



Survey of IT Recruiters 2008

IT JOBS THAT ARE HARD TO FILL



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1 Executive summary

The Survey of Information Technology (IT) Recruiters 2008 explored the degree of difficulty that recruiting and contracting agencies have in finding candidates to fill specific IT¹ occupations and specialisations. Representatives from 38 New Zealand recruitment agencies were invited to fill out the survey online, and 30 of these participated in the survey. Although the number of respondents is relatively small, the detail and depth of knowledge shared by respondents provides valuable insight into the sector.

Similar surveys of IT recruiters were carried out by the Department of Labour (the Department) annually from 2003 to 2006. Previous surveys were based on specialisations in the IT industry. The 2008 survey was extended to include IT occupations as defined by the ANZSCO so that results could be compared with other information sources and surveys (see Appendix A for further info). This report presents analysis of the results for occupations only, but results for specialisations are available in Appendix C.

Widespread difficulty filling IT vacancies

The survey found that 36 out of the 50 IT occupations surveyed were difficult to fill in 2008. An occupation is defined as being difficult to fill when at least 50% of the recruiters indicated that it was 'very difficult' or 'difficult' to find suitable applicants for vacancies in the last three months.

Table 1 shows the number of occupations that were difficult to fill in each broad group of IT occupations. The survey showed that recruiters had the most difficulty finding suitable applicants for the following broad groups:

- ICT business and systems analysts and programmers
- ICT database and systems administrators, and ICT security specialists
- ICT designers
- ICT network and support professionals

The only broad group to have no occupations that were difficult to fill was ICT management.

¹ Note that the acronyms IT and ICT (Information and Communication Technology) are used interchangeably in this report.

Table 1: Number of occupations difficult to fill in each broad category

Broad group	Number of occupations difficult to fill	Number of occupations surveyed	% of occupations difficult to fill
Electronics and telecommunications trades	9	9	100
Business and systems analysts and programmers	8	8	100
Database and systems administrators and ICT security specialists	3	3	100
ICT design and engineering	3	3	100
ICT network and support professionals	7	9	78
ICT engineering and telecommunications technicians	6	10	60
ICT training, business and marketing	3	5	60
ICT management	0	3	0
Total	39	50	78

Source: Department of Labour, 2008

Occupations hardest to fill

Determining an exact ranking order for the difficulty of recruiting for occupations is difficult because of the differences in size of occupations. 'Niche' occupations that have few recruiters trying to fill vacancies tend to be more at the extremes of the percentage of recruiters with difficulty filling vacancies, and so are more likely to occur at either end of a ranking. However, the list below shows those occupations considered among the hardest to fill.

- ICT security specialist (100% of recruiters had difficulty filling vacancies)
- Telecommunications network planner (100%)
- Telecommunications technical officer or technologist (93%)
- ICT systems test engineer (93%)
- ICT support and test engineer not elsewhere counted (85%)
- Telecommunications network engineer (84%)
- Telecommunications engineer (83%)
- ICT quality assurance engineer (83%)
- Software engineer (82%)
- Software and applications programmers not elsewhere counted (81%)

2 Purpose of this report

In 2003, the Department conducted the first survey of information technology recruiters. The Survey of IT Recruiters was repeated in September 2004, November 2005, November 2006 and most recently in February 2008.

The purpose of the report is to identify the IT occupations that recruitment agencies have the greatest difficulty finding candidates for. This is in order to:

- help the Department to better understand the current scope of IT skill shortages;
- help inform the choice of occupations on the Immigration Service's skill shortage lists (for example, suggesting the addition of some occupations, the removal of others, and perhaps a shift between immediate and long term lists);
- provide information that could be used by education and training providers to assist in their planning of future courses; and
- help individuals make decisions relating to training choices.

This report complements the Department's recently published Survey of Employers who have Recently advertised (SERA) 2007². Whereas the SERA report identifies which occupations in New Zealand are currently in shortage, the Survey of IT Recruiters report provides more detail on occupations and specialisations within IT and insight into the perspectives of recruiters of IT professionals.

Scope of the analysis provided in this report

The degree of difficulty in recruiting can be used to indicate whether skill shortages exist for each IT occupation. However, the survey results do not show the reasons why the shortage exists (which may affect the types of responses needed to address the shortage).

This report does not contain detailed analysis of the demand and supply forces impacting on individual occupations, as the report aims to make the latest information publicly available as quickly as possible. For detailed analysis of skill shortages, see, for example, the Department of Labour's skill shortage assessment reports².

² See: <http://www.dol.govt.nz/publications/jvm/shortage2007/summary.asp>

Purpose of the survey

Unemployment is at historically low levels, which means we cannot rely on more people working longer hours to drive economic growth into the future. Instead, we must focus on lifting productivity through providing businesses with the skilled workers they need. The shortage of skilled workers in IT is particularly acute and has the potential to further inhibit New Zealand's economic growth by limiting the ability of business to align technology with business strategy.

The Department conducts regular surveys to identify occupations in which employers are having difficulty filling vacancies. With ongoing IT skill shortages in New Zealand, information on which areas of the industry have vacancies that are difficult to fill has become increasingly important. This information can help agencies that influence the supply of IT skills in the New Zealand labour market (such as the Tertiary Education Commission, economic development agencies, and Immigration New Zealand) to achieve a better match between skills supply and the demands of the labour market.

Interpreting results

In this report, an occupation is defined as being difficult to fill when at least 50% of recruiters indicated that it was 'very difficult' or 'difficult' to fill vacancies for the occupation in the last three months.

Occupations may be difficult to fill for a range of reasons. For any one occupation this may be because it is more difficult to recruit people to some locations. For some occupations the work environment or conditions are less attractive than for other roles requiring similar skills. And, of course, vacancies may be unfilled because there is simply no one available who can do the job.

It is important to consider the number of people working in an occupation when interpreting the percentage of recruiters who said that particular vacancies were difficult to fill. For example, 16 out of 30 recruiters indicated that they had recruited for telecommunications network planner vacancies, and all of the recruiters indicated that these vacancies were *difficult* or *very difficult* to find suitable applicants for. Census 2006 indicates that this occupation is very small, with fewer than 10 people employed in this occupation at the time of the census. The size of the occupation, coupled with the fact that only half of the recruitment agencies were looking for people for this occupation, may indicate that demand for this occupation is relatively low compared to other occupations, but the demand that exists is very difficult to meet.

3 What we found

ICT management

Recruiters that had recently recruited for ICT management vacancies had relatively little difficulty in filling positions, with only about a third of recruiters reporting difficulty (see Table 2). ICT project managers and ICT managers not elsewhere counted were on the margin of being difficult to fill, with just under 50% of recruiters having difficulty finding suitable applicants.

In the 2006 census, there were no people employed in the occupation ICT managers not elsewhere counted. The fact that most recruiters in our survey are now recruiting for these positions could be due to the development of these positions since 2006. It could also be due to a mismatch between the way people in the 2006 census reported their own occupation and the way recruiters group positions into occupations.

