



December 2005

FINDINGS FROM THE INFORMATION TECHNOLOGY RECRUITERS SURVEY 2005

1 Executive Summary

- 1.1 The 2005 Information Technology (IT) Recruiters Survey explored the degree of difficulty that recruiting and contracting agencies have in finding candidates with specific software and hardware specialisations. Managing directors from 16 New Zealand recruitment agencies participated in the Department of Labour's annual survey.
- 1.2 The survey identified 74 specialisations in shortage in 2005 – an increase from 55 in 2004 and 13 in 2003, as recorded by earlier surveys conducted by the Department of Labour. A specialisation is defined as being in shortage when at least 50% of the recruiters indicated that it was 'very difficult' or 'difficult' to find applicants with a particular specialisation.
- 1.3 The specialisations identified as having the most acute shortages were: J2EE, data warehousing applications, Java, business analysis and CCNE.
- 1.4 The broad categories of specialisations in which recruitment agencies had the most difficulty recruiting candidates were: network engineering, application development, framework development, and process and systems management. In contrast, recruiters had less difficulty recruiting candidates in the telecommunication and multimedia information technology categories.

2 Background & Research Objectives

- 2.1 In 2003, the Department of Labour (the Department) conducted the first survey of information technology recruiters to identify the IT specialisations in which recruitment agencies had the greatest difficulty finding candidates. The survey results contributed to the compilation of the Immediate and Long-term Skill Shortage Lists by Immigration New Zealand. The findings were also incorporated into the Department's 2004 Information technology professional: Occupational skill shortage assessment report.
- 2.2 The IT Recruiters Survey was repeated in September 2004, and most recently in November 2005. This report discusses the findings from the latest survey.

- 2.3 This report complements the recently published IT professional skill shortage assessment report (see <http://www.dol.govt.nz/publications/jvm/job-ad-professionals.asp>). Whereas the skill shortage assessment report attempts to identify whether there is an overall shortage of IT professionals, the IT Recruiters Survey report identifies which types of IT specialisations are in shortage.

3 Methodology

- 3.1 The data for this study were collected using a web-based questionnaire. Respondents were selected based on their membership with the Information Technology Contract & Recruitment Association (ITCRA), or non-members who have previously participated in the survey. ITCRA is a voluntary professional organisation with members in New Zealand and Australia. All respondents were based in Auckland and Wellington.
- 3.2 The list of IT specialisations used in the survey was drawn from numerous sources including: submissions to Immigration New Zealand, discussions with industry experts and feedback from respondents to earlier surveys.
- 3.3 The managing director of each IT recruiting agency was mailed a letter inviting them to participate in the survey. They were subsequently contacted by the Department by telephone to secure their participation and to respond to any questions that arose. Survey participants were then forwarded the survey link by email.
- 3.4 Respondents completed the questionnaire between November 1 and November 10, 2005. Reminder emails were sent to encourage all recruiters to participate.
- 3.5 In the earlier IT Recruiters Surveys, respondents self-completed a 2-point scaled question indicating the degree of difficulty ('Difficult' or 'Very Difficult') in finding candidates with particular specialisations. In the interest of developing a more sensitive shortage measure, the 2005 survey used a 4-point scaled question (i.e. 'Not at all difficult' and 'Somewhat difficult' were added as options). Additionally, survey participants evaluated how difficult it was to find candidates for every specialisation.
- 3.6 In total, 16 out of 21 recruiters completed the questionnaire. The findings were not weighted.
- 3.7 The Department endeavours to base the survey on a comprehensive list of IT specialisations that are currently in demand by employers in New Zealand. However, it is possible that the Department has omitted some specialisations from the list and these may be in shortage.

4 Definition of Shortage

- 4.1 A specialisation is regarded as being in shortage when 50% or more of the total respondents indicated that vacancies in that IT specialisation are *very difficult* or *difficult* to fill.

5 Major Findings

- 5.1 Of the 140 IT specialisations surveyed in this study, 74 were in shortage. In 2003 there were only 13 specialisations in shortage and this increased to 55 in 2004. Appendix I lists all of the specialisations that are in shortage.
- 5.2 The survey revealed that recruiters had the most difficulty finding applicants with J2EE, data warehousing, and Java (as measured by the proportion of recruiters who stated that these were *very difficult* or *difficult* to find candidates). Table 1 shows the ten most difficult to find specialisations.

Table 1. Ten Most Difficult to find IT Specialisations

Rank	Application	Sample size (n)	% Rating Very difficult	% Rating Very difficult & Difficult
1	J2EE	16	88%	100%
2	Data warehousing	15	69%	94%
3	Java	15	56%	94%
4	Business analysis	16	81%	93%
5	CCNE	15	62%	93%
6	CCNA	15	38%	88%
7	Biztalk	15	50%	88%
8	Visual Basic.net	14	50%	88%
9	UML	15	69%	88%
10	ASP.net	14	62%	87%

Note: There were other skills which ranked higher, but were not included due to their small sample size.

