Information, media and telecommunications

…covers publishing, motion picture and sound recording activities, broadcasting, internet publishing and broadcasting, telecommunications services, internet service providers, web search portals and data processing services and library and other information services such as news collection services.

Key points

- Information, media and telecommunications employs approximately 213,700 people, accounting for around two per cent of the total Australian workforce
- The majority of the workforce (62 per cent) is employed in large enterprises (i.e. those that employ 200 workers or more), with 20 per cent employed in small-sized enterprises (i.e. those which employ less than 20 workers)
- Employment in information, media and telecommunications is spread over a large number of different occupations, with the 'top ten' occupations accounting for only one-third of total employment within the industry
- The industry workforce has a relatively young age profile, with 71 per cent of workers aged under 45 years compared to 63 per cent for all industries
- Workers in information, media and telecommunications are predominantly male (58 per cent), based in state capital cities (78 per cent), and work full-time (80 per cent)
- A high proportion of the information, media and telecommunications workforce has completed a Bachelor degree or higher, with 41 per cent compared to an average of 26 per cent for all industries
- A detailed employment profile for information, media and telecommunications (including information on its workforce, industry and occupational characteristics) can be found at www.skillsinfo.gov.au

Industry outlook

The information, media and telecommunications sector is a small but important industry which provides essential services to the economy. In terms of industry value added, the information, media and telecommunications industry contributed 3.6 per cent ($39.2b) to the Australian economy in 2009-10.[1]

[1] 'Industry value added' is the measure of the contribution by industry to gross domestic product (GDP) at basic prices. ABS (2010) *Australian System of National Accounts* (Cat. no. 5204.0).

Short-term growth

Following a period of negative job growth, the information, media and telecommunications industry is expected to experience positive employment growth into the future, which is on par with the national average.

Table 1 Current and past employment in information, media and telecommunications

Industry	**Current employment**		**Past growth: five years**	
	'000	% of total	'000	%
Information, media and telecommunications	213.7	1.9	-25.7	-10.7
All employed	**11,044.6**	**100.0**	**1,060.1**	**10.6**

Population: Employed people.
Source: DEEWR analysis of ABS trend data, May 2010 (Cat no: 6291.0.55.003).

Long-term growth

Skills Australia used scenario planning and economic modelling undertaken by Access Economics to calculate the skills demand for the economy into the future.[2] The three scenarios are:

- Open Doors – assumes an industry and occupation structure that is driven by greater global openness, high economic growth and high productivity
- Low Trust Globalisation – assumes global competition but with more moderate participation rates, productivity growth and rates of growth of net migration, and accordingly, medium economic growth
- Flags – assumes a more protectionist economy, with a greater move to domestic self-sufficiency, a lower rate of net migration and productivity growth, and accordingly, assumes a low rate of economic growth.

As Table 2 shows, employment in the information, media and telecommunications industry is expected to grow strongly whichever scenario eventuates. This is particularly true in the case of telecommunications services and internet service providers, web search portals and data processing services. Employment growth in each of these subdivisions is forecast to be approximately 1.5 times the rate of the predicted national average, under all three scenarios. Other occupations, such as library and other information services, are expected to grow under the Open Doors and Low Trust Globalisation scenarios, but to decline in the Flags world. For the publishing subsector, the opposite is true: with growth anticipated under the Flags world and low or negative employment growth anticipated under the other two scenarios.

[2] A description of the scenarios and the Access Economics modeling of employment in each, with state and territory break-downs, is available at the Skills Australia web-site www.skillsaustralia.gov.au

Table 2 Average annual industry employment growth in three scenarios, 2010-15 and 2010-25 (%pa)

Industry	Open Doors		Low-Trust Globalisation		Flags	
	2015	2025	2015	2025	2015	2025
Information media and telecommunications	**3.2**	**2.0**	**2.5**	**1.3**	**2.5**	**1.1**
Publishing (except internet & music pub.)	0.5	-0.5	-0.3	-1.4	3.1	1.5
Motion picture and sound recording activities	2.0	1.2	1.3	0.5	1.7	0.8
Broadcasting (except internet)	1.9	1.1	1.2	0.4	1.8	0.9
Internet publishing and broadcasting	3.0	1.7	2.2	1.0	2.9	1.3
Telecommunications services	4.8	3.1	4.0	2.4	2.8	1.2
Internet service providers, web search portals and data processing services	4.5	3.1	3.8	2.4	2.6	1.2
Library and other information services	4.0	3.1	3.5	2.6	-0.2	-1.0
All industries	**2.6**	**2.1**	**1.9**	**1.5**	**1.3**	**0.9**

