



Australian Computer Society

Employment Survey Report

August 2009

This report was analysed and written by the Centre for Innovative Industries Economic Research Inc for the Australian Computer Society. It was edited by Ian Dennis, and Len Joynson for the ACS.

About ACS



ACS is the leading professional body in ICT in Australia. Members of the ACS are professionally qualified and accredited.

ACS has over 17,000 members nationally. Of these, some 50% are directly involved in the Australian ICT Industry with approximately 60% holding senior management positions. ACS also supports a large student membership.

In addition to our professional members, over 1000 ICT practitioners participate in ACS Special Interest Groups (SIG), including ICT Governance, E-Commerce, Service Oriented Computing, IT Quality and Telecommunication SIGs.

About CIIER

Centre for Innovative
Industry Economic
Research Inc.

CIIER is an Asia-Pacific think-tank developing and analysing consistent, competently researched, up-to-date data on employment, markets, revenue streams, R&D, processes and management methods, for high technology, innovative, and emerging industries. CIIER produces the 'Top 250' *ICT Industry Research Report*, recognised as a leading indicator of trends in the Australian ICT industry, and conducts analysis and reporting on Information Technology and other high technology industries.

Whitehorse Strategic Group Ltd assisted with the analysis for this publication. Whitehorse is an Australian owned management consulting practice specialising in Information Management, ICT policy and strategy, e-Government, Governance, and Economic Development.

This publication is copyright. Other than for the purposes of and subject to the conditions prescribed under the Copyright Act, no part of it may be in any form or by any means (electronic, mechanical, microcopying, photocopying, recording or otherwise) be reproduced, stored in a retrieval system or transmitted without prior written permission.

© **Centre for Innovative Industries Economic Research Inc**

ABN 64 806 162 996

Suite 5.03, 365 Little Collins St.

Melbourne, 3000

e-mail: admin@whitehorsestrategic.com

Phone: 03 9614 8510

Fax: 03 9614 8201

Table of Contents

INTRODUCTION	- 4 -
Survey Validity	- 4 -
Geographic profile	- 4 -
Industry Profile	- 5 -
Employment profile	- 6 -
Seniority profile	- 7 -
Gender profile	- 7 -
Analysis of the ACS Employment Survey	- 8 -
Employment characteristics and trends	- 8 -
Workload	- 9 -
Continuity	- 9 -
Industry sector employment type	- 10 -
Age Demographic distribution	- 11 -
Gender, Age, and Discrimination Issues	- 12 -
Unemployment	- 16 -
Professional Development	- 18 -
Job Search	- 20 -
Profiles	- 21 -
International nature of ICT	- 22 -
Survey Questions	- 23 -

INTRODUCTION

The 2009 ACS Survey is the sixth in the series providing detailed information on the employment outlook for ICT professionals in Australia based upon Survey responses. Its aim is to assist ICT professionals; those contemplating a career in the industry, and other industry stakeholders, with a useful overview of employment conditions and attitudes in the profession.

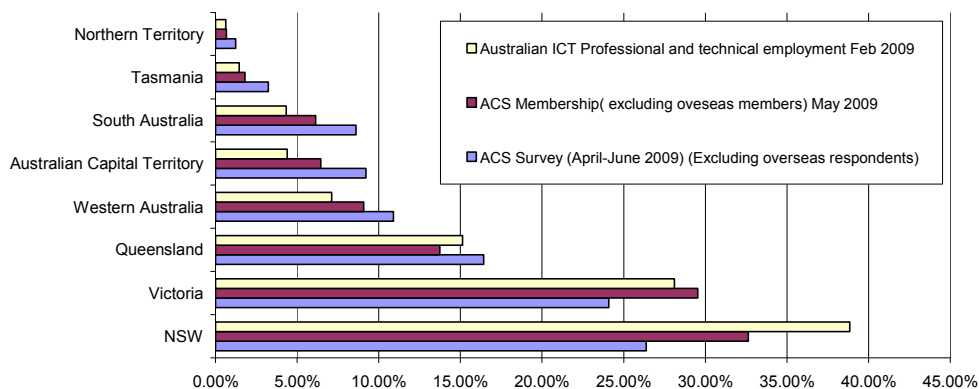
Survey Validity

The major value of a Survey is in its ability to be used to model the group surveyed and to accurately reflect that cohort. It is therefore important to establish the validity or otherwise of the Survey data, by comparing its structure to that for both ACS membership, and to ICT professional employment. The response made to the 2009 ACS Survey, at a response rate of 5.6% of members, reflects members' continuing interest in contributing to an important aspect of ACS activities, which is to further the employment prospects of ICT professionals in Australia.

The following comparisons show the relative percentages applicable to the responses, the ACS membership, and ICT professional and technical employment in Australia, based, in the main, on Department of Education, Employment and Work-place Relations (DEEWR) data.

Geographic profile

**Comparison of geographic profile -
This Survey, ACS membership, and ICT Management, Technical and Professional employment**



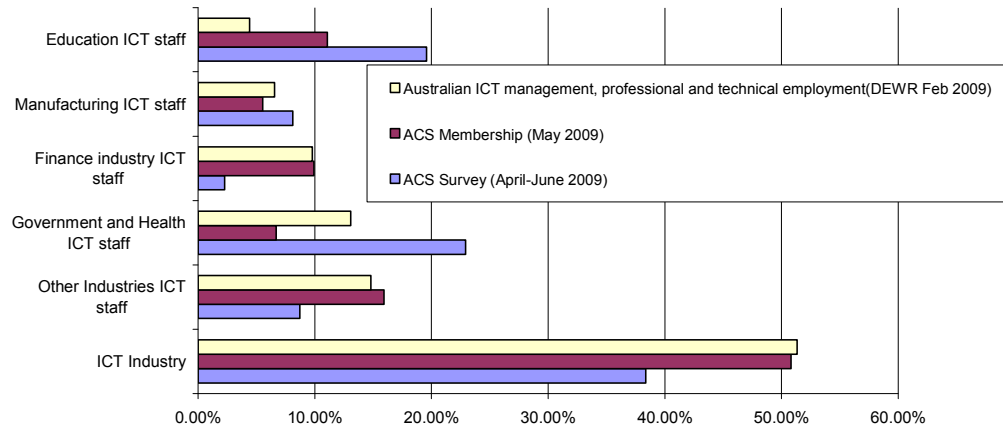
	NSW	Victoria	Queensland	Western Australia	Australian Capital Territory	South Australia	Tasmania	Northern Territory
Australian ICT Professional and technical employment Feb 2009	38.85%	28.10%	15.13%	7.12%	4.39%	4.33%	1.45%	0.63%
ACS Membership (excluding overseas members) May 2009	32.63%	29.54%	13.73%	9.07%	6.45%	6.13%	1.79%	0.65%
ACS Survey (April-June 2009) (Excluding overseas respondents)	26.38%	24.08%	16.41%	10.89%	9.20%	8.59%	3.22%	1.23%

The geographic profile of respondents correlates reasonably to that of ACS membership in the State concerned, and to the demography for total ICT technical and professional employment. Regional

comparatives are slightly less likely to more accurately reflect the position in NSW and may need to be interpreted with more caution in relation to that State.

Industry Profile

**Comparison of Industry profile -
This Survey, ACS membership, and ICT technical and Professional employment (DEWR)**

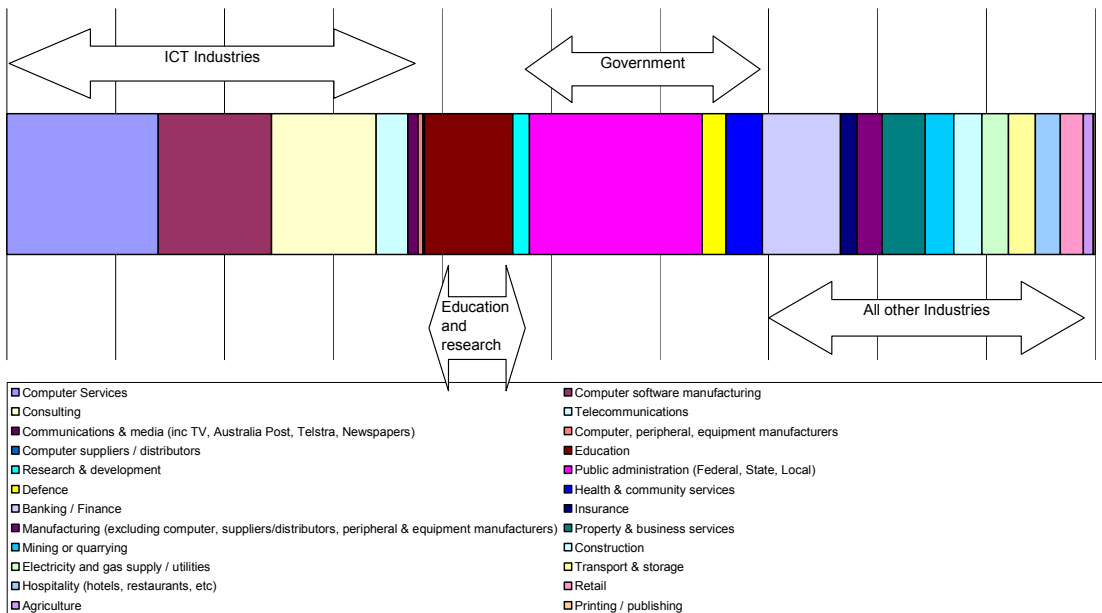


	ICT Industry	Other Industries ICT staff	Government and Health ICT staff	Finance industry ICT staff	Manufacturing ICT staff	Education ICT staff
Australian ICT management, professional and technical employment (DEWR Feb 2009)	51.33%	14.82%	13.08%	9.78%	6.56%	4.42%
ACS Membership (May 2009)	50.80%	15.95%	6.68%	9.94%	5.54%	11.09%
ACS Survey (April-June 2009)	38.38%	8.72%	22.94%	2.29%	8.10%	19.57%

The Survey response demography is “overweight” from Government (State, Federal and Local Government) and education employees, in common with previous Surveys. The response correlates well for ICT staff in non-ICT industries, but is slightly “underweight” from the ICT industry.