Table 2: Percentage of recruiters with difficulty finding suitable applicants for ICT management vacancies

ANZSCO code	Occupation	Number of recruiters with vacancies	Percent with difficulty filling vacancies	Number of people in occupation ¹
135111	Chief information officer	22	32	50
135112	ICT project manager	30	47	4,680
135199	ICT managers not elsewhere counted	29	48	0

Source: Department of Labour, 2008.

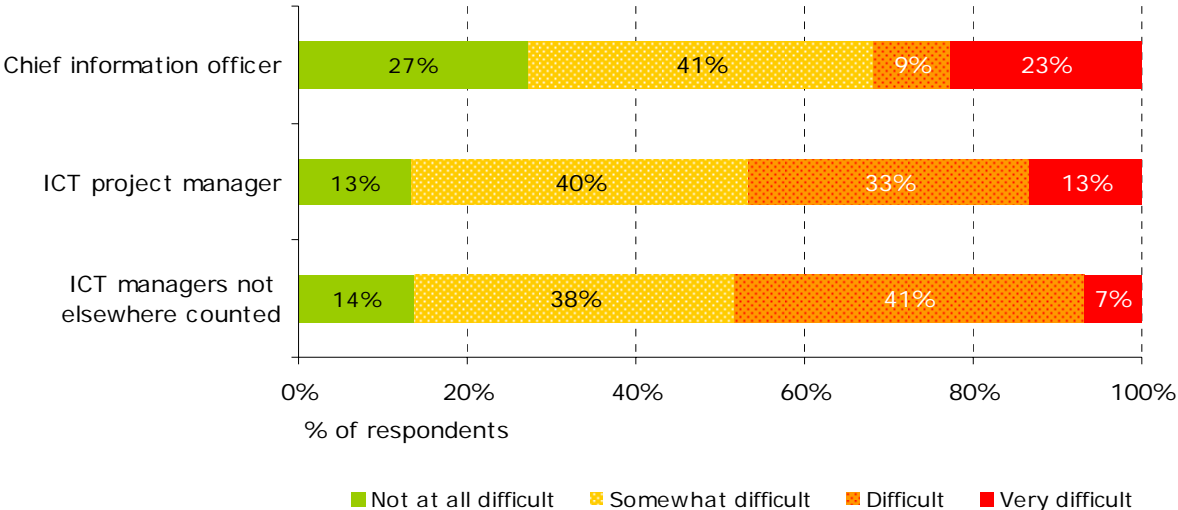
Notes:

1. Number of people employed in each occupation comes from the 2006 Census (Statistics NZ). Figures provided are rounded to the nearest 10.
2. Occupations highlighted grey are considered to be difficult to fill, i.e. over 50% of respondents answered that recruiting for this occupation was either 'very difficult' or 'difficult'.

Chief information officers had the lowest percentage of recruiters with difficulty finding suitable applicants. However, the distribution of difficulty was wide, with about a quarter saying they had no difficulty finding suitable applicants and another quarter saying they found it very difficult (see Figure 1).

This difference in opinion could be due to recruiters in particular regions finding it very difficult to fill vacancies, while those in other regions find it easy. However, a regional analysis of difficulty is beyond the scope of this survey.

Figure 1: Degree of difficulty in finding suitable applicants for ICT management vacancies



Source: Department of Labour, 2008

ICT training, business and marketing

ICT account managers (74%), ICT business development managers (71%) and ICT sales representatives (68%) are perceived to be vacancies that are difficult to fill, with more than 50% of recruiters saying that they had difficulty in recruiting for these occupations (see Table 3).

Conversely, recruiters had little difficulty filling ICT trainer (36%) and ICT sales assistant (38%) vacancies.

In the 2006 census, there were very few people employed as ICT account managers (about 10 people) and ICT business development managers (about 30 people). The fact that most recruiters in our survey are now recruiting for these positions could be due to growth of these positions since 2006. It could also be due to a mismatch between the way people in the 2006 census reported their own occupation and the way recruiters group positions into occupations.

Table 3: Percentage of recruiters who had difficulty finding suitable applicants for ICT training, business and marketing vacancies

ANZSCO code	Occupation	Number of recruiters with vacancies	Percent with difficulty filling vacancies	Number of people in occupation ¹
223211	ICT trainer	22	36	810
225211	ICT account manager	23	74	10
225212	ICT business development manager	28	71	30
225213	ICT sales representative	22	68	1,610
621211	ICT sales assistant	16	38	150

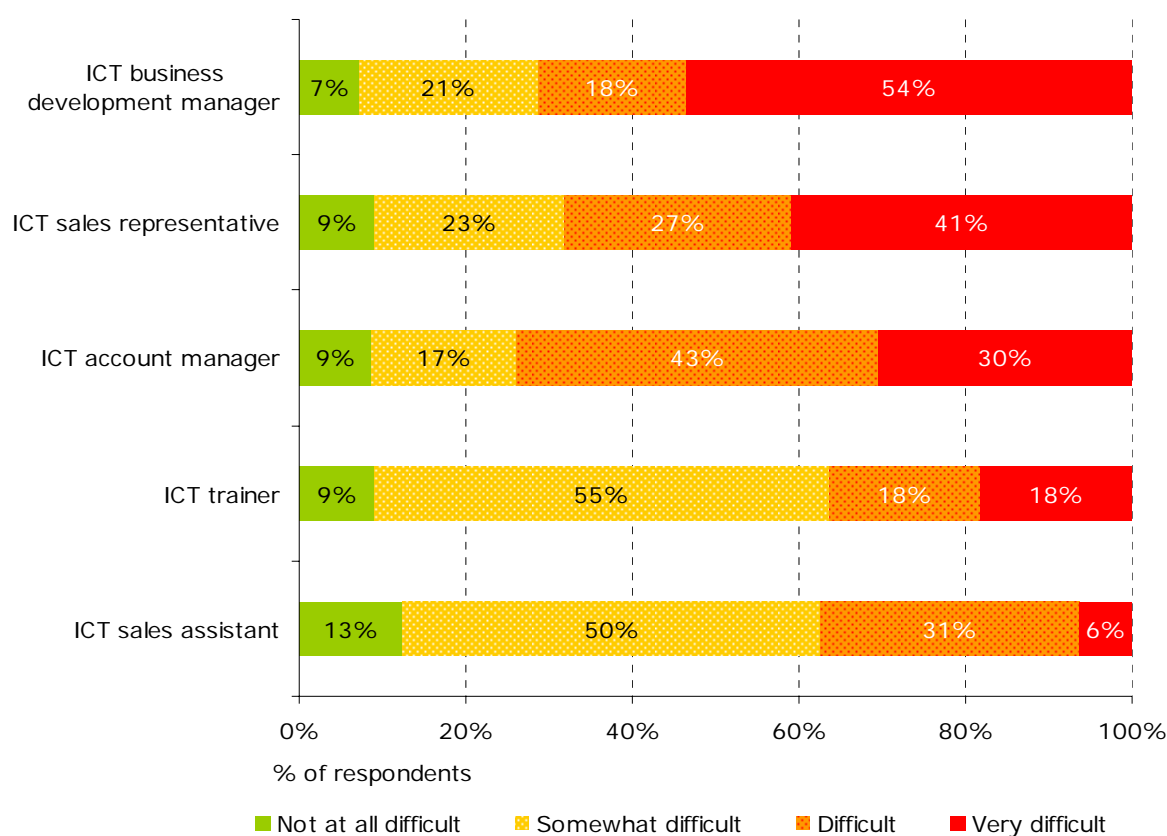
Source: Department of Labour, 2008.