Source: Access Economics (2009) *Economic modelling of skills demand*, Table D1, conversion to ANZSIC by CEET (2010)

Occupation outlook

Key occupations

The top ten information, media and telecommunications occupations account for only one-third of total employment, reflecting the diversity and spread of occupations across the industry. The largest occupations are journalists and other writers (accounting for 5 per cent of the total workforce), telecommunications trades workers (5.7 per cent) and sales representatives (3.6 per cent).

Table 3 Top ten information, media and telecommunications occupations occupations

Occupation		People employed	Industry employment
ANZSCO		'000	% of total
2124	Journalists and other writers	11.5	5.0
3424	Telecommunications trades workers	10.8	4.7
6113	Sales representatives	8.4	3.6
2121	Artistic directors, media producers & presenters	7.5	3.2
2123	Film, television, radio and stage directors	7.5	3.2
5412	Inquiry clerks	7.3	3.2
6212	ICT sales assistants	6.6	2.9
2246	Librarians	6.5	2.8
1311	Advertising and sales managers	5.9	2.6
5411	Call or contact centre workers	5.1	2.2
Total		**232.0**	**33.3**

Source: ABS (2010) *Labour Force Australia*, detailed quarterly report, 2009 average of four quarters (Cat. no. 6291.0.55.003).

Short-term growth

Table 4 shows recent past and forecast growth rates for the occupations that feature prominantly within the industry. **Note that the figures refer to the expected number of people in these occupations across all industries, not just in the information, media and telecommunications sector**.

Despite the decrease in total employment experienced by the industry over the past five years (see Table 1), a number of key occuations showed relatively strong employment growth over this time. This is particularly true of small, specialised occupations such as telecommunications engineering professionals; and film, television, radio and stage directors. However, once again, it should be noted that the data in Table 4 refers to these occupations in *all* industries.

Table 4 Current and past employment in key occupations

ANZSCO	Occupation	Current employment (all industries)		Past growth: five years	
		'000	% of total	'000	%
1311	Advertising and sales managers	141.8	1.3	28.4	25.0
2121	Artistic directors, and media producers and presenters	12.6	0.1	1.4	12.8
2123	Film, television, radio and stage directors	13.4	0.1	5.5	70.8
2124	Journalists and other writers	24.6	0.2	4.3	21.2
2246	Librarians	12.5	0.1	0.7	6.3
2324	Graphic and web designers, and illustrators[(a)]	43.6	0.4	3.7	9.2
2633	Telecommunications engineering professionals[(a)]	12.6	0.1	5.4	75.6
3424	Telecommunications trades workers	23.7	0.2	2.5	11.9
5411	Call or contact centre workers	32.1	0.3	4.5	16.1
5412	Inquiry clerks	71.6	0.6	9.4	15.1
6113	Sales representatives	103.6	0.9	9.2	9.8
6212	ICT sales assistants	17.1	0.2	0.8	4.8
	All employed	**11,044.6**	**100.0**	**1,060.1**	**10.6**

(a) Added to table as a 'key occupation' within the industry.
Population: Employed people.
Source: DEEWR analysis of ABS trend data, May 2010 (Cat no: 6291.0.55.003).

Long-term growth and job openings

Table 5 indicates the long-term net job growth per annum expected in these occupation groups, according to Access Economics' scenario modelling. In the longer-term, these are occupations which generally have average or above-average expected employment growth compared to other groups. Under Open Doors, the exceptions are media professionals; electronics and telecommunications trades workers; and insurance agents and sale representatives – each of which is forecast to experience employment growth that is slightly below the all-occupations average to 2025.

