OPAL (Online Public Access in Libraries) and AskNow! online librarian chat.[244]

Arts Queensland

Initiatives include the Creative Fellowship Program, Sector Project Grants, and Small to Medium Organisations Program (s2m).[245]

Australasian CRC for Interaction Design (ACID)

ACID conducts research and development in interaction design and experience design in collaboration with over 100 researchers in six universities and industry partners across Australia and New Zealand. Cooperative Research Centre funding is provided by the federal Government for a seven year period and must be matched by cash and/or in-kind contributions.[246]

Multimedia Art Asia Pacific (MAAP)

Asia Pacific touring new media art festival and online resource partners with regional organisations. MAAP encompasses 14 countries in the region and is the only new media festival to focus on Australia and the Asia Pacific regions. Partners include Australia Council for the Arts, Arts Queensland, State Library of Queensland, Youth Arts Queensland, FCm Travel Solutions, Madman Entertainment, ANAT, and QUT Creative Industries.[247]

VICTORIA

Arts Victoria

2007-2008 budget includes $5.9M for ACMI to create the Museum of 100 Years of the Moving Image (film, TV, video games and new media exhibits, live and interactive experiences) and $7M for Imagination Unlimited, an initiative to support outreach, artist residencies in schools and online programs.[248] Arts Victoria new media related support includes the Centre for Contemporary Photography, Experimenta Media Arts, and Melbourne

237 http://www.acmi.net.au/PAML/intro.htm
238 http://www.ozco.gov.au/boards/new_media_arts/
239 http://studioelectronicart.net/blog/cat/master-of-electronic-art/
240 http://www.ozco.gov.au/boards/new_media_arts/introducing_interarts/
241 www.anat.org.au

242 http://www.thinkers.sa.gov.au/home.html
243 http://artistsbooks.slq.qld.gov.au
244 http://www.slq.qld.gov.au/about/initiatives
245 http://www.arts.qld.gov.au/regional_arts.asp
     http://www.arts.qld.gov.au/pdf/twnm_sector_plan.pdf
246 http://www.interactiondesign.com.au/
247 http://www.maap.org.au/
248 http://www.arts.vic.gov.au/arts/news/news/budget0708.htm

Fringe.[249] Like many arts organisations, they have multiple funding sources. For example, Experimenta is sponsored by Australia Council, AFC, Arts Victoria, Film Victoria, City of Melbourne, Visions of Australia Contemporary Touring Initiative, Japan Foundation, Australia-China Council as well as corporate sponsors such as Apple and Sofitel.

Film Victoria's Digital Media Fund
Supports multimedia art projects like lifeSigns, an interactive installation that explored virtual worlds, digital games, artificial life and electronic language. Major industry sponsor was Criterion Software, supplier of the Renderware graphics engine.[250]

TASMANIA
Artists@work
This joint initiative of arts@work, a business unit of the Tasmanian government's Department of Tourism, Arts and the Environment, and the Australia Business Arts Foundation (AbaF) is supporting contemporary Tasmanian artists working with mining and wine industries.[251]

CANADA
Canadian Culture Online (CCO)
The Virtual Museum of Canada is an award-winning initiative funded by the Department of Canadian Heritage and private sector partners. It was developed through a partnership between Canada's museums and the Canadian Heritage Information Network. VMC attracts over seven million visitors per year and features over 500 Virtual Exhibits with over 420 000 images and more than 150 interactive games.[252]

- **AGORA-The VMC Learning Centre[253]**
  This interactive e-learning initiative offers a collection of multimedia resources and was created by Canadian Institutions for educators and students.

Canada Council for the Arts
Offers wide range of media-arts funding to new media artists, organisations, groups and independent collectives for research, creation, production, dissemination, festivals, travel, operating activities and equipment acquisition. There are also a number of endowments and prizes including Bell Canada Award in Video Art, Governor General's Awards in Visual and Media Arts, Japan-Canada Fund, Molson Prizes and Petro-Canada Award in New Media.

