# CENTRAL WEST

# CREATIVE INDUSTRIES

# SURVEY 2008

**Prepared for: Arts OutWest**

**By Western Research Institute**

**22nd January 2009**

Arts OutWest

CWRDB

Department of State and Regional Development

Western Research Institute
ABN 76 090 089 991
C/- Charles Sturt University
Research Station Drive
Bathurst NSW 2795
Telephone: (02) 6338 4435
Facsimile: (02) 6338 4699
Email: tmurphy@csu.edu.au

*The WRI is proudly supported by Charles Sturt University*

| | |
|---|---|
| Electronic Path: | S:\Centres\Research Centres\Western Research Institute\Completed Projects\2008\08 005 Arts OutWest\Report |
| Last updated: | 22nd January 2009 |

# CONTENTS

## DISCLAIMER

Any representation, statement, opinion or advice, expressed or implied, in this publication is made in good faith, but on the basis that the Western Research Institute (WRI) or its employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever, which has occurred or may occur in relation to that person taking (as the case may be) action in respect of any representation, statement or advice referred to above.


## ACKNOWLEDGEMENTS

The WRI would like to acknowledge the assistance of the Arts OutWest staff and steering committee:

- Hannah Semler: Executive Officer, Arts OutWest
- Sandra Stroud: Projects Officer, Arts OutWest
- Maryanne Jaques: Communications Officer, Arts OutWest
- Wendy Carlson: Arts OutWest Board member, heritage consultant
- Lyn Cole: Arts OutWest Board member, owner/ operator Cudgegong Gallery
- Bob Craven: Hon Secretary Arts OutWest Board, owner/ operator taste Canowindra
- Alvaro Marques: Community Economic Development Manager, Regional Development Division, Department of State and Regional Development
- Marje Prior: Executive Officer, Central NSW Tourism
- Sharon Rabey: Executive Officer, Central Western Regional Development Board
- Fiona Thompson: Director, Mitchell Conservatorium

The WRI would also like to thank all individuals and organisations who participated in the *Central West Creative Industries Survey 2008*.


### PHOTO CREDITS

- Potter’s hands: Cudgegong Gallery
- Bathurst City and RSL Band at the Brucedale Concert: Maryanne Jaques
- Metal fish sculpture: taste Canowindra
- Cellular vase: Caroline Briggs

# EXECUTIVE SUMMARY

The creative industries have long played an integral part in economies both on a national and regional level. Yet the true impact is often difficult to quantify due to the fragmented nature of the sector when compared to other industries. The Department of State and Regional Development (DSRD) and Central West Regional Development Board (CWRDB) provided Arts OutWest (AOW) with funding to commission the Western Research Institute (WRI) to determine the impact, performance and profile of the creative industries in the Central West. Specifically, this report provides answers to the key research questions outlined below, and parallels a state-wide report currently being undertaken by the NSW Governments' Innovation Unit.

***What do the Creative Industries Look like in the Central West?***

Survey respondents were predominantly involved in the visual arts, design and architecture industry, followed by community and events, music and performing arts and heritage and culture.

Approximately two-thirds of respondents derived part or all of their income from their involvement in the creative industries. Creative industry income was derived from a variety of sources:

- 50% of organisations and 41% of individuals derived some or all of their income from tourism; and
- $1.2 million was received through public and private grants and sponsorship.

Most goods and services were sold directly to consumers, with word of mouth being the most popular form of promotion.

The creative industries proved to be of a highly collaborative nature, with 84% of respondents working jointly with individuals, government, education and training providers, private businesses and community groups within the past 12 months.

***What is the Economic Value of the Creative Industries in the Central West?***

The creative industries contributed 0.77% to the economy of the Central West in terms of gross regional product in 2006-07. This included:

- $196 million in output;

- $62 million in gross regional product;
- $42 million in household income; and
- 891 full-time equivalent jobs.

A contribution of 0.77% to gross regional product is significant, as evidenced by comparing this result with the most prominent tourism attraction in the Central West, Mt Panorama. Events held on Mt Panorama generated 0.56% of the Central West's gross regional product in the year 2000.

Volunteers also provided significant impetus to arts endeavours in the region with a conservative estimate of 234 full-time positions being filled by volunteers in cultural organisations and 200 full-time positions provided by individuals.

***How well are the Creative Industries Performing?***

The study found that cultural services[1] in the Central West outperformed the state in terms of employment growth between 2001 and 2006. On balance, the greatest increases in growth occurred in the film and video services and services to the arts. This was predominantly a result of economic factors and advantages specific to the Central West region driving growth ahead of state averages.

***How can the Performance of the Creative Industries be Improved?***

Availability of industry and government funding was considered by respondents to be the most critical barrier to their future development in the creative industries in the Central West. Improving their grant application skills was a high priority for both individuals and organisations, indicating an opportunity to provide information about managing business finances and sourcing and accessing financial assistance.

Surprisingly, digital technology was not considered critical for participation in the creative industries, although this is likely to be influenced by the relatively small proportion of respondents representing digital media in the survey sample.

***How do Results link with the NSW Government Statement on Innovation?***

The results of the *Central West Creative Industries Survey 2008* describe the creative industries; demonstrate the economic and social importance of the creative industries to the

[1] This analysis was based on ABS data, utilising the ABS category 'cultural services' (with sporting and recreational services removed). All other analysis was based on primary data collected according to the Arts OutWest categories and is termed 'creative industries'.

Central West; and identify opportunities to improve innovation. This provides an evidence-based foundation for policy formulation and contributes to the knowledge and information infrastructure objective of the NSW Government Statement on Innovation.

# Introduction

# 1 INTRODUCTION

## 1.1 Project Background

Arts OutWest received funding from the Department of State and Regional Development and the Central West Regional Development Board to commission research into the economic value of the creative industries in Central West NSW. The valuation included the impact of both full-time equivalent employees and volunteer contributions. Arts OutWest intends to use the results to develop a strategic plan to support the creative industries in the Central West.

## 1.2 Aims

The specific aims of the study include:

- contribute to the second objective of the NSW Government Statement on innovation, namely to upgrade knowledge and information infrastructure;
- an estimation of the economic value of the creative industries in terms of dollar value, household income, employment, output and as a percentage of the Central West economy;
- define the demographics of the creative industries in the Central West;
- assess the performance of the creative industries in the Central West with the purpose of identifying development opportunities, gaps and barriers to performance; and
- provide a framework for the future monitoring of industry trends through the establishment of a survey and shift-share analysis[2].

## 1.3 Defining the Creative Industries in the Central West

Creative industry sectors can be defined by two main methods: the Arts OutWest Cultural Directory and the Australian Bureau of Statistics (ABS) classifications.

The 2006 ABS census data refers to the creative industry sector as “Cultural Services”. The sector includes:

[2] A description of Shift Share methodology is included in Appendix 4.

- arts;
- services to the arts;
- film and video services;
- libraries;
- museums; and
- parks and gardens.

Arts OutWest developed broader categories to be used for primary data collection. The Arts OutWest Cultural Directory identified eight key classifications of creative industry:

- visual arts, design and architecture;
- film, tv and radio;
- advertising and marketing;
- music and performing arts;
- writing, publishing and print media;
- digital media;
- heritage and culture; and
- community and events.

This report uses the broader Arts OutWest definition "creative industries" unless the analysis being referred to uses only secondary ABS data, in which case the term "cultural services" is used.

The geographic region of 'Central West' was defined as the area covered by the Central West Regional Organisation of Councils (CENTROC). The Council regions included in the study are listed in *Appendix 1: CENTROC Councils*. This region corresponds to the Australian Bureau of Statistics Central West Statistical Division plus Wellington Local Government Area.

## 1.4 Methodology

The methodology was designed to answer 4 key questions:

1. *What do the creative industries look like in the Central West?*

Primary data[3] about the individuals and organisations involved in the creative industries was collected via Section A of the *Central West Creative Industries Survey 2008* (included in *Appendix 2*).

This data was analysed using descriptive statistical techniques[4].

2. *What is the economic value of the creative industries in the Central West?*

Section B of the *Central West Creative Industries Survey 2008* (included in *Appendix 2*) collected the primary data required to determine the economic importance of the creative industries in the Central West.

Information collected was entered as superior data into a Central West input-output table to determine the economic impact of the creative industries. Economic impact analysis generates indicators including gross regional product (the regional equivalent of gross domestic product), household income (wages) and full-time equivalent employment figures. A full description of Input-Output Analysis is included in *Appendix 3*.

3. *How well are the creative industries performing?*

A useful measure of the performance of cultural services is employment growth over time. Positive or negative growth can be the result of growth in the state economy, growth in cultural services state-wide or factors specific to the local area. It is the last of these that is the real indicator of the performance of cultural services in the Central West.

These employment changes were gauged using ABS census data and shift-share analysis. A full description of shift-share analysis is included in *Appendix 4*.

4. *How can the performance of the creative industries be improved?*

This question was also answered by drawing on responses to Section A of of the *Central West Creative Industries Survey 2008* (included in *Appendix 2*).

[3] Primary data is the collection of data that has not previously been collected and published
[4] Descriptive statistics summarise the basic features of a data set.

### 1.4.1 The Survey Instrument

The WRI collaborated with the Arts OutWest Steering Committee to develop the questionnaire included in *Appendix 2: Central West Creative Industries Survey 2008*. The questionnaire consisted of 17 questions in total, and underwent piloting and cognitive testing before being approved for use by the Arts OutWest Steering committee.