Table 5 Average annual occupation growth in three scenarios, 2010-15 and 2010-25 (% pa)

Industry		Open doors		Low-trust globalisation		Flags	
ANZSCO		2015	2025	2015	2025	2015	2025
131	Advertising and sales managers	2.3	1.7	1.6	1.0	1.4	0.7
212	Media professionals	2.6	2.0	2.0	1.3	1.4	0.7
224	Information and organisation professionals	3.3	2.5	2.6	1.9	1.8	1.1
232	Architects, designers, planners and surveyors	2.6	2.0	2.0	1.4	1.6	0.9
263	ICT network and support professionals	3.0	2.4	2.4	1.8	1.9	1.3
342	Electronics and telecommunications trades workers	1.7	1.8	1.1	1.1	1.0	1.1
541	Call or contact centre information clerks	3.1	2.4	2.5	1.8	1.7	1.0
611	Insurance agents and sales representatives	2.6	1.9	1.8	1.1	1.4	0.6
621	Sales assistants and salespersons	3.5	2.5	2.9	1.9	1.8	0.8
All occupations		**2.6**	**2.1**	**1.9**	**1.5**	**1.3**	**0.9**

Source: Access Economics (2009) *Economic modelling of skills demand*, Table D4 (ASCO); conversion to ANZSCO by CEET (2009). Three-digit ANZSCO job titles are used in this analysis.

As noted, the data in Table 5 concerns employment growth in an industry. The number of total **job openings** which includes both new jobs and **the replacements resulting from individuals leaving the occupation net of those re-entering** can also be estimated. This replacement requirement is particularly significant in industries where there are high numbers of people retiring or leaving the occupation.

Table 6 shows the average annual job openings projected in key information, media and telecommunications occupations to 2025.

Under all three scenarios, the highest proportion of job openings is forecast for sales assistants and salespersons. This occupation is expected to show around twice the all-occupation average for job openings each year to 2025, reaching 8.2 per cent per annum under Open Doors. In comparison, job openings for most other key occupations remain at a steady rate, reflecting the relatively young age profile of the industry and a modest rate of job turnover.

Table 6 Average annual job openings, pa 2010 to 2025, in three scenarios

Occupation		Open doors		Low trust globalisation		Flags	
ANZSCO		('000)	%	('000)	%	('000)	%
131	Advertising and sales managers	4.4	3.1	3.2	2.3	2.8	2.1
212	Media professionals	2.6	3.8	2.1	3.2	1.6	2.5
224	Information and organisation professionals	4.3	3.2	3.3	2.5	2.2	1.7
232	Architects, designers, planners and surveyors	4.0	2.8	3.0	2.2	2.3	1.7
263	ICT network and support professionals	2.2	4.4	1.8	3.8	1.5	3.2
342	Electronics & telecommunications trades workers	4.7	3.9	3.6	3.3	3.5	3.2
541	Call or contact centre information clerks	4.6	3.8	3.7	3.2	2.6	2.4
611	Insurance agents and sales representatives	5.6	4.2	4.2	3.4	3.5	2.9
621	Sales assistants and salespersons	65.5	8.2	57.7	7.6	45.5	6.5
All occupations		**579.1**	**4.4**	**465.9**	**3.8**	**373.7**	**3.2**

Source: Access Economics (2009) *Economic modelling of skills demand*, Table D4 (ASCO); conversion to ANZSCO and net replacement demand by CEET (2009). Three-digit ANZSCO job titles are used in this analysis.

As Table 7 shows, job openings are generally driven by new growth rather than replacement demands under the Open Doors scenario. The only exceptions are electronics and telecommunications trades workers; insurance agents and sales representatives; and sales assistants and salespersons – for which the majority of job openings are driven by replacement demand.

Replacement requirements are typically low for professional occupations under Open Doors. Only around one quarter of job openings for information and organisation professionals; and architects, designers, planners and surveyors are expected to be created by replacement demand to 2025.

Table 7 Total job openings (growth and net replacement) in three scenarios, 2010 to 2025

7.1 Open Doors

Occupation ANZSCO		Total growth (persons) ('000)	%	Net replacement estimates (persons) ('000)	%	Total job openings (persons) ('000)	%
131	Advertising and sales managers	40.1	57.1	30.1	42.9	70.2	100.0
212	Media professionals	21.2	51.3	20.2	48.7	41.4	100.0
224	Information and organisation professionals	55.5	79.7	14.1	20.3	69.6	100.0
232	Architects, designers, planners and surveyors	45.2	71.2	18.3	28.8	63.4	100.0
263	ICT network and support professionals	19.0	54.9	15.5	45.1	34.5	100.0
342	Electronics & telecommunications trades workers	34.2	45.8	40.6	54.2	74.8	100.0
541	Call or contact centre information clerks	45.1	61.2	28.6	38.8	73.7	100.0
611	Insurance agents and sales representatives	39.9	44.6	49.6	55.4	89.6	100.0
621	Sales assistants and salespersons	309.2	29.5	739.0	70.5	1,048.3	100.0
All occupations		**4,425.7**	**47.8**	**4,840.1**	**52.2**	**9,265.8**	**100.0**

