

Senate Inquiry into Current and Future Skills Needs

**Supplementary Information
to the March 2003 submission by the**

Australian National Training Authority

August 2003



Terms of Reference

The inquiry is to report on:

- a) Areas of skills shortage and labour demand in different areas and locations, with particular emphasis on projecting future skills requirements.
- b) The effectiveness of current Commonwealth, State and Territory education, training and employment policies, and programs and mechanisms for meeting current and future skills need, and any recommended improvements.
- c) The effectiveness of industry strategies to meet current and emerging skill needs.
- d) The performance and capacity of Job Network to match skills availability with labour market needs on a regional basis and the need for improvements.
- e) Strategies to anticipate vocational education and training needs flowing from industry restructuring and redundancies, and any recommended improvements.
- f) Consultation arrangements with industry, unions and the community on labour-market trends and skills demand in particular, and any recommended appropriate changes.

1 Introduction

- 1.1 In our March 2003 submission, we advised of further work being undertaken by Access Economics, which might inform the work of the Inquiry. We undertook to provide this work on future demand and growth for vocational education and training to the Inquiry following reporting to the ANTA Ministerial Council in June.
- 1.2 In addition to the future demand work, preliminary analysis has been undertaken of the latest national strategic industry VET plans submitted through the current industry advisory arrangements. The analysis includes itemisation of areas of skill shortage as identified by these bodies.
- 1.3 This supplement to ANTA's initial submission includes extracts from both the future demand work and the analysis of the national strategic industry VET plans. This information is particularly relevant for Term of Reference (a). The material on future demand has been presented essentially as provided to us in the consultant's report.

2 Future Demand Analysis

- 2.1 The analysis undertaken by Access Economics suggests that the current job growth of over 3% per annum will slow over the next decade as the baby boomers retire in increasing numbers. Although, it was noted that retirement of baby boomers will have a particular impact on employment growth after 2010, which was outside the timeframe of the report.
- 2.2 Much of the slowdown in employment growth will be related to construction, currently seeing its strongest growth in two decades, but seen easing soon. Overall job growth may lose steam alongside housing construction activity, despite expected better news on white collar and farm employment through 2003-04.
- 2.3 More broadly, Access Economics forecast relatively slower employment growth over the next decade. Compared with average annual job growth for the decade to 2002 of 2.0%, the average over the decade to 2012 may be 1.1%.
- 2.4 The Access Economics' forecasts assume continuation of reasonably strong rates of productivity growth for Australia. With slowing labour force growth, productivity growth is set to become relatively an even more important driver of Australia's economic performance, with implications for skill requirements and VET. The other longstanding trend - that of part-time exceeding full-time job gains - should also continue.
- 2.5 Access Economics advises that in addition to the weak supply side implied by the demographic story, another long run trend will affect the type of new jobs that are created. Blue collar employment is only slowly growing (in agriculture, forestry and fishing, mining and manufacturing, electricity, gas and water, construction, wholesale and retail, transport and storage).

Table 1: White collar and blue collar employment aggregates

	June 1985	June 1995	June 2001
White collar	2.7m	3.8m	4.6m
Blue collar	3.7m	4.4m	4.6m

Source: ABS Labour Force survey, Access Economics

- 2.6 In 2001, white collar employment overtook blue collar employment, and is expected to grow at a faster pace than blue collar jobs in the future. Legal, accounting, finance, marketing, property and business services jobs are expected to exceed the national average. There will also be strong gains in community services (including health, aided by an ageing Australia) plus in a series of leisure related sectors (accommodation, cafes, restaurants, sport and recreation).
- 2.7 On the other hand, there is expected to be weakness in the job market for construction related industries as the current housing boom eases. Manufacturing industries are expected to experience a declining employment share as a result of strong international competition, particularly in the TCF industries. Employment in agriculture and mining will also be weak.
- 2.8 Occupations like farmers and farm managers, road and rail transport drivers, and textile, clothing and related tradespersons have relatively older workforces than others. Occupations that are related to the faster growing sectors of the economy (like hospitality workers) tend to experience a relatively high turnover of staff.

EMPLOYMENT TRENDS BY INDUSTRY

- 2.9 As part of its analysis, Access Economics provided a comparison of historical employment growth by industry, included in Table 2, and forecasts of employment growth by industry, included in Table 3.