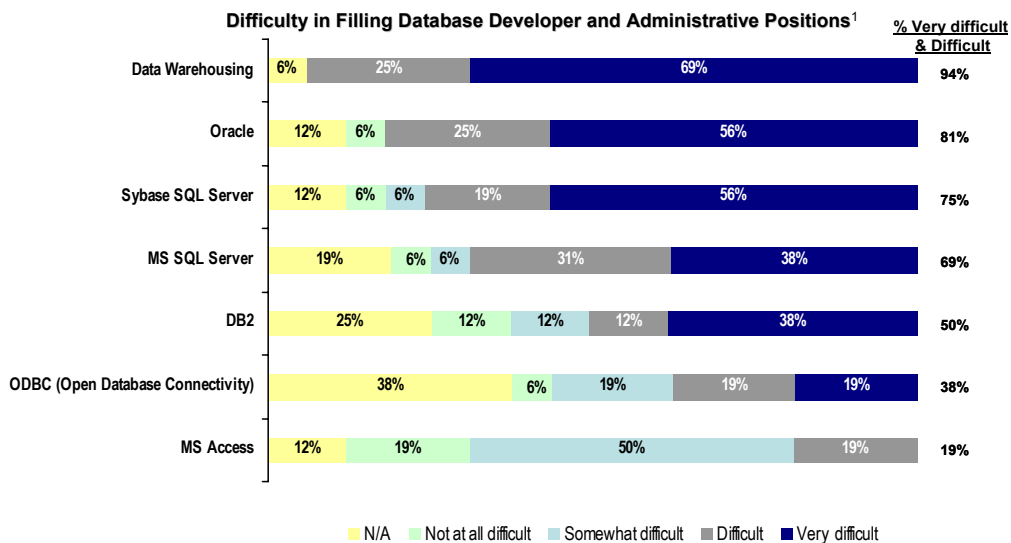
- 5.3 There were 16 broad categories into which the 140 specialisations were categorized. The categories which had a high number of specialisations in shortage were network engineering, application development, framework development, and process and systems management. Telecommunication and multimedia were the two categories that recruiters appear to have had the least difficulty in finding candidates.

6 Detailed Findings

6.1 Databases

6.1.1 Specialisations in shortage: *Data warehousing, Oracle, Sybase SQL Server, MS SQL Server, DB2*

6.1.2 Recruiting and contracting agencies (recruiters) seeking to fill database developer and administrator vacancies find it very difficult to recruit candidates with data warehousing (94%), Oracle (81%) and Sybase SQL Server (75%) specialisations. Many recruiters only experienced moderate difficulty in finding candidates with the specialisation to program using MS Access (50%).



Base: Total (n=16)

4. If you have had difficulty in filling database developer and administrator vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

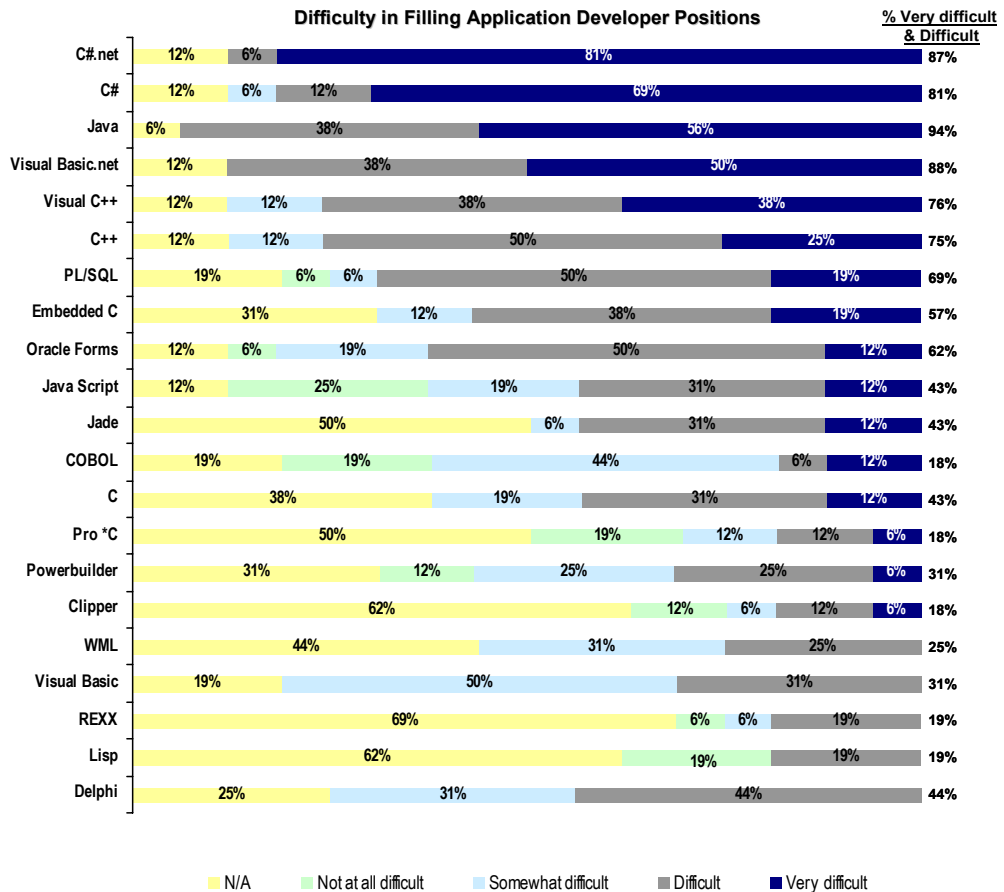
6.2 Application Development

6.2.1 Specialisations in shortage: *Java, Visual Basic.net, C#.net, C#, Visual C++, C++, PL/SQL, Oracle Forms, Embedded C*

6.2.2 Positions requiring applicants with Java (94%), C#.net (87%), and C# (81%) specialisations were difficult to fill. Even though Java and JavaScript share a common moniker, they are not similar programming languages. This explains the considerable difference in the ratings for these development tools.

6.2.3 More than half of respondents indicated that Rexx (69%), Clipper (62%) and LISP (62%) were not applicable specialisations of concern to recruiters, which highlights the limited demand for these specialisations among recruiters.

¹ Throughout the report, percentages presented in the figures may not total exactly 100% due to rounding.