7.2 Low-Trust Globalisation

Occupation ANZSCO		Total growth (persons) ('000)	%	Net replacement estimates (persons) ('000)	%	Total job openings (persons) ('000)	%
131	Advertising and sales managers	23.0	44.9	28.3	55.1	51.3	100.0
212	Media professionals	13.9	42.1	19.0	57.9	32.9	100.0
224	Information and organisation professionals	39.5	74.8	13.3	25.2	52.8	100.0
232	Architects, designers, planners and surveyors	30.4	63.8	17.3	36.2	47.7	100.0
263	ICT network and support professionals	13.6	48.1	14.7	51.9	28.3	100.0
342	Electronics and telecommunications trades workers	20.2	34.9	37.9	65.1	58.1	100.0
541	Call or contact centre information clerks	32.2	54.3	27.1	45.7	59.3	100.0
611	Insurance agents and sales representatives	21.8	32.1	46.1	67.9	67.9	100.0
621	Sales assistants and salespersons	222.5	24.1	700.3	75.9	922.9	100.0
All occupations		**2,892.9**	**38.8**	**4,561.3**	**61.2**	**7,454.2**	**100.0**

7.3 Flags

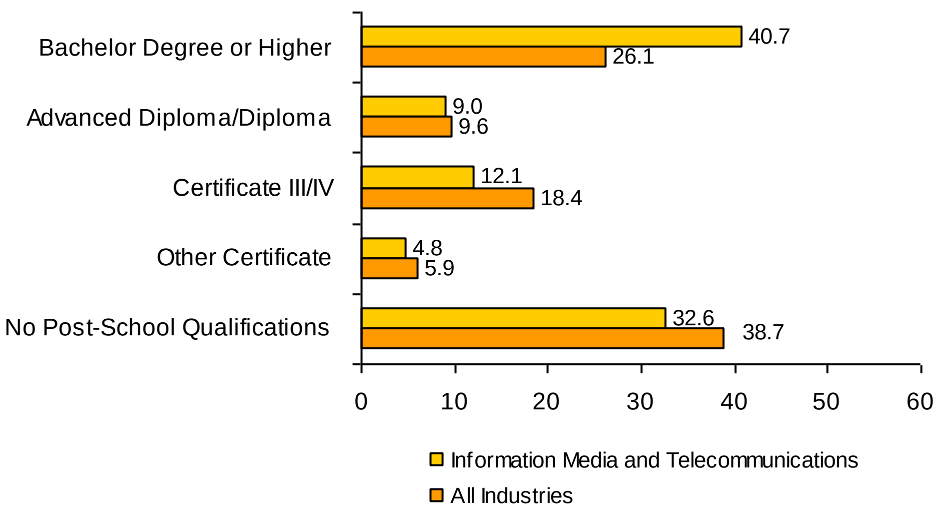
Occupation		Total growth (persons)		Net replacement estimates (persons)		Total job openings (persons)	
ANZSCO		('000)	%	('000)	%	('000)	%
131	Advertising and sales managers	16.9	37.9	27.7	62.1	44.5	100.0
212	Media professionals	7.3	28.6	18.1	71.4	25.4	100.0
224	Information and organisation professionals	22.1	64.0	12.4	36.0	34.5	100.0
232	Architects, designers, planners and surveyors	20.4	55.1	16.6	44.9	37.1	100.0
263	ICT network and support professionals	9.5	40.4	14.0	59.6	23.5	100.0
342	Electronics and telecommunications trades workers	18.7	33.3	37.3	66.7	56.0	100.0
541	Call or contact centre information clerks	16.4	39.3	25.2	60.7	41.6	100.0
611	Insurance agents and sales representatives	11.9	21.2	44.3	78.8	56.2	100.0
621	Sales assistants and salespersons	89.5	12.3	637.8	87.7	727.3	100.0
All occupations		**1,681.7**	**28.1**	**4,297.2**	**71.9**	**5,978.9**	**100.0**

Source: Access Economics (2009) *Economic modelling of skills demand*, Table D4 (ASCO); conversion to ANZSCO and net replacement demand by CEET (2009). Three-digit ANZSCO job titles are used in this analysis.