- **Canada Council for the Arts / Natural Sciences and Engineering Research Council New Media Initiative**
  Intended to "promote collaboration linking artists, scientists and/or engineers to combine creativity with the development and application of new technologies and knowledge." [254]

The Banff Centre
Develops and promotes creative work in the arts, sciences, business, and the environment and includes the Banff New Media Institute and the Aboriginal Animation Mentorship program. The Centre receives federal funding from the Canada Council for the Arts, and the Departments of Canadian Heritage and Human Resources Development through the National Arts Training Contribution Program as well as support from the Alberta state Government of Alberta Arts and Infrastructure and Transportation.[255]

NEW ZEALAND
Creative New Zealand Arts Council
A range of awards, bursaries, scholarships, fellowships and residencies are offered with $7.45M of support last year.

- **Screen Innovation Production Fund**
  Partnership between Creative New Zealand and the New Zealand Film Commission to support emerging and experienced moving-image makers for innovative, experimental and non-commercial productions. Previous grants ranged from $890 to $25,000.[256]

- **Aotearoa Digital Arts**
  New Zealand's only digital artists network receives funding from Creative New Zealand. ADA members include artists, curators, writers, and teachers affiliated to NZ and it features an email-discussion list, website, and three face-to-face symposia.[257]

AUSTRIA
Ars Electronica
Funded by the Austrian Broadcasting Corporation, Province of Upper Austria, city of Linz and a number of companies and institutions. It includes the International competition of cyber arts[258] and Ars Electronica Futurelab.[259]

EUROPEAN UNION
IST Programme
One of the projects funded by the IST Programme is SCALEX (Scalable Exhibition Server) which allows a personalised experience for museum visitors using a personal digital assistant (PDA). Exhibit content is customised based on user preferences and saved for subsequent visits. The €2.5M project received €1.7M

249 http://www.legislation.vic.gov.au/domino/Web_Notes/newmedia.nsf/ b0222c68d27626e2ca256c8c001a3d2d/fc0d415088a5e55dca25711d007fe5 6b!OpenDocument
250 http://artdes.monash.edu.au/research/news/lifesigns.html
251 http://www.abaf.org.au/communicationscentre/mediareleases/ Artistsatwork.htm
252 http://www.virtualmuseum.ca
253 http://www.virtualmuseum.ca/English/Teacher/index.html

254 http://www.canadacouncil.ca/mediaarts/
255 http://www.banffcentre.ca/bnmi/
256 www.screeninnovation.govt.nz
257 http://www.aotearoadigitalarts.org.nz/about/
258 http://www.aec.at/en/prix/news_detail.asp?iNewsID=964
259 http://www.aec.at/en/futurelab/index.asp

from the IST Programme and has 12 partners in a number of countries including media, arts and technology companies, institutes and museums.[260]

- **The Culture Programme**
  Supports cultural diversity through artistic cooperation in performing arts, visual arts, literature, music, history and cultural heritage, etc. with €240M for 2000-2006 and €400M for 2007-2013.

- **eLearning**
  With a budget of €44M for 2004-2006, the program is intended to integrate communication and information technologies for education and training and includes promotion of digital culture.

- **MEDIA PLUS Programme**
  European audiovisual industry program supports development, distribution, training, festivals and promotion projects. From 2001-2006, more than € .5B was spent on 8.000 projects from over 30 countries. The new MEDIA 2007 programme (2007-2013) has a budget of € 755M.[261]

FRANCE

Multimedia Artistic Creation Mechanism (MACM)

Supports art projects that make innovative use of digital techniques and exhibition and is financed by the Ministry of Culture and Communications.[262]

UNITED STATES

The National Endowment for the Arts (NEA) provides public funding for digital artists and arts organisations.[263] However, National Endowment grants are often supplemented with additional funding from a variety of sources. Arts in the U.S. are primarily funded by private foundations (e.g. Carnegie, MacArthur, Ford and Rockefeller) and corporate contributions. Some examples of diverse funding models:

- **Boston Cyberarts**
  The non-profit organisation presents the international Cyberarts Festival which explores the *"the impact of technology on art and how artists throughout the world are using technology to advance traditional and evolving artistic disciplines"* and includes visual art, music, dance, new media, public art, performance, web art, film, lectures, discussions, and conferences. It has received grants from the NEA, the Boston Foundation as well as funding from Mass Cultural Council, The Andy Warhol Foundation for the Visual Arts, and private businesses.[264] A.R.T.C.O.M. (Artists in Residence at Technology Companies of Massachusetts) is managed by Boston Cyberarts and funded by the NEA. It fosters collaborations between the arts and technology companies including IBM.[265]

- The Coushatta Tribe of Louisiana is developing a digital Heritage Center with combined funding from the National Endowment for the Humanities, National Science Foundation, Smithsonian and Tribal casino profits. The Tribe is partnering with an immersive digital learning company to design interactive exhibits to help preserve and revitalize their native language and tribal heritage, including a 3D virtual world, an interactive language game, and an interactive timeline wall with audio and video

- **Art and Sciences Collaborations (ASCI)[266]**
  The organisation has been fostering art-sci-tech collaborations and raising public awareness since 1988 through panels, symposia, exhibitions and competitions, projects and other events. It is funded by the AT&T, Intel, Sony, Lucent, the NEA and a number of foundations. It has an extensive list of partners (e.g. Australian Network for Art and Technology, Arts Council of England, Banff New Media Institute, Canada, American Museum of Natural History, NYC, Department of Design/Media Arts at UCLA, SMARTlab Centre, London), sponsors (e.g. Canada Council for the Arts, Discover and Nature Magazines, Tercentenary Foundation Bank of Sweden, The Arts Council of Ireland, The Intel/Whitney American Century Internet Project and Yahmaha) and individual contributions (e.g. Ideas for Creative Exploration, University of Georgie, Montana State University, Bozeman Center for Biofilm, Sony Wonder Lab and the Vienna Science Center.)

SINGAPORE

Ministry of Communications and Arts

- **Creative Community Singapore**
  Fosters innovation by supporting convergence of creative thinkers in the arts, culture, business and technology sectors through the Creative Business Fund and the Creative Talent Fund. *"We believe that innovation thrives when people with creative ideas are given the right support. This is the reason why we have unveiled a two-prong developmental framework, to give talented individuals an opportunity to realise their potential, by nurturing their creativity and turning their ideas into sustainable creative businesses."* [267]

- **Creative Industries Scholarships**
  Offer career support in the arts, design and media industries. This initiative is part of the national effort to transform Singapore under the Creative Industries Development Strategy. Offered in partnership with the National Arts Council, Design Singapore and the Media Development Agency.[268]

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260 http://www.scalex.info/
     http://cordis.europa.eu/fetch?ACTION=D&CALLER=PROJ_IST&QM_EP_
     RCN_A=71197

261 http://ec.europa.eu/culture/eac/index_en.html

262 www.cnc.org

263 http://www.neh.gov/grants/digitalhumanities.html

264 http://bostoncyberarts.org/

265 http://domino.watson.ibm.com/comm/pr.nsf/pages/news.20040823_cue_
     artist.html

266 www.asci.org

267 www.creativecommunity.sg

268 http://www.mica.gov.sg/mica_business/ci_scholar.html

WA'S DIGITAL ARTS SECTOR: RECOMMENDATIONS

"New media cultural practices require long-term, strategic investment. Arts councils, cultural agencies, foundations, governmental and inter-governmental bodies should support projects that mature over longer durations. This assumes that rigorous accounting and documentation maintain a high degree of transparency, public accountability and responsiveness. And insistence of quantifiable 'deliverables' is counter-productive, especially if the practice seeks to break new ground, and be innovative." –Helsinki Agenda: Strategy document on international development of new media culture policy [269]

Creative application of digital technology can help ensure the future of WA's arts sector. Many of the following recommendations echo those for digital media industry. The arts sector also needs to focus on innovation, creative excellence, collaboration and business knowledge. We are in an age where traditional art co-exists with digital and it is through their convergence that WA's arts practitioners can develop, produce, market and distribute work that engages the audience. Overall, it is recommended that DCA leverage digital technology to help it achieve its strategic objectives to: *"(1) Encourage and support a vibrant and sustainable culture and arts sector; (2) Foster an environment in which culture and arts is recognised and valued as essential to community wellbeing; (3) Deliver and maintain infrastructure to sustain culture and arts; (4) Develop a strong and coordinated culture and arts portfolio that strengthens and supports the delivery of Government objectives; and (5) Develop a highly skilled, motivated and flexible workforce."* [270] As with digital media, recommendations for the digital arts sector will focus on three areas: (I) Management and Services, (II) Development, and (III) Production and Partnerships.