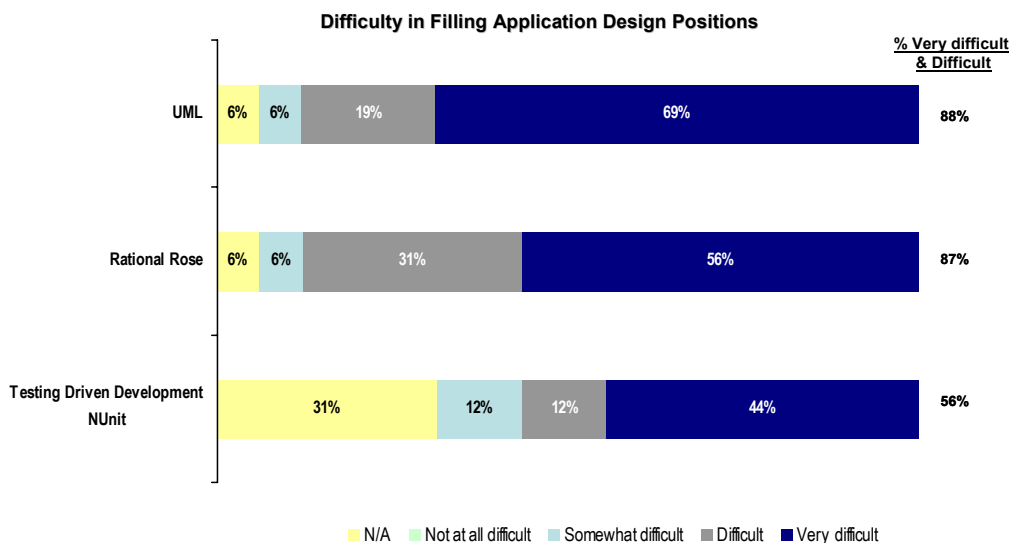


Base: Total (n=16)
 5. If you have had difficulty in filling application developer vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.3 Application Design

6.3.1 Specialisations in shortage: UML, Rational Rose, Testing Driven Development

6.3.2 Over half of the recruiters indicated that it is difficult to find candidates possessing proficiency in UML (88%), Rational Rose (87%) and Testing Driven Development (56%).



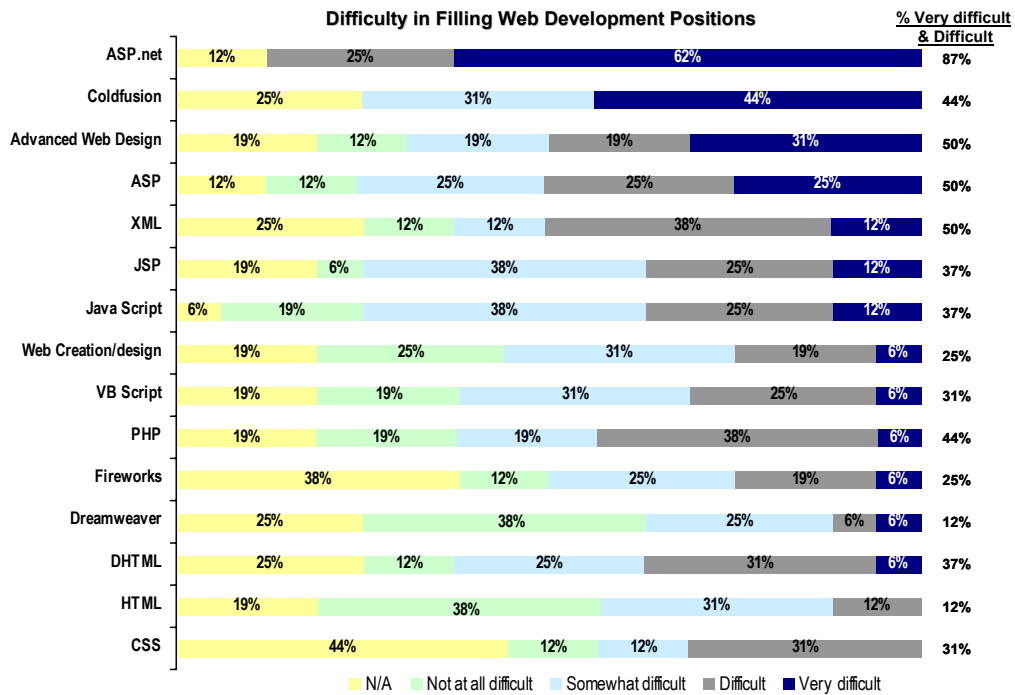
Base: Total (n=16)
 7. If you have had difficulty in filling application designer vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.4 Web Development

6.4.1 Specialisations in shortage: *ASP.net, Advanced web design, ASP, XML*

6.4.2 Web developers specialised in using ASP.net (87%) are very difficult to find in the current job market.

6.4.3 It appears that recruiters have minimal difficulty filling vacancies requiring Dreamweaver (12%) and HTML (12%). The latter is a core specialisation required to do Advanced Web Design (50%).



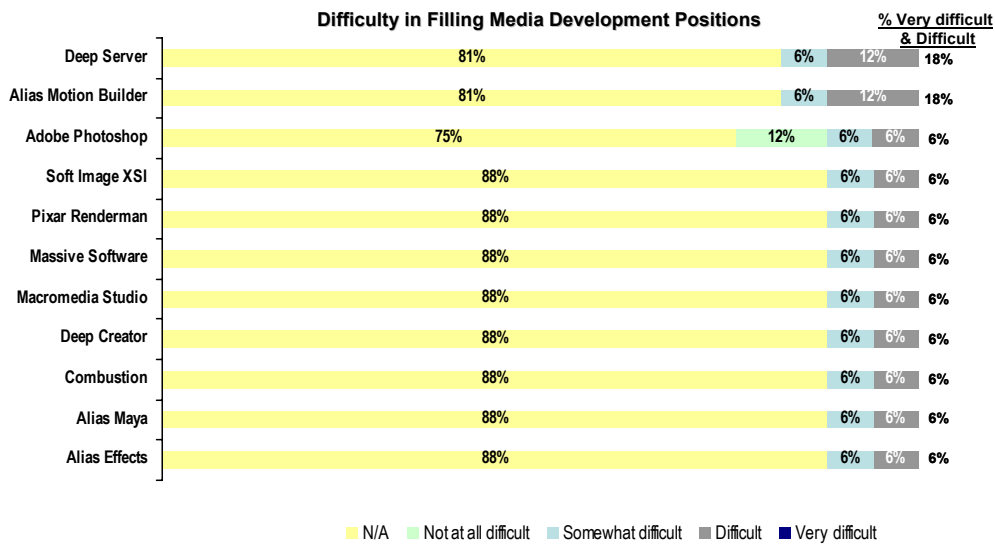
Base: Total (n=16)

6. If you have had difficulty in filling web developer vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.5 Media Development

6.5.1 Specialisations in shortage: *nil*

6.5.2 The findings highlight that few recruiters are involved in recruiting media developers in comparison to other information technology specialisations. Deep Server (12%) and Alias Motion Builder (12%), however, stand out as the most difficult media development specialisations to find.