Education and training profile

The information, media and telecommunications workforce is characterised by a high proportion of tertiary attainment, with 41 per cent having completed a Bachelor degree or higher qualification, compared to 26 per cent across all industries.

Figure 1 Education profile of the information, media and telecommunications workforce (%)



Source: DEEWR (2010) *Australian Jobs 2010*.

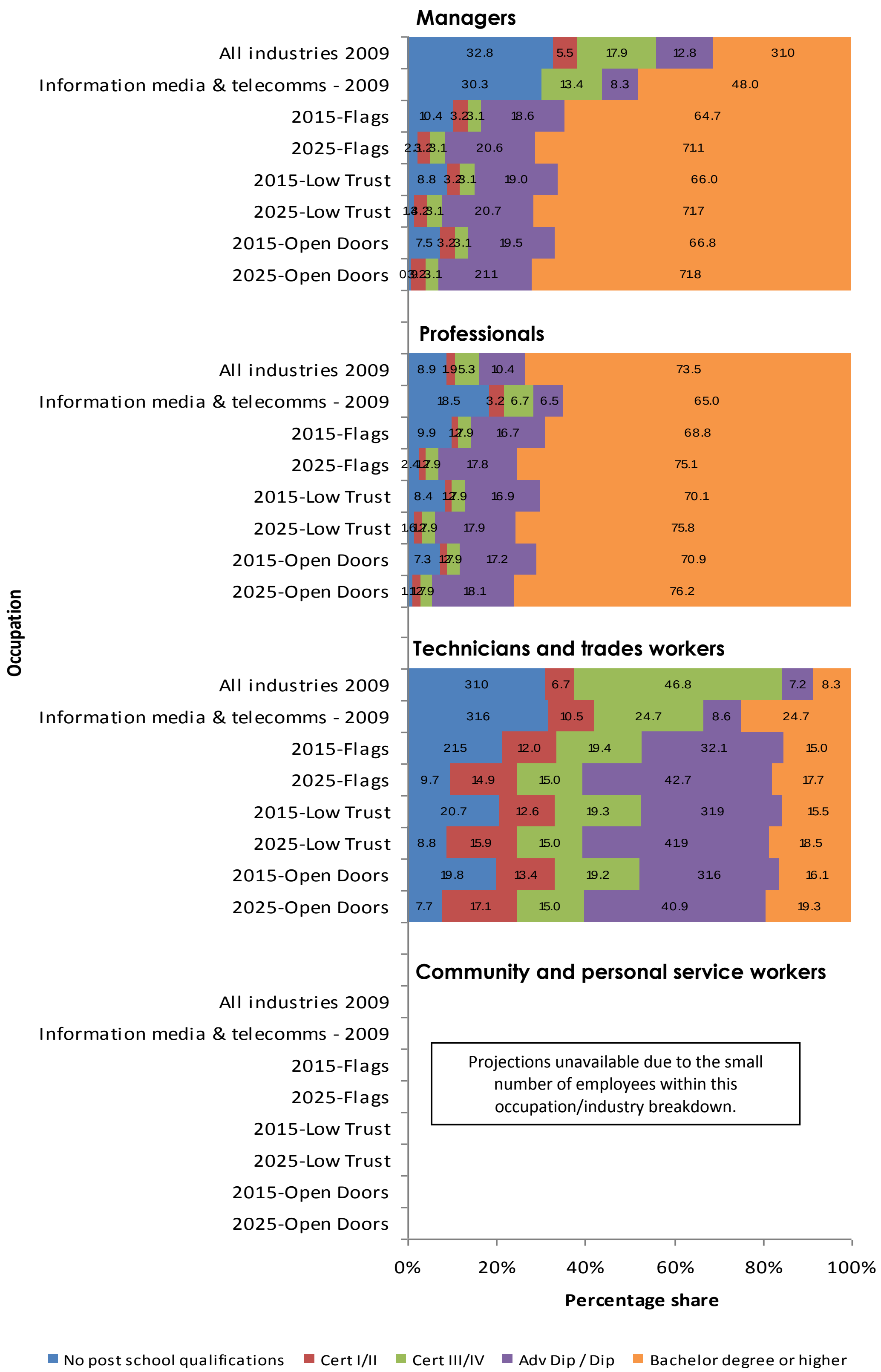
Figure 2 shows how demand for qualifications is expected to change over time. It shows the current education profile for each respective occupation: across all industries and within the information, media and telecommunications industry. It also shows projected levels of educational attainment to 2015 and 2025 by each occupation group depending on which of the three scenarios eventuates.