Arts OutWest distributed the questionnaire by mail and email to 1194 individual and 1149 organisational contacts on the Arts OutWest Cultural Directory. The final date to return completed surveys by was the 29th August 2008.

A total of 235 respondents completed the demographic questions in Section A of the survey. Eighty-five of these also completed Section B, providing information for the economic analysis. The overall response rate was 10% with a confidence interval of +/- 6% at the 95% confidence level. That is, the WRI is 95% confident that responses to the survey represent the population to within +/- 6%. The majority of survey respondents represented the visual arts, design and architecture sector.

A detailed outline of the questionnaire design, sampling, administration and response rates is included in *Appendix 5: Survey Instrument*.

# What do the Creative Industries look like in the Central West?

# 2 WHAT DO THE CREATIVE INDUSTRIES LOOK LIKE IN THE CENTRAL WEST?

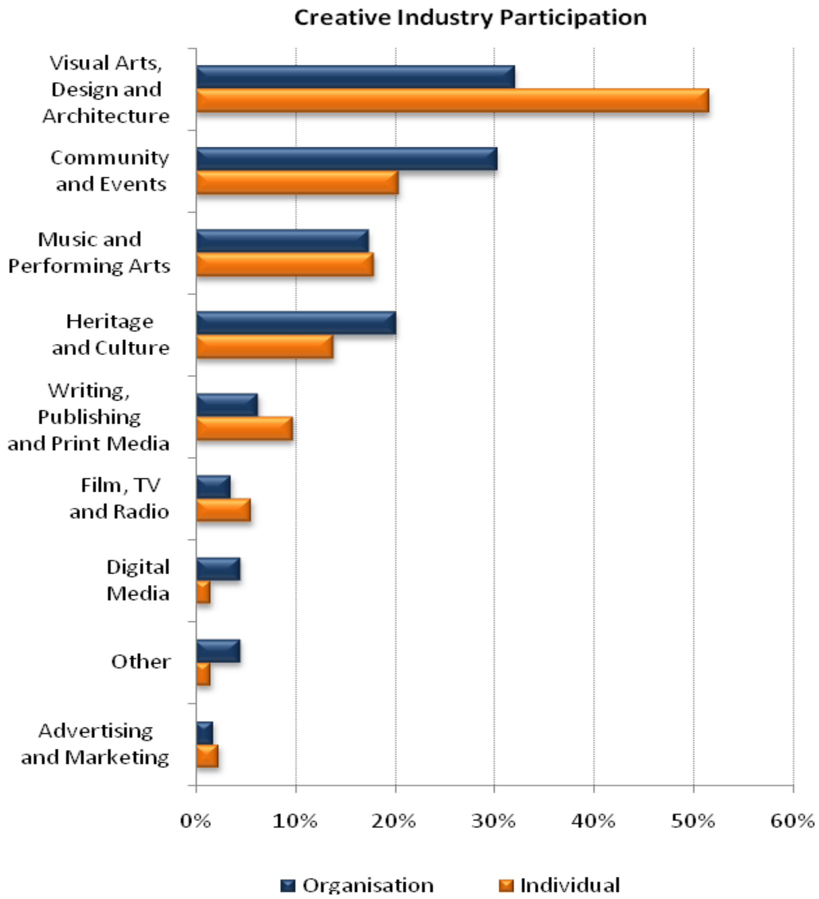
Responses to the *Central West Creative Industries Survey 2008* provided information on the following:

- Industry Involvement
    - Creative Industry Participation
    - Length of Industry Involvement
    - Collaboration
- Working in the Creative Industries
    - Work Premises
    - Training and Education
- Selling Goods and/or Services
    - Promotion
    - Sales Method
    - Overseas Sales
- Income
    - Creative Industries Income
    - Tourism Income
    - Grants and Sponsorships.

## 2.1 Industry Involvement

### 2.1.1 Creative Industry Participation

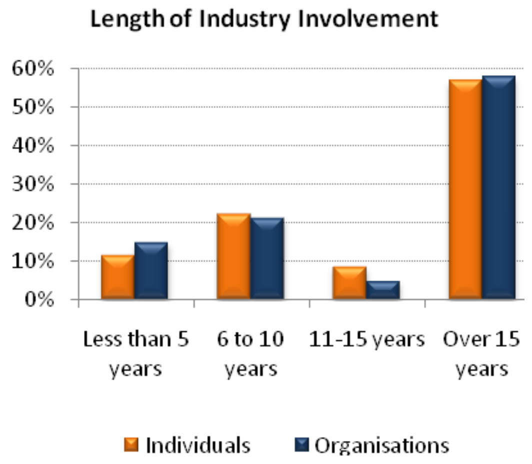
Individuals (52%) and organisations (32%) were most likely to be involved in the visual arts, design and architecture industry, followed by community and events (20% and 30% respectively). Both individuals and organisations were least likely (2% each) to participate in the advertising and marketing industry.



### 2.1.2 Length of Industry Involvement

Overall, most respondents (57%) had been involved in the creative industries for more than 15 years.

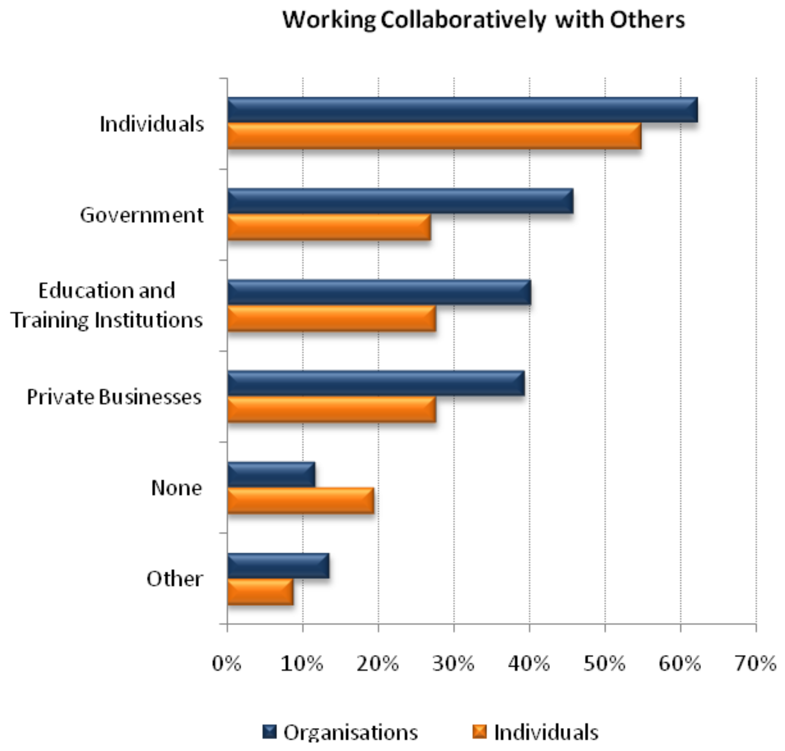
Overall, individuals were more likely than organisations to have been involved for between 6 and 15 years (30%), while organisations were more likely to have been established for less than 5 years (15%).




### 2.1.3 Collaboration

Overall, 58% of respondents had worked collaboratively with individuals over the past 12 months. Thirty-six percent had collaborated with government, 34% with educational and training providers and 33% with private businesses. A further 11% nominated 'other' collaborative partners, namely community groups. Sixteen percent of respondents had not collaborated with others in the past 12 months.

Generally, organisations were more likely than individuals to work collaboratively with others.



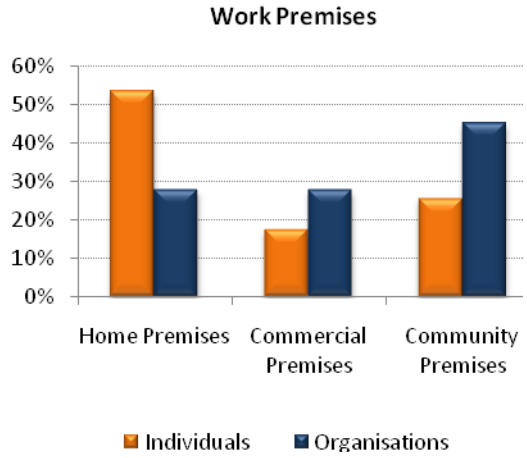
## 2.2 Working in the Creative Industries

### 2.2.1 Work Premises

Individuals were most likely to work from home (53%) , while organisations were most likely to utilise public and community spaces (45%) including:

- Council buildings;
- community halls; and
- churches.