Base: Total (n=16)

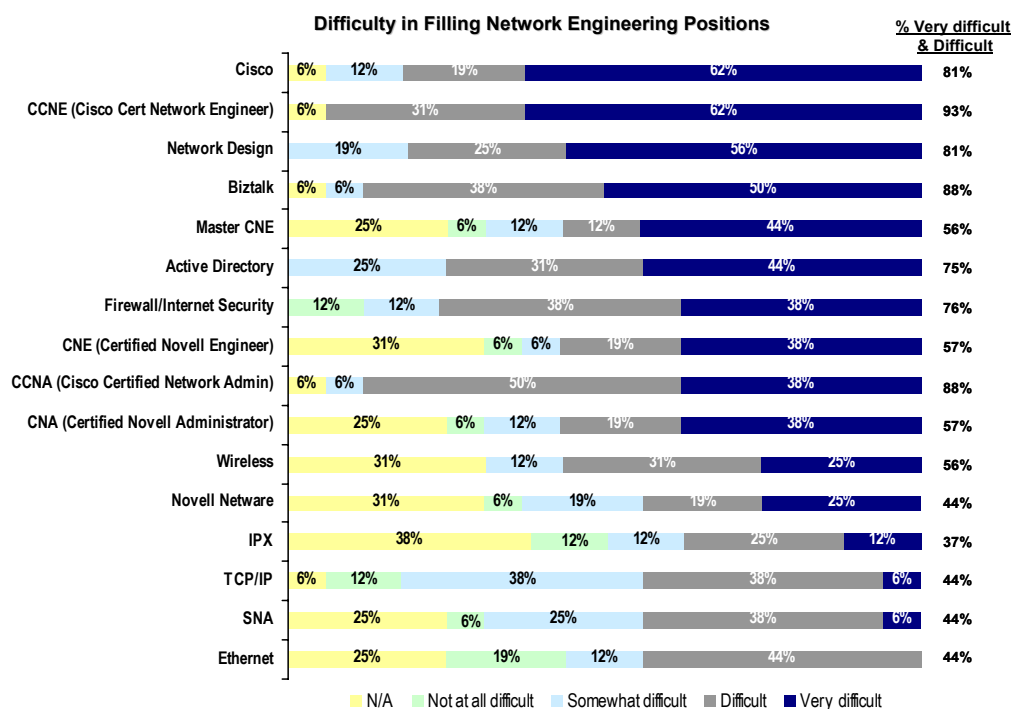
8. If you have had difficulty in filling media developer vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.6 Network Engineering

6.6.1 Specialisations in shortage: *CCNE, Biztalk, CCNA, Cisco, Network Design, Firewall /Internet Security, Active Directory, CNE, CNA, Master CNE, Wireless*

6.6.2 Recruiters express that it was difficult to find candidates holding CCNE (93%) and CCNA (88%) certifications, and Biztalk (88%). Overall, it appears that it was challenging to find network engineers.

6.6.3 There are a number of network engineering specialisations that require certification and these include: CCNE, CNE, Master CNE, CCNA and CNA.



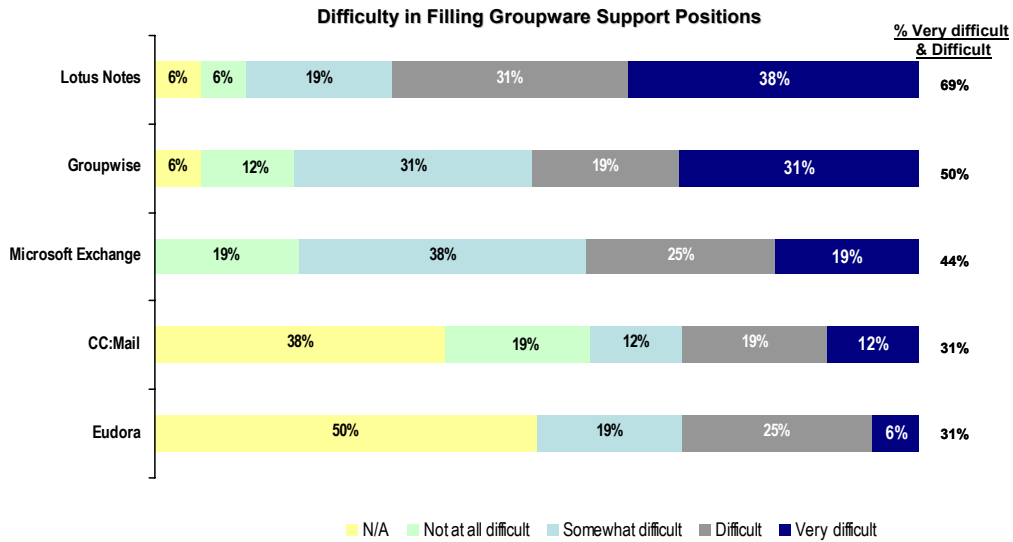
Base: Total (n=16)

9. If you have had difficulty in filling networking engineer vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.7 Groupware Support

6.7.1 Specialisations in shortage: Lotus Notes, Groupwise

6.7.2 In relation to groupware support vacancies, Lotus Notes (69%) and Groupwise (50%) are the two applications for which recruiters had the most difficulty finding skilled candidates.