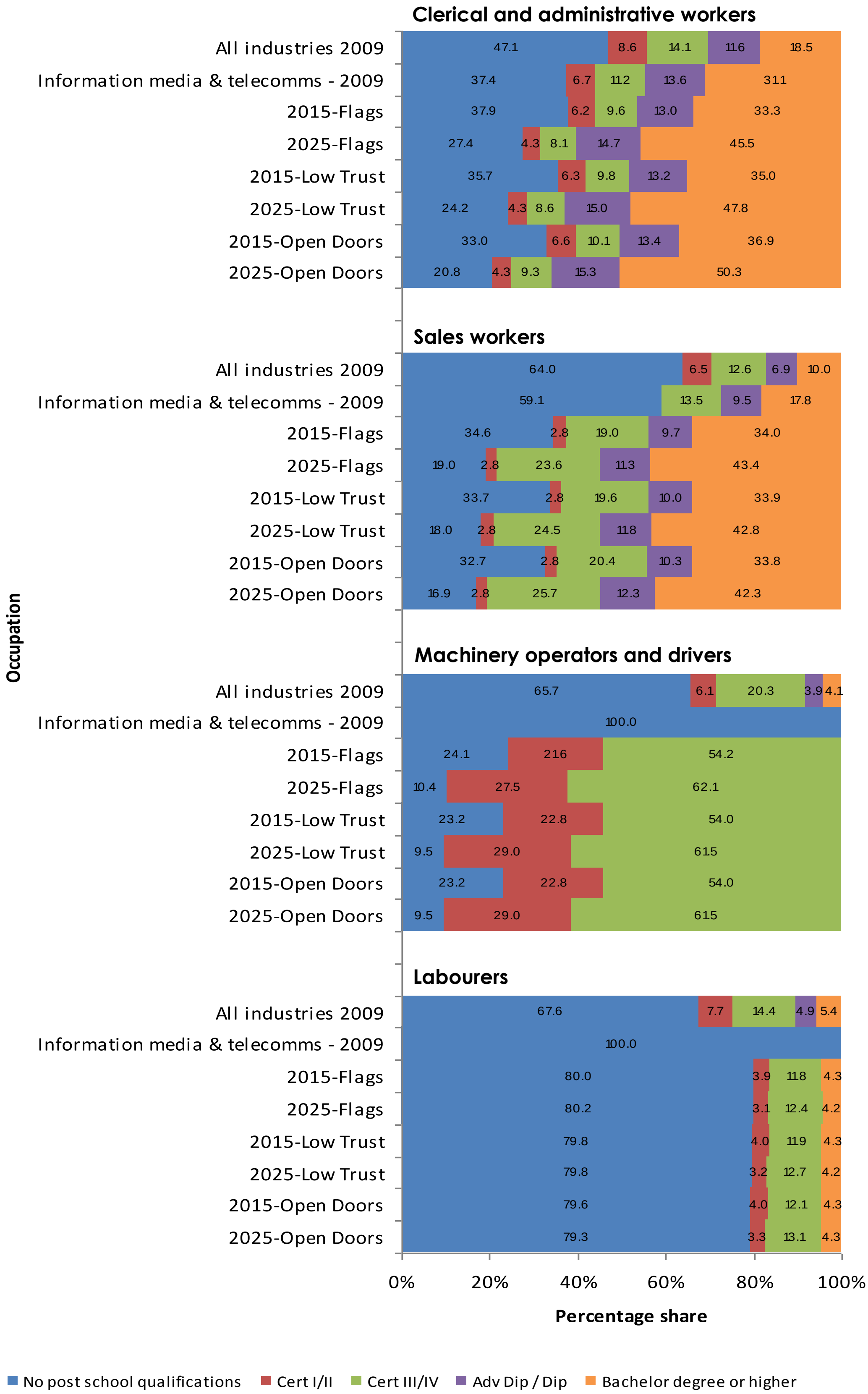
As Figure 2 shows, managers and professionals within the information, media and telecommunications industry typically have high skill levels. This expected to continue into the future under all three scenarios. The proportion of managers holding a Bachelor degree or higher, for example, is predicted to increase from 48 per cent in 2009 to 71.8 per cent in 2025 under the Open Doors scenario. Professionals, meanwhile, are expected to build on the already high proportion of workers holding university degrees, rising from 65 per cent in 2009 to 76.2 per cent in 2025 under Open Doors. The proportion of professionals with a Diploma or higher is also forecast to increase, reaching 18.1 per cent by 2025.