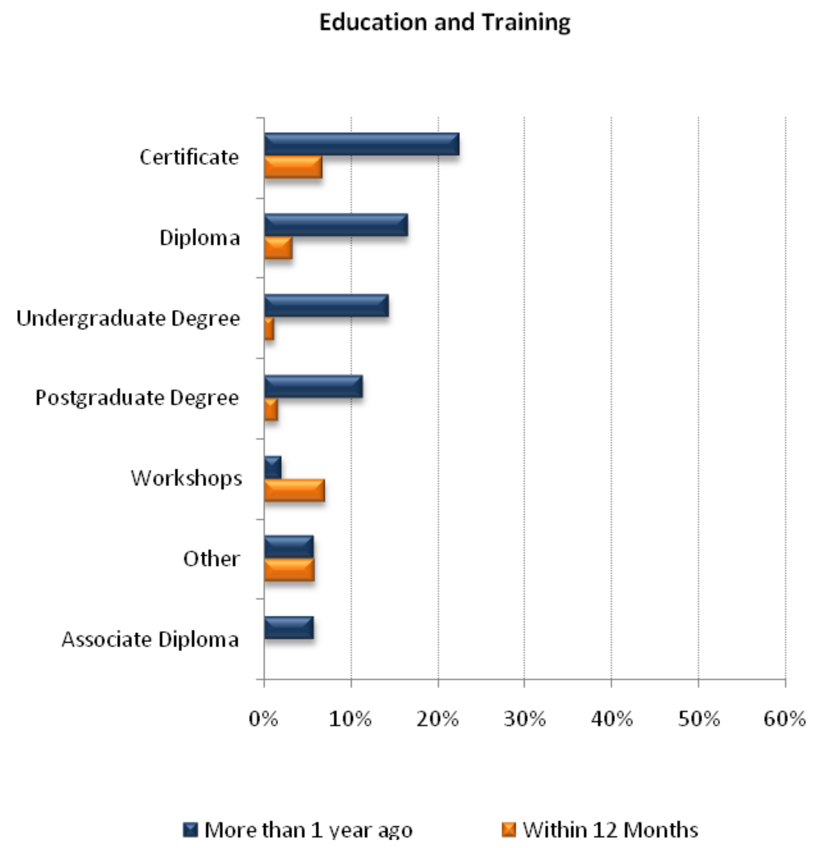
Overall, approximately one in five respondents (22%) utilised commercial premises.




### 2.2.2 Training and Education

Seventy percent of individuals and 72% of organisations had at least one employee undertake some form of education or training relevant to their involvement in the creative industries.

With the exception of workshops, most training had been undertaken more than one year ago. Twenty-nine percent of respondents had a certificate qualification relevant to their creative industry, while one in five (20%) held a diploma. Sixteen percent had completed an undergraduate degree, 13% a post-graduate degree, 9% attended workshops and 6% held an associate diploma. Twelve percent of respondents nominated alternative training and education, mainly private tutoring and community colleges.

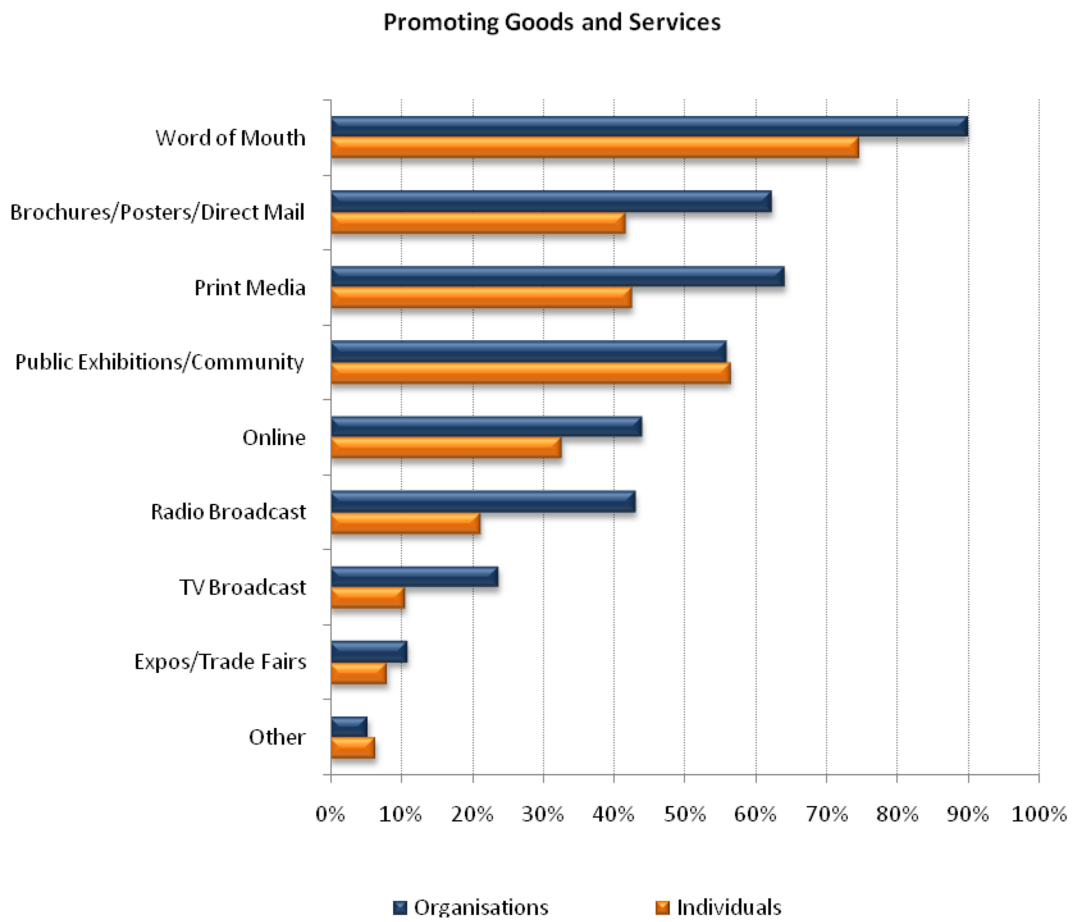



## 2.3 Selling Goods and/or Services

### 2.3.1 Promotion

Overall, the majority of respondents (82%) used word of mouth to promote their goods and/or services for sale, while approximately half used public exhibitions (55%), print media (52%) or brochures/posters/direct mail (51%). Thirty-eight percent promoted their goods and/or services online, 31% utilised radio broadcasts, 17% used television media and 10% used expos and fairs.

Organisations were more likely than individuals to promote their goods and/or services for sale. On average, organisations utilised four promotional methods while individuals utilised three. Public exhibitions were the only promotional tool more likely to be used by individuals (57%) than organisations (56%).

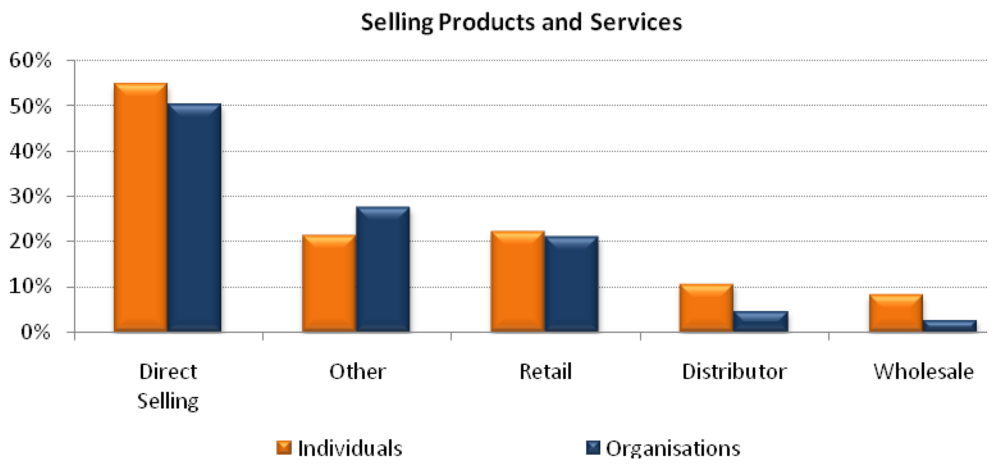



### 2.3.2 Sales Method

Fifty-five percent of individuals and 50% of organisations sold their goods and/or services directly to the consumer. Approximately one in five respondents (22% of individuals and 21% of organisations) utilised retail outlets, while 11% of individuals and 5% of organisations sold via a distributor. Individuals (8%) and organisations (3%) were least likely to wholesale their goods and/or services.

One quarter of respondents (25%) selected 'other' and outlined promotional tools including:

- exhibitions;
- galleries;
- internet;
- advertisements; and
- word of mouth.




### 2.3.3 Overseas Sales

Fifteen percent of respondents sold goods and/or services overseas. These respondents were asked to nominate what proportion of their goods and/or services had been sold to an overseas market.

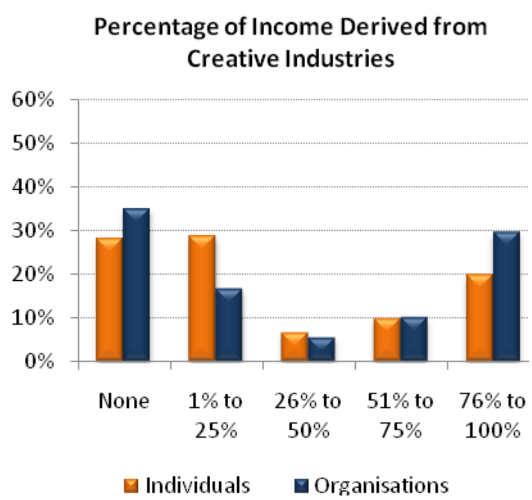
Responses ranged from 1% to 80% and averaged at 18%. Organisations and individuals were equally likely to sell goods and/or services overseas (7.5%), however organisations generally sold a higher proportion of goods and/or services overseas (21%) compared to individuals (14%).