I. MANAGEMENT AND SERVICES

Coordinate between agencies.
It is recommended that DCA, ScreenWest and DoIR work together to clarify funding responsibility in terms of which agency is funding which type of digital project. With convergence and hybrids, traditional categories are becoming problematic so flexibility will be necessary. Following the Canadian model of media-arts could prove beneficial and consideration should be given to future restructuring. For example, if commercial viability is used as the criteria then multimedia would include audio and video. Closer ties between traditional media, new media, and contemporary music would surely benefit all the industries and cross-promotion in the global market could be an overall benefit to WA.

Increase awareness of digital arts funding
It is understood that DCA does not currently have specific funding for digital arts because it is considered an integrated aspect of the arts overall. However, there does not appear to be general awareness in the arts community that digital projects are funded. It may be a matter of better messaging this to WA's arts practitioners but establishing specific initiatives to encourage digital arts development, production, marketing and distribution should be considered.

Flexibility of funding
In order to be a world renowned centre for innovative art, the ever-evolving nature of technology should be acknowledged and embraced. Cutting-edge creativity requires free-thinking, experimentation and risk-taking that defies rigid categories. Government needs to be open to funding a diverse range of work without limiting areas of artistic exploration. Exploring partnerships with ScreenWest and other players could enable the offering of video, games and other interactive content. One possibility is to establish a mentorship program that allows emerging multimedia practitioners to produce arts content at a reduced rate for non-profit organisations.

DCA will also need to consider whether there should be increased accountability for artists and arts organisations. One possibility is creating separate categories of 'grant' and 'investment.' For arts projects that generate profit, DCA could follow ScreenWest's model by requiring investment to be repaid.

Increase digital media expertise within Government
Arts project managers need to be knowledgeable about digital arts and media. It may be necessary to provide upskilling to increase digital literacy. Also, peer review panels will need to include digital experts along with traditional arts experts.

Increase digital arts awareness
Digital technology can be leveraged to increase public appreciation for arts overall. Working with ScreenWest to develop an online WA culture showcase can help DCA achieve its vision to foster *"a creative community that participates in and values culture and the arts as essential to our wellbeing."* [271] This online content showcase and tourism portal would feature WA's arts, media, and culture to a worldwide audience. It is envisioned as a collaborative community project with professional and user generated content that demonstrate the innovative excellence of the State. It's a great opportunity for State-wide partnerships including ScreenWest, DCA, DoIR, WA Tourism, industry organisations, cultural institutions, and schools.

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269 http://www.ifacca.org/files/040916Helsinki_agenda_final.pdf
270 The Department of Culture and the Arts Portfolio Coordination Directorate—Operational Plan.
271 The Department of Culture and the Arts Portfolio Coordination Directorate—Operational Plan.

DEVELOPMENT

Industry

Foster WA virtual arts communities.

The other arts should follow the contemporary music industry's effective embracing of community and audience interaction. Social networking for cultural enthusiasts would enable fine arts, ballet, opera, theatre, classical music, dance, and book lovers to connect online. This would be particularly valuable for those who reside in regional areas.

Enhance digital literacy

To grow WA's digital arts sector, upskilling will be necessary. This will include interactive multimedia and cross-platform project development, technological knowledge, cutting-edge, cost-effective production techniques, multimedia project management, business plans, business diversification, market research, audience demographics and usage, budgeting cross-platform projects, raising capital from diverse sources, multi-platform contract negotiation, intellectual property (IP) and rights management, marketing, and distribution. Since this sort of upskilling is also recommended for digital media producers, DCA can coordinate with ScreenWest to offer training opportunities for all media-arts practitioners.