Notes:

1. Number of people employed in each occupation comes from the 2006 Census (Statistics NZ). Figures provided are rounded to the nearest 10.
2. Occupations highlighted grey are considered to be difficult to fill, i.e. over 50% of respondents answered that recruiting for this occupation was either 'very difficult' or 'difficult'.

Although ICT account manager vacancies and ICT business development manager vacancies were at a similar level of difficulty to fill overall, these occupations show different degrees of difficulty (see Figure 2). Over half of recruiters said it was very difficult to recruit for ICT business development managers compared to under a third for ICT account managers.

Figure 2: Degree of difficulty in finding suitable applicants for ICT training, business and marketing vacancies



Source: Department of Labour, 2008

Business and systems analysts and programmers

Responses from recruiters indicated that all occupations within business and systems analysts and programmers were difficult to fill. Software engineers had the highest percentage of recruiters reporting difficulty (82%) followed by software and applications programmers not elsewhere counted (81%), analyst programmers (79%) and developer programmers (79%) (see Table 4).

Systems analyst, software and applications programmers not elsewhere counted, and developer programmer are large occupations, with between 5,000 and 7,000 people employed in each of these occupations at the time of the 2006 census. This implies that, not only are these vacancies difficult to fill, but there are a large number of them.

Table 4: Percentage of recruiters who had difficulty finding suitable applicants for business and systems analyst and programmer vacancies

ANZSCO code	Occupation	Number of recruiters with vacancies	Percent with difficulty filling vacancies	Number of people in occupation ¹
261111	ICT business analyst	29	79	410
261112	Systems analyst	28	61	6,680
261211	Multimedia specialist	20	65	50
261212	Web developer	29	55	990
261311	Analyst programmer	28	79	800
261312	Developer programmer	28	79	6,920
261313	Software engineer	28	82	210
261399	Software and applications programmers not elsewhere counted	26	81	5,130

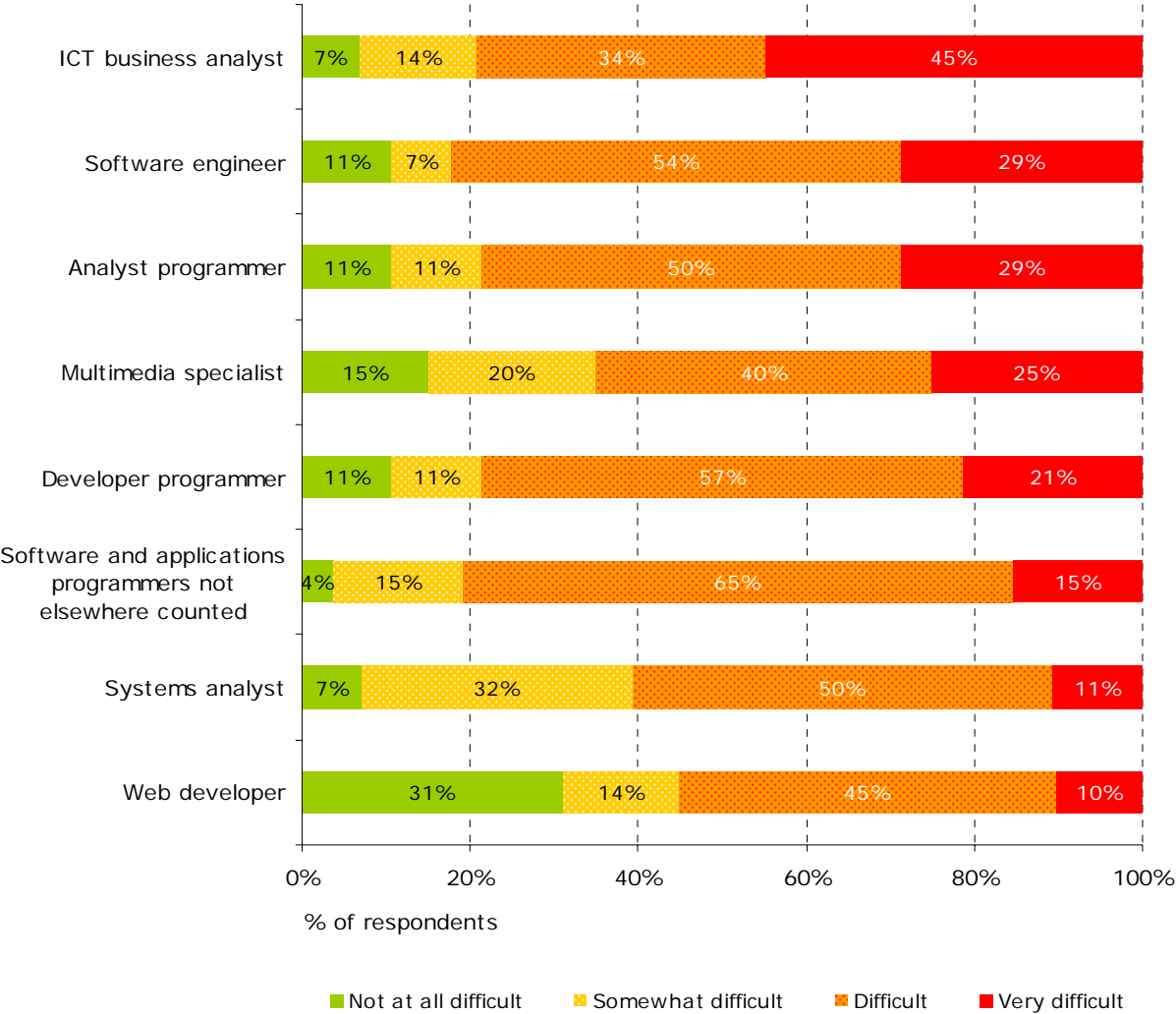
Source: Department of Labour, 2008.

Notes:

1. Number of people employed in each occupation comes from the 2006 Census (Statistics NZ). Figures provided are rounded to the nearest 10.
2. Occupations highlighted grey are considered to be difficult to fill, i.e. over 50% of respondents answered that recruiting for this occupation was either 'very difficult' or 'difficult'.

Although recruiters said it was difficult to fill vacancies for software and applications programmers not elsewhere counted, this occupation had a relatively low percentage of recruiters saying it was very difficult to fill vacancies (see Figure 3). Conversely, ICT business analysts, which showed similar difficulty overall, had a high percentage of recruiters who said vacancies were very difficult to fill.