Table 2: Employment shares and growth rates by industry, 1992 to 2002

	1992 share	2002 share	% point change in share 1992 to 2002	avg. % growth p.a. 1992 to 2002
Agriculture	4.8%	3.8%	-1.0%	-0.3%
Services to Agriculture; Hunting and	0.2%	0.3%	0.1%	4.2%
Forestry and Logging	0.1%	0.1%	0.0%	0.2%
Commercial Fishing	0.2%	0.2%	0.0%	2.1%
Coal Mining	0.3%	0.2%	-0.1%	-2.7%
Oil and Gas Extraction	0.1%	0.0%	0.0%	-2.6%
Metal Ore Mining	0.5%	0.4%	-0.1%	0.0%
Other Mining	0.1%	0.1%	0.0%	-0.7%
Services to Mining	0.2%	0.2%	0.0%	1.4%
Food, Beverage and Tobacco	2.5%	2.0%	-0.4%	0.2%
TCF and Leather Manufacturing	1.3%	0.8%	-0.5%	-2.3%
Wood and Paper Product Manufacturing	0.9%	0.8%	-0.1%	0.7%
Printing, Publishing and Recorded Media	1.4%	1.2%	-0.2%	0.7%
Petroleum, Coal, Chemical	1.3%	1.2%	-0.1%	1.5%
Non-Metallic Mineral Product	0.7%	0.5%	-0.2%	-1.2%
Metal Product Manufacturing	2.3%	1.8%	-0.5%	-0.5%
Machinery and Equipment Manufacturing	3.0%	2.7%	-0.3%	1.0%
Other Manufacturing	1.0%	0.9%	-0.1%	1.0%
Electricity and Gas Supply	0.9%	0.5%	-0.4%	-4.4%
Water Supply, Sewerage and Drainage	0.4%	0.2%	-0.2%	-4.4%
General Construction	2.4%	2.7%	0.3%	3.2%
Construction Trade Services	4.4%	4.9%	0.5%	3.1%
Basic Material Wholesaling	1.8%	1.2%	-0.6%	-2.0%
Machinery and Motor Vehicle	2.4%	1.6%	-0.7%	-1.8%
Personal and Household Good	2.2%	1.9%	-0.3%	0.6%
Food Retailing	5.3%	5.8%	0.5%	3.0%
Personal and Household Good Retailing	6.0%	6.5%	0.5%	2.8%
Motor Vehicle Retailing and Services	3.1%	2.9%	-0.2%	1.4%
Accommodation, Cafes and Restaurants	4.4%	4.9%	0.5%	3.1%
Road Transport	2.3%	2.4%	0.0%	2.1%
Rail Transport	0.7%	0.4%	-0.4%	-4.9%
Water Transport	0.1%	0.1%	0.1%	7.0%
Air and Space Transport	0.5%	0.5%	0.0%	2.6%
Other Transport	0.0%	0.0%	0.0%	13.9%
Services to Transport	0.9%	0.7%	-0.2%	-0.3%
Storage	0.2%	0.3%	0.1%	5.0%
Communication Services	1.7%	1.8%	0.1%	2.5%
Finance	2.7%	1.8%	-0.9%	-1.9%
Insurance	0.9%	0.8%	-0.1%	0.5%
Services to Finance and Insurance	0.7%	1.1%	0.4%	7.3%
Property Services	1.4%	1.5%	0.1%	3.0%
Scientific, technical and computer svces	2.0%	3.2%	1.2%	6.9%
Legal, accounting, marketing and	2.9%	3.3%	0.4%	3.5%
Other business services	2.0%	3.5%	1.5%	8.0%
Government Administration	4.3%	4.2%	-0.1%	1.7%
Defence	0.3%	0.2%	-0.1%	-1.0%
Education	7.1%	7.0%	-0.1%	1.9%
Health Services	7.3%	7.4%	0.1%	2.1%
Community Services	1.8%	2.6%	0.8%	6.0%
Motion Picture, Radio and Television	0.5%	0.6%	0.0%	2.9%
Libraries, Museums and the Arts	0.4%	0.7%	0.3%	7.9%
Sport and Recreation	1.1%	1.3%	0.2%	3.7%
Personal Services	1.9%	2.0%	0.1%	2.6%
Other Services	1.9%	2.0%	0.1%	2.4%
Private Households Employing Staff	0.2%	0.1%	-0.1%	-8.4%
Total	100.0%	100.0%		2.0%

Source: Access Economics from the ABS Labour Force survey

Table 3: Employment shares and growth rates by industry, 2002 to 2010

	2002 share	2010 share	% point change in share 2002 to 2010	avg. % growth p.a. 2002 to 2010
Agriculture	3.8%	3.5%	-0.3%	0.3%
Services to Agriculture; Hunting and Forestry and Logging	0.3%	0.3%	0.0%	1.0%
Commercial Fishing	0.1%	0.1%	0.0%	-0.8%
Coal Mining	0.2%	0.2%	0.0%	-0.3%
Oil and Gas Extraction	0.2%	0.2%	0.0%	-1.4%
Metal Ore Mining	0.0%	0.1%	0.0%	2.4%
Other Mining	0.4%	0.3%	-0.1%	-0.7%
Services to Mining	0.1%	0.1%	0.0%	-0.9%
Food, Beverage and Tobacco	0.2%	0.2%	0.0%	0.4%
TCF and Leather Manufacturing	2.0%	2.0%	-0.1%	0.8%
Wood and Paper Product Manufacturing	0.8%	0.6%	-0.2%	-2.7%
Printing, Publishing and Recorded Media	0.8%	0.7%	-0.1%	-0.1%
Petroleum, Coal, Chemical	1.2%	1.1%	-0.1%	0.3%
Non-Metallic Mineral Product	1.2%	1.1%	-0.1%	0.3%
Metal Product Manufacturing	0.5%	0.4%	-0.1%	-0.3%
Machinery and Equipment Manufacturing	1.8%	1.6%	-0.2%	-0.5%
Other Manufacturing	2.7%	2.6%	-0.1%	0.9%
Electricity and Gas Supply	0.9%	0.8%	-0.1%	-0.4%
Water Supply, Sewerage and Drainage	0.5%	0.4%	-0.1%	-0.3%
General Construction	0.2%	0.2%	0.0%	-0.9%
Construction Trade Services	2.7%	2.6%	-0.1%	0.9%
Basic Material Wholesaling	4.9%	4.8%	-0.1%	1.0%
Machinery and Motor Vehicle	1.2%	1.0%	-0.2%	-1.3%
Personal and Household Good	1.6%	1.4%	-0.2%	-0.4%
Food Retailing	1.9%	1.9%	0.0%	0.9%
Personal and Household Good Retailing	5.8%	6.1%	0.3%	1.8%
Motor Vehicle Retailing and Services	6.5%	6.6%	0.2%	1.6%
Accommodation, Cafes and Restaurants	2.9%	2.7%	-0.2%	0.5%
Road Transport	4.9%	5.5%	0.5%	2.5%
Rail Transport	2.4%	2.2%	-0.1%	0.7%
Water Transport	0.4%	0.3%	0.0%	0.1%
Air and Space Transport	0.1%	0.1%	0.0%	1.2%
Other Transport	0.5%	0.4%	-0.1%	-0.2%
Services to Transport	0.0%	0.0%	0.0%	1.0%
Storage	0.7%	0.7%	-0.1%	0.1%
Communication Services	0.3%	0.3%	0.0%	1.2%
Finance	1.8%	1.8%	-0.1%	0.9%
Insurance	1.8%	1.8%	0.0%	1.5%
Services to Finance and Insurance	0.8%	0.8%	0.0%	0.7%
Property Services	1.1%	1.2%	0.0%	1.8%
Scientific, technical and computer svc	1.5%	1.6%	0.1%	1.7%
Legal, accounting, marketing and	3.2%	3.5%	0.3%	2.5%
Other business services	3.3%	3.4%	0.1%	1.5%
Government Administration	3.5%	3.9%	0.4%	2.6%
Defence	4.2%	4.2%	0.0%	1.2%
Education	0.2%	0.2%	0.0%	0.8%
Health Services	7.0%	7.0%	0.0%	1.3%
Community Services	7.4%	7.8%	0.4%	1.9%
Motion Picture, Radio and Television	2.6%	2.9%	0.4%	2.9%
Libraries, Museums and the Arts	0.6%	0.6%	0.0%	1.4%
Sport and Recreation	0.7%	0.8%	0.1%	2.2%
Personal Services	1.3%	1.4%	0.0%	1.7%
Other Services	2.0%	2.0%	0.0%	1.4%
Private Households Employing Staff	2.0%	2.1%	0.1%	2.0%
Total	0.1%	0.1%	0.0%	-1.1%
Total	100.0%	100.0%		1.3%