Responses were, however, received from almost every industry sector, with a very strong response from Government (including defence and health), and from the banking and finance sector within the non-ICT industries.

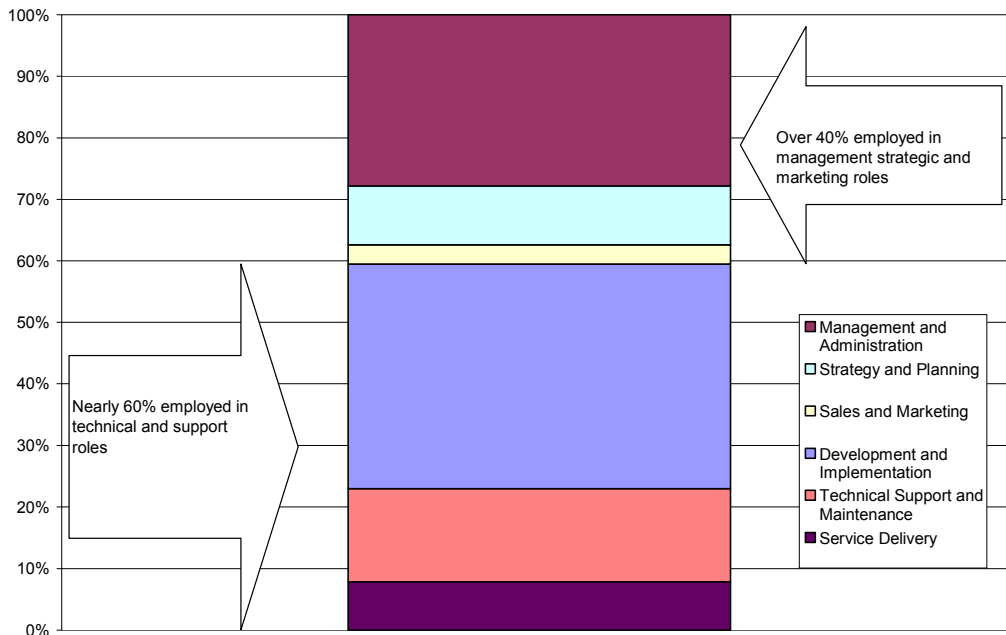
Responses by Industry sector



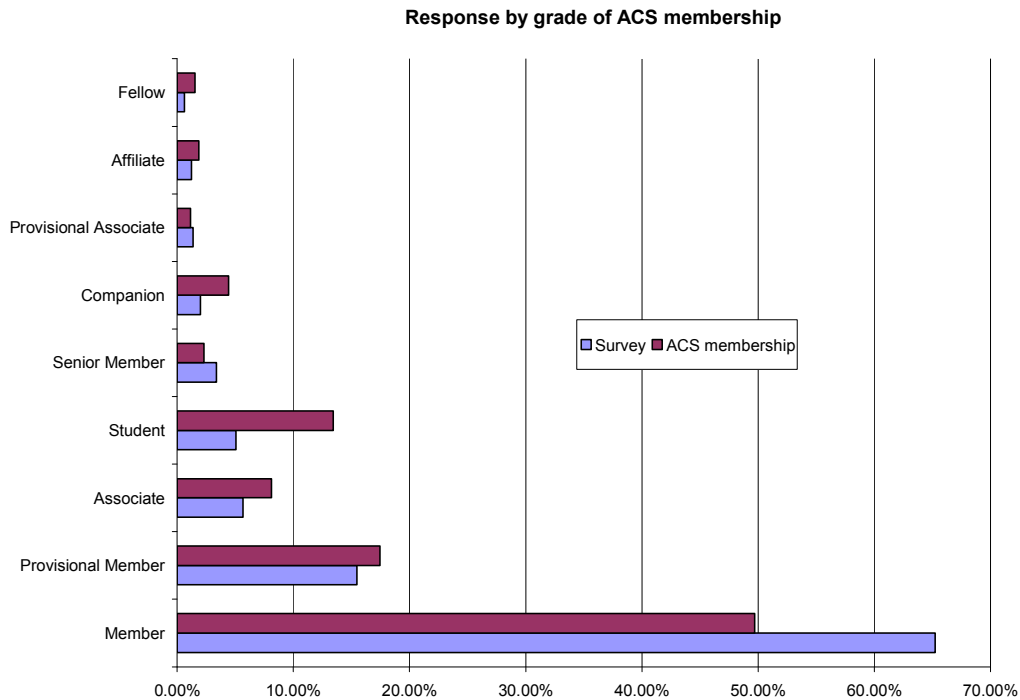
Employment profile

Respondents covered the full range of ICT jobs, with a significant concentration of management, strategic, and senior roles.

ACS Employment Survey 2009 - main job type



Seniority profile



The relative seniority of respondents is underscored by the overweight representation of the senior professional grades (Member, Senior Member, Fellow), within the survey respondents.

Gender profile

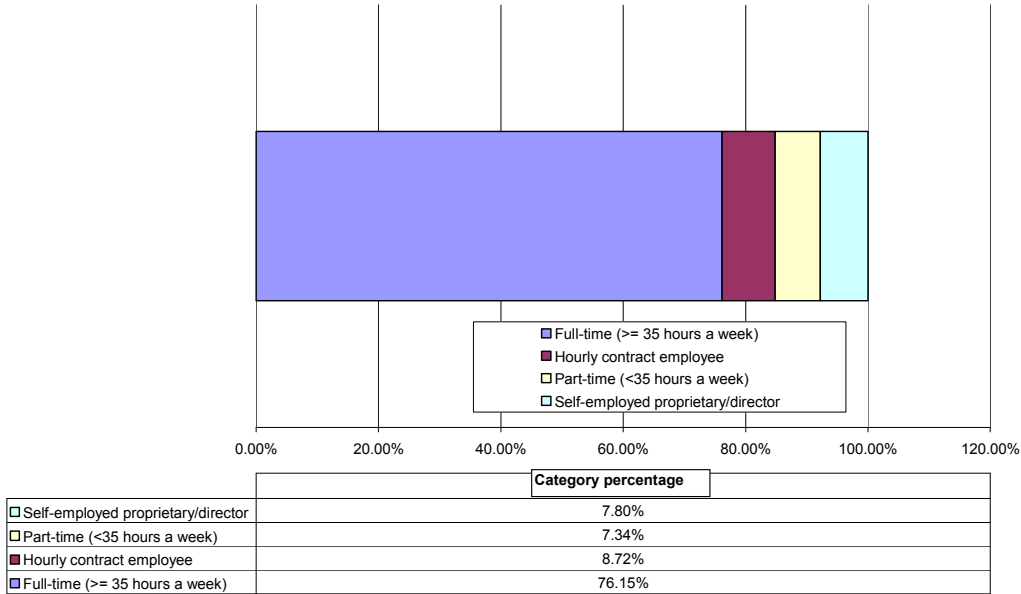
The response rate of 14.6% females is reflective of the gender composition of ACS membership. Whilst it is lower than the employment rate within the ICT sector, it is consistent with earlier Surveys. ABS and CIER data shows 24% of professionals in the ICT industry workforce are female and 76%, male, however DEEWR data indicates that approximately 19% of ICT technical and professional employment in all industries is female. The survey analysis following, in relation to gender issues, should be evaluated in this light.

Analysis of the ACS Employment Survey

Employment characteristics and trends

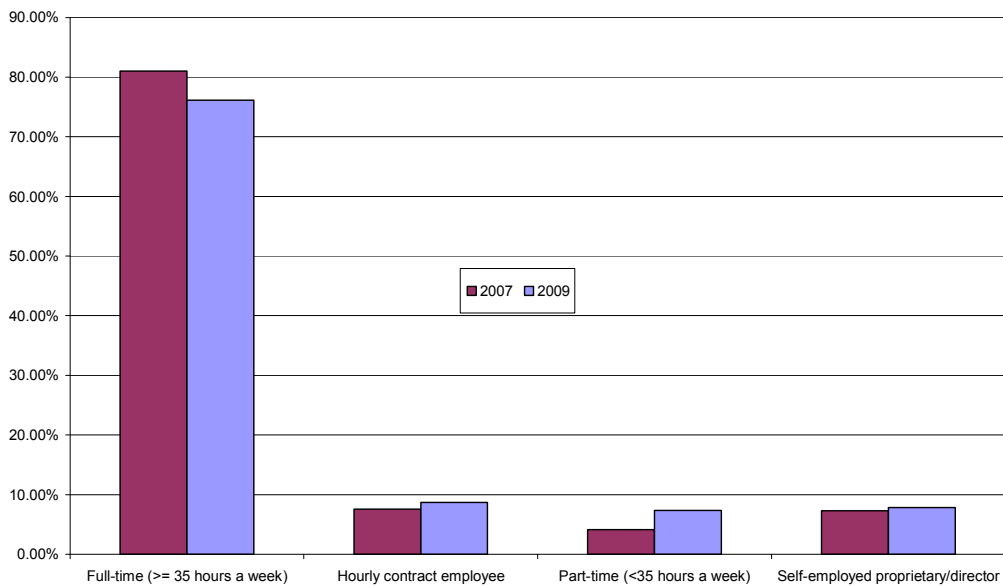
The 2009 Survey suggests that the global financial slowdown has not significantly impacted the Australian ICT professional labour market, with little difference to the proportion of ICT professionals who are employed full-time.