Online information

Like ScreenWest's proposed 'Knowledge Bank,' there should be an aggregation of digital arts resources online including blogs, forums, video and podcasts from conferences, seminars, and other events. There is also an opportunity to build upon existing networks such as the Australian Network for the Arts and Culture and the Australia Council.

Residencies

International residencies offer great potential for skills development. Opportunities can be explored with organisations like Banff, ZKM, Eyebeam, Sagasnet and ZeroOne.

Digital arts training

In terms of training models, it is worth examining arts programs that have outstanding success rates in turning out multi-talented artists. California Institute for the Arts, for example, provides both traditional and digital arts training to their well-rounded students. "*The richness of the educational experience at the school is based on four elements. The first is a body of self-motivated, intellectually curious students who are ready to break new ground. The second is an outstanding faculty of professional artists and technicians who share their knowledge and experience with passion and generosity. Third is an extensive and constantly upgraded inventory of facilities and equipment, while fourth is the unique cross-pollination of the different art disciplines at CalArts. This generates a lively and stimulating creative environment—one that allows every student to expand the scope of his or her cultural experience and, in the process, become a better artist.*" [272]

272   http://www.calarts.edu/filmvideo/

Interaction with Digital Content Industry Organisations

As part of the effort to foster collaboration between the arts and media sectors, there should be more inclusiveness of industry organisations. Media and arts events should embrace all creative digital practitioners.

Foreign festival and conference attendance

Attendance helps individual artists showcase their work and also serves to increase the profile of WA's digital arts sector. In the interest of fairness, travel support should be rotated throughout the industry and those who attend should be required to share their knowledge via an online report such as an arts sector blog. The international reputation of WA's overall arts community can be enhanced by increasing the presence of Western Australian artists at prestigious events such as ISEA, Ars Electronica, Documenta, MAAP and potentially at trade events such as MILIA, E3 and the like.

Project Development

Encourage traditional artists to use digital technology.

The development of cutting-edge interactive digital art that engages the audience needs to be fostered. Arts education through interactive digital content as well as cultural preservation through digital technology also need support.

Innovation incubation

Arts-technology-science collaborations should be encouraged through an incubator program. Teams of artists, media producers, scientists, and technology experts should be empowered to develop original intellectual property with global market potential. Projects with multiple revenue streams should be encouraged. By partnering highly creative thinkers with technology and business experts, WA can develop an industry of visionary entrepreneurs.

Artprobe (METArt)

Having distinguished itself as a leader in bio-art investigation with SymbioticA, WA can leverage this reputation into exploration of the broader realm of futuristic 'Meta Art.' WA's support of future art can be extended into deeper and higher realms by examining the 'big picture' questions presented by humanity's technological evolution. This provocative initiative would be both an artistic probe into terrestrial, outer planetary, and virtual space and a probe into the philosophical, psychological, and ethical issues of techno-evolution. Exploration could include areas such as theoretical physics, metaphysics, nanotechnology, advanced computing, memetics, artificial intelligence, space exploration, consciousness, megascale engineering, spacetime manipulation and transhumanity/posthumanity. Emphasis would be on developing interactive work that provokes questioning and enables collaborative imagining by artists and the public on the profound issues of our future existence. Traversing the

creative divide between science fact and fiction holds great potential to inspire artists and engage audiences—and increase science and technology literacy. There are business, education, health and media partnership possibilities including technology companies, universities, research labs, and space centres both within Australia and internationally.

Business Development

Audience outreach

Arts organisations should be empowered to use interactive delivery of cultural arts to the community. One way to encourage the use of digital technology is for DCA to require digital marketing plans from grants applicants.

Strategic development

Support should be given to arts organisations to diversify and develop expanded business models that can include digital content revenue generation.

Digital portfolios and showreels

The days of delivering slides to galleries are over. Artists need to make their work easily accessible via websites, CDs, DVDs and downloads for portable media.

Diversified fundraising

The arts sector needs help learning creative ways to raise capital from diverse national and international sources including government, private business, and foundations. It was recommended that ScreenWest consider bringing in an expert—DCA could collaborate on this.