Figure 3: Degree of difficulty in finding suitable applicants for business and systems analyst and programmer vacancies



Source: Department of Labour, 2008

Database and systems administrators and ICT security specialists

Recruiters indicated that vacancies for all occupations within the database and systems administrators and ICT security specialist field were difficult to fill (see Table 5).

All 24 recruiters who had tried recruiting for ICT security specialists within the last three months had difficulty in doing so. Three quarters of recruiters who had tried recruiting for database administrators, and over a half of those who had tried recruiting for ICT security specialists, had difficulty in doing so.

Table 5: Percentage of recruiters who had difficulty finding suitable applicants for database and systems administrators and ICT security specialist vacancies

ANZSCO code	Occupation	Number of recruiters with vacancies	Percent with difficulty filling vacancies	Number of people in occupation ¹
262111	Database administrator	29	76	1,630
262112	ICT security specialist	24	100	350
262113	Systems administrator	30	53	2,740

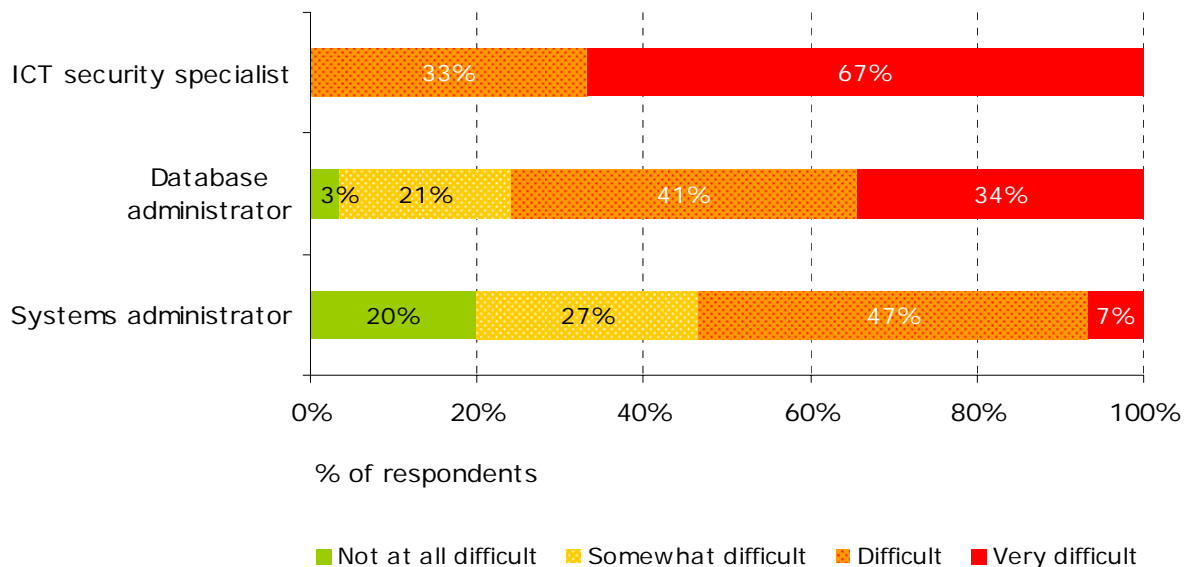
Source: Department of Labour, 2008.

Notes:

1. Number of people employed in each occupation comes from the 2006 Census (Statistics NZ). Figures provided are rounded to the nearest 10.
2. Occupations highlighted grey are considered to be difficult to fill, i.e. over 50% of respondents answered that recruiting for this occupation was either 'very difficult' or 'difficult'.

Not only did all recruiters have difficulty filling vacancies for ICT security specialists, but two thirds said this occupation was very difficult to recruit for (see Figure 4). This proportion is the second highest reported in this survey, behind telecommunications network planners.

Figure 4: Degree of difficulty in finding suitable applicants for database and systems administrators and ICT security specialist vacancies



Source: Department of Labour, 2008

ICT network and support professionals

There were seven occupations within ICT network and support professionals with reported difficulties in filling vacancies (see Table 6).

Ninety three percent of those who had tried to recruit for ICT systems test engineers said they had difficulty in doing so. ICT quality assurance engineers (83%), telecommunications engineers (83%) and ICT support and test engineers not elsewhere counted (85%) also showed very high levels of difficulty in being filled.

Table 6: Percentage of recruiters who had difficulty finding suitable applicants for ICT network and support professional vacancies

ANZSCO code	Occupation	Number of recruiters with vacancies	Percent with difficulty filling vacancies	Number of people in occupation ¹
263111	Computer network and systems engineer	30	50	880
263112	Network administrator	29	41	1,190
263113	Network analyst	28	57	150
263211	ICT quality assurance engineer	24	83	150
263212	ICT support engineer	29	45	570
263213	ICT systems test engineer	28	93	270
263299	ICT support and test engineer not elsewhere counted	26	85	130
263311	Telecommunications engineer	24	83	490
263312	Telecommunications network engineer	25	84	640

Source: Department of Labour, 2008.

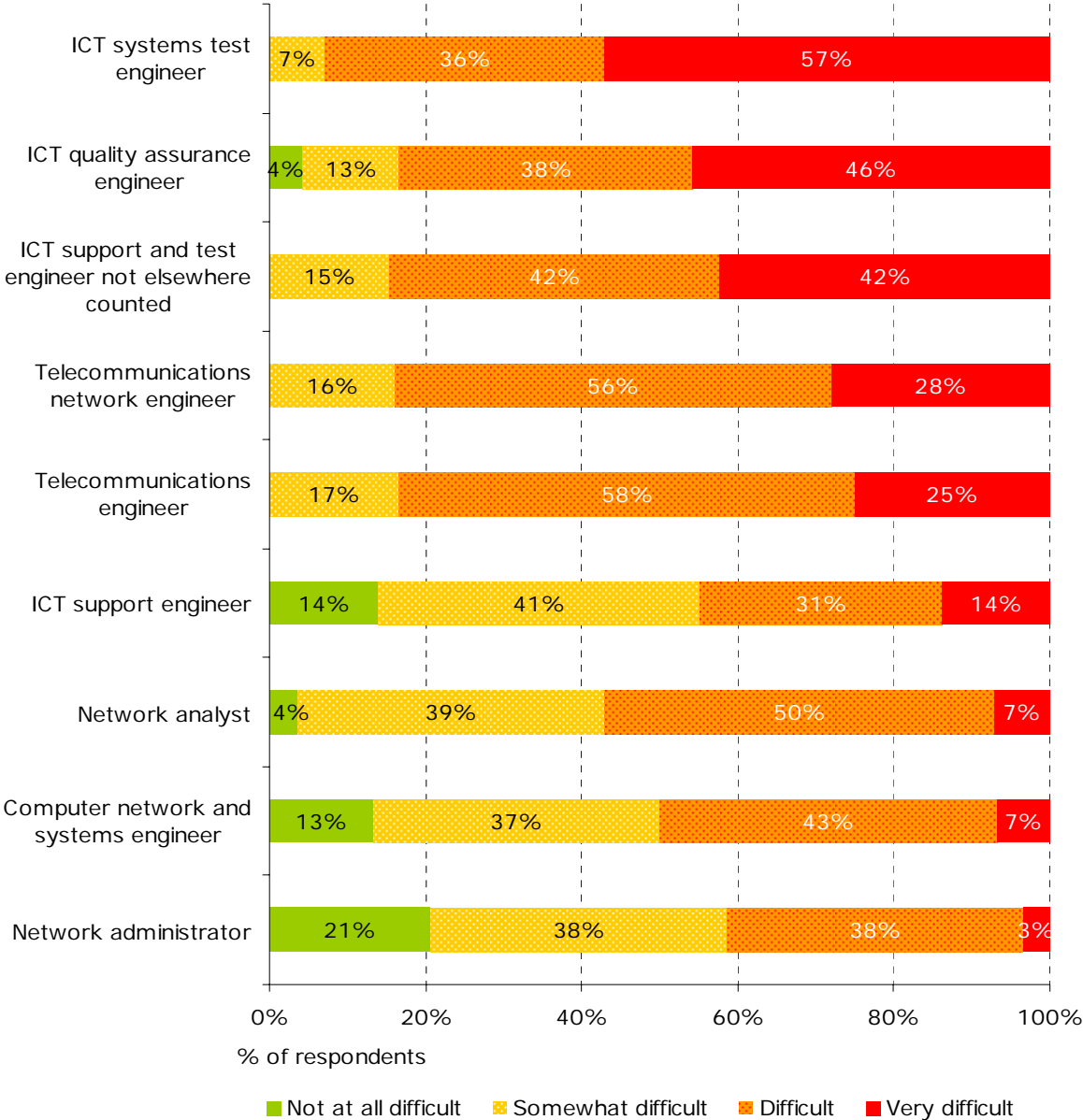
Notes:

1. Number of people employed in each occupation comes from the 2006 Census (Statistics NZ). Figures provided are rounded to the nearest 10.
2. Occupations highlighted grey are considered to be difficult to fill, i.e. over 50% of respondents answered that recruiting for this occupation was either 'very difficult' or 'difficult'.

Not only did most recruiters have difficulty filling vacancies for ICT systems test engineers, but 57% said this occupation was very difficult to recruit for (see Figure 5).

A similar percentage of recruiters said it was difficult to fill ICT quality assurance engineer vacancies (83%), ICT support and test engineer not elsewhere counted vacancies (85%), and telecommunications network engineer vacancies (84%). However, the percentage of recruiters who said it was very difficult to recruit for telecommunications network engineer vacancies is low (28%) in comparison.

Figure 5: Degree of difficulty in finding suitable applicants for ICT network and support professional vacancies



Source: Department of Labour, 2008

ICT design and engineering

Three quarters of recruiters with electronics engineer vacancies said they were difficult to fill (see Table 7). Multimedia designer and web designer vacancies were both marginally difficult to fill with around half of recruiters having difficulty recruiting for these occupations.

Table 7: Percentage of recruiters who had difficulty finding suitable applicants for ICT design and engineering vacancies

ANZSCO code	Occupation	Number of recruiters with vacancies	Percent with difficulty filling vacancies	Number of people in occupation ¹
232413	Multimedia designer	19	53	80
232414	Web designer	24	50	640
233411	Electronics engineer	16	75	900

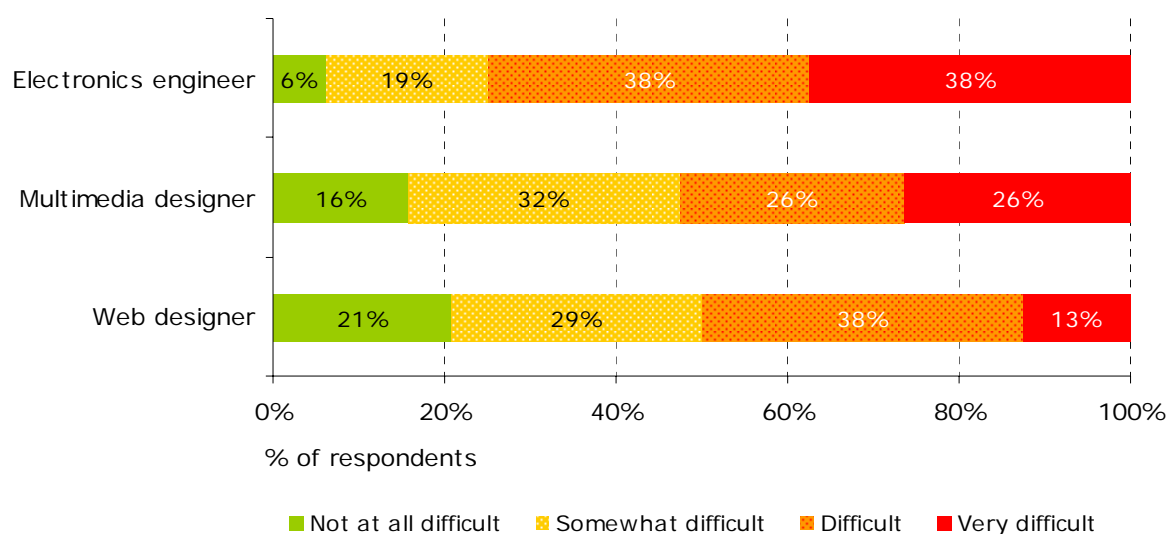
Source: Department of Labour, 2008.

Notes:

1. Number of people employed in each occupation comes from the 2006 Census (Statistics NZ). Figures provided are rounded to the nearest 10.
2. Occupations highlighted grey are considered to be difficult to fill, i.e. over 50% of respondents answered that recruiting for this occupation was either 'very difficult' or 'difficult'.

Over a third of recruiters found filling electronics engineer vacancies very difficult (see Figure 6). Only 16 of 30 recruiters had tried to fill vacancies for this occupation, which could imply that demand for this occupation is relatively low compared to other occupations, but the demand that exists is very difficult to meet.

Figure 6: Degree of difficulty in finding suitable applicants for ICT design and engineering vacancies



ICT engineering and telecommunications technicians

Overall, recruiters had less difficulty finding applicants for ICT customer support officer roles than for other occupations. Web administrators and ICT support technicians not elsewhere counted were also less difficult than many other occupations to fill, with only 32% and 35% of recruiters indicating difficulty.

At the other end of the scale, all respondents recruiting for telecommunications network planners had difficulty filling vacancies. In addition, 93% of recruiters found it difficult filling telecommunications technical officer or technologist vacancies and 73% had difficulty filling telecommunications field engineer vacancies.

However, each of these occupations is small, with few recruiters with vacancies and few people in the 2006 census in the occupation. This implies that demand for these occupations is low compared to other occupations, but the demand that exists is very difficult to meet.