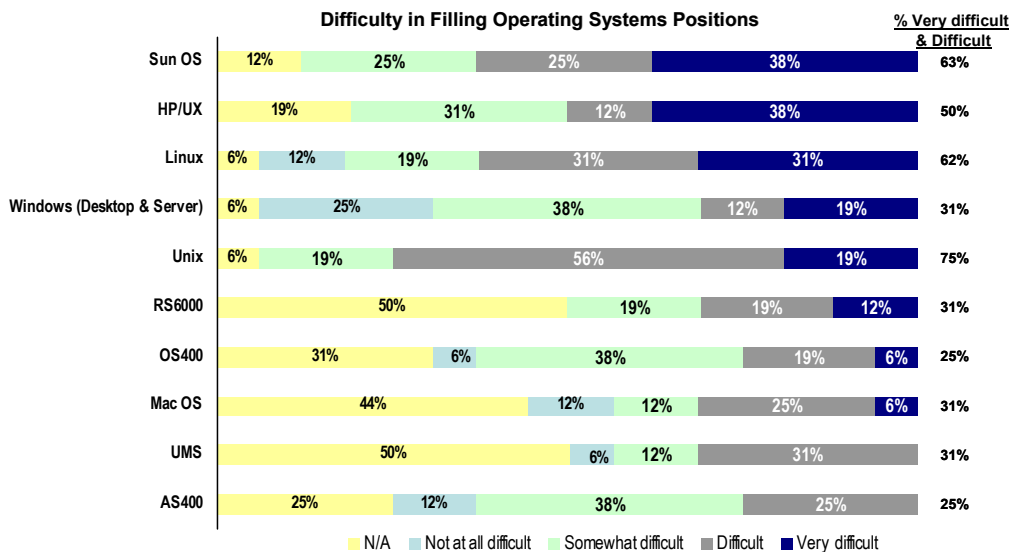
Base: Total (n=16)

10. If you have had difficulty in filling groupware support vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.8 Operating Systems

6.8.1 Specialisations in shortage: Unix, Sun OS, Linux, HP/UX

6.8.2 Finding suitable candidates proficient in operating Unix (75%), Sun OS (63%) and Linux (62%) was difficult for recruiters.



Base: Total (n=16)

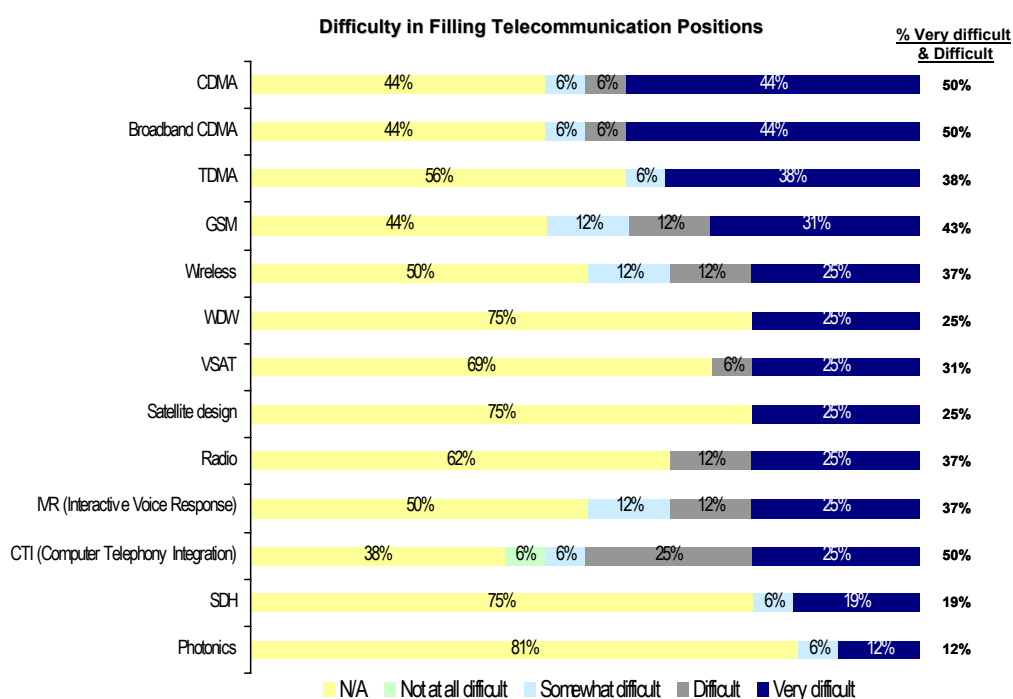
11. If you have had difficulty in filling operating system support vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.9 Telecommunication

6.9.1 Specialisations in shortage: *CDMA, Broadband CDMA, CTI*

6.9.2 Half of the recruiters indicated that it was difficult to find candidates with CDMA (50%) and Broadband CDMA (50%) specialisations. Unlike many other specialisation categories, there are many recruiters who noted that the telecommunication skill-set was not applicable to their recruitment practise.

6.9.3 Among all the telecommunication specialisations, it appears that CTI (Computer Telephony Integration) was relevant to over 3 in 5 recruiters, with 50% indicating that it is difficult or very difficult to find candidates with this specialisation.



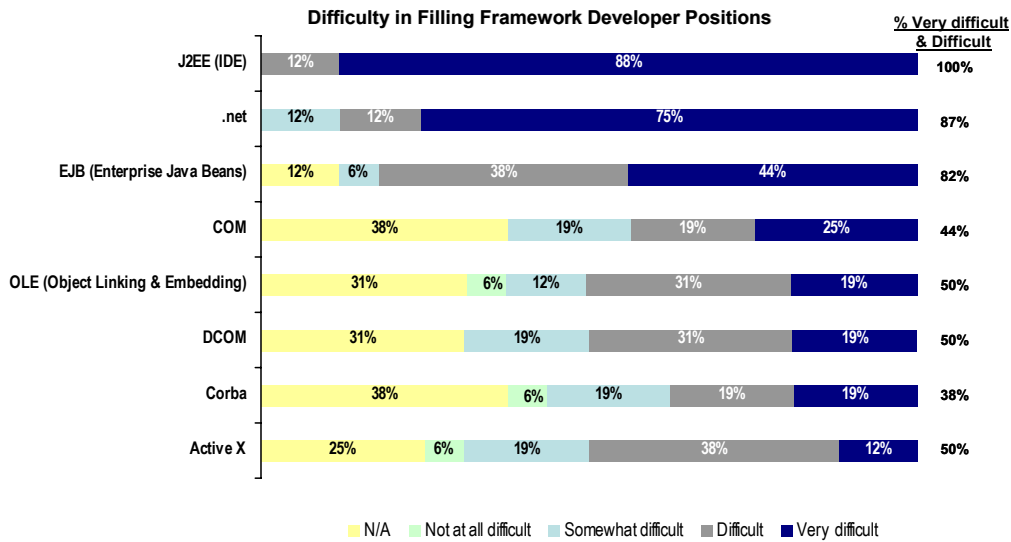
Base: Total (n=16)