## 2.4 Income

### 2.4.1 Creative Industry Income

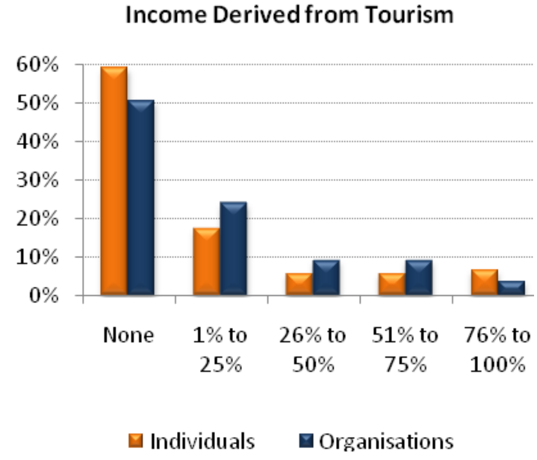
Over the past 12 months, individuals (65%) were more likely than organisations (61%) to have derived part or all of their gross income from the creative industries.

Individuals were more likely to obtain less than one quarter of their gross income from the creative industries. By comparison, organisations were more likely to derive over three quarters of their gross income from the creative industries.



### 2.4.2 Tourism Income

Half of all organisations (50%) and 41% of individuals had derived part or all of their gross income from the tourism industry over the past 12 months.




Overall, one in five respondents derived between 1% and 25% of their income from the tourism industry, 7% derived between 26% and 50%, and a further 7% derived between 51% and 75%.

Six percent of respondents relied on the tourism industry for more than three-quarters of their gross income.

### 2.4.3 Grants and Sponsorships

Respondents had received 114 grants and sponsorships totalling $1,196,932.45 to assist with their involvement in the creative industries over the past 12 months.

The most common value of a grant or sponsorship was $500.00. Values ranged from $100 to $107,712.00, with an average value of $9,879.50.

Grants and sponsorships were received from a number of private and public organisations, including the following:

- ACHLT(Carrick institute)
- Arts NSW
- Arts OutWest
- Australia Council
- Bathurst RSL
- Credit Unions (including Reliance, Lithgow Family First, Central West and Orange Credit Unions)
- Community Development Support Expenditure Scheme (CDSE)
- Central West Catchment Management Authority
- Community Broadcast Foundation
- Commonwealth Bank Regional Awards
- Delta Electricity
- Department of Community Services

- Department of State & Regional Development
- Federal Government.
- Festivals Australia
- Foundation for Rural and Regional Renewal
- Australia Post
- Indigenous Co-ordination Centres
- INDENT-music NSW
- Local Councils (including Bathurst Regional, Blayney, Mid Western, Parkes Shire, Oberon, Lithgow, Lachlan Shire and Cabonne)
- Museums and Galleries NSW
- MAG NSW
- Mavis Wiles Bequest
- Royal Australian Historical Society
- Regional Arts NSW (Grant)
- Spectrum
- Tourism NSW
- Youth week
- Wollemi Creative Children Art
- Local Stages program
- Accessible Arts NSW
- Bathurst Library
- Calleen Trust
- Central West Writers Centre
- Local Councils (including Bathurst Regional, Cabonne and Parks Shire)
- General/community donations from individuals and businesses
- Inkability
- Lyndon Community
- Millthorpe AH & P Association
- Molong Players
- Orange Credit Union
- Quicks Regional Arts
- Regional Arts Fund
- Rotary

## 2.5 Summary

Participants from all eight creative industries responded to the *Central West Creative Industries Survey 2008*, however the majority of respondents represented the visual arts, design and architecture sector. Respondents generally had over 15 years of experience in their chosen creative industry(ies) (57%), and the majority (84%) had collaborated with other individuals or organisations in the past 12 months.

Approximately 2 in 3 respondents derived all or part of their gross income from the creative industries over the past 12 months. Over half (52%) of respondents sold their goods or services directly to consumers, with the majority of promotion being achieved by word of mouth (82%). Almost half (49%) of all respondents had received financial support from the community.

# What is the Economic Value of the Creative Industries in the Central West?

# 3 WHAT IS THE ECONOMIC VALUE OF THE CREATIVE INDUSTRIES IN THE CENTRAL WEST?

The economic value of the creative industries in the Central West was calculated by entering superior data[5] collected from Section B of the *Central West Creative Industries Survey 2008* into Input-Output tables. A detailed description of Input-Output methodology is included in *Appendix 3*.

Due to the fragmented nature of the creative industries that differentiates them from more conventional industrial sectors, a number of assumptions were required to allow for robust analysis of the data without compromising the unique features of the cultural sector. These assumptions are included in *Appendix 6: Input-Output Assumptions.*

## 3.1 Economic Impact of the Creative Industries in the Central West

This input-output table incorporated the primary data gathered through the survey, weighted to reflect the relevant proportion of the database of Arts OutWest. The Central West input-output table covers the combined region of the Australian Bureau of Statistics Central West Statistical Division plus Wellington Local Government Area to reflect the members of the Central West Regional Organisation of Councils (CENTROC).

The economic significance of the creative industries in the Central West in 2006-07 is shown in Table 3.1.

**Table 3.1: Economic Significance of the Creative Industries in the Central West, 2006-07**

| | Output $m | Value Added $m | Household Income $m | Employment FTE |
|---|---|---|---|---|
| **Direct** | 53.1 | 25.2 | 21.2 | 544 |
| **Flow-on** | 143.0 | 37.1 | 20.6 | 347 |
| **Total** | **196.1** | **62.3** | **41.8** | **891** |
| **Multiplier** | 3.69 | 2.47 | 1.97 | 1.64 |

When flow-on effects are taken into account the creative industries in the Central West are estimated to generate:

- 196 million in output;
- $62.3 million in value added (gross regional product);
- almost $42 million in household income; and
- 891 full-time equivalent jobs.

[5] Eighty-five respondents provided financial information suitable for use in input-output analysis.

This is equivalent to 0.77% of the gross regional product of the Central West region and 1.14% full time equivalent jobs.

It should be noted that the 0.77% contribution of cultural services to the Central West gross regional product is significant for the region. This is evidenced by comparing the contribution of the creative industries with the contribution of the Central West's premier tourism attraction, Mt Panorama. The three major motor sport events[6] held on Mt Panorama in 2000 generated 0.56% of the Central West's gross regional product for that year.

It is also interesting to note that cultural services[7] in New South Wales in 2006-07 are estimated to have contributed 2.2% to the gross state product in 2006-07 while accounting for approximately 1.3% of full-time equivalent jobs state-wide.

As cultural services are likely to be more prominent in capital cities than in regional areas, it is to be expected that the creative industries in the Central West would make a smaller contribution to gross regional product than the state average. However in terms of employment, the creative industries generate a similar number of full time equivalent positions in the Central West (1.14%) as cultural services generate state-wide (1.3%).

## 3.2 Volunteer Contributions to the Creative Industries

### 3.2.1 Volunteer Contributions

Unpaid volunteers comprise a large proportion of labour input in the creative industries in the Central West region, as indicated in Table 3.2.

**Table 3.2: Impact of Volunteer Workforce in the Creative Industries in the Central West**

| | Total Volunteer Hours Worked Per Year, Central West | Volunteer Work in Full-time Equivalent (FTE) Positions, Central West | Total Volunteer Hours Worked Per Year, Outside Central West | Volunteer Work in Full-time Equivalent (FTE) Positions, Outside Central West |
|---|---|---|---|---|
| **Organisations** | 462,051 | 234 | 12,809 | 6 |
| **Individuals** | 394,908 | 200 | - | - |

Conservatively, some 462,000 unpaid hours were worked in creative industry organisations over the 1 year period, equating to 234 full-time positions in the Central West region. Likewise, on an individual basis some 395,000 hours were volunteered by individuals equating to 200 full-time positions.

6 Easter Motorcycle Festival, FAI 1000 Weekend and the Bob Jane T-Mart Bathurst 500 Weekend.
7 This table was based on ABS data, utilising the ABS category 'cultural services' (with sporting and recreational services removed).

These figures are of a conservative nature as a great many volunteer hours go unrecorded, particularly in smaller non-profit organisations. As such, the true volunteer impact on the creative industries in the Central West is likely to be considerably higher. This conclusion is supported by ABS data[8] suggesting that on average, volunteers in art galleries and museums out number paid employees by 3 to 1 and approximately a third of all workers in the music, theatre and library sectors are volunteers.

### 3.2.2 Potential Economic Impact of Volunteer Contributions

The potential economic impact of the volunteer component of the creative industries in the Central West is shown in Table 3.3[9].

**Table 3.3: Potential Economic Impact of Volunteer Workforce in the Creative Industries in the Central West region**

| | Output $m | Value Added $m | Household Income $m | Employment FTE |
|---|---|---|---|---|
| **Individual** | 83.6 | 26.8 | 17.2 | 361 |
| **Organisation** | 97.8 | 31.3 | 20.1 | 423 |
| **Total** | **181.3** | **58.1** | **37.3** | **784** |

Assuming that the total volunteer component for individuals and organisations in the Arts OutWest database were in paid employment in the creative industries, this would generate an additional:

- $181 million in output;
- $58 million in value added (gross regional product);
- $37.3 million in household income; and
- 784 full-time equivalent jobs.