Survey response by employment characteristics



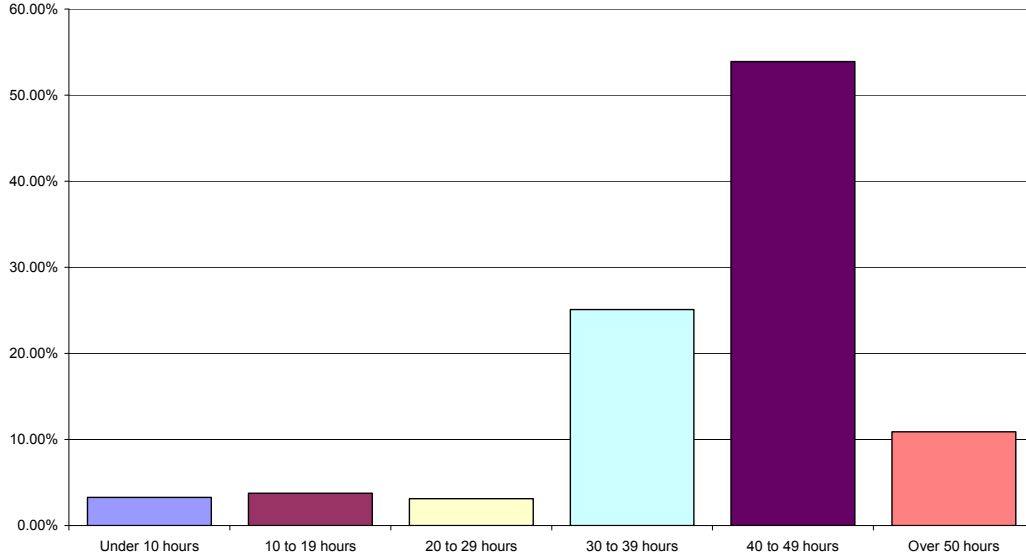
Even in comparison to the 2007 boom period, there has been a minor reduction in full-time and only a slight increase in part-time work reported.

Comparison of Employment characteristics of respondents 2007-2009



Workload

ACS Employment Survey 2009 - Workload

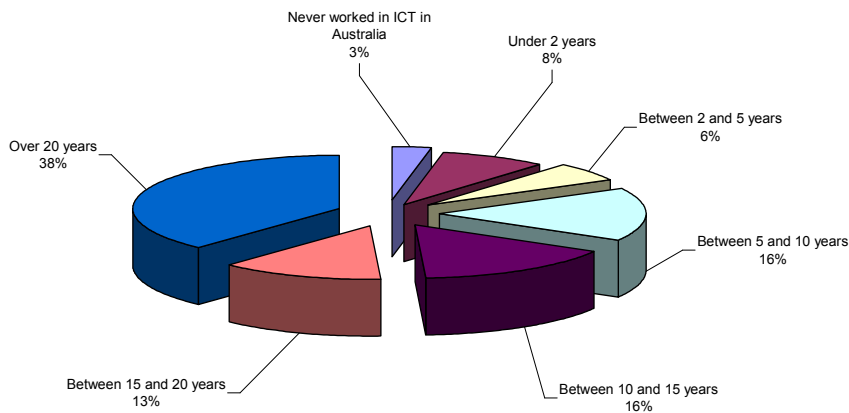


Doubts about any change in the well identified ICT skills shortage is also reflected in the work-load of those employed, with 65% still working more than a 40 hour work, exactly the same percentage as in 2007, with the only difference being a few less working over 50 hours a week; a marginal improvement in work-life balance.

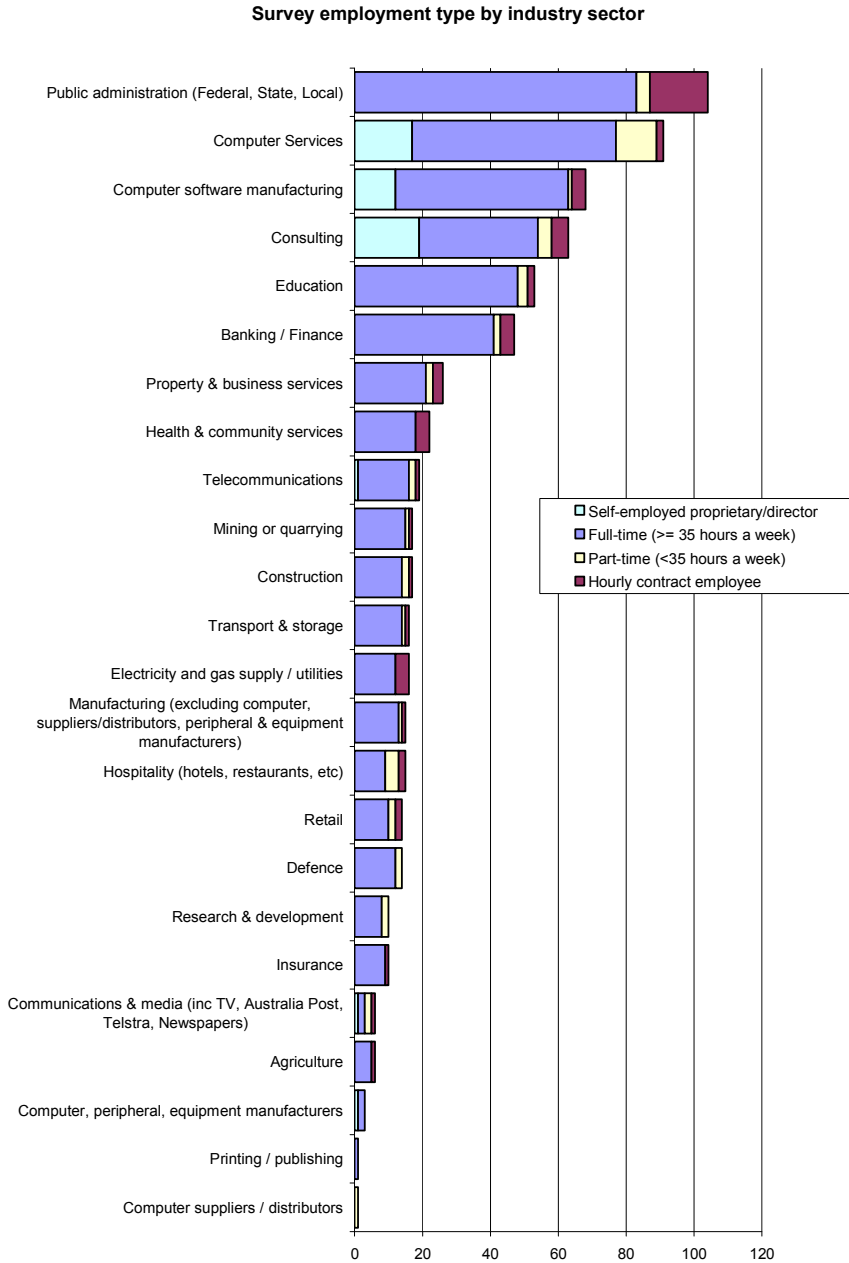
Continuity

Continuity of employment by respondents to the Survey is another indicator of a tight labour market. 57% of the Survey respondents in 2009 have worked more than ten years in the ICT industry in Australia, compared to 62% of the respondents to the 2007 Survey.

ACS Employment Survey 2009 - Duration of employment

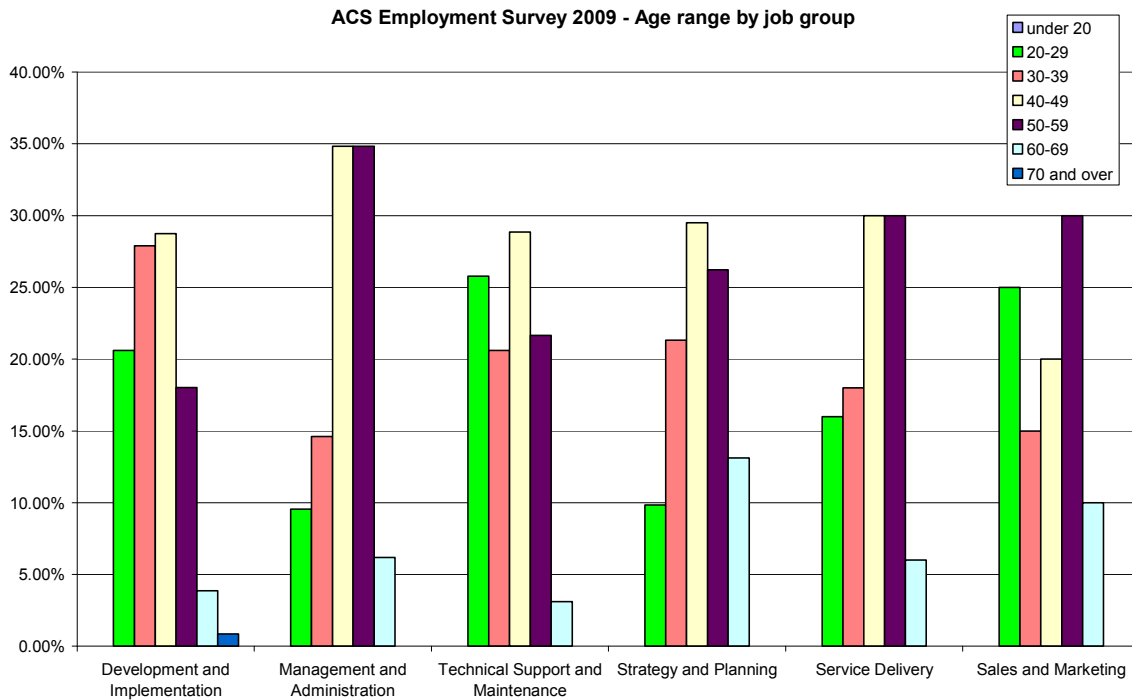


Industry sector employment type



Employment characteristics (self employed, contractor, full time employment etc) vary considerably by industry sector, with the highest concentration of full-time employment in education and public administration (predominately Government employees). In contrast, computer services and consulting have the highest concentration of self-employed.