12. If you have had difficulty in filling telecommunication specialist vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.10 Framework Development

6.10.1 Specialisations in shortage: *J2EE (IDE), .net, EJB, OLE, DCOM, Active X*

6.10.2 J2EE (100%), .net (87%) and EJB (82%) emerge as the three framework development applications which are the most difficult to find skilled applicants for in New Zealand. Overall findings suggest that framework development is generally a difficult specialisation category for which to recruit candidates.



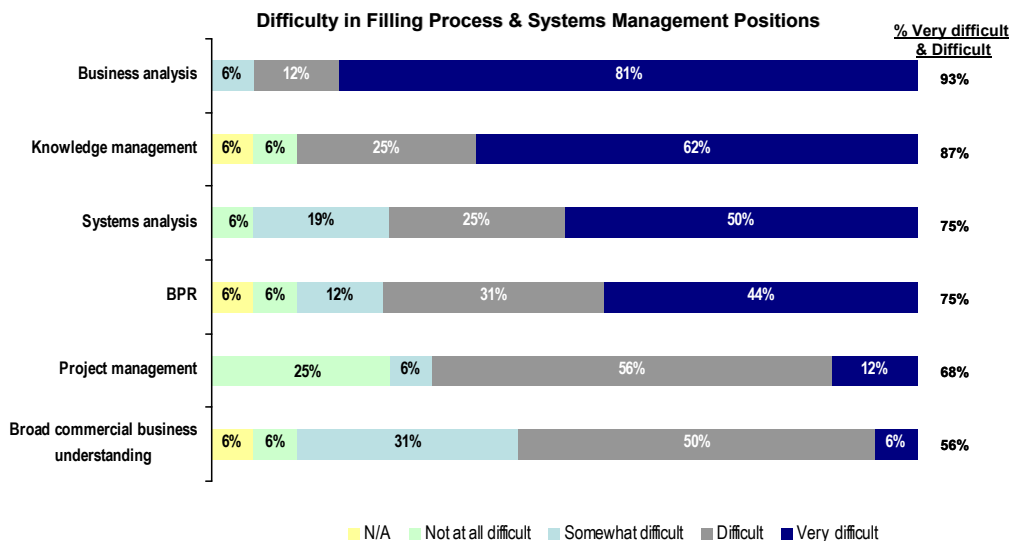
Base: Total (n=16)

13. If you have had difficulty in filling framework developer vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.11 Process and Systems Management

6.11.1 Specialisations in shortage: *Business analysis, Knowledge management, Systems analysis, BPR, Project management, Broad commercial business understanding*

6.11.2 Recruiters noted that it is very difficult to find business analysts (93%) and knowledge managers (87%).



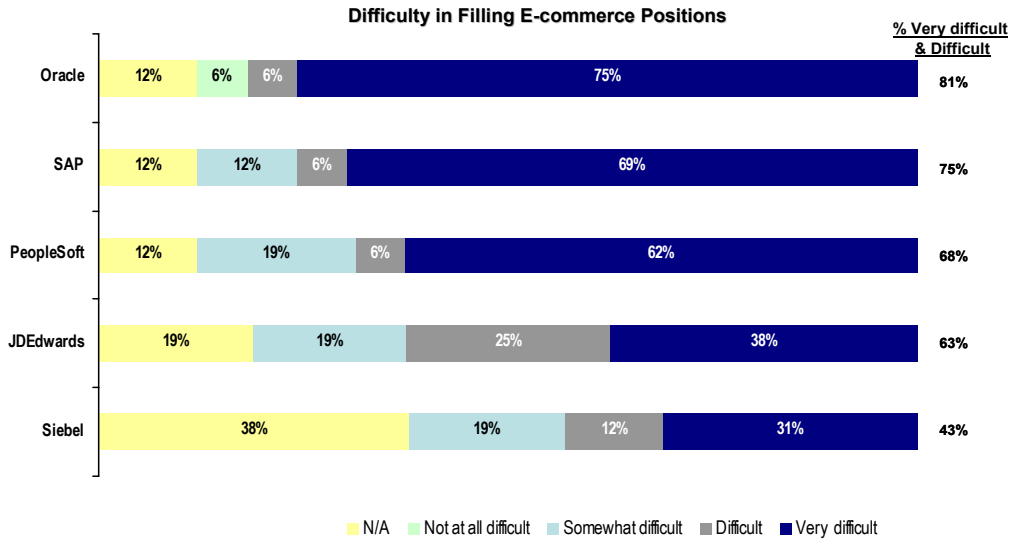
Base: Total (n=16)

14. If you have had difficulty in filling systems analyst vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.12 E-commerce and Enterprise Resource Planning

6.12.1 Specialisations in shortage: Oracle, SAP, PeopleSoft, JDEdwards

6.12.2 It is very difficult to find candidates with specific e-commerce and enterprise resource planning specialisations, such as Oracle (81%) and SAP (75%).