It should be noted that there may be a degree of double counting involved when comparing volunteer work done for organisations to those by individuals, hence a total combined figure may result in a misleading figure and interpretations.

[8] (Cat. No. 4172.0)
[9] Results assume that the estimated FTE from volunteer work have the same productivity rate per FTE as the employed FTE in the sector.

## 3.3 Summary

The creative industries in the Central West were estimated to have accounted for 0.77% of the gross regional product of the Central West region in 2006-07. This included $62.3 million in value added and almost $42 million in household income. Some 891 full-time equivalent jobs were created as a result of this economic activity. To give these results context, the three major motor sport events[10] held on Mt Panorama in 2000 generated 0.56% of the Central West's gross regional product.

The impact of volunteers on the creative industries in the Central West, while not of a direct financial nature, cannot be underestimated in terms of the continued viability of many creative industry organisations. With many non-profit groups relying on grants or other sponsorship to cover shortfalls in income, volunteers provide an integral service by assisting in lowering overheads and through their passionate involvement, ensuring the consistent high quality of product produced.

[10] Easter Motorcycle Festival, FAI 1000 Weekend and the Bob Jane T-Mart Bathurst 500 Weekend.

# How well are the Creative Industries Performing?

# 4 HOW WELL ARE THE CREATIVE INDUSTRIES PERFORMING?

Comparisons were observed with regard to the growth and decline between cultural services sub-groups (with “sport and recreational services” sub-groups removed) by comparing 2001 and 2006 ABS employment figures in a shift-share analysis.

Shift-Share analysis attributes employment growth or decline in a sector to the state economy, industry mix or local factors. An in-depth shift-share methodology is included in *Appendix 4: Shift-Share Methodology*.

Growth or decline in each sub-group is shown in *Table 4.1: Cultural Services Comparison*.

**Table 4.1: Cultural Services Comparison: Number of Persons Employed**

| | NSW Growth Component | Industrial Mix Component | Local Component | Total |
|---|---|---|---|---|
| **Film and Video Services** | 5.3 | -65.3 | 83.0 | 23 |
| **Radio and Television Services** | 9.2 | -113.2 | 94.0 | -10 |
| **Libraries** | 5.0 | -59.8 | 19.8 | -35 |
| **Museums** | 1.6 | -17.8 | 11.2 | -5 |
| **Parks and Gardens** | 7.1 | -65.1 | 34.0 | -24 |
| **Arts** | 5.8 | -67.6 | 53.8 | -8 |
| **Services to the Arts** | 0.9 | -11.3 | 16.3 | 6 |
| **Total** | **34.9** | **-400.1** | **312.1** | **-53** |

On balance, the greatest increases in employment occurred in the film and video services sub-group followed by the arts, and the greatest declines were observed by libraries.

- The greatest net change occurred in libraries, with a downward shift in employment recorded (-35).
- The greatest volatility was recorded by the radio and television services sector, with significantly negative industrial factors (-113.2) slightly outweighing the combined positive impacts of local and state factors (103.2).
- Museums were the most stable sector (-5), followed by services to the arts (6).
- Local factors had the greatest positive influence on radio and television services (94), followed by film and video services, arts, parks and gardens, libraries, services to the arts and finally museums.

- Industry factors had a negative impact on all cultural services sub-sectors, especially radio and television services(-113.2). Services to the arts (-11.3) and museums(-17.8) were least affected.

- The NSW growth component had a minimal, but positive, impact on all cultural services sub-sectors.

## 4.1 Summary

Although the net growth of cultural services in the Central West was negative, increases in employment are supported by industry growth from within the Central West, rather than relying on external industry factors. This indicates that cultural services are a strong performer in the region's industry mix.

Film and television services and services to the arts experienced an increase in employment between 2001 and 2006, while the remaining creative industries recorded decreases in employment. The greatest decrease occurred in the libraries sector.

It should be noted that these results refer to paid employment positions only. Shifts in equivalent full time volunteer position numbers do not appear in the ABS data and so are more difficult to trend. There is the potential for future research endeavours to investigate whether volunteers are taking up the decrease in full-time equivalent employment in some cultural services.

# How can the performance of the Creative Industries be Improved?

# 5 HOW CAN THE PERFORMANCE OF THE CREATIVE INDUSTRIES BE IMPROVED?

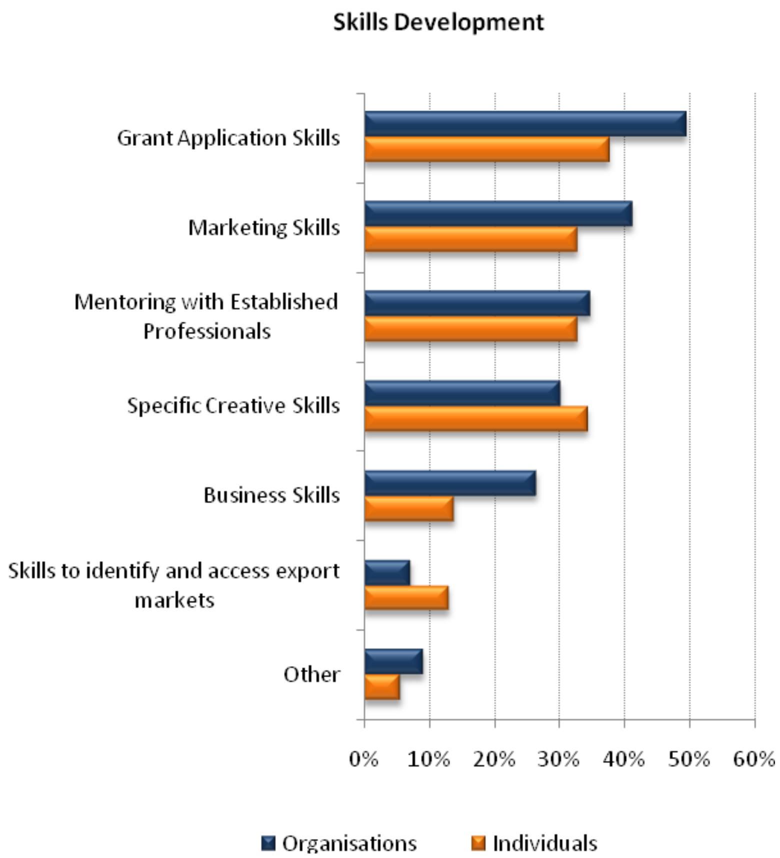
Respondents to the *Central West Creative Industries Survey 2008* were queried about:

- skills development;
- the importance of digital technology; and
- barriers to development.

### 5.1.1 Skills Development

Respondents were asked what skills they wished to develop to assist their involvement in the creative industries. The development of grant application skills was a priority for both organisations (50%) and individuals (38%).

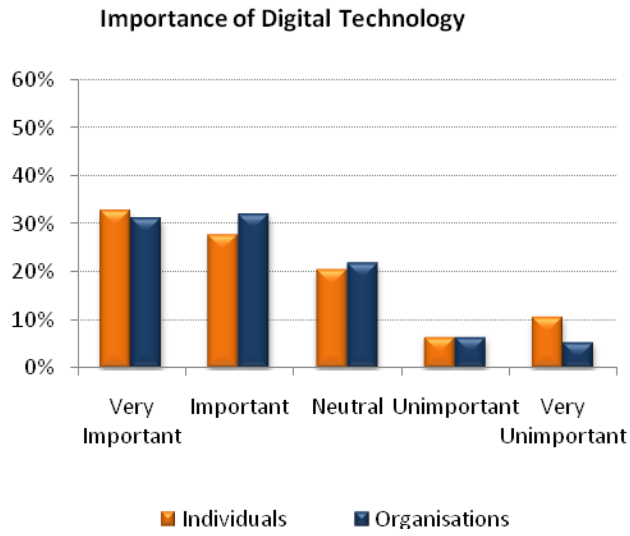
Organisations were then interested in developing marketing skills (41%), mentoring with established professionals (35%), specific creative skills (30%), business skills (27%) and the skills to identify and access export markets (7%). Individuals were more interested in developing specific creative skills (34%), followed equally by marketing and mentoring (33%).



### 5.1.2 Importance of Digital Technology

On balance, respondents rated the importance of digital technology to their organisation's participation in the creative industries at 4.8 out of 10, where 10 is most important.

Digital technology was marginally more important to organisations (5.1) than to individuals (4.3).