Age Demographic distribution



The chart above clearly shows that there are completely different, and understandable, age-profiles for each of the main job/skill groups.

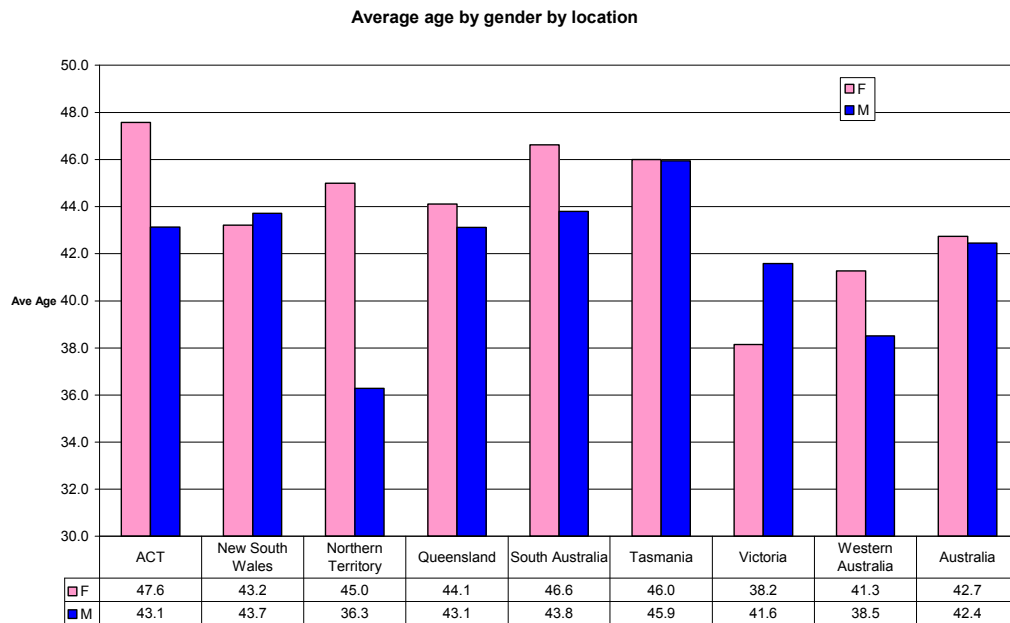
The analysis indicates a continued older overall age profile for management and administration, peaking in the 40-59 age-groups, and an older age profile for service delivery, with a lower peak in the same two age-groups. Strategy and planning has a more even profile which, although it does peak at the same point as management and administration, is much less subject to age-group variation.

The process of quantifying likely future shortages in ICT skills groups can be greatly assisted by an improved understanding of age-profiles. This will allow for more accurate projections of the rate of “new” job entrants to the job-skills identified, rather than the proportion normally filled by transfer or promotion from other job-skills.

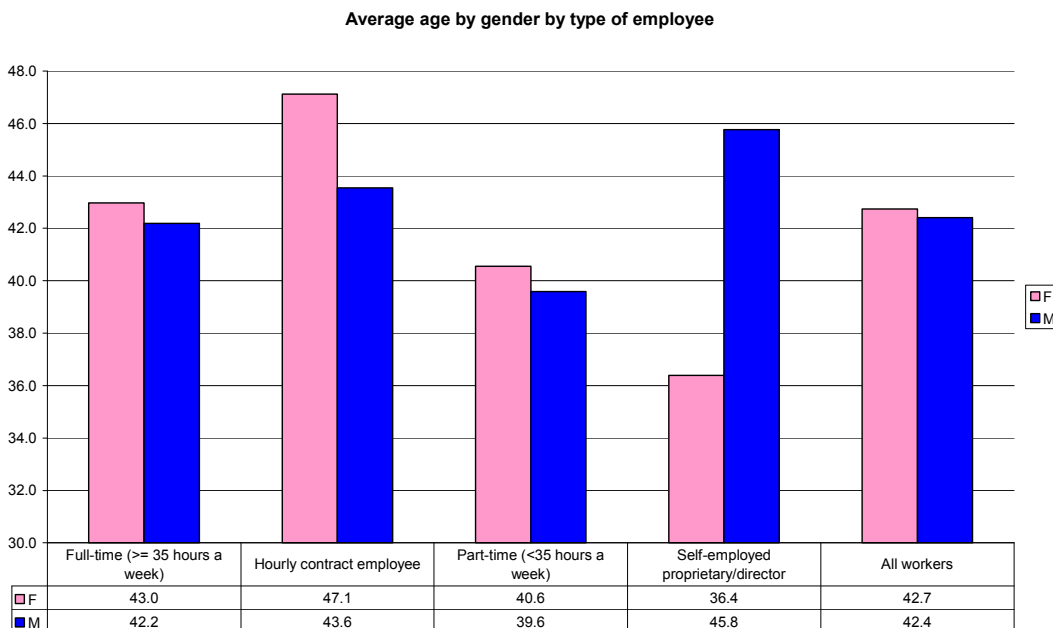
A simpler way of partially analysing this difference is to identify the average age of respondents by the job function, and comparing the results to the average across all jobs.

As a general rule, unless the age distribution is such that there are no respondents at all at the lowest age-point, then the lower the average and median age profile for a particular job-skill, the higher will be the proportion of new entrants to such jobs, and the higher the age-profile the higher the risk of skill-shortages in future years.

Gender, Age, and Discrimination Issues

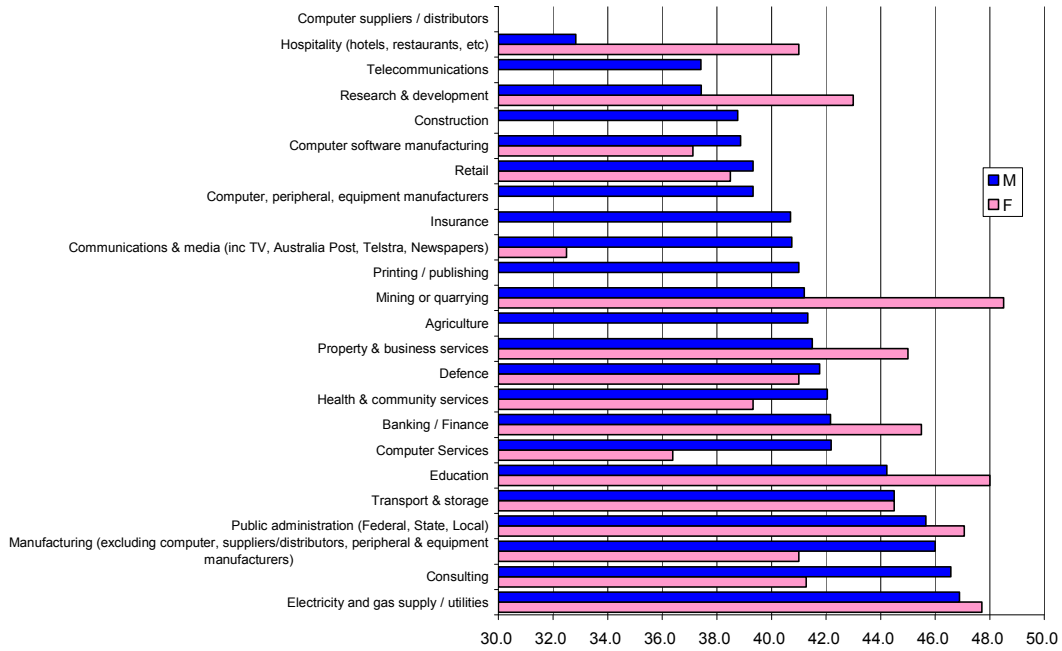


Age profiles of respondents varied by location, but much more significantly for males than for females. Victoria had a much younger age-profile than other large States, and Tasmania a much older profile than the median for both genders.