Source: ABS Labour Force survey; Access Economics

- 2.10 **Agriculture and mining** are expected to continue to experience a relative decline in their share of employment. The agricultural (farming, forestry and fishing) sector remains exposed to the need to continually improve yields through improved practices and technology in order to keep up with competitors, with little prospect of net jobs growth. The rate of relative decline for agricultural employment may be slower over the forecast period, though that has much to do with a rebound from drought in the short term. The drought savaged farm employment in 2002 (especially in hard hit northern NSW), and as it does break some of that employment will return, providing a short term boost, though one which should not mask the longer run trend of little net jobs growth. A short term lift thanks to a rebound from drought is also expected for the downstream food, beverages and tobacco industry.
- 2.11 Improvements to technology will also continue to limit employment growth in mining looking forward, in what is already a highly capital intensive industry. Within mining, employment may grow in the oil and gas extraction area, given that Australia has a large number of such projects in development, and given heightened uncertainty over global energy supplies. However, coal mining may continue its relative climb and metal ores - which benefited last decade from a move into 'new' minerals such as nickel - may ease back as a share of total Australian employment.
- 2.12 All sectors within **manufacturing** are expected to experience a decline in their employment share over the forecast period, as has occurred over the last decade. Improvements in technology and practices to substitute for labour are being driven by strong international competition (increasingly centred on China), with Australia basically no longer able to compete with Asia in labour intensive manufacturing.
- 2.13 The lower \$A of the early 2000s offered some reprieve against this competition, and helped manufacturing employment to grow strongly in some areas, but as the \$A has appreciated back closer to its longer term trend, international competition is again being heightened - particularly in textiles, clothing and footwear. That is putting these recent employment gains at risk. The other key factor which may see manufacturing employment fall below trend rates over the next two years is the cyclical drop off in new housing construction and renovation, and as a result, demand for manufacturing supplies to construction (building and wood products, some chemicals and metal products). That is also bad news in the short term for those manufacturers selling to the retailers geared to the housing cycle (such as furniture, carpets, curtains and appliances). Employment recorded in manufacturing will also continue to moderate due to outsourcing of some business functions.
- 2.14 Employment in the **utilities** sectors (electricity, gas and water supply) is expected to continue to contract in absolute terms over the forecast period. That again reflects technological improvement over time, along with a slowing rate of population growth (a key driver for water supply activity), and some continued outsourcing. The expected decline is modest, with the very large employment reductions in electricity of the mid 1990s now well behind. In other infrastructure areas of **transport and communications**, employment growth is generally expected to be positive, though below average (airline cutbacks in 2003 will hold down average employment growth for air transport). Rail transport may staunch its earlier declines amid the reform process currently underway.

- 2.15 Employment in **construction** is expected to grow at a little below the average to 2010, though that partly reflects the starting point (2002 is near a peak in cyclical construction activity and employment). The expected decline in construction employment in 2004 and 2005 brings down the average growth. Discounting for the cycle, construction employment growth is expected to track around or just above economy wide employment growth.
- 2.16 **Retailing** is another area where employment growth should track above the economy wide average, partly as the trend towards part-time employment continues further. However, such employment growth may pause in 2004 as the retail cycle passes its peak and consumers rebuild their finances after a period of rapid spending growth.
- 2.17 For employment growth, **business services** has been outstanding over the past decade and there is no reason to expect it won't continue to generate a substantial number of jobs over the forecast period. The weak global economy has seen some elements of business services employment weaken lately (such as IT positions, advertising/marketing and accounting), though they should pick up again in the short term when the global economy does regain momentum (perhaps 2004). The industry is likely to continue to benefit from outsourcing from other sectors. **Finance and insurance** should also show good employment growth looking forward, with the bulk of the bank cut-backs now likely to have been completed.
- 2.18 Employment growth is also expected to be strong in the delivery of **public and community services**, as the latter takes up a higher share of consumers' interests and budgets. Jobs growth in education will be limited by demographics slowing growth in the number of school students, though education exports are likely to continue to rise solidly (after digesting the recent rise in the \$A). On the other hand demographics will stimulate further demand for health care and community services such as aged care.
- 2.19 Finally, employment growth in **accommodation, cafes and restaurants** and the various **recreational services** sectors should be strong in the longer term, leveraging off growth in consumer's disposable incomes. A short term risk comes from a reluctance to fly during times of global political uncertainty, which is damaging tourist numbers to Australia at present, and that is being amplified by concerns over SARS, though such concerns may ease over the longer term.

EMPLOYMENT TRENDS BY OCCUPATION

- 2.20 The Access Economics analysis shows that employment growth in recent years (and indeed as a general trend for some decades) has been strongest in those occupations, which generally require a higher level of skill and qualifications - **managers, professionals and associate-professionals**.
- 2.21 This development reflects the long term trend towards (1) more jobs being created in business services in particular and the services sector in general and (2) technological developments favouring relatively more skilled workers. Employment growth has also been strong for **intermediate clerical, sales and service workers**, though at a generally lower level of skill and qualification.

- 2.22 While strong, the growth in these occupations is less than the business services industry employment data might have suggested. That has much to do with outsourcing of some business functions, which can produce large changes for employment on an industry basis (for example, shifting employment formerly done within the mining, manufacturing or construction sectors, into business or specialist services). On an occupational basis, provided the same skill set is used, outsourcing means little or no change in the occupational share of employment. This forms an important distinction in projecting demand, which is linked to the skill set required, rather than which industry those skills are used in.
- 2.23 Table 4 shows that the traditional trades occupations have experienced much more modest employment growth over the past five years, despite the current housing construction boom. Elsewhere, **intermediate production and transport workers** experienced falls in employment levels over the five years to 2002, with some jobs moving up to more highly skilled areas. That shift up in skills has had less effect on **labourers and related workers**, which in total experienced solid (though still below average) job growth.
- 2.24 Significant changes in occupational shares evident from Table 4 include the decline in traditional clerical functions (via intermediate numerical clerks and secretaries and personal assistants), as well as the rise of more professional roles in the office (via computer professionals and miscellaneous business and administration associate professionals). This has strong implications for different areas of demand. The decline in the employment share of farmers and farm managers is also notable, though that has much to do with the drought savaging the farm sector in 2002.
- 2.25 It is also important to note that the VET-intensive subset of the workforce declined slightly between 1997 and 2002, with greater demand in occupations requiring university qualifications. That declining share, from 66.4% to 65.8%, has occurred despite the construction industry being at a low level of demand in 1997 and a high level in 2002.