Table 8: Percentage of recruiters who had difficulty finding suitable applicants for ICT engineering and telecommunications technician vacancies

ANZSCO code	Occupation	Number of recruiters with vacancies	Percent with difficulty filling vacancies	Number of people in occupation ¹
312411	Electronic engineering draftsperson	4	100	10
312412	Electronic engineering technician	7	86	2,090
313111	Hardware technician	15	40	90
313112	ICT customer support officer	21	29	5,910
313113	Web administrator	22	32	280
313199	ICT support technicians not elsewhere counted	20	35	1,840
313211	Radiocommunications technician	9	67	20
313212	Telecommunications field engineer	11	73	20
313213	Telecommunications network planner	16	100	10
313214	Telecommunications technical officer or technologist	14	93	60

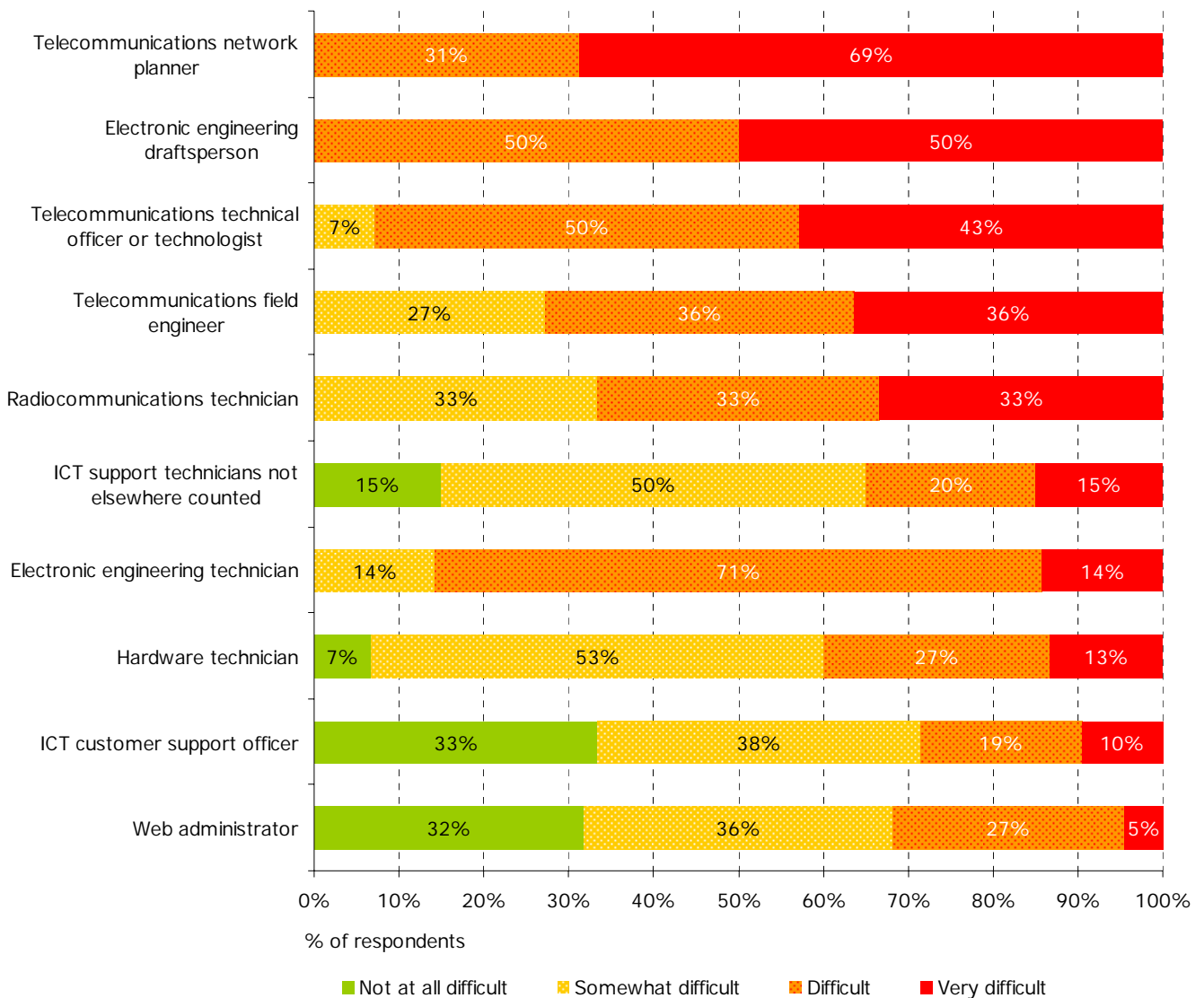
Source: Department of Labour, 2008.

Notes:

1. Number of people employed in each occupation comes from the 2006 Census (Statistics NZ). Figures provided are rounded to the nearest 10.
2. Occupations highlighted grey are considered to be difficult to fill, i.e. over 50% of respondents answered that recruiting for this occupation was either 'very difficult' or 'difficult'.

Not only did all recruiters with telecommunications network planner vacancies find it difficult to find suitable candidates, but over two thirds of them found it very difficult (see Figure 7). This percentage is the highest of all occupations in this survey.

Figure 7: Degree of difficulty in finding suitable applicants for ICT engineering and telecommunications technician vacancies



Source: Department of Labour, 2008

Electronics and telecommunications trades

Each of the electronics and telecommunications trades occupations included in this survey had few recruiters who had recently recruited for these occupations – ranging from two to seven recruiters (see Table 9). In most cases, this is likely to be because these occupations are ‘niche’ occupations that employ few people and so vacancies rarely occur.

However, telecommunications technicians and electronic equipment trades workers are relatively large occupations, with about 2,060 and 1,180 people in these occupations respectively (from the 2006 census). The combination of few recruiters with vacancies and the high percentage reporting difficulty in both these occupations may indicate that these occupations are specific to particular regions or that there is specialisation amongst recruiters. It could also be due to a mismatch between the way people in the 2006 census reported their own occupation and the way recruiters group positions into occupations.

Table 9: Percentage of recruiters who had difficulty finding suitable applicants for electronics and telecommunications trades vacancies

ANZSCO code	Occupation	Number of recruiters with vacancies	Percent with difficulty filling vacancies	Number of people in occupation ¹
342312	Communications operator	6	50	270
342313	Electronic equipment trades worker	2	100	1,180
342314	Electronic instrument trades worker (general)	2	100	10
342315	Electronic instrument trades worker (special class)	2	100	30
342411	Cabler (data and telecommunications)	4	75	110
342412	Telecommunications cable joiner	3	100	20
342413	Telecommunications line mechanic	3	100	100
342414	Telecommunications technician	7	86	2,060
899914	Electrical or telecommunications trades assistant	6	83	40

Source: Department of Labour, 2008.

Notes:

1. Number of people employed in each occupation comes from the 2006 Census (Statistics NZ). Figures provided are rounded to the nearest 10.
2. Occupations highlighted grey are considered to be difficult to fill, i.e. over 50% of respondents answered that recruiting for this occupation was either 'very difficult' or 'difficult'.