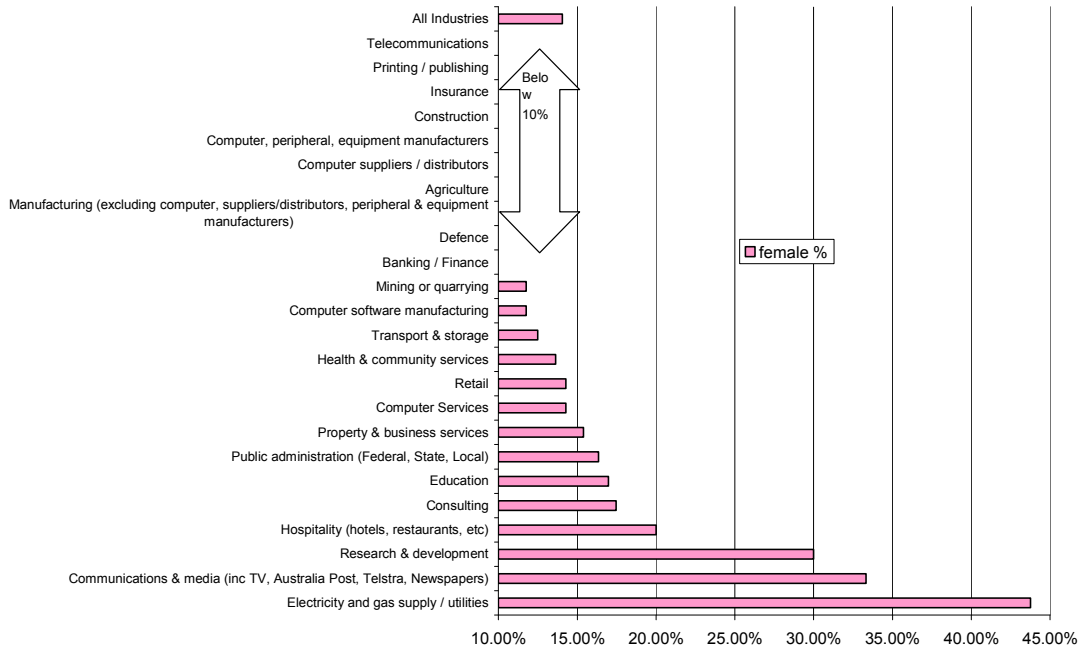
Whilst the age profile by gender was reasonably consistent for other types of employee, the self-employed showed a much older profile for men than for women. It is possible that some younger women adopt self-employment as a result of discriminatory hiring practices, equally however this anomaly may indicate a life-style decision by some younger women. It is also possible that some older men have less alternative to self employment as a result of age discrimination.

Average age by gender by industry sector



Average age variations by industry sector simply reflect age profiles for employment as whole in these sectors.

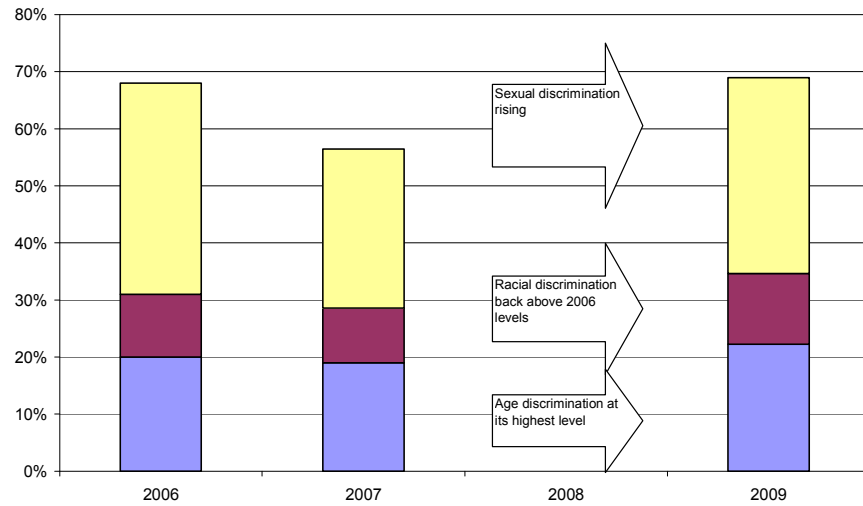
Female employment percentage by industry sector



However, female ICT professional respondent employment is strongly clustered, with many industry sectors below gender norms.

The 2006 Survey found that a significant proportion (20%) of respondents reported that they had been discriminated against on the basis of their age. The 2007 Survey reinforced that finding, with 19.2% of respondents claiming that they had experienced age discrimination. There was, however, no significant statistical difference between males and females in regard to age discrimination in 2007. In 2009 perceived discrimination has increased for all categories, and, in the case of Age discrimination, to its highest level recorded so far.

ACS Employment Survey 2009 - Discrimination trend



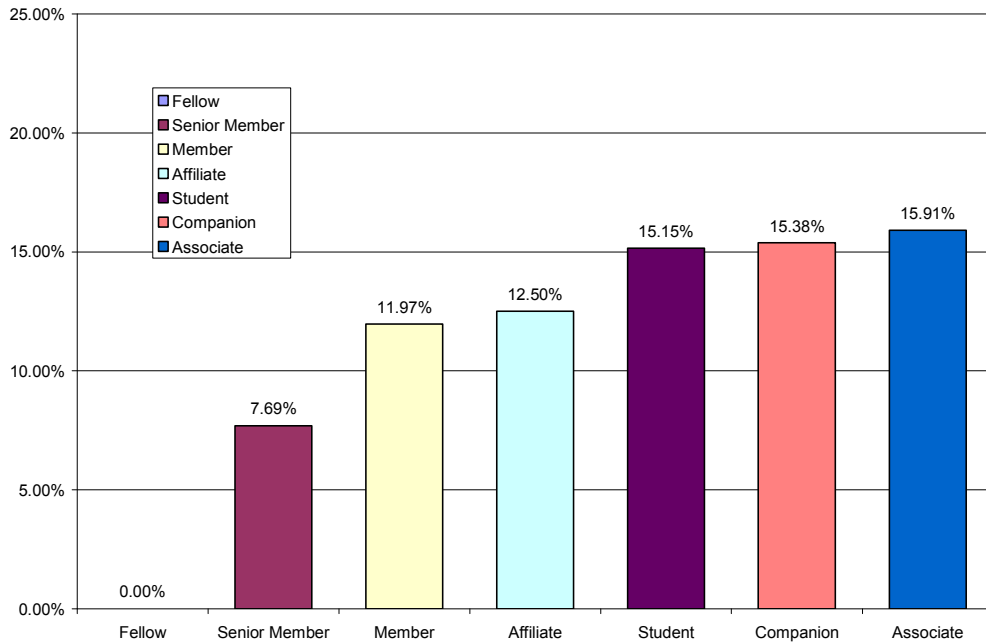
	2006	2007	2009
■ Discrimination against your sex (female respondents)	37%	27.80%	34.34%
■ Discrimination against your race or ethnicity	11%	9.60%	12.39%
■ Discrimination against your age	20%	19%	22.24%

The 2006 Survey found discrimination on the basis of race and ethnicity claimed by 11% of respondents, with students highly represented in this group. In 2007 the number was slightly lower at 9.6%, with a similar percentage (9.8%) of students indicating that they had been discriminated against on racial or ethnic grounds. In 2009 over 12% of respondents reported racial or ethnic discrimination, perhaps reflecting more disquiet since the advent of the economic downturn.

In 2007, female respondents reported a level of 27.8% sexual discrimination, but in 2009 this percentage had grown back to 34%, nearly the level reported in 2006.

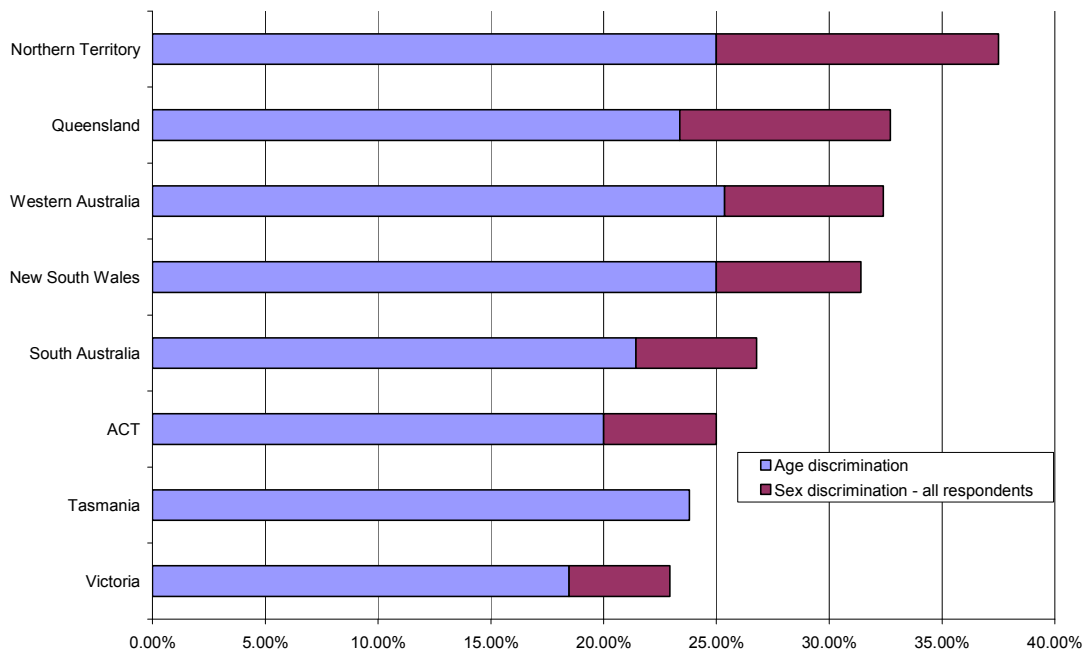
The perception of racial or ethnic discrimination varied considerably by membership grade, diminishing in close correlation to the relative seniority of the respondent. It is possible that some of what is perceived as racial or ethnic discrimination may, in fact, be recruitment rejection for other grounds. It is noticeable, that fellows, the highest professional grade, perceived no racial or ethnic discrimination, however this may be, in part, due to ACS fellows being, in the main, not drawn from groups more subject to discrimination; being women, the young, and recent migrants.