Table 4: Employment shares and growth rates by occupation, 1997 to 2002

		1997 share	2002 share	% point change in share 1997 to 2002	avg. % growth p.a. 1997 to 2002
111	General managers and administrators	0.5%	0.6%	0.1%	4.4%
119	Miscellaneous generalist managers	0.9%	0.9%	0.0%	2.6%
121	Resource managers	0.7%	0.7%	0.0%	3.2%
122	Eng., distribution and process managers	0.8%	1.0%	0.2%	6.4%
123	Sales and marketing managers	0.8%	1.0%	0.2%	6.4%
129	Miscellaneous specialist managers	0.7%	0.8%	0.1%	4.2%
131	Farmers and farm managers	3.0%	2.3%	-0.6%	-2.6%
211	Natural and physical science professionals	0.6%	0.7%	0.1%	4.9%
212	Building and engineering professionals	1.4%	1.3%	-0.1%	0.2%
221	Accountants, auditors and corp. treasurers	1.2%	1.6%	0.4%	8.5%
222	Sales, marketing and advertising prof.	0.7%	0.8%	0.1%	4.6%
223	Computing professionals	1.3%	1.8%	0.6%	9.7%
229	Miscellaneous bus. and information prof.	1.3%	1.4%	0.2%	4.8%
231	Medical practitioners	0.6%	0.6%	0.0%	3.0%
232	Nursing professionals	1.9%	1.9%	0.0%	2.5%
238	Miscellaneous health professionals	2.8%	2.5%	-0.3%	0.0%
241	School teachers	3.1%	3.0%	0.0%	1.9%
242	University and vocational teachers	0.8%	0.7%	-0.1%	-0.4%
249	Miscellaneous education professionals	0.5%	0.5%	0.0%	1.7%
251	Social welfare professionals	0.8%	0.8%	0.0%	3.2%
252	Miscellaneous social professionals	0.6%	0.7%	0.1%	5.1%
253	Artists and related professionals	1.2%	1.2%	0.0%	2.9%
254	Miscellaneous professionals	0.4%	0.4%	0.0%	3.7%
311	Medical and science technical officers	0.4%	0.4%	-0.1%	-0.5%
312	Building and eng. associate professionals	1.1%	0.9%	-0.2%	-1.8%
321	Finance associate professionals	0.7%	1.0%	0.3%	8.8%
329	Misc. bus. and admin. associate prof.	2.1%	2.8%	0.7%	7.9%
331	Shop managers	2.2%	2.3%	0.1%	2.9%
332	Hospitality and accommodation managers	1.3%	1.5%	0.2%	5.2%
339	Misc. managing supervisors	0.9%	1.0%	0.1%	3.2%
341	Enrolled nurses	0.4%	0.3%	-0.1%	-3.4%
342	Welfare associate professionals	0.1%	0.2%	0.1%	10.5%
349	Miscellaneous health and welfare assoc.	0.2%	0.2%	0.0%	5.0%
391	Police officers	0.5%	0.5%	0.0%	1.8%
399	Miscellaneous associate professionals	0.5%	0.6%	0.1%	5.0%
411	Mechanical engineering tradespersons	1.5%	1.3%	-0.2%	-1.1%
412	Fabrication engineering tradespersons	0.9%	0.8%	-0.1%	-0.5%
421	Automotive tradespersons	1.6%	1.5%	-0.1%	0.2%
431	Electrical and electronics tradespersons	2.1%	1.9%	-0.2%	0.2%
441	Structural construction tradespersons	1.8%	1.8%	0.1%	2.7%
442	Final finishes construction tradespersons	0.5%	0.6%	0.0%	3.4%
443	Plumbers	0.6%	0.6%	0.0%	3.0%
451	Food tradespersons	1.0%	0.9%	-0.1%	-1.1%
461	Skilled agricultural workers	0.2%	0.1%	0.0%	-1.4%
462	Horticultural tradespersons	0.7%	0.7%	0.1%	3.7%
491	Printing tradespersons	0.5%	0.3%	-0.1%	-4.4%
492	Wood tradespersons	0.4%	0.4%	0.0%	0.6%
493	Hairdressers	0.5%	0.5%	0.1%	4.6%
494	Textile, clothing and related tradespersons	0.3%	0.3%	0.0%	1.3%
498	Misc. tradespersons and related workers	0.7%	0.7%	0.0%	0.7%

Source: Access Economics from ABS Labour Force survey

Table 4: Employment shares and growth rates by occupation, 1997 to 2002 (continued)

	1997 share	2002 share	% point change in share 1997 to 2002	avg. % growth p.a. 1997 to 2002
511 Secretaries and personal assistants	2.6%	2.1%	-0.5%	-2.2%
591 Advanced numerical clerks	1.3%	1.5%	0.2%	5.7%
599 Misc. advanced clerical and service workers	0.6%	0.6%	0.0%	0.6%
611 General clerks	0.8%	1.3%	0.4%	11.2%
612 Keyboard operators	1.3%	1.1%	-0.2%	-1.1%
613 Receptionists	1.5%	1.6%	0.1%	3.4%
614 Intermediate numerical clerks	3.6%	2.8%	-0.8%	-3.0%
615 Material recording and despatching clerks	1.1%	1.1%	0.0%	1.1%
619 Miscellaneous intermediate clerical workers	1.4%	1.6%	0.2%	4.9%
621 Intermediate sales and related workers	1.4%	1.7%	0.2%	5.4%
631 Carers and aides	2.4%	2.8%	0.4%	5.4%
632 Hospitality workers	1.7%	1.7%	0.0%	1.8%
639 Miscellaneous intermediate service workers	1.1%	1.3%	0.2%	5.1%
711 Mobile plant operators	1.1%	1.2%	0.2%	5.2%
712 Intermediate stationary plant operators	0.9%	0.7%	-0.2%	-2.3%
721 Inter. textile, clothing and related machine	0.6%	0.3%	-0.2%	-8.8%
729 Miscellaneous intermediate machine op.	0.7%	0.6%	-0.1%	-0.4%
731 Road and rail transport drivers	3.2%	3.1%	-0.2%	1.0%
791 Intermediate mining and construction	0.5%	0.4%	-0.1%	-0.3%
799 Misc. intermediate prodn and transp.	2.1%	2.0%	-0.1%	0.7%
811 Elementary clerks	1.0%	0.7%	-0.3%	-4.3%
821 Sales assistants	5.9%	5.9%	0.0%	1.9%
829 Miscellaneous elementary sales workers	2.0%	2.0%	-0.1%	1.3%
831 Elementary service workers	1.2%	1.2%	0.1%	3.3%
911 Cleaners	2.4%	2.3%	-0.1%	1.6%
921 Process workers	1.9%	1.4%	-0.5%	-3.6%
922 Product packagers	0.8%	0.8%	0.0%	2.4%
991 Mining, construction and related labourers	1.1%	1.0%	0.0%	1.2%
992 Agricultural and horticultural labourers	1.6%	1.4%	-0.2%	-0.3%
993 Elementary food prep. and related workers	1.4%	1.3%	-0.1%	0.8%
999 Miscellaneous labourers and related	0.7%	0.9%	0.2%	7.9%
Total	100.0	100.0		2.1%