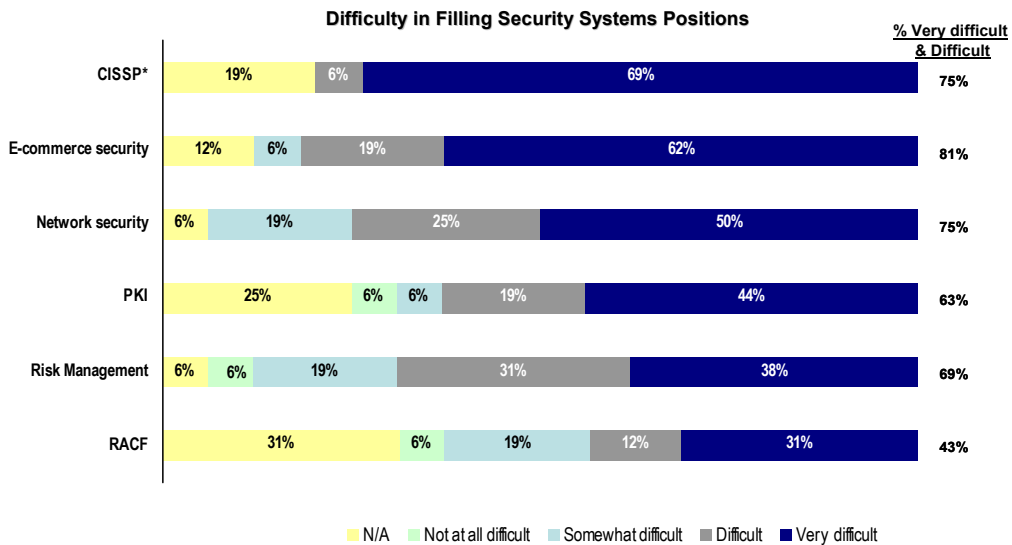
Base: Total (n=16)

15. If you have had difficulty in filling enterprise resource planner vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.13 Security Systems

6.13.1 Specialisations in shortage: E-commerce security, CISSP*, Network security, Risk Management, PKI

6.13.2 Recruiters noted that they had great difficulty recruiting candidates with e-commerce security (81%), CISSP* (75%) and network security (75%) specialisations.



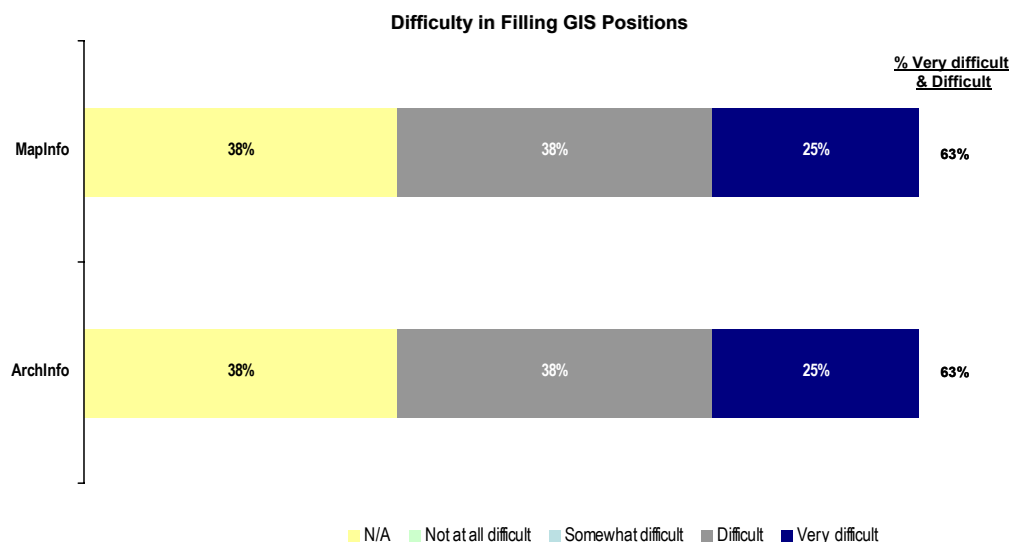
Base: Total (n=16)

16. If you have had difficulty in filling network security support vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.14 Geographic Information Systems

6.14.1 Specialisations in shortage: *MapInfo, ArchInfo*

6.14.2 MapInfo (63%) and ArchInfo (63%) are software applications that are equally difficult to find qualified candidates for in the market, and both were in shortage. However, only about 2 in 5 recruiters (38%) noted that this specialisation was not applicable to their recruiting practise.



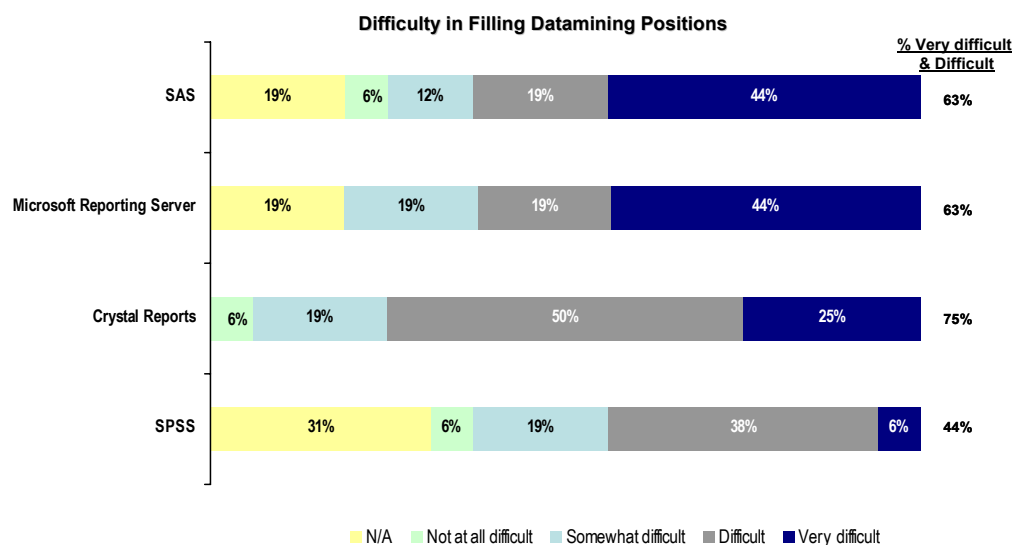
Base: Total (n=16)

17. If you have had difficulty in filling GIS operator vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.15 Datamining

6.15.1 Specialisations in shortage: *Crystal Reports, SAS, Microsoft Reporting Server*

6.15.2 Crystal Reports (75%), SAS (63%) and Microsoft Reporting Server (63%) are very difficult specialisations to find among IT candidates.