ACS Employment Survey 2009 - Racial discrimination by membership grade



There was a significant variation on discrimination reports when considered by location. Both perceived age and sexual discrimination was significantly higher in Queensland, Northern Territory and Western Australia, consistent with previous years. Levels of perceived racial discrimination were broadly consistent across locations, again consistent with previous Surveys.

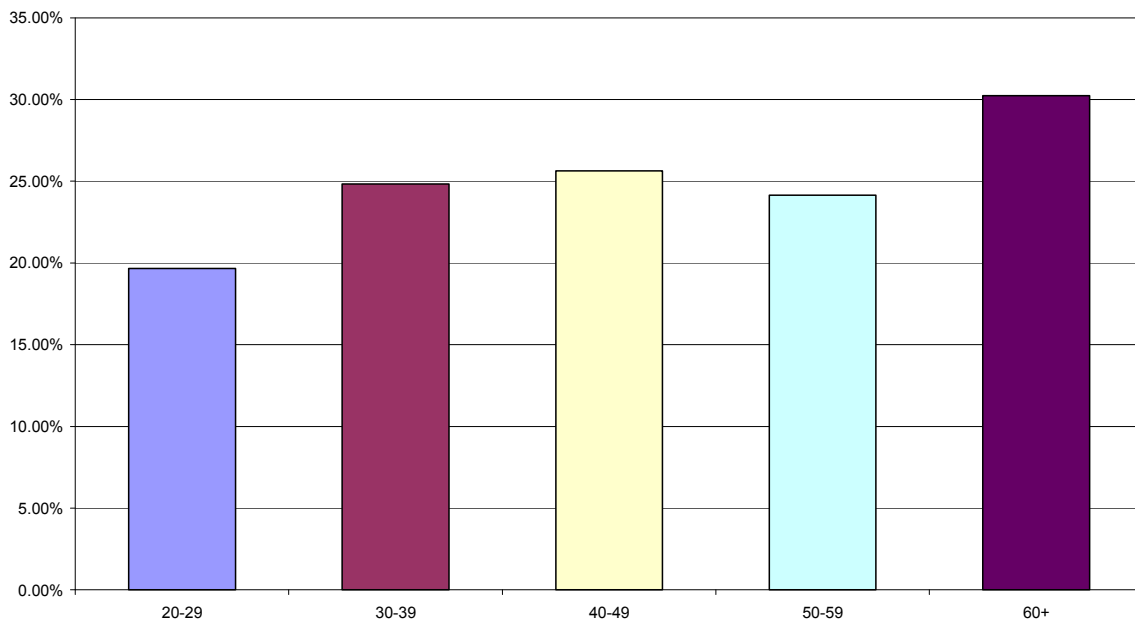
ACS Employment Survey 2009 - Discrimination by location



Unemployment

A lower 24.7% of 2009 respondents had experienced some form of unemployment at some stage in the last five years – down from over 29% of respondents in 2007. Every age group was represented in this, but unlike 2007, when there appeared to be two distinct age peaks, those aged under 30, especially under 25, and those aged 41-50, the 2009 Survey showed a much more even spread across all age groups.

ACS Employment Survey 2009- Unemployed by age group

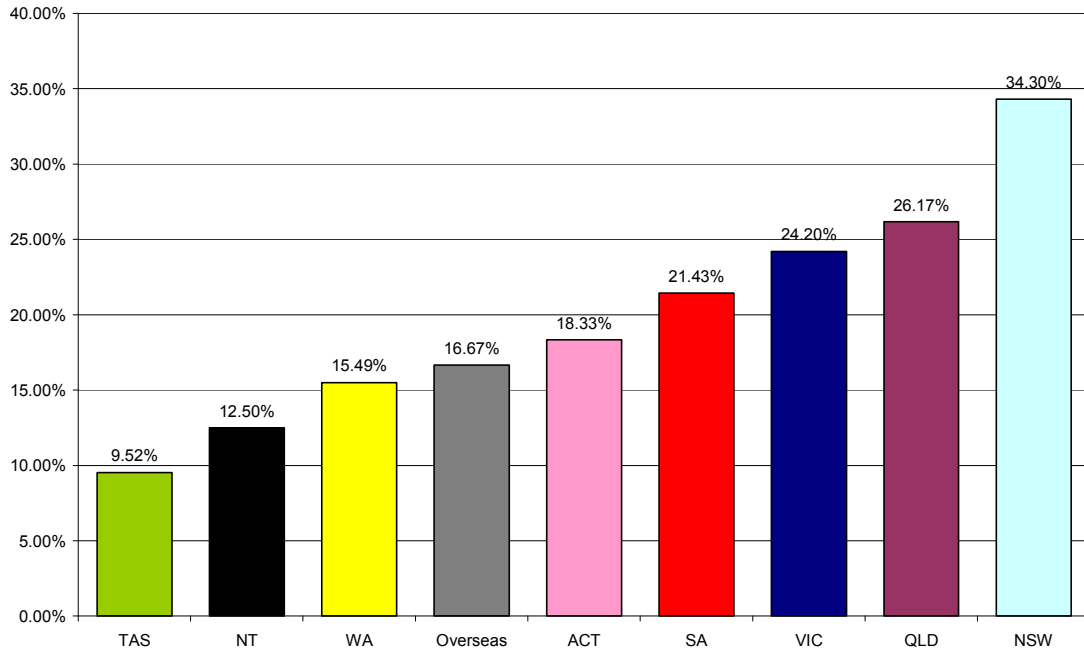


The higher level of unemployment experience for the 60+ age group is likely to be derived from a combination of age discrimination and either real or imagined concerns about the currency of their ICT skills.

Of those respondents reporting an unemployment experience in the last five years, the 2009 Survey showed very little variation by gender. In previous Surveys this has not been the case, with women previously reporting higher proportional levels of unemployment.

Location variations were, however, very significant, with Tasmania and the Northern Territory, the “safest” places to retain an ICT job, and NSW the most volatile location, by a large margin, compared to the other larger States.

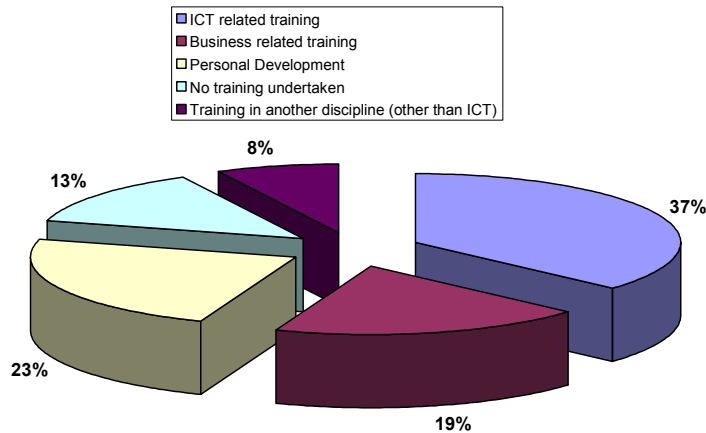
ACS Employment Survey 2009 - Unemployed at any time in the last 5 years



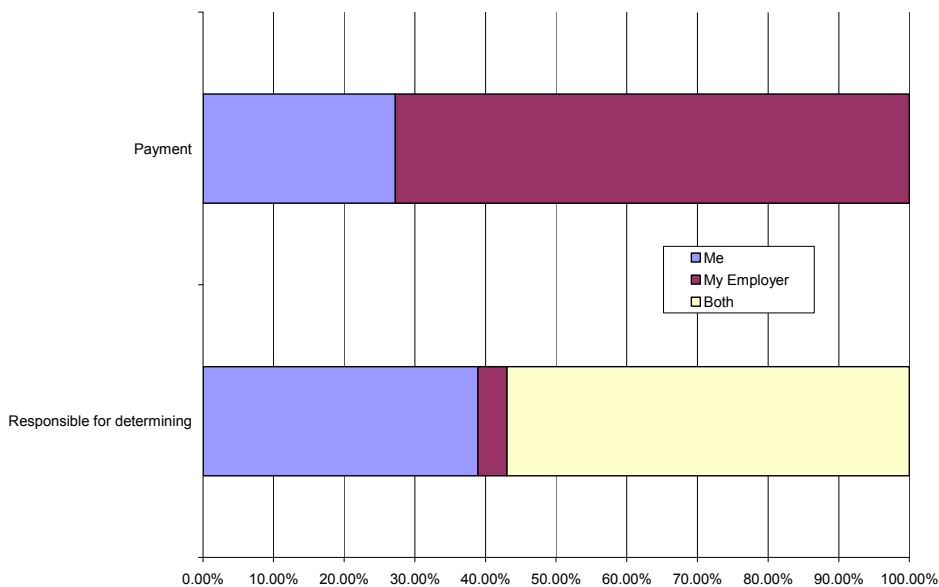
Professional Development

Data indicate that 80% of respondents had undertaken some form of training over the last year, with the main types of training being ICT related, followed by personal development and business related training, with over 11% indicating that they had undertaken training outside the ICT discipline.