Source: Access Economics from ABS Labour Force survey

- 2.26 Table 5 presents Access Economics' employment projections for all ASCO occupational groups (at the 3 digit level). It shows the share of employment in 2010 and the average annual growth between 2002 and 2010. This is in effect the net number of people entering the occupation. To this figure is added an allowance for retirements and normal turnover to estimate the gross number of entrants.
- 2.27 Employment by occupation in these projections follows the industry projections, with Census data on the level of and change in occupational shares within industry used as the basis for Access Economics' projections. Broadly, existing trends are expected to continue over the coming decade, favouring a rising share of the workforce being employed in service occupations (such as professional, managerial and financial services), rather than in occupations associated with the more traditional farming, mining and manufacturing sectors.
- 2.28 Above average employment growth is expected in all categories of **managers and administrators**, with the exception of farmers and farm managers, despite a significant employment rebound expected over the next two years as the drought breaks. Over the longer term, this is a sector reliant on productivity rather than people to generate

extra output, suggesting that farm jobs are likely to continue to make way for improved technology and farm practices.

- 2.29 Above average job growth is also expected for many categories of **professionals and associate professionals**, led by continued strong demand for computing professionals - despite the recent hiccup via the global IT downturn, longer term demand for computing professionals continues to look solid, and should perform strongly, with the business services sector a key jobs driver looking forward. Employment for other business-related professionals is also expected to perform well.
- 2.30 **Community services** will also be a key job generator, though the existing dividing line between good prospects in health and more modest prospects in education is likely to be maintained. A range of medical and welfare professional groups are expected to see reasonable growth, but growth in the number of school teachers may be kept in check by slow (or no) growth in the number of children of school age.
- 2.31 Employment growth in the traditionally VET-intensive **tradespersons** categories is generally expected to be below average over the coming decade. In large part that expected underperformance is cyclical, with the construction and related trades at an unsustainable high level at present. The coming downswing in the housing construction cycle between late 2003 and early 2005 will see job losses or only slow growth in many trades in the next couple of years (the flipside of recent history, in which the upswing of the last two years has helped growth in jobs). Over the longer term, technology remains a threat to the growth in demand for some of these occupations, as does import competition for manufacturing products.
- 2.32 On the latter front, it is interesting that import penetration ratios have risen in the last decade (despite an undervalued \$A in recent years) for products once thought to be relatively free of import competition - a list which ranges from steel reinforcing to cement, as well as other products where imports have been on the rise (such as paints, soaps and refined petroleum). More broadly, a steady process of structural change is affecting manufacturing sectors around the world, as manufacturing increasingly concentrates production in low cost Asia (notably China). That has hollowed out the manufacturing sectors of the United States and Japan in recent years, and affected growth rates in Europe as well. In Australia, manufacturing has been less affected to date, though it has been aided by two essentially temporary factors - an undervalued \$A, and the current residential and commercial construction boom (the strongest in over two decades).
- 2.33 Looking across the coming decade, the \$A has already risen (it is broadly back to trend against most currencies, though may rise further against the \$US), and current construction strength will fade. That suggests more modest growth prospects for those occupations and trades tied to manufacturing sectors exposed to global trade pressures (either as exporters or fending off import competition).

- 2.34 As a result, those occupations expected to see below average growth in the coming decade include the likes of textile, clothing and related tradespersons, intermediate textile, clothing and related machine operators, printing tradespersons, building and engineering associate professionals, building and engineering professionals, mechanical engineering tradespersons, fabrication engineering tradespersons, intermediate stationary plant operators, miscellaneous intermediate machine operators, wood tradespersons, intermediate mining and construction workers, process workers, miscellaneous intermediate production and transport workers, miscellaneous tradespersons and related workers, mining, construction and related labourers, product packagers, final finishes construction tradespersons, structural construction tradespersons, plumbers, electrical and electronics tradespersons, and mobile plant operators.
- 2.35 In brief, it is worth noting that TCF tradespersons remain hostage to a local industry which finds import competition very tough (and may find it tougher still given the recent rise in the \$A), while printing tradespersons are dealing with a soft advertising environment in the short term, as well as the threats of technology (which has seen considerable advances in productivity over the past decade).
- 2.36 Hairdressers are an exception to the projected relative weakness among the trades, with no import competition and little technology substitution meaning this remains a labour-intensive trade. Also among the better performing trades may be employment among food tradespersons, which is expected to benefit from a post-drought rebound.
- 2.37 **Advanced, intermediate and elementary clerical sales and service workers** (ASCO codes commencing with a 5, 6 or 8) are also VET-intensive occupations, and here the jobs story is expected to be much stronger. While the number of secretaries and keyboard operators are expected to continue to decline in relative terms (though at a slower rate than evident in the past decade), a broader range of skills in the office favour stronger growth in the occupation of advanced numerical clerks.
- 2.38 Sales and service workers are also likely to continue relatively stronger growth, benefiting from growth in consumers' disposable incomes. That said, one longer term growth retardant is the lack of saving from recurrent income. Today's average Australian consumer spends all he or she earns, saving only any capital gains they make on their home or shares. The fall in saving across the last decade supported consumer spending (and so job prospects for the likes of sales and service workers), but savings rates can fall no further.
- 2.39 Hospitality workers may also do relatively well over the coming decade, although in the short term the international tourism downturn places some jobs at risk, as does the recent rise in the \$A. (For the longer term the issue is to what extent current security concerns persist. The assumption here is that these concerns fade over the next year or two.)
- 2.40 For carers and aides strong growth is expected, as there will be a greater number of aged persons to look after. An increasing proportion of demand may be outside the formal aged care sector, with informal care (such as *Dial An Angel*-type arrangements) expected to see stronger growth given the combination of rapid growth in the number of the dependent aged, yet limited public funds.