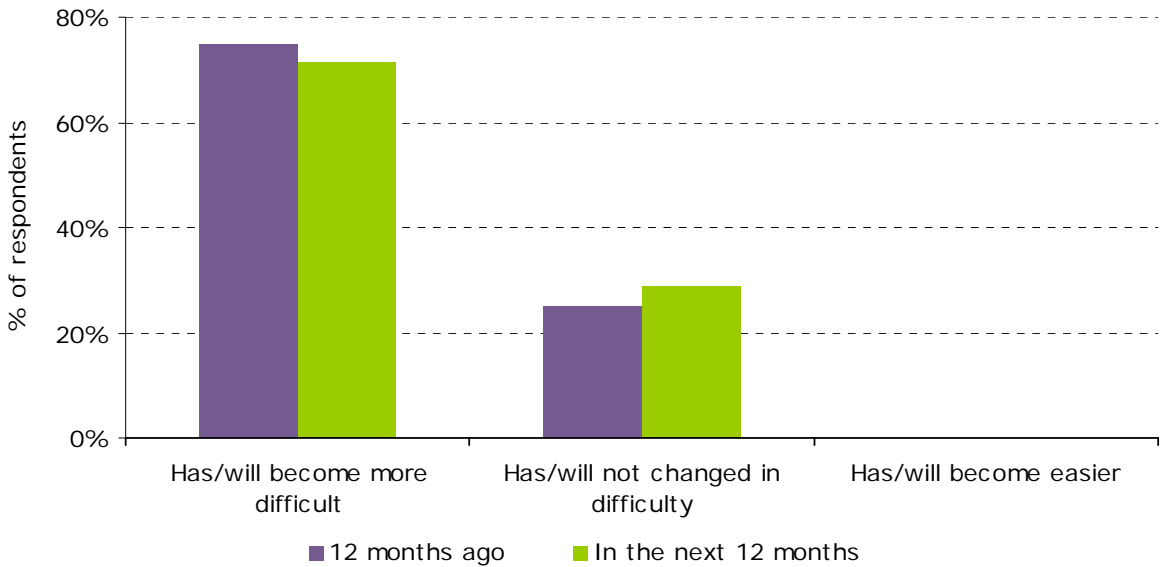
Information on the degree of difficulty in finding suitable applicants for these occupations is not provided because it is hard to draw reliable conclusions from such a small number of respondents.

How recruiters perceive the difficulty finding suitable IT applicants

In the survey, respondents were also asked how they viewed the overall level of difficulty of recruiting for IT positions in terms of changes over the past 12 months and perceptions on how this may change in the next 12 months.

Figure 8 shows that 75% of recruiters felt that it was more difficult to find suitable IT applicants compared to 12 months ago, and 71% felt that it will become more difficult in the next 12 months. These findings are very similar to last year's survey results.

Figure 8: The perception of recruiters regarding the difficulty in finding suitable IT applicants 12 months ago and for the next 12 months



Source: Department of Labour, 2008

General feedback from recruiters on skill shortages for IT occupations

In the questionnaire, respondents were given the opportunity to make any comments related to skill shortages within the field of IT.

Many respondents commented that often the most challenging part of recruiting IT workers is finding qualified people who also have good English and communication skills. Some recruiters suggested that companies should be willing to invest in language skills for their employees, or that we should target English speaking countries first to fill skill shortages.

The second most common point made by respondents was that there are not enough skilled IT professionals, even to recruit and train. A few respondents suggested that this was because there is a need for more promotion and awareness targeted at younger people who may potentially study the profession at a tertiary level. Another respondent suggested increasing salaries to compete in the international market for IT skills.

Some recruiters also said there has been a behavioural change in IT professionals towards short-term contracting, as opposed to long-term employment. Recruiters suggested that for international IT professionals who are given permission to work based on their skills, there should be a bonded period of time that they must stay. This would be to prevent migrants from entering into the contracting process, as their New Zealand counterparts do, which can add burden to companies who seek IT professionals.

Appendix A Australian and New Zealand Standard Classification of Occupations (ANZSCO)

The difference between occupations and specialisations in ANZSCO

The Australian and New Zealand Standard Classification of Occupations (ANZSCO) was developed for the use in the collection, analysis and dissemination of occupation statistics in Australia and New Zealand. From 2006, ANZSCO has been used by the Australian Bureau of Statistics and Statistics NZ censuses and surveys where occupation data is collected.

ANZSCO is a skill-based classification used to classify all occupations and jobs in the Australian and New Zealand labour markets. An 'occupation' is defined as a set of jobs that require the performance of similar or identical sets of tasks. The similarity of tasks is determined by the skill level *and* skill specialisation required to perform those tasks.

In ANZSCO, skill level is based on the range and complexity of the set of tasks performed in a particular occupation, whereas skill specialisation is based on the knowledge of subject matter, tools and equipment used, materials worked on, and goods and services provided.

Change to focus on occupations

In previous years, the Survey of IT Recruiters has focused on specialisations within IT. In 2008 the survey focused on occupations instead, although it maintained the previous specialisation questions.

This change allows the use of ANZSCO categorisation of IT occupations, and hence enables the comparison of survey results to census data and other survey findings from New Zealand and overseas.

Using the five-level hierarchical structure

ANZSCO uses a five-level hierarchical structure of classification. At the highest level there are eight major groups. Major groups are loosely organised from highly skilled (major group 1) to less skilled (major group 8). Each major group can be further subdivided into four other levels (see appendix table 1):

- sub-major group
- minor group
- unit group
- occupation.

The more digits a classification level has, the more detailed the occupational group is. Occupations are most detailed at the 6-digit level.

Appendix B Methodology for the survey

Most respondents were selected based on either their membership with the Information Technology Contract & Recruitment Association (ITCRA)³, or on participation in previous surveys. Some other recruitment agencies were also surveyed if they had placed 20 or more IT-related advertisements on SEEK, Jobstuff or TradeMe immediately prior to the survey being delivered.

The list of IT occupations and specialisations used in the survey was drawn from numerous sources, including a comprehensive scan of major internet job boards, discussions with industry experts, and feedback from respondents to earlier surveys.

The data for this study were collected using a web-based questionnaire. The managing director of each IT recruiting agency was mailed a letter inviting them to participate in the survey. They were subsequently contacted by telephone by the Department to secure their participation, and to respond to any questions that arose. Survey participants were then forwarded the survey link by email.

Respondents completed the questionnaire between January 29 and February 15, 2008. Reminder emails were sent to encourage all recruiters to participate.

In the 2008 survey, respondents were asked to indicate the degree of difficulty they experienced in recruiting for each IT occupation and specialisation in the last three months, using a 4-point scale ('Not at all difficult', 'Somewhat difficult', 'Difficult' or 'Very difficult').

In total, 30 out of 38 recruiters took part in the 2008 survey. The findings were not weighted.

The Department endeavours to base the survey on a comprehensive list of IT occupations and specialisations that are currently in demand by employers in New Zealand. However, it is possible that the Department has omitted some from the list.

³ ITCRA is a voluntary professional organisation with members in New Zealand and Australia.