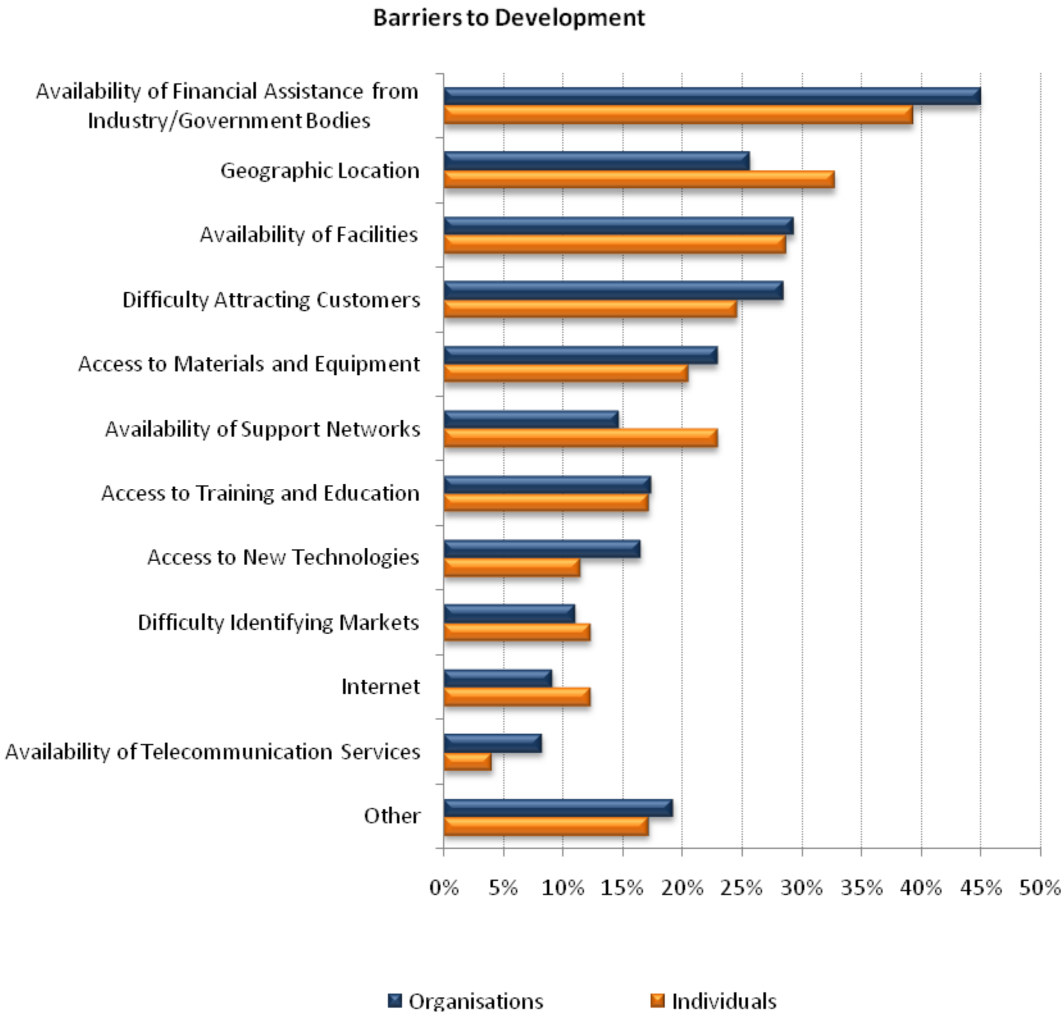



### 5.1.3 Barriers to Development

Availability of financial assistance from industry/government bodies was the primary barrier to development for creative industry participants in the Central West (42%). This was followed by geographic location (29%), availability of facilities (29%), difficulty attracting customers (27%), access to materials and equipment (22%), availability of support networks (20%), access to training and education (17%), access to new technologies (14%), availability of internet technology services (11%), difficulty identifying markets (11%) and availability of telecommunication services (6%). Eighteen percent of respondents nominated alternative barriers, particularly:

- Human Resources
- Cashflow/income
- Time poor

Individuals were 8% more likely than organisations to be affected by a lack of support networks and 7% more likely to feel disadvantaged by their geographic location. On the other hand, organisations were 6% more likely than individuals to nominate limited financial assistance from industry and government as a barrier to development, and 5% more likely be affected by limited access to new technologies.



Barriers to Development
Availability of Financial Assistance from Industry/Government Bodies
Geographic Location
Availability of Facilities
Difficulty Attracting Customers
Access to Materials and Equipment
Availability of Support Networks
Access to Training and Education
Access to New Technologies
Difficulty Identifying Markets
Internet
Availability of Telecommunication Services
Other
0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50%
Organisations
Individuals

## 5.2 Summary

Availability of financial assistance was considered a significant barrier to development by 42% of respondents, and both individuals and organisations indicated a desire to develop grant application skills. Based on the training and education uptake of respondents over the past 12 months, workshops would be a viable training format for the development of grant application skills.

On balance, digital technology was not considered critical to involvement in the creative industries. This is surprising given the heavy influence of visual arts, design and architecture in the sample.

Of particular interest was the survey respondent assertion that geographical location (i.e. the Central West) was among the top two limiting factors when it came to development and expansion. As was previously demonstrated, one of the most important factors in employment growth in the Central West was revealed by shift share analysis to be local components. In fact ABS data suggests that this local component holds the Central West in good standing compared to the rest of NSW which is experiencing employment decline in the cultural and recreational sector.

# Linking Results with the NSW Government Statement on Innovation

# 6 LINKING RESULTS WITH THE NSW GOVERNMENT STATEMENT ON INNOVATION

As part of the Government's Economic and Financial Statement, the Government asked Professor Jonathan West, a world expert in innovation, formerly Associate Professor at Harvard Business School, to provide advice on an innovation strategy for NSW. The NSW Government Statement on Innovation is the NSW Government's response to Professor West's first paper.

The Government sees this innovation strategy as a key part of its commitment to support economic growth in NSW, and accepts the three core principles underlying Professor West's proposal:

1. That the efforts of government to support and build innovation should be focused on those industries that are most likely to produce benefits for the broader economy, and where innovation will be boosted by the Government's support.

2. That policies and support to these sectors should be based on an analytical understanding of the actual innovation processes specific to these sectors in the NSW economy.

3. That the Government's role in supporting innovation should be focused on complementing, not replacing the market.

(Source: New Direction for NSW: NSW Government Statement on Innovation[11])

The five industries identified as being most likely to produce benefits to the broader economy were: creative industries; financial services; manufacturing; logistics; and resources (coal). The creative industries were selected because of their high employment growth, high industry growth and being one of NSW's top 20 exports.

The statement aims to enhance innovation in these industry sectors through the implementation of 5 key goals:

1. improve human capital;

2. upgrade knowledge and information infrastructure;

3. reduce the cost to business of utilising science and technology;

4. encourage capital allocation to invest in innovation; and

[11] Available online: http://www.business.nsw.gov.au/NR/rdonlyres/0851EEBF-97CA-456E-9F99-73ED34153997/0/NSW_INNOVATION_STATEMENT_NOV2006.pdf Accessed 17th December 2008

5. reduce regulatory barriers to innovative NSW companies.

The *Central West Creative Industries Survey 2008* was designed to align with the second objective of the NSW Government Statement on Innovation: to contribute to knowledge and information infrastructure. The project has contributed to analytical knowledge and information infrastructure in the Central West creative industries by:

- defining and describing the Central West creative industries;
- determining the economic and social importance of the creative industries to the Central West;
- identifying how the creative industries have performed over time in terms of employment;
- identifying opportunities for improvement; and
- identifying how the NSW government can play a role in improving the performance.

These results can form the basis of policy development and provide the NSW Government with strategies for improving productivity and investment in the Central West creative industries.

A similar project is currently being undertaken on a state-wide scale by the NSW Government's Innovation Unit. This project is investigating the economic impacts of the creative industries in NSW to provide an evidence base for policy, and identifying key areas where the NSW Government can promote innovation and stimulate economic growth. The *Central West Creative Industries Survey 2008* provides complementary information to the state-wide project, strengthening evidence suitable for policy development available on the creative industries in the Central West.

# Conclusion

# 7 CONCLUSION

The *Central West Creative Industries Survey 2008* was designed to align with the NSW Government Statement on Innovation, and complement a state-wide study being undertaken into the economic contribution of the creative industries, and identify opportunities to encourage innovation in the sector.

The creative industries in the Arts OutWest region were estimated to have accounted for 0.77% of the gross regional product of the Central West region in 2006-07. This included:

- $62.3 million in value added (gross regional product);
- almost $42 million in household income; and
- 891 full-time equivalent jobs.

A contribution of 0.77% to gross regional product indicates the importance of the creative industries to the Central West economy. By comparison, the three major motor sport events held on Mt Panorama in 2000 combined to generate 0.56% of the Central West's gross regional product.

In addition to this direct economic benefit to the region, volunteer contributions were also significant. Conservatively, some 395,000 hours were volunteered by individuals equating to 200 full-time positions, while organisations reported a total of 234 full-time equivalent positions being filled by volunteers.

Employment growth in the Central West cultural services sector outperformed the state between 2001 and 2006. This was a result of economic factors local to the Central West region driving growth ahead of state averages.

Approximately two-thirds of individuals (65%) and organisations (61%) derived part or all of their income from the creative industries. Nearly half of all respondents derived some or all of their income from tourism sales, while some $1.2 million was sourced though government and private grants and sponsorships.

The availability of industry and government financial assistance was cited as the primary barrier to development for those in the creative industries. Both organisational and individual respondents listed grant application skills as their highest priority, indicating a significant opportunity for the NSW Government to provide information and support on sourcing and securing financial assistance. It may also indicate an opportunity to encourage the development of business finance skills in the creative industries.

Results from the *Central West Creative Industries Survey 2008* demonstrate the economic importance of the creative industries to the regional economy; strong performance attributable to the Central West region; and identifies opportunities for improvement. These results form a strong foundation for policy development and identifying how the NSW Government can play a role in improving the performance and innovation of the creative industries in the Central West. In this way, the Central West creative industries can play a part in the NSW Government Statement on Innovation.

# APPENDICES

# APPENDIX 1: CENTROC COUNCILS

The following councils were members of the Central West Regional Organisation of Councils (CENTROC) at the commencement of the study.