- 2.41 Little in the way of net jobs growth is expected for **production and transport workers**, with strong international competition leaving many employers of these workers under pressure to cut costs, and with rail reform seeing that capital-intensive sector lift its performance relative to some of the more labour-intensive components of transport (such as road transport).
- 2.42 Interestingly, prospects are somewhat stronger for **labourers and related workers** given that much of their work has a domestic service rather than production focus, and so the continued trend to outsourcing home services may work in favour of these latter occupations.
- 2.43 Ranking the projections shows that 7 of the top 8 individual occupations are VET-intensive, led by computing professionals, with all of these in the service part of the economy. VET intensive occupations are also dominant at the bottom of the ranking list, largely via a range of tradespersons (though this partly reflects the starting point of the forecast period being very near the peak of the construction cycle).

Table 5: Employment shares and growth rates by occupation, 2002 to 2010

	2002 share	2010 share	% point change in share 2002 to 2010	avg. % growth p.a. 2002 to 2010	
111	General managers and administrators	0.6%	0.6%	0.0%	2.1%
119	Miscellaneous generalist managers	0.9%	0.9%	0.0%	1.4%
121	Resource managers	0.7%	0.7%	0.0%	1.4%
122	Eng., distribution and process managers	1.0%	1.1%	0.0%	1.7%
123	Sales and marketing managers	1.0%	1.0%	0.0%	1.8%
129	Miscellaneous specialist managers	0.8%	0.8%	0.0%	1.5%
131	Farmers and farm managers	2.3%	2.3%	0.0%	1.2%
211	Natural and physical science professionals	0.7%	0.7%	0.0%	1.2%
212	Building and engineering professionals	1.3%	1.2%	-0.1%	0.4%
221	Accountants, auditors and corp. treasurers	1.6%	1.7%	0.1%	2.2%
222	Sales, marketing and advertising prof.	0.8%	0.8%	0.0%	1.8%
223	Computing professionals	1.8%	2.3%	0.4%	4.0%
229	Miscellaneous bus. and information prof.	1.4%	1.6%	0.2%	2.7%
231	Medical practitioners	0.6%	0.6%	0.0%	1.6%
232	Nursing professionals	1.9%	2.0%	0.1%	1.7%
238	Miscellaneous health professionals	2.5%	2.4%	-0.1%	0.6%
241	School teachers	3.0%	2.9%	-0.1%	0.8%
242	University and vocational teachers	0.7%	0.7%	0.0%	1.7%
249	Miscellaneous education professionals	0.5%	0.5%	0.0%	1.6%
251	Social welfare professionals	0.8%	0.9%	0.0%	2.0%
252	Miscellaneous social professionals	0.7%	0.8%	0.0%	1.4%
253	Artists and related professionals	1.2%	1.2%	0.0%	1.4%
254	Miscellaneous professionals	0.4%	0.4%	0.0%	0.9%
311	Medical and science technical officers	0.4%	0.3%	0.0%	0.0%
312	Building and eng. associate professionals	0.9%	0.8%	-0.1%	0.0%
321	Finance associate professionals	1.0%	1.1%	0.1%	2.7%
329	Misc. bus. and admin. associate prof.	2.8%	3.3%	0.5%	3.5%
331	Shop managers	2.3%	2.2%	-0.1%	0.9%
332	Hospitality and accommodation managers	1.5%	1.6%	0.1%	2.2%
339	Misc. managing supervisors	1.0%	1.0%	0.1%	2.2%
341	Enrolled nurses	0.3%	0.3%	0.0%	0.1%
342	Welfare associate professionals	0.2%	0.2%	0.0%	3.0%
349	Miscellaneous health and welfare assoc.	0.2%	0.2%	0.0%	1.7%
391	Police officers	0.5%	0.5%	0.0%	1.3%
399	Miscellaneous associate professionals	0.6%	0.6%	0.0%	1.3%
411	Mechanical engineering tradespersons	1.3%	1.2%	0.0%	0.1%
412	Fabrication engineering tradespersons	0.8%	0.7%	0.0%	0.0%
421	Automotive tradespersons	1.5%	1.4%	0.0%	0.8%
431	Electrical and electronics tradespersons	1.9%	1.8%	0.0%	0.5%
441	Structural construction tradespersons	1.8%	1.7%	0.0%	0.5%
442	Final finishes construction tradespersons	0.6%	0.5%	0.0%	0.5%
443	Plumbers	0.6%	0.6%	0.0%	0.5%
451	Food tradespersons	0.9%	0.9%	0.0%	1.0%
461	Skilled agricultural workers	0.1%	0.1%	0.0%	0.7%
462	Horticultural tradespersons	0.7%	0.7%	0.0%	1.2%
491	Printing tradespersons	0.3%	0.3%	-0.1%	-1.1%
492	Wood tradespersons	0.4%	0.4%	-0.1%	-0.5%
493	Hairdressers	0.5%	0.5%	0.0%	1.3%
494	Textile, clothing and related tradespersons	0.3%	0.2%	0.0%	-1.1%
498	Misc. tradespersons and related workers	0.7%	0.7%	0.0%	0.7%