Infrastructure upgrade

An upgrade of IT infrastructure and knowledge is required to enable older arts exhibition spaces and performance venues to handle a diverse range of high-tech projects. As we move to a world where digital and traditional arts can co-exist in the same spaces, older institutions will need support in order to modernise their capabilities.

PRODUCTION

Apply 360° project model

The idea of "360° commissioning" is applicable to digital arts as well as digital media. Digital arts practitioners in WA should be developing more projects with cross-platform content. These creatively integrated digital projects need to offer audience interaction and engagement and be equally compelling in multiple media. Although the live experience of art will always have an important cultural role, it is increasingly important to offer art 'on demand' in cyberspace that engages the audience on multiple levels.

More digital content

Online streaming, downloadable and mobile delivery of digital content can be made available at performance venues and exhibition spaces including trailers, artist statements, and mini-documentaries. Digital content can incorporated as part of a multimedia project and/or used as marketing. It can also offer revenue potential such as selling live recordings post-performance on CD, DVD or downloadable to iPod.

Digital content for young people.

The younger audience has grown up immersed in digital technology and is particularly receptive to it. Imaginations can be captured with interactive kiosks in exhibition spaces, online games and activities, and the ability to create and share content.

BEAP 3.0

BEAP 3.0 is envisioned as the future-forward expression of a cutting-edge media-arts experience. This would involve the collaboration of WA's arts, media and technology sectors to create an international interactive cross-platform experience that engages audiences worldwide. BEAP 3.0 would enable WA to be a digital trend-setter and lead the evolution of new millennium festivals beyond preconceived notions of art, artist, exhibition and audience. Not only could BEAP more effectively leverage the talents of WA's creative industries and transcend the time-space limitations of festival exhibitions, but it could also challenge elitist ideas and offer a truly collaborative forum that incorporates the work of citizen artists from around the world. BEAP could also challenge the idea that festivals must be separate entities divided by national borders by forging partnerships with electronic arts organisations and festivals around the world. (This would also extend exhibition opportunities for WA practitioners.) These partnerships could include the U.S. (e.g. Eyebeam in New York) as well as Europe and Asia. Ideally, BEAP 3.0 would incorporate as much of the world as possible to become a truly collaborative global work of art. A newly evolved BEAP would allow WA to demonstrate its innovative excellence, however, it would be necessary to question everything, let imaginations run wild, take creative risks and dare to create something truly unique.

PARTNERSHIPS

Collaborations with other industries

Artists should be encouraged to collaborate with media producers, scientists, technology experts, health and human services, and education to facilitate knowledge transfer and potentially develop innovative applications. Museums, libraries, zoos and other cultural institutions looking to better reach audiences can partner with video game and software developers to create engaging interactive digital exhibits. They can also work with pervasive and mobile game developers and the tourist sector to create fun, interactive learning experiences in the physical world using mobile technology. The arts sector can partner with the education sector to develop arts e-learning content.

Networking opportunities

DCA should coordinate with ScreenWest to bring WA's creative practitioners together and mix the various communities locally. A bar/coffeehouse/performance/exhibition venue that could serve as a regular creative 'hang-out' would be a potent means of fostering interaction and collaboration. On the national and international level, attendance at digital conferences, festivals and markets can help practitioners make connections. Exchange programs with overseas arts, media and technology can both develop craft and increase professional opportunities.

Private Investment

WA's arts sector already has a certain amount of private investment. These existing partnerships need to be expanded to cover digital content. It will be key to communicate the benefits of using digital technology to increase the cultural value of investment by expanding audience reach. New investment sources can be explored including communications and technology companies like Apple and Microsoft Australia.

It is hoped that these recommendations will lead to the creation of initiatives that allow DCA to empower WA's arts practitioners to leverage the opportunities offered by digital technology.

SECTION 5.0

CONCLUSION

CONCLUSION

This report commenced with an acknowledgement to its predecessors. Much of what has been stated, explained, and advocated here has been said before. Although the message is the same, the urgency has increased. It is time for active initiatives. With the proper support, WA's digital media and arts practitioners can apply their strengths, surmount their weaknesses and master their challenges by embracing the bountiful opportunities of the new media world.