This trend of skills deepening is reflected in lower skilled occupations such as sales workers, with the proportion of the workforce with no post school qualifications decreasing from 59.1 per cent in 2009 to 16.9 per cent in 2025 under Open Doors.

The proportion of workers with no post-school qualifications is also expected to decrease among machinery operators and drivers and labourers. However the low numbers currently employed within these occupations make any comparison over time difficult. For example, the small number of workers reported for 2009 within this industry means that '100 per cent' of labourers and machinery operators and drivers are shown not to possess any post-school qualifications. This data should consequently be treated with caution.

Figure 2 Level of educational attainment in the information, media and telecommunications industry by occupation, 2009 and projections to 2015 and 2025 (%)





Source: ABS (2009) *Survey of Education and Work 2009* (Cat. no. 6227.0).

Specialised occupations

In *Workforce Futures*, Skills Australia has proposed that national skills and workforce planning should focus on **specialised occupations**. Specialised occupations are defined as those 'where specialised skills, learned in formal education and training, are needed at entry level and where the impact of market failure is potentially significant for the economy and/or the community.'

Specialised occupations demonstrate these characteristics:

- long lead time—skills are highly specialised and require extended learning and preparation time over several years;
- high use—skills are deployed for the uses intended (i.e. good occupational 'fit');
- high risk—the disruption caused by the skills being in short supply is great, resulting either in bottlenecks in supply chains or imposing significant economic or community costs because an organisation cannot operate; and
- high information—the quality of information about the occupation is adequate to the task of assessing future demand and evaluating the first three criteria.

Specialised occupations associated with the information, media and telecommunications industry include:

ICT business and systems analysts
Software and applications programmers
Telecommunications engineering professionals
Telecommunications technical specialists

More detailed information about specialised occupations is available from *Australian Workforce Futures: A National Workforce Development Strategy* at http://www.skillsaustralia.gov.au/PDFs_RTFs/WWF_strategy.pdf.

Example workforce development initiatives

Investment in workforce development has been shown to maximise people's capabilities, lift productivity and increase workforce participation. Employee satisfaction levels and engagement also increase when enterprises make better use of their employees' skills.[3] Current workforce development initiatives in information, media and telecommunications include the following examples:

- An **Apprenticeship for the Telecommunications Industry** has been developed by the Innovation and Business Skills Australia (IBSA), the Industry Skills Council responsible for telecommunications, and the telecommunications industry. This new apprenticeship will lead to a multi-skilled technician, with a broad range of telecommunications and information technology skills, who is able to install, maintain and alter telecommunications systems and general equipment in customer premises with linked network locations in a converging environment. More information can be found at www.ibsa.org.au.
- **Innovation Business Skills Australia Integrated Workforce Development**: Innovation Business Skills Australia offer up to date workforce development advice through a series of factsheets on their website. More information can be found at www.ibsa.org.au.
- A Scoping Study into **Digital Literacy Foundation Skills** was commissioned by the Industry Skills Council, Innovation Business Skills Australia. A sampled organisation reported on the digital literacy needs of 'e-employees' and the importance of digital literacy's role in enabling effective operation of people in the digital world, in relation to the completion of the National Broadband Network. Further information can be found at www.ibsa.org.au.
- The integrated **Telecommunication Training Package** has been updated to reflect incoming initiatives such as the National Broadband Network and the Digital Switchover with a focus on sustainability practices to reduce carbon emissions. More information can be found at www.ibsa.org.au.
- The Australian Government's **Enterprise Based Productivity Places Program (EBPPP)** has enabled IBSA to broker funding for the upskilling of workers in the telecommunications sector for a number of enterprises and industry associations including Australian Digital Television Industry Association (ADTIA), Telstra and Communications & Information Technology Training (CITT). IBSA has also commenced projects for the upskilling of workers in two other areas:
  - The Cultural and Creative sector for a number of enterprises including Foxtel, Victoria Arts College and TTOC Media.
  - The Information services sector with the Records Management Association of Australasia.

[3] Skills Australia (2010) *Australian Workforce Futures: A National Workforce Development Strategy.*