Source: ABS Labour Force survey; Access Economics

**2.44 Table 5 Employment shares and growth rates by occupation, 2002 to 2010
(continued)**

	2002 share	2010 share	% point change in share 2002 to 2010	avg. % growth p.a. 2002 to 2010
511 Secretaries and personal assistants	2.1%	1.9%	-0.2%	0.3%
591 Advanced numerical clerks	1.5%	1.6%	0.1%	2.2%
599 Misc. advanced clerical and service workers	0.6%	0.6%	0.0%	1.0%
611 General clerks	1.3%	1.3%	0.0%	1.3%
612 Keyboard operators	1.1%	1.0%	-0.1%	0.7%
613 Receptionists	1.6%	1.6%	0.0%	1.3%
614 Intermediate numerical clerks	2.8%	2.7%	-0.1%	0.7%
615 Material recording and despatching clerks	1.1%	1.0%	-0.1%	0.5%
619 Miscellaneous intermediate clerical workers	1.6%	1.6%	0.0%	1.2%
621 Intermediate sales and related workers	1.7%	1.7%	0.1%	1.8%
631 Carers and aides	2.8%	3.3%	0.4%	3.1%
632 Hospitality workers	1.7%	1.8%	0.1%	2.2%
639 Miscellaneous intermediate service workers	1.3%	1.3%	0.1%	1.8%
711 Mobile plant operators	1.2%	1.2%	-0.1%	0.4%
712 Intermediate stationary plant operators	0.7%	0.7%	-0.1%	-0.1%
721 Inter. textile, clothing and related machine	0.3%	0.3%	-0.1%	-1.6%
729 Miscellaneous intermediate machine op.	0.6%	0.5%	-0.1%	-0.1%
731 Road and rail transport drivers	3.1%	2.9%	-0.2%	0.6%
791 Intermediate mining and construction	0.4%	0.4%	-0.1%	-0.6%
799 Misc. intermediate prodn and transp.	2.0%	1.9%	-0.1%	0.8%
811 Elementary clerks	0.7%	0.6%	-0.1%	-0.8%
821 Sales assistants	5.9%	5.9%	0.0%	1.3%
829 Miscellaneous elementary sales workers	2.0%	1.9%	0.0%	1.0%
831 Elementary service workers	1.2%	1.3%	0.1%	2.0%
911 Cleaners	2.3%	2.4%	0.1%	1.6%
921 Process workers	1.4%	1.2%	-0.2%	-1.0%
922 Product packagers	0.8%	0.8%	0.0%	0.6%
991 Mining, construction and related labourers	1.0%	1.0%	-0.1%	0.6%
992 Agricultural and horticultural labourers	1.4%	1.3%	-0.1%	0.1%
993 Elementary food prep. and related workers	1.3%	1.4%	0.0%	1.5%
999 Miscellaneous labourers and related	0.9%	0.9%	0.0%	1.7%
Total	100.0	100.0		1.3%

Source: ABS Labour Force survey; Access Economics

2.45 The preceding Access Economics analysis provides estimates for net workforce entry by occupation over time. While the net change provides an indication of labour market strength, for the purposes of addressing skill/training needs it is the gross number of people entering an occupation that is often more important. The gross number of entrants covers the net change as estimated above, plus the number of people required to replace those who are expected to retire on the basis of age, as well as the number of people required to cover for those who leave the occupation for some other reason (normal turnover, not related to retirement).

2.46 Access Economics has developed estimates for both of these latter two factors.

2.47 National workforce participation rates by age and Census data of observed retirements by age are used to estimate the rate of retirement for each occupation. Other things being equal, the older the age profile of an occupation, and the younger the age of retirement, the more people will be expected to retire in the near term. As far as economic variables go, these effects are reasonably predictable, so they are expected to provide a good guide for whether skill development needs to be stepped up ahead of any upcoming retirement crunch in a particular occupation.

- 2.48 Table 6 provides a profile of the average rate of retirement expected by occupation over the period 2002 to 2010. It suggests that from a VET sector perspective 3 of the top 14 occupations ranked by retirement rate can be classed as VET-intensive, and those occupations (farmers and farm managers, road and rail transport drivers, and textile, clothing and related tradespersons) are ones which have a low rate of projected net workforce growth.
- 2.49 (Indeed, part of the reason those occupations have relatively older employees is that they have been among the slower growing sectors. That has limited entry by younger workers, given a lack of prospects, and limited exit of older workers, concerned that they may not be able to get another job in the same sector if they leave the job they are in.)
- 2.50 Low rates of retirement are expected in many VET-intensive occupations, including sales workers, hairdressers, computing professionals and hospitality workers, reflecting a young age profile in those areas. People often leave these occupations for another occupation prior to retirement age (although that is still to be tested for computing professionals - given the recent and rapid expansion of that profession, relatively few in that area have hit retirement age), so the rate of turnover for these occupations is more of an issue in assessing the number of looming vacancies.
- 2.51 Estimates of normal **turnover** by occupation (not relating to new workforce entry or retirement) are obtained from the ABS labour mobility survey. This survey tracks a sample of workers over a period time, reporting on whether they remain in the same occupation (not necessarily the same job), change to another occupation, or leave the workforce.
- 2.52 Table 6 shows that the rate of turnover per annum is higher than the expected retirement rate for all occupations. In many cases they are inversely related - hospitality workers have the lowest rate of retirement expected, but nearly one quarter leave the occupation every year, with both factors linked to a young (and relatively mobile) workforce.
- 2.53 While the above suggests that retirement may not be a notable VET problem, turnover to go to other occupations does show up as higher in those occupations which are VET-intensive. Indeed, 8 of the top 10 occupations ranked by turnover rate have a strong reliance on VET. For the VET-intensive occupations in total, there is an average 10.7% turnover rate each year. That relatively high rate does suggest that VET to an extent is providing skills, which are used in an occupation for a relatively shorter period of time. However that turnover does not always mean the skills learned in the previous occupation are unused in the next. In fact, sometimes turnover will reflect movement to a related occupation, perhaps for reasons of promotion connected to the training received earlier.
- 2.54 The most stable occupations as recorded in Table 6 are nursing professionals, natural and physical science professionals, plumbers and teachers (school, university and vocational).

Table 6: Expected annual rate of retirement and turnover by occupation, 2002 to 2010