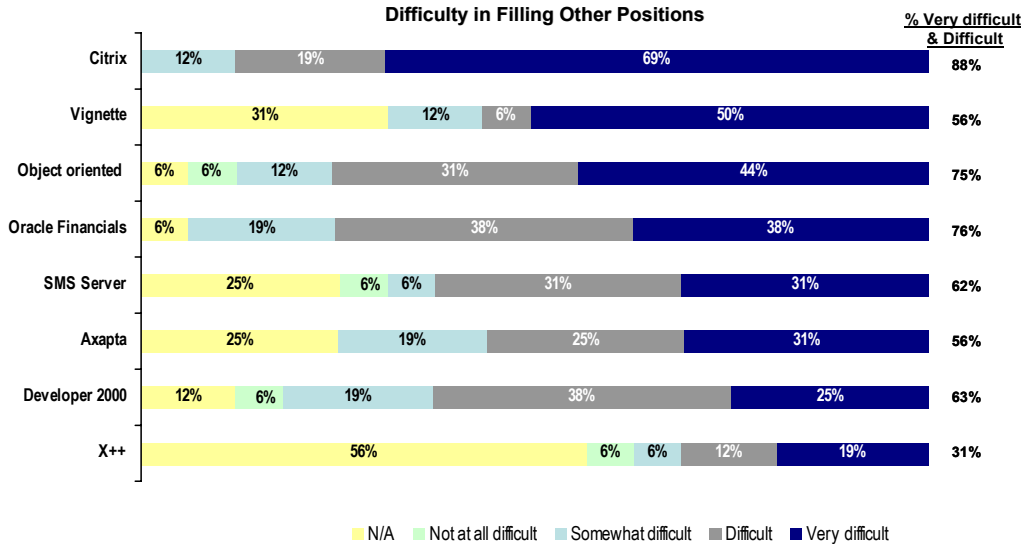
Base: Total (n=16)

18. If you have had difficulty in filling data analyst vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

6.16 Other specialisations

6.16.1 Specialisations in shortage: *Citrix, Oracle Financials, Object oriented, Developer 2000, SMS Server, Vignette, Axapta*

6.16.2 General software and technical specialisations that emerged as very difficult to fill were Citrix (88%) and Oracle Financials (76%), with Object Oriented programming languages also being very difficult to fill (75%).



Base: Total (n=16)

19. If you have had difficulty in filling general vacancies in the last three months, could you please indicate the degree of difficulty experienced in finding applicants with each of these specific skills.

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

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APPENDIX I: IT SPECIALISATIONS IN SHORTAGE 2003-2005

Note: In 2003 a specialisation was defined as being in shortage if 40% or more of recruiters stated that it was 'difficult' or 'very difficult' to fill vacancies in that specialisation. In subsequent years the threshold was raised to 50%.

	September 2003	December 2004	November 2005
Databases			
Data Warehousing	x	x	x
Oracle	x	x	x
MS SQL Server		x	x
Sybase SQL Server		x	x
DB2			x
Application Development			
C#	x	x	x
C#.net	x	x	x
Embedded C	x	x	x
Visual Basic.net	x	x	x
Visual C++		x	x
C++		x	x
Java		x	x
Oracle Forms		x	x
C	x	x	
Visual Basic		x	
PL/SQL			x
Web Development			
XML		x	x
JSP		x	
ASP			x
ASP.net			x
Advanced web design			x
Application Design			
UML		x	x
Rational Rose		x	x
Testing Driven Development NUnit			x
Networking Engineering			
Cisco	x	x	x
CCNA (Cisco Certified Network Admin)		x	x
CCNE (Cisco Cert Network Engineer) CGI		x	x
Firewall/Internet Security		x	x
Network Design		x	x
Master CNE		x	x
IPX		x	
Novell Netware		x	
Microsoft Exchange		x	
CNE (Certified Novell Engineer)			x
CNA (Certified Novell Administrator)			x
CDMA			x
Biztalk			x
Active Directory			x

Groupware Support			
Lotus Notes			X
Groupwise			X
Operating Systems			
HP/UX		X	X
SUN OS		X	X
Unix		X	X
Sun Solaris		X	
Linux			X
Telecommunication			
Broadband CDMA		X	X
CTI (Computer telephony integration)			X
Wireless			X
Wireless Engineers		X	
Framework Development			
.net	X	X	X
EJB (Enterprise Java Beans)		X	X
J2EE (IDE)		X	X
OLE (Object Linking and Embedding)		X	X
DCOM			X
Active X			X
Process and Systems Management			
BPR		X	X
Broad commercial business understanding		X	X
Knowledge management		X	X
Project Management		X	X
Systems analysis		X	X
Business analysis			X
E-commerce and Enterprise Resource Planning			
SAP	X	X	X
PeopleSoft	X	X	X
Oracle		X	X
JDEdwards			X
Security Systems			
CISSP*		X	X
E-commerce security		X	X
Network security		X	X
Risk Management			X
PKI			X
Geographic Information Systems			
MapInfo			X
ArchInfo			X
Datamining			
Crystal Reports		X	X
SAS		X	X
Microsoft Reporting Server			X
Other Specialisations			
Citrix	X	X	X
Oracle Financials		X	X
SMS Server		X	X
Vignette		X	X
OO.net		X	
Developer 2000			X

Axapta		x
Object oriented		x
Delphi	x	