Appendix C Results from specialisations section

Specialisation	Number of recruiters with vacancies	Percent with difficulty filling vacancies
Application and Web Development		
NET Development - ASP.NET/ASPX.NET	28	79%
NET Development - C#	26	81%
NET Development - Visual Basic.NET	27	74%
NET Development - ADO.NET	23	78%
J2EE - Java	27	93%
J2EE - JSP	25	92%
C++	26	73%
Coldfusion	22	86%
Delphi	21	81%
DHTML	21	43%
JavaScript	24	54%
Microsoft Sharepoint Server	24	96%
Oracle Developer Suite	22	77%
PERL	23	57%
PHP	23	57%
PL/SQL	21	52%
Powerbuilder	19	79%
Progress	18	78%
VB Script	21	33%
Visual C++	20	55%
XML	21	43%
AJAX	20	60%
Jade	17	76%
Linc EAE	15	93%
RPG	14	71%

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Specialisation	Number of recruiters with vacancies	Percent with difficulty filling vacancies
Operating Systems		
HP/UX	22	77%
Linux	24	83%
Mac OS	16	56%
OS/400 or i5/OS	16	63%
SUN OS or Solaris	21	91%
Unix	26	85%
Windows (Desktop & Server)	25	36%
Informix Dynamic Server	12	67%
Business and Process Management		
Business Process Re-Engineering	25	76%
Broad Commercial Business Understanding	25	52%
Business Analysis	27	78%
Knowledge Management	23	83%
IT Project Management	27	56%
Systems Analysis	26	69%
IT Training	21	62%
Technical Documentation	25	56%
Document Management	26	73%
IT Infrastructure Library		
ITIL Managers (Master) level certification	24	88%
ITIL Foundation certification	27	41%
Change Management	23	61%
Incident Management	19	47%
Service Management	24	38%
Configuration Management	20	70%

Specialisation	Number of recruiters with vacancies	Percent with difficulty filling vacancies
Application Design and Processing		
RUP	23	48%
UML	25	40%
Test-Driven Development	18	72%
Extreme Programming (XP)	20	70%
Rapid Application Development	20	60%
Development Testing	23	83%
Development Test Management	24	88%
Object Oriented Programming	25	52%
Agile	24	67%
Business and Process Management		
Business Process Re-Engineering	25	76%
Broad Commercial Business Understanding	25	52%
Business Analysis	27	78%
Knowledge Management	23	83%
IT Project Management	27	56%
Systems Analysis	26	69%
IT Training	21	62%
Technical Documentation	25	56%
Document Management	26	73%
Office / Email / Groupware		
Novell Groupwise	17	59%
Lotus Notes	21	67%
Microsoft Exchange	25	44%
Open Office	15	33%
Microsoft Office	24	17%
Mozilla and Firefox	17	47%

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Specialisation	Number of recruiters with vacancies	Percent with difficulty filling vacancies
Telecommunications		
Broadband CDMA	11	64%
CDMA	11	64%
CTI (Computer Telephony Integration)	12	67%
GSM	10	80%
GPS	9	67%
IVR (Interactive Voice Response)	11	91%
Radio	8	75%
SMS Integration	10	100%
TDMA	9	78%
VoIP	18	72%
UMTS	9	89%
W-CDMA	10	80%
Wireless	11	64%
WDM	9	78%
3G	9	67%
E-commerce and ERP (Enterprise Resource Planning)		
SAP	24	96%
JDEdwards (Enterprise1)	16	94%
Oracle eBusiness Suite	19	100%
PeopleSoft	18	89%
Siebel	14	100%
Vignette	16	94%
Microsoft Dynamics	17	94%
Lawson Financials	11	91%
Microsoft CRM	21	76%
Sage	11	82%

Database Design and Administration		
DB2	22	95%
My SQL	27	44%
MS SQL Server (pre-2005 versions)	27	56%
MS SQL Server 2005	29	66%
Oracle	27	74%
DMS	16	81%
Sybase SQL Server	23	87%
Teradata	21	95%
Interconnectivity		
Active X (OLE)	16	56%
COM	14	57%
Corba	13	85%
DCOM	14	79%
ODBC	13	54%
JDBC	14	57%
Web Services	16	56%
XML Parsing/SOAP	19	84%
WebSphere	26	100%
Biztalk	25	96%
OLAP and Analytical Software		
Crystal Reports/Business Objects	22	68%
Microsoft Reporting Server	20	70%
SAS	17	94%
SPSS	11	91%
Analysis Services	12	75%
SAP Business Information Warehouse	18	100%
Data Warehousing	24	96%
Cognos	14	79%
Oracle OLAP	18	94%
Geographic Information Systems (GIS)		
ESRI ArcGIS	11	100%
MapInfo	13	100%
Intergraph	11	91%

Source: Department of Labour, 2008

Specialisation	Number of recruiters with vacancies	Percent with difficulty filling vacancies
Networking Technology		
Cisco - CCNA	27	52%
Cisco - CCNP	26	69%
Cisco - CCIE	25	88%
Novell Netware - CNE	19	63%
Novell Netware - CAN	17	65%
Novell Netware - Master CNE	16	75%
Citrix	26	69%
Active Directory	27	52%
Ethernet	19	42%
IIS	22	55%
IPX	17	41%
Microsoft Certified Systems Engineer	26	46%
Network Design	23	83%
Service Oriented Architecture	24	88%
SNA	17	71%
TCP/IP	21	33%
Wireless Networking	21	57%
Apache Tomcat	18	78%
Network+ Certification	21	33%
Virtual Private Networks	22	55%
System Security		
CISSP	23	91%
E-commerce Security	22	95%
Network Security	22	86%
PKI (Public Key Infrastructure)	11	100%
RACF	8	88%
Cryptograh	11	100%
Firewall/Internet Security	21	81%
Disaster Recovery	18	78%
DMZ Setup	13	77%
Antivirus Software	17	35%
Risk Assessment	15	60%

Appendix D List of acronyms for specialisations

Acronym	Definition
AJAX	Asynchronous JavaScript Technology and XML
CAN	Certified Novell Administrator
CCIE	Cisco Certified internet work Expert
CCNA	Cisco Certified Network Associate
CCNP	Cisco Certified Network Professional
CDMA	Code Division Multiple Access
CISSP	Certified Information Systems Security Professional
COM	Component Object Model
CRM	Customer Relationship Management
CTI	Computer Telephony Integration
DCOM	Distributed Component Object Model
DHTML	Dynamic HTML
DMS	Document Management System
DMZ	Demilitarised Zone
GPS	General Print Server
GSM	Global System for Mobile Communications
IIS	Internet Information Services
IVR	Interactive Voice Response
JDBC	Java Database Connectivity
Linc EAE	Linc Enterprise Application Environment
ODBC	Open Database Connectivity
OLAP	Online Analytical Processing
PERL	Practical Extraction Report Language
PHP	Hypertext Pre-Processor
PKI	Public Key Infrastructure
RACF	Resource Access Control Facility
RPG	Report Program Generator
RUP	Rational Unified Process
UML	Unified Modelling Language
VoIP	Voice Over Internet Protocol
XML	Extensible Mark-up Language

For further information contact: info@dol.govt.nz

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