- Bathurst Regional Council
- Blayney Shire Council
- Cabonne Council
- Lithgow City Council
- Cowra Shire Council
- Forbes Shire Council
- Lachlan Shire Council
- Mid-Western Regional Council
- The Oberon Council
- Orange City Council
- Parkes Shire Council
- Weddin Shire
- Wellington Council

# APPENDIX 2: CENTRAL WEST CREATIVE INDUSTRIES SURVEY 2008

# APPENDIX 3: INPUT OUTPUT METHODOLOGY

Input-output tables are part of the Australian national accounts. An input-output model provides a very detailed picture of the structure of an economy at a particular point in time. It includes all the transactions that occur during a specific period, usually one year.

- The rows of an input-output table show the disposal of the output of an industry to itself and to other industries as well as final demand categories (i.e. exports and household consumption); and

- The columns show the origin of inputs into production, whether they are intermediate inputs (i.e. intra- and inter-industry purchases) or primary inputs (i.e. labour and capital).

The main use of input-output tables is economic impact analysis, where the tables are used to estimate the benefits generated by new initiatives on each and every sector of an economy. For example, if there is a change in the purchasing or sales pattern of any industry, the flow-on, or multiplier, effects on upstream industries can be calculated. An input-output table is also very useful for estimating the direct and indirect contribution of a specific industry, such as the creative industries, to the economy.

The application of input-output analysis to estimate the contribution of the creative industries to the economy involves four basic steps:

1. Construction of appropriate national, state and regional input-output tables;

2. Estimation of the value of the sales and purchases of the creative industries using surveys and secondary data sources;

3. Insertion of separate sectors representing the economic activities of the creative industries; and

4. Balancing of the input-output tables using the RAS method.

The input-output tables used in this study were constructed using the Generation of Regional Input-Output Tables (GRIT) system.

GRIT uses a series of non-survey steps to produce a prototype regional table from the national table, but provides the opportunity at various stages for the insertion of "superior data". The system is "variable interference" in that the analyst is able to determine the extent to which they interfere with the mechanical processes by introducing primary or other superior data.

The GRIT system is designed to produce regional tables that are:

- consistent in accounting terms with each other and with the national table;
- capable of calculations to a reasonable degree of holistic accuracy; and
- capable of being updated with a minimum effort as new data becomes available.

The GRIT procedure was developed by Associate Professor Guy West and Professor Rod Jensen of the University of Queensland and is the most widely used method of constructing input-output tables in Australia. The GRIT method is also widely used in America and Europe.

In its original form the national input-output table constructed by the ABS contains a sector for motion picture, radio and television services and a sector for libraries, museums and the arts. However, these sectors are not sufficiently broad to encompass the range of creative activities undertaken by members of Arts OutWest. Therefore the ABS table does not provide a satisfactory representation of the creative industries in its original form.

To account for these deficiencies the information collected from the surveys of individuals and organisations was used to update the combined motion picture, radio and television services and libraries, museums and the arts sectors in the ABS input-output table.

The final input-output tables were balanced using the RAS technique. The RAS technique is a bi-proportional iterative adjustment method designed to modify a base input-output matrix to fit new row and column totals. The rows and columns are simply adjusted proportionally to the new row and column totals in turn, and the cycle repeated until the actual row and column totals converge to the specified values. After the tables were balanced they were checked to ensure that the final tables were consistent and to identify any large discrepancies.

One of the main limitations of input-output tables is the assumption of linear coefficients. To address this problem and the associated problem of overestimation the input-output analysis undertaken for Arts OutWest incorporates the marginal coefficients model.

The marginal income coefficients model attempts to overcome the limitations of traditional input-output analysis by removing the assumption of linear coefficients for the household sector. As is well documented in the literature, the household sector is the dominant component of multiplier effects in an input-output table so using marginal income coefficients for the household sector only provides a more accurate estimate of the multiplier effects and provides results closer to those of a computable general equilibrium (CGE) model. This should still result in a more accurate estimate of the significance of the creative industries value chain than would be possible with traditional input-output analysis.

## Glossary of Terms

| | |
|---|---|
| *Capital Expenditure* | Gross fixed capital expenditure is the purchases of durable investment goods such as dwellings, plant and equipment. |
| *COE* | Compensation of Employees (COE) is equal to the wages and salaries of employees plus on-costs (e.g. superannuation and payroll tax). Compensation of Employees is the basis of the *Household Income* multiplier. |
| *Employment* | Employment is measured as full-time equivalent (FTE) jobs. |
| *Exports* | At the national level exports are goods and services sold to non-residents. Note that non-residents are defined as consumers, firms and governments from outside a given area. To illustrate the difference, the sale of art works from the Central West region to a purchaser in Sydney is an export with respect to the Central West region input-output table, but is not classified as an export in the New South Wales input-output table. |
| *Final Consumption* | Final consumption expenditure includes the current expenditure of households, industry and government. It includes purchases of durable and non-durable commodities, except the purchase of dwellings and equipment that are capital in nature. There are two types of final consumption: private final consumption expenditure (PFCE) and government final consumption expenditure (GFCE). |
| *Final Demand* | Final demand is the demand for goods and services not used up during the production process. Final demand is the sum of household and government consumption expenditure, capital investment, exports and increases in inventories. |
| *Intermediate Inputs* | An intermediate input is a good or service that is used in the production process. |

*Imports* Imports are goods and services purchased from non-residents and may include: competing imports, where there is a domestically produced substitute; and complementary imports, where there is no domestically produced substitute. Note that non-residents are defined as consumers, firms and governments from outside a given area. To illustrate the difference, a purchase of artists' supplies from Sydney by a Central West artist is an import with respect to the Central West region input-output table, but is not classified as an import in the New South Wales input-output table.

*GOS* Gross Operating Surplus (GOS) is the excess of gross output over the costs of production, before deducting depreciation, interest and company taxes.

*Multiplier* A multiplier is a summary measure used for estimating the economic impact on an economy caused by a change in the demand for the output of a particular industry or group of industries. A multiplier indicates the relative magnitude of the flow-on effects of the creative industry compared to the direct effect of the industry.

The multipliers in this report are for *output*, *value added*, household income (i.e. *compensation of employees*) and *employment*.

*Output* Output is equal to total sales (i.e. quantity sold multiplied by price per unit).

*Primary Inputs* A primary input is an input into the production process that is not a good or service. Examples of primary inputs are compensation of employees, gross operating surplus, imports and indirect taxes on products and production.

*Value Added* Value-added is equal to the value of output minus the value of intermediate inputs. That is value added is the difference between the costs of production (excluding the Compensation of Employees, Gross Operating Surplus, Taxes and Imports) and the value of sales turnover. In a national accounts context, Gross Domestic Product (GDP) consists of the sum of value-added by all industries. Value-added also pertains to differences between the value of production at various stages of the supply chain.

# APPENDIX 4: SHIFT SHARE METHODOLOGY

The shift-share methodology is useful as it provides some explanation of the past employment growth performance of a region. It is a mathematical technique that separates employment growth between state economy, industry mix and local components. In addition, shift-share analysis identifies industries that have grown at a faster rate than state and industry averages.

For each component of the shift-share analysis (state economy, industry mix and local) the result is either shown as a positive or negative change in employment.

- **State Economy** - The Central West region is part of the larger NSW economy is affected by state wide economic conditions such as changes in State government policy, levels of economic activity, and so on. It is therefore reasonable to expect that part of the employment growth in the region could be attributable to the overall growth of the NSW economy.  This has been assessed as growth in the State regional economies i.e. excluding growth in the Sydney Statistical Division.

| |
|---|
| Calculated as 2001 employment in the Central West region multiplied by the average regional employment growth for NSW. |

- **Industry mix** - Industries grow at different rates to the average for the economy as a whole, growth may be rapid in some industries and slow or stable in others. Thus, the mix of industries in the Central West region will affect the overall level of employment growth in the region.

| |
|---|
| Calculated as the average growth of each industry at the combined regional state level less the average growth of regional NSW overall multiplied by 2001 employment in the Central West region. |

- **Local component** - It could be expected that each industry in the Central West region will reflect the characteristics of that industry at the state level, however there will also be differences in the growth rates compared to the average rate of growth for that industry in regional NSW. Such differences can occur for a range of reasons, including: the competitive advantage of local industry; an attractive economic environment; access to resources and infrastructure; and so on. The local component of employment growth is attributable to the relative performance of firms in the region compared to the state average.

  A positive local factor component for an industry indicates that firms from that industry in the Central West region performed better than the combined state average in that industry, in terms of employment growth. Conversely, if the Central West region shows a negative local factor component for an industry, the firms in that industry are performing relatively poorly in comparison to the state average for that industry.

| |
|---|
| Calculated as the growth of each industry in the Central West region less the average growth of each industry at the state level multiplied by 2001 employment in the Central West region. |

Shift-share analysis, like all analytical techniques has some limitations. The main limitations of shift-share analysis include:

- it is based on ABS employment data which is defined place of residence not place of work, therefore the analysis may include individuals residing in the Central West region but working in other areas and vice versa;
- it does not offer a definitive explanation of why the various effects were positive or negative;
- in some cases the use of averages is not representative of the employment performance of individual industries or regions; and
- it may not be a reliable indicator of future employment performance.