		Avg. retirement rate 2002 to 2010	Avg turnover rate
111	General managers and administrators	3.3%	4.0%
119	Miscellaneous generalist managers	2.9%	4.5%
121	Resource managers	2.3%	11.2%
122	Eng., distribution and process managers	2.3%	4.8%
123	Sales and marketing managers	1.9%	5.2%
129	Miscellaneous specialist managers	3.1%	7.9%
131	Farmers and farm managers	3.4%	3.8%
211	Natural and physical science professionals	1.8%	2.8%
212	Building and engineering professionals	2.2%	4.2%
221	Accountants, auditors and corp. treasurers	1.7%	3.9%
222	Sales, marketing and advertising prof.	1.4%	9.2%
223	Computing professionals	1.0%	4.3%
229	Miscellaneous bus. and information prof.	2.0%	7.8%
231	Medical practitioners	2.4%	4.5%
232	Nursing professionals	2.6%	2.8%
238	Miscellaneous health professionals	1.9%	4.8%
241	School teachers	2.8%	3.7%
242	University and vocational teachers	3.4%	3.7%
249	Miscellaneous education professionals	2.5%	8.4%
251	Social welfare professionals	2.8%	4.1%
252	Miscellaneous social professionals	1.9%	5.0%
253	Artists and related professionals	1.6%	10.5%
254	Miscellaneous professionals	2.2%	8.9%
311	Medical and science technical officers	2.0%	9.5%
312	Building and eng. associate professionals	2.3%	6.0%
321	Finance associate professionals	1.9%	4.7%
329	Misc. bus. and admin. associate prof.	2.2%	9.6%
331	Shop managers	2.5%	7.0%
332	Hospitality and accommodation managers	2.2%	7.9%
339	Misc. managing supervisors	2.4%	6.7%
341	Enrolled nurses	2.4%	8.6%
342	Welfare associate professionals	2.1%	7.3%
349	Miscellaneous health and welfare assoc.	1.7%	7.7%
391	Police officers	1.6%	7.7%
399	Miscellaneous associate professionals	1.7%	7.5%
411	Mechanical engineering tradespersons	2.0%	5.1%
412	Fabrication engineering tradespersons	1.8%	7.1%
421	Automotive tradespersons	1.5%	7.0%
431	Electrical and electronics tradespersons	1.7%	7.8%
441	Structural construction tradespersons	1.7%	5.9%
442	Final finishes construction tradespersons	2.3%	10.7%
443	Plumbers	1.8%	2.9%
451	Food tradespersons	1.8%	9.4%
461	Skilled agricultural workers	1.9%	7.1%
462	Horticultural tradespersons	2.1%	5.9%
491	Printing tradespersons	2.0%	9.6%
492	Wood tradespersons	1.5%	8.3%
493	Hairdressers	1.0%	7.5%
494	Textile, clothing and related tradespersons	2.7%	6.4%
498	Misc. tradespersons and related workers	1.5%	7.5%

Source: ABS Labour Mobility survey; Access Economics

Table 6: Expected annual rate of retirement and turnover by occupation, 2002 to 2010 (continued)

	Avg. retirement rate 2002 to 2010	Avg turnover rate
511 Secretaries and personal assistants	2.5%	9.5%
591 Advanced numerical clerks	2.3%	7.3%
599 Misc. advanced clerical and service workers	1.8%	8.8%
611 General clerks	2.3%	10.4%
612 Keyboard operators	2.0%	12.3%
613 Receptionists	1.9%	13.0%
614 Intermediate numerical clerks	1.9%	8.4%
615 Material recording and despatching clerks	2.0%	8.4%
619 Miscellaneous intermediate clerical workers	1.8%	11.3%
621 Intermediate sales and related workers	1.9%	10.6%
631 Carers and aides	2.5%	9.6%
632 Hospitality workers	0.6%	22.9%
639 Miscellaneous intermediate service workers	1.4%	11.7%
711 Mobile plant operators	2.2%	10.7%
712 Intermediate stationary plant operators	2.4%	5.0%
721 Inter. textile, clothing and related machine	2.8%	8.7%
729 Miscellaneous intermediate machine op.	1.6%	10.7%
731 Road and rail transport drivers	2.8%	8.1%
791 Intermediate mining and construction	2.1%	7.8%
799 Misc. intermediate prodn and transp.	1.6%	16.5%
811 Elementary clerks	2.3%	13.1%
821 Sales assistants	1.2%	18.6%
829 Miscellaneous elementary sales workers	1.0%	16.5%
831 Elementary service workers	2.4%	13.5%
911 Cleaners	3.0%	12.4%
921 Process workers	1.7%	15.8%
922 Product packagers	1.8%	17.0%
991 Mining, construction and related labourers	1.7%	19.2%
992 Agricultural and horticultural labourers	1.8%	19.0%
993 Elementary food prep. and related workers	1.4%	21.7%
999 Miscellaneous labourers and related	2.4%	13.3%
Total	2.0%	9.6%

Source: ABS Labour Mobility survey; Access Economics

2.55 Further work on the drivers of future demand for VET is planned.

3 Skill Shortages Identified by Industry Advisory Arrangements

- 3.1 Preliminary analysis of the latest national strategic industry VET plans submitted through the current industry advisory arrangements suggest a number of common factors which contribute to skill shortages. The most commonly identified factor is worker attraction and/or retention. The range of factors is described in the table below.

Factor	Definition
Ageing Workforce	Loss of skills resulting from impending retirement of significant sector of workforce.
Industry Attractiveness	Poor perception of the industry as an attractive career choice.
Technology	Application of new technology has implications for the provision of training programs and the need for skill development and enhancement. Technological advances are increasing (or will increase) the training requirements.
Globalisation	Expansion to the global market, resulting in the need for international business skills and competence in international trade and corporate governance.
Apprenticeships	Some industries are experiencing a slow uptake of apprenticeships, or the apprenticeship system is not producing the results or numbers that are required by industry for long term labour sustainability.
Worker Attraction/Retention	Industry is experiencing problems or difficulties associated with the attraction of new workers or the retention of existing workers.
Skill Requirements	Industry relies on a higher proportion of experienced and highly skilled workers than low skilled workers. As a result, young people often find it difficult to gain experience within the industry.
Training Culture	Industry does not have an established training ethos.
Work processes	Work processes are changing as a result of: technology; competition; emerging markets; economies of scale; replacement of traditional occupations; etc.
Employment Arrangements	Indicates that the nature of employment is changing within the industry.
Other	Shifts in population away from rural areas. Limited funding for education.
Access to Training	There is demand for increased access to training, both in terms of the provision of training and the need for access to timely and innovative training products that meet the needs of industry. Access to training is seen as problematic in "thin markets" where funding for training is restricted.
Market Expansion	Increased demand for industry services requires increased numbers of skilled employees.
Customer Service	Changes to customer expectations have required the industry to focus on improving service delivery, and products. This requires the skills of workers to be enhanced to meet the needs of the customer. In some industries, changes in customer service will have a significant impact on work practices and/or training requirements.
Regulatory Compliance	Changes to the regulatory framework are impacting on the industry through licensing, competency and compliance requirements. In addition, some industries are experiencing increasing government intervention and regulation. Both cases require increased or changed training arrangements. In some sectors there is often a narrow training focus in meeting regulatory requirements and there are moves to expand this focus to include other important workskill requirements.

- 3.2 The plans submitted through the current industry advisory arrangements also included areas of identified skill shortage. This information along with the reasons identified by each advisory body as contributing to skill shortage is at **Attachment A**.

- 3.3 Work on examining future industry skills is ongoing. The ANTA Board will be funding up to 10 new Industry Skills Councils with the roles of engaging industry and developing and maintaining high quality products and services for VET. This will be paralleled by holding an Industry Skills Forum, led by the ANTA Board, twice yearly to provide high level strategic advice on industry directions and skill needs.