ACS Employment Survey 2009 - Training Undertaken



ACS Employment Survey 2009 - Responsibility and payment for training



ICT Employers in Australia clearly value the training that their employees receive, but are happy for their employees to make decisions on what training they require, with over 70% of employees of

the respondents providing funding support, whilst just under 60% share the decision making process, and less than 40% leave it up to the employee.

Who is responsible for determining your training needs?

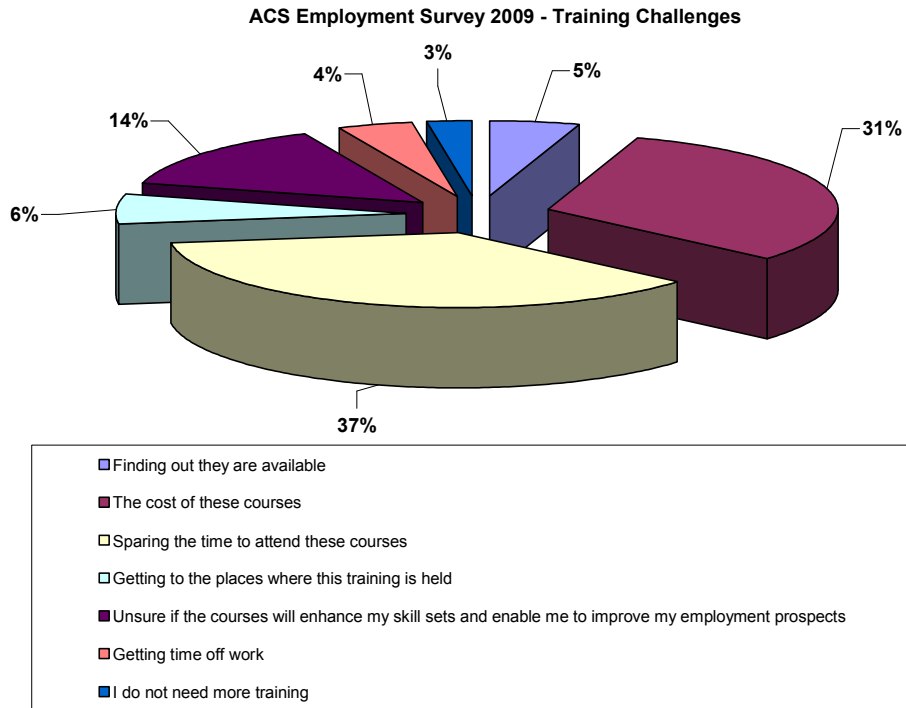
Me	38.92%
My Employer	4.11%
Both	56.96%

Does your employer pay or contribute to your training?

Yes	72.78%
No	27.22%

What is the main challenge you face when undertaking training/courses to enhance your ICT skills ?

Finding out they are available	5.06%
The cost of these courses	31.33%
Sparing the time to attend these courses	36.39%
Getting to the places where this training is held	6.49%
Unsure if the courses will enhance my skill sets and enable me to improve my employment prospects	13.92%
Getting time off work	4.27%
I do not need more training	2.53%

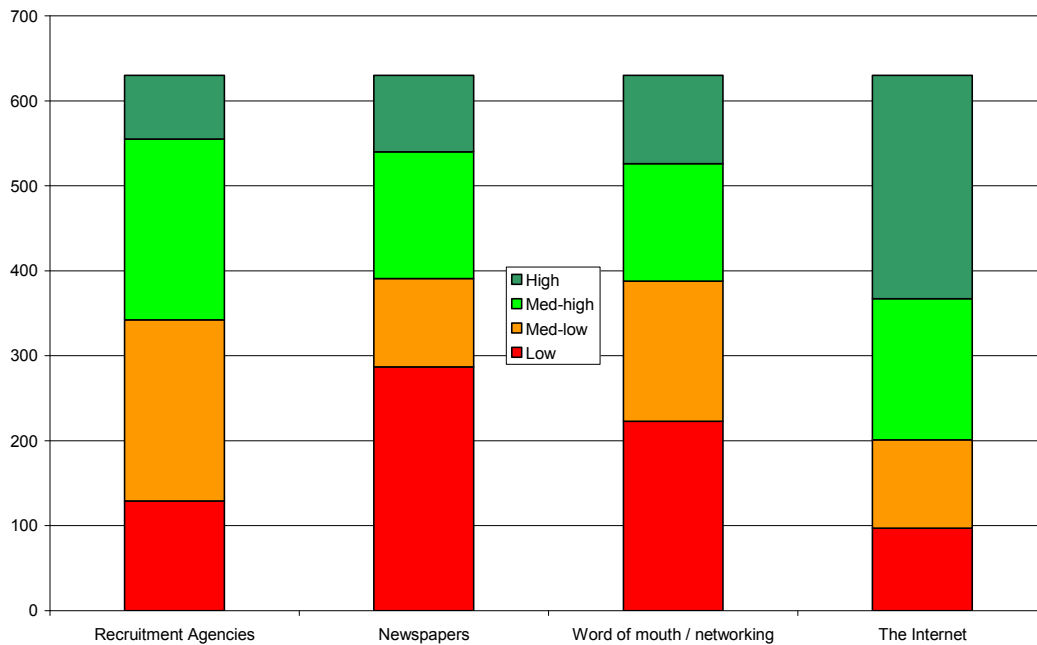


Respondents, however, continue to report concerns at the challenges faced by them in accessing courses, with nearly 40% having problems finding the time available, whilst others are concerned about the cost of courses and yet others having doubts about the relevance of training offerings to their required skill-sets. Less than 3% of respondents, however, felt that they had no need for further training, consistent with earlier Surveys, and reinforcing the view that ICT is truly a “life-long learning” profession.

Job Search

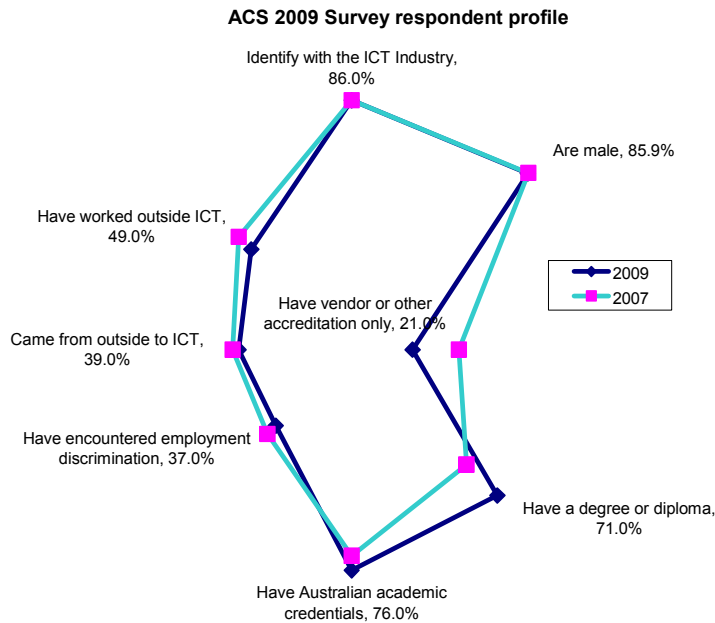
In a surprising result in 2007 the Survey found each of the major job sources, Internet; Word-of mouth/Networking; Recruitment Agencies; and Newspapers, ranked as very close equivalents. This years Survey returned to the previous position, in which the Internet was preferred by a significant majority of respondents as the better source for ICT positions.

Recruitment media rating by no. of respondents 2009



In answer to other questions, nearly 80% of respondents considered that they need to undertake training/retraining to keep their skills current every 1-3 years.

Profiles



	2009	2007
Identify with the ICT Industry	86.0%	86.0%
Are male	85.9%	86.1%
Have vendor or other accreditation only	21.0%	37.0%
Have a degree or diploma	71.0%	56.0%
Have Australian academic credentials	76.0%	71.0%
Have encountered employment discrimination	37.0%	41.0%
Came from outside to ICT	39.0%	41.0%
Have worked outside ICT	49.0%	55.0%

The table and chart above allows us to profile the respondents, and suggests that the sometimes stated perception that ACS is comprised of tertiary educated ICT academics and researchers is not the reality.

71 % of the 2009 respondents have received a degree or diploma in any field of study, although 76% have studied in Australia, and 21% of respondents have vendor or other (non-University) accreditation as their sole qualification, other than experience.

Also significantly, a continuing high percentage of respondents have entered ICT from other fields, and nearly half have worked in fields outside ICT at some stage in their careers.