Two years ago, the Australian Film Commission, Australia Council for the Arts and AFTRS offered the following conclusion.

" *The multitude of technological innovation success stories in the film and digital content sectors is due largely to the support provided by Australia's cultural agencies along with various government regulatory regimes, and economic incentives, which help, protect and nurture ideas and content. Without continued government intervention in these areas, Australia will fall behind in its creation of new digital content and applications. Just as economies of scale and market size favour the US in the television and film industry, it is also the case with digital content. In the UK, Europe and Canada, the production and availability of local digital content is ensured through a robust mixture of regulation, investment incentives and subsidy.*" [273]

In their book "Culture @ the Crossroads: Culture and Cultural Institutions at the Beginning of the 21st Century: Considerations for Perth," Charles Landry and Marc Pachter asked the following questions:

"Perth is at the edge of a continent, but is it at the leading edge—a zone of experimentation, exploration and imagination? Or does it hover on the margins of the great debates about culture? Is it too locked into a tradition of constraint and constipation where the clutter of regulations built up over the ages lies there like a heavy sediment, dulling the senses and initiative? A place where there is always a reason to say 'no' and never the verve to say 'yes'." [274]

If WA takes action and supports the creative industries and empowers them to further embrace digital technology then the answers to those questions will be clear.

It is believed that government support through ScreenWest, DCA and DoIR will help ensure the digital future of WA's media-arts. Further, the collaboration of these agencies, where appropriate, can help WA realise its vision. That vision—a media-arts industry of inspired entrepreneurs with a global reputation for producing innovative work of creative excellence—can become a reality.

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274   Charles Landry and Marc Pachter. "Culture @ the Crossroads."

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273   Australian Film Commission, Australia Council for the Arts and AFTRS Joint Submission to the House of Representatives Standing Committee on Science and Innovation, 2005.

SECTION 6.0

SOURCES

SOURCES

INTERVIEWS

Harry Bardwell	Director Production Development, ScreenWest
Kat Black	Artistic Director, Byte Me! Festival
Jimmy Blackburn	Senior Director Research, Nickelodeon
Ian Booth	Chief Executive, ScreenWest
Greg Bruyer	WA Chair, Siggraph
Bronwen Clune	Founder and Director, North Media
Mark Cypher	Senior Lecturer and Program Chair, Multimedia, Murdoch/ Digital Artist
Jean du Buisson	Executive Producer, Lizard Entertainment, K29 Entertainment/President, ADCA
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Janelle Landers	Producer, WBMC
Brett Leavy	Executive Producer, Cyberdreaming
Alan Lindsay	ScreenWest Board/ Vue DC Pty Ltd
Tos Mahoney	BEAP Board/ Artistic Director, Tura New Music
Chris McCormick	Director, PodSix Games/ PIGMI
Debra Miller	Indigenous Project Officer, ScreenWest
Sarah Miller	Former Director, PICA/ Lecturer, Wollongong University
Amanda Morrison	Director, 4 U Media
Aidan O'Bryan	Media Producer, WBMC
Raphe Patmore	ScreenWest Board/ Managing Director, Modus Operandi
Roxanna Petzold	Director, Miller Theatre
Patrick Pittman	Director, Papercut Media
Ed Punchard	Director, Prospero Productions
Kate Raynes-Goldie	Internet Studies PhD Candidate, Curtin/ Co-Founder, Big Dice
Dan Scherr	Senior Project Officer Communications Technology Development, Department of Industry and Resources
Robert Spencer	Chief Operating Officer, Interzone
Cynthia Versaget	Bio and Technology Artist
Kate Vyvyan	Author, WA Animation Scoping Report/ WAnimate
Colin Walker	Director, Department of Culture and the Arts
Brian Ward	Manager, AFTRS Centre for Screen Business
Graeme Watson	Manager Professional Development & Training, FTI
Freddi Wilkinson	Fundraiser, WA Ballet

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