# APPENDIX 5: SURVEY INSTRUMENT

## Questionnaire Design

The WRI collaborated with the Arts OutWest Steering Committee to develop a questionnaire that collected data for two main purposes:

1. To gather primary data for use in input-output analysis which will robustly measure the economic impact of creative industries in the Central West.

2. To gather demographic information on the nature of individuals and organisations contributing to the creative industries.

The questionnaire consisted of 17 questions in total, and underwent piloting and cognitive testing between the 3rd and the 11th June 2008. The final survey instrument was approved by the Arts OutWest Steering committee on the 27th June 2008, and a copy is included in *Appendix 2: Survey Instrument*.

## Sampling

The WRI wished to survey all types of contributors to the Central West creative industries – including both organisations and individuals.

Arts OutWest maintains a cultural directory of individuals and organisations involved in the creative industries in the Central West. At the time of surveying this directory included 1194 individuals and 1149 organisations. By comparison, 2006 ABS census figures indicate that a total of 409 people are employed in cultural services in the Central West. Therefore, the Arts OutWest cultural directory is considered to be a more comprehensive representation of the individuals and organisations contributing to the creative industries in the Central West in both a professional and recreational capacity.

Subsequently, all 2,343 contacts in the cultural directory were invited to complete the survey.

## Administration

The survey was sent via email to cultural database contacts who had an email address, and by post to those who did not. Arts OutWest arranged both the email and postal distribution of surveys over a four week period with the assistance of volunteers.

Arts OutWest also arranged an incentive to be offered to encourage survey completion. Each respondent who completed a survey was entered into the weekly draw to win prizes such as show tickets to Cabaret Kite and taste Canowindra, and bottles of local Kalari Wines.

Surveys were distributed from Monday 1st July 2008, with an initial closing date of the 15th August 2008.

On the 1st August 2008 the WRI sent a reminder email to all those who had an email address, but had not yet returned a survey. This was supported by a press release issued by Arts OutWest, as well as an update being published in issue 75 of the Artspeak newsletter.

Arts OutWest sent a reminder email on the 7th August 2008, also notifying recipients that the deadline was extended from the 15th August 2008 to 29th August 2008. Arts OutWest then sent a final reminder email on the 25th August 2008.

From the 18th August 2008 the WRI commenced 250 follow up phone calls to those who had not yet returned a survey.

**Response Rate**

All 2343 individual (1194) and organisational (1149) contacts on the Arts OutWest cultural directory were invited to complete the survey. A total of 235 completed surveys were returned, including 122 individuals and 109 organisations (a further 4 were undisclosed). This is an overall response rate of 10%. With this response rate, Arts OutWest can be 95% confident that the responses gathered from the sample represent the original population to within +/-6%. Statistically, this is a robust and representative sample.

**Data Entry**

The data from returned surveys was entered into a database built by the WRI specifically for Arts OutWest. Professionally trained local staff cleaned and entered the data for further analysis, and data was subjected to data validation processes.

# APPENDIX 6: INPUT-OUTPUT ASSUMPTIONS

Due to the fragmented nature of the creative industries that differentiate them from more conventional industry sectors, a number of assumptions were required to allow for robust analysis of the data without compromising the unique features of the cultural sector. While some of these additional assumptions relate directly to the usability of the data, a number were required to explain features that would otherwise be considered unusual in other sectors of the economy.

The definition of creative industries used by Arts OutWest encompasses segments of a range of industry sectors as defined by the Australian Bureau of Statistics (ABS) and does not readily lend itself for incorporation into the input-output table which is based on national accounts data. Therefore the assessment of the economic significance of the creative industries in the Central West region using primary data reflects the economic significance of individuals and organisations in the Arts OutWest database. It does not include additional business enterprises located in the region which are comparable in activity but which are not included in the Arts OutWest database.

The Arts OutWest database also includes a number of organisations which have been excluded for the purposes of weighting up the raw data. There are several schools in the database for example which, while contributing in some way to creative activities, would serve to overstate the employment, income and expenditure estimates if included in the weighting process. The database also includes individuals and organisations whose involvement in the creative industries is purely on a volunteer basis for which they receive no remuneration. These individuals and organisations have no direct economic impact in terms of the input-output analysis.

To weighting the financial and employment data gathered from individuals and organisations, the Arts OutWest database was analysed and as a result the following assumptions have been made:

- forty percent of individuals in the database played a direct financial role in the creative industries; and
- fifty percent of organisations in the database played a direct financial role in the creative industries.

Due to the nature of creative endeavours, it was assumed that financial compensation for expenditure and labour is not necessarily attainable or even a goal in many cases. This was demonstrated in the data, in particular with respect to individuals, where in many cases little if any income was derived when compared with expenditure. Other suggested examples include semi/retired artists from outside the Central West, moving to the region having already secured their financial position and hence spending on equipment and materials with no intention of producing art for public consumption.

At the other end of the scale, it was assumed that the use of readily available raw materials in the creative process meant that not all economic activity had an expenditure component. While unlikely, this circumstance is both possible and feasible when considered within the context of the activities of the creative industries.

When it came to calculating employment and wages, if no data was supplied by a respondent, the fulltime equivalent (FTE) wage was assumed to be $40000. This is marginally lower than that of the state average for the creative industries but is consistent with other sector estimations for regional areas and is suggested as a reasonable figure by other responses in the data sample.

When calculating FTE jobs it was assumed that four part time positions were equivalent to one FTE position. Likewise, a 38 hour week was assumed when converting casual hours worked to an FTE average.

## THE WESTERN RESEARCH INSTITUTE

The WRI is a non-profit economic, business and social research organisation located on the Bathurst campus of Charles Sturt University. The WRI holds a wealth of knowledge on employment, business development and investment issues affecting regional Australia. It has worked with Commonwealth, State and Local Governments and industry groups on numerous investment and development programs in regional areas. The WRI has strong credentials in business and commercial market consulting and applied economic modelling including input-output analysis, shift-share, agribusiness and regional socio-economic surveys and analysis.

### The Research Team

**Tom Murphy - Chief Executive Officer** *BEc. (Hons I) MSc. (Econ) Lancaster*

Tom Murphy holds the degrees of Bachelor of Economics from the University of New England and Master of Science (Economics) from the University of Lancaster. He is currently Chief Executive Officer of the WRI. Mr Murphy has previously held academic positions as senior lecturer in Economics and Director of the Regional Economics Research Unit in the Faculty of Commerce, Charles Sturt University, Bathurst and positions at the University of New England and Macquarie University. He has also held the positions of Economic Analyst with the Office of National Assessments in Canberra, with responsibility for the ASEAN economies and Senior Consultant with KPMG Peat Marwick Management Consultants.

**Kathy Sloan – Research Manager** *BAppSc (Geography) UC, GDip InfoSys*

Kathy provides statistical analysis in WRI projects and is an experienced researcher in both the private and public sectors. Her strengths in information communication technology ensure WRI work is enhanced through the use of current computer applications. Her experience in private consultancy and the Planning and Audit Division of CSU provides a strong background in project management and quality assurance.

**Danielle Ranshaw – Senior Research Officer** *BEc&Fin NSW*

Danielle's experience in project management in the information technology sector combined with qualifications in economics and finance provide a solid background for WRI projects. Danielle recently joined the WRI after coordinating the Study Link program for Charles Sturt University. Danielle's skills in business and systems analysis, performance planning and review, and project planning make her a valued member of the WRI team.

**Lesley Arthur – Senior Research Officer** *BS. Bio Sc (Hons), MSc Tech Ec.*

Lesley is an experienced researcher in the areas of tourism, property development and economic development. Prior to joining WRI, Lesley was a director with KPMG Peat Marwick Management Consultants in Australia and Malaysia. Lesley is skilled in the construction and application of market forecasting and financial models and brings a wealth of experience to WRI projects.

**Rachel Jackson – Research Officer** *BEquineBusMgt (Hons 2/1)*

Rachel has experience in the agricultural, hospitality and retail industries as well as having spent several years working as a sales representative for a local newspaper, developing a sound understanding of regional business. With a strong interest in agricultural and environmental areas, particularly land and stock management, Rachel brings a range of skills to her role at the WRI.

**Deborah Munns – Research Officer** *BA (Hons) USyd, Grad Dip Sec Ed (HSIE) CSU*

Deborah has a Bachelor of Arts degree with Honours, majoring in Human Geography and Industrial Relations. Recently, Deborah obtained a Graduate Diploma in Secondary Education (HSIE). Deborah has a broad range of experience in the travel, retail and local government sectors. With experience in social research in both private consultancy and local government sectors, Deborah brings a variety of skills to support her position at the WRI.

**David West – Research Officer** *BEcon, GCAppLaw UQ*

David comes to WRI having developed a range of skills in economic impact analysis, in particular IO modelling. Having worked previously for the Centre for Economic Policy Modelling at the University of Queensland, David has experience in modelling impacts from the LGA to national level and has worked on projects as diverse as non-profit festivals to major government infrastructure projects and billion dollar private sector investments and expansions both in Australia and abroad.

**Dale Rogers – Research Assistant** *BA ANU*

Dale began at the WRI as a fieldwork supervisor and has worked on several community and business surveys. Dale holds a Bachelor of Arts degree and majored in Anthropology and International Relations. With experience in the retail and communications sectors, Dale brings strong organisational skills and a vibrant personality to the WRI.