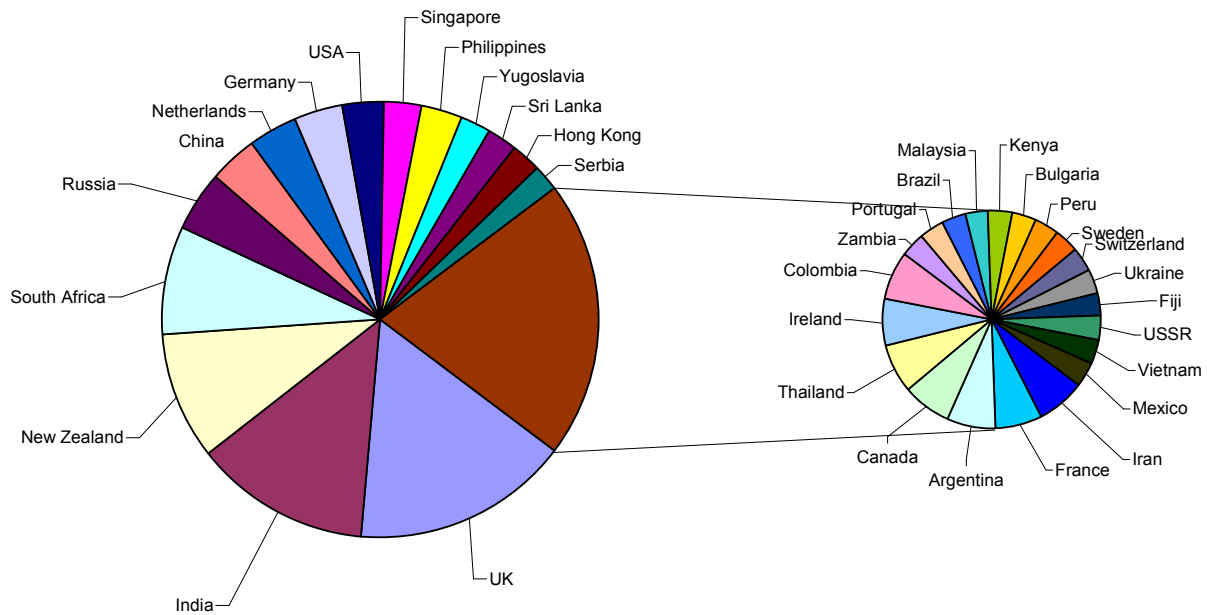
What is also surprising is the relatively high reporting of some form of discrimination encountered, on the grounds of one or more of age, race, or sex, only marginally down from the 2007 results.

Most importantly, over 86% of respondents continue to consider themselves to be part of the Australian ICT industry.

International nature of ICT

Whilst the 2009 Survey did not ask for country of origin of respondents, however some indication can be gained from the detailed answers given by the nearly 150 responses to the location of overseas qualifications, nominating 36 different countries from almost every region of the world.

ACS Survey 2009 - location of overseas qualification



Survey Questions

- 1 What is your employment status?
Full-time (≥ 35 hours a week)
Part-time (<35 hours a week)
Self-employed proprietary/director
Hourly contract employee
Unemployed

- 2 In which state or territory are you based?
NSW
VIC
QLD
SA
WA
TAS
ACT
NT
Overseas (Please specify which country)

- 3 In what industry sector are you working now?
Agriculture
Banking / Finance
Computer suppliers / distributors
Computer, peripheral, equipment manufacturers
Computer software manufacturing
Computer Services
Communications & media (inc TV, Australia Post, Telstra, Newspapers)
Consulting
Construction
Defence
Education
Electricity and gas supply / utilities
Health & community services
Hospitality (hotels, restaurants, etc)
Insurance
Manufacturing (excluding computer, suppliers/distributors, peripheral & equipment manufacturers)
Mining or quarrying
Printing / publishing
Property & business services
Public administration (Federal, State, Local)
Retail
Research & development
Telecommunications
Transport & storage
Other

- 4 In what industry sector(s) have you spent most of your working life?
Agriculture
Banking / Finance
Computer suppliers / distributors
Computer, peripheral, equipment manufactures
Computer software manufacturing
Computer services
Communications & media (inc TV, Australia Post, Telstra, Newspapers)
Consulting
Construction
Defence

Education
Electricity and gas supply / utilities
Health & community services
Hospitality (hotels, restaurants etc)
Insurance
Manufacturing (excluding computer, suppliers / distributors, peripheral & equipment manufactures)
Mining or quarrying
Printing / publishing
Property & business services
Public administration (Federal, State, Local)
Retail
Research & development
Telecommunications
Transport & storage
Other (Please specify)

- 5 Have you worked outside of the ICT sector during your career?
Yes
No
- 6 Did you move into an ICT career from another area?
Yes
No
- 7 How many hours do you work a week?
Under 10 hours
10 to 19 hours
20 to 29 hours
30 to 39 hours
40 to 49 hours
Over 50 hours
- 8 Right now, which of the following best describes your main ICT job responsibility?
Development and Implementation
Management and Administration
Sales and Marketing
Strategy and Planning
Service Delivery
Technical Support and Maintenance
- 9 Within Development and Implementation, which of the following are your specialisations?
Systems Installation / Decommissioning
Documentation
System Integration
Business Analysis
Data Analysis
Database Design
Media and Content
Programming / Software Development
Systems Design
Systems Ergonomics / Design
Systems Testing
Technical Authority
Web Design
Analyst Programmer
Enterprise Architecture
- 10 Within Management and Administration, which of the following are your specialisations?
CIO
ICT Director / Division Head

Program Management
Project Officer
Compliance
Quality Assurance
Quality Management
Asset Management
Education & Training Management
ICT Management
Systems Integrator
IS Coordination
Service Delivery Management
Systems Development Manager
Contract Manager
Procurement

- 11 Within Sales and Marketing, which of the following are your specialisations?
Account Management
Marketing
Sales and Support
Selling
- 12 Within Strategy and Planning, which of the following are your specialisations?
Business Process Improvement
Business Risk Management
IS Strategy & Planning
Consultancy
Information Resource Management
Technical Specialist
Business Continuity Planning
Change Control
Emerging Technology
Methods & Tools
Network Planning
Systems Architecture
- 13 Within Service Delivery, which of the following are your specialisations?
Education and Training Delivery
Communication & Network Engineer
Hardware Engineer
Systems Engineer
Capacity Management
Configuration Management
Network Control
Security Administration
Application and Systems Support
Database Administration
ICT Operations
Service Level Control
Network and Administration Support
User Support
Enterprise Architecture
- 14 Over the life cycle of your ICT career to date which of the following best describes your main job responsibility?
Development and Implementation
Management and Administration
Sales and Marketing
Strategy and Planning
Service Delivery
Technical Support and Maintenance

- 15 Within Development and Implementation, which of the following are your specialisations?
- Systems Installation / Decommissioning
 - Documentation
 - Systems Integration
 - Business Analysis
 - Data Analysis
 - Database Design
 - Media and Content
 - Programming / Software Development
 - Systems Design
 - Systems Ergonomics / Design
 - Systems Testing
 - Technical Authority
 - Web Design
 - Analyst Programmer
 - Enterprise Architecture
- 16 Within Management and Administration, which of the following are your specialisations?
- CIO
 - ICT Director / Division Head
 - Program Management
 - Project Officer
 - Compliance
 - Quality Assurance
 - Quality Management
 - Asset Management
 - Education & Training Management
 - ICT Management
 - Systems Integrator
 - IS Coordination
 - Service Delivery Management
 - Systems Development Manager
 - Contract Manager
 - Procurement
- 17 Within Sales and Marketing, which of the following are your specialisations?
- Account Management
 - Marketing
 - Sales and support
 - Selling
- 18 Within Service Delivery, which of the following are your specialisations?
- Education & Training Delivery
 - Communications & Network Engineer
 - Hardware Engineer
 - System Engineer
 - Capacity Management
 - Configuration Management
 - Network Control
 - Security Administration
 - Application & Systems Support
 - Database Administration
 - ICT Operations
 - Service Level Control
 - Network & Administration Support
 - User Support
 - Enterprise Architecture
- 19 Within Strategy and Planning, which of the following are your specialisations?

Business Process Improvement
Business Risk Management
IS Strategy & Planning
Consultancy
Information Resource Management
Technical Specialist
Business Continuity Planning
Change Control
Emerging Technology
Methods & Tools
Network Planning
Systems Architecture

- 20 What training, via courses/conferences/seminars have you undertaken in the past 12 months?
ICT related training
Business related training
Personal Development
No training undertaken
Training in another discipline (other than ICT)
- 21 Who is responsible for determining your training needs?
Me
My Employer
Me and My Employer
- 22 Does your employer pay or contribute to your training?
Yes
No
- 23 What is the main challenge you face when undertaking training/courses to enhance your ICT skills?
Finding out they are available
The cost of these courses
Sparing the time to attend these courses
Getting to the places where this training is held
Unsure if the courses will enhance my skill sets and enable me to improve my employment prospects
Getting time off work
I do not need more training
- 24 How often do you need to undertake training/retraining to keep your skills current?
1-3 years
3-5 years
5-10 years
- 25 Have you ever worked in a non-ICT professional or technical role during your career?
Yes
No
- 26 Do you have academic or industry computing qualifications?
No formal qualifications
Vendor accreditation
Diploma
Bachelor Degree with Honours
Bachelor Degree without Honours
Graduate Diploma
MA / MBA
PHD
Other
- 27 If you have formal qualifications where were they gained and in what discipline?
Australia, please specify discipline

Elsewhere, please specify (Country and discipline)

28 Among the following, what do you find are the best source of ICT positions? Please select each box then rank in order 1 to 4, 1 being the best

Newspapers
Recruitment Agencies
The Internet
Word of mouth / networking

29 How long have you worked in the ICT industry?

Never worked in ICT in Australia
Under 2 years
Between 2 and 5 years
Between 5 and 10 years
Between 10 and 15 years
Between 15 and 20 years
Over 20 years

30 Do you currently consider yourself as employed in the ICT industry?

Yes
No

31 Over the last 5 years, have you been unemployed?

Yes, how long
No

32 In applying for ICT positions, do you believe you have ever encountered any of the following forms of discrimination?

Discrimination against your age
Discrimination against your sex
Discrimination against your race or ethnicity
Never experienced any discrimination

33 Over the last 12 months, have you been unemployed?

Yes, how long
No

34 If you are interested in receiving the results of the survey, please enter your return email address here