CISCO SYSTEMS

2006 CCIE Customer Feedback

Summary of Results

April 2006

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- Respondents this year represent a cross-section by track and by employer type, but are skewed slightly more towards candidates (as opposed to CCIEs) than last year (20% vs 13%).

- Among those intending to certify in the next twelve months, Security, Voice and R&S are nearly equal in overall share among respondents (28%, 26% and 26% respectively).

- Employers remain generally supportive of CCIE--83% of respondents say their employers value CCIE. Just over half of employers pay at least some of the exam costs and 75% offer some sort of incentive for achieving certification. Most common incentives are higher status and recognition at 54% and salary increases at 49%.

- Respondents see value in more flexible recertification options and in having some kind of CCIE Emeritus status.

- Common program suggestions include:

  - written exam questions that test knowledge, not ability to locate obscure facts in documentation

  - more trouble-shooting on lab

  - more availability of study materials, practice labs and equipment

Key Findings 1 of 3

- **Comparability**. Percentage of respondents who are candidates (as opposed to certified CCIEs) is somewhat greater than last year (20% vs. 13%) which affects comparability.

- **Intent.** Intent to certify has increased over last year (53% vs 42%) and appears strong, considering majority are already certified (80%).

- **Tracks.** Overall, interest in Security continues to appear strong, while Voice has grown to be as popular as R&S among respondents.

- CCIE R&S still top choice of those not yet certified (71%), but CCIE Voice is gaining popularity among the not-certified.

- Among those already certified, interest in CCIE Voice has grown and now outranks CCIE Security (46% to 35%).

- **Challenges.** Biggest challenge is still a busy work schedule. More folks bothered by exam changes this year (IPv6 possibly) and more by personal commitments.

- Candidates for CCIE Voice are most concerned about equipment access. Candidates employed by service providers least concerned about work schedule and difficulty of lab. Enterprise candidates most concerned about exam and travel costs and lack of employer support.

- **Drivers.** Relative ranking of motivations unchanged from prior year. Developing skills and personal satisfaction are strongest motivators.

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- **Incentives**. Higher status and more money remain the #1 (50%) and #2 (37%) most common employer incentives.

- **Employer Support**. Access to equipment has decreased over last year (41% vs. 59.2%). Employer-paid training (35% this year) and exam preparation (34%) may have decreased from last year (combined total of 54.4% last year).

- **Expenses.** Although concern about costs appears to have fallen, perceived average total cost to pursue CCIE has risen to US$9,050 from US$7,600.

- Trend continues for employees to pay all or some of the expenses of pursuing (66% this year, vs. 50% last year).

- **Value of CCIE.** Majority continue to report that employers value CCIE (83% this year and 81% last) and 'credibility with customers' is the reason most often cited (78%).

- **ISC(2).** Respondents are pretty evenly divided on plans to obtain CISSP certification.

- **New Tracks.** Ranking of importance for Network Mgmt, Optical and Wireless falls somewhere between 'somewhat important' and 'important' on average. Ranking for Network Design was lowest of tracks tested (2.05 = 'not very important'). This somewhat contradicts the strong interest in design shown in last year's survey.

- **Exam Preparation.** *Inadvertently captured only responses of those not pursuing certification--limiting usefulness*, however, self-study, equipment labs and practice exams still appear to be most popular preparation methods. (Used by 89%, 77% and 58% respectively.)

Key Findings 3 of 3

April 2006

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- **CCIE Assessor**. Most respondents aware of official CCIE practice lab and assessment (71% vs. 29% unaware). Candidates even more aware (84% vs. 71%).

- **Recertification.** Taking recert exams and presenting papers are two recert options that scored better than neutral among respondents.

- Voice CCIEs were more likely than others to prefer presenting a paper and less likely to want a recert exam.

- **Website Quality**. Use of website appears consistent and a bit stronger than last year , with at least 44% indicating they visit the site at least once per month (vs. 32% last year).

- Satisfaction with the CCIE website has improved across the board since last year.

- News/announcements and blueprints are the most popular website items.

- **Potential Benefits.** All suggestions were considered at least 'somewhat important' with leader being the gift certificate for Cisco Press.

- Voice CCIEs were more likely than others to value Cisco Press and SP CCIEs were more likely to value logo merchandise.

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CCIE Program; April 21, 2006

Methodology

- Survey administered online using vendor application.

- Link to survey emailed to 6000 randomly-selected CCIEs in program database and 3000 candidates who passed the written exam within last six months.

- Link to survey also placed on CCIE home page.

- Survey live from March 16 – April 10, 2006.

- Total of 1,402 participants (15.8% response vs. 35.5% last year)

  - 880 companies represented

  - 62 countries

Demographics Summary

- **Status:** Of total respondents:

  - **80% were CCIE (1,105)**
  - **20% were non-CCIE (284)**

  - 16% were Cisco employees
  - 84% were non-Cisco

- **Certification Process.** Among those pursuing certification this year:
  - 39% were preparing for the written
  - 13% had passed written
  - 24% were studying for lab
  - 23% had attempted lab already

- **Tracks.** CCIE tracks are represented similarly to total population (Figure 1):
  - 87% R&S
  - 17% Security
  - 9% Voice
  - 4% Service Provider
  - 3% other tracks, including Storage

- **Seniority, Geography, Employers.** Respondents came from all levels of seniority (Figure 2), a broad geographic spectrum (Slide 7), and all major employer types (Figure 3).

Demographics: CCIE status

All Respondents

Figure 1 (n=1389, multiple responses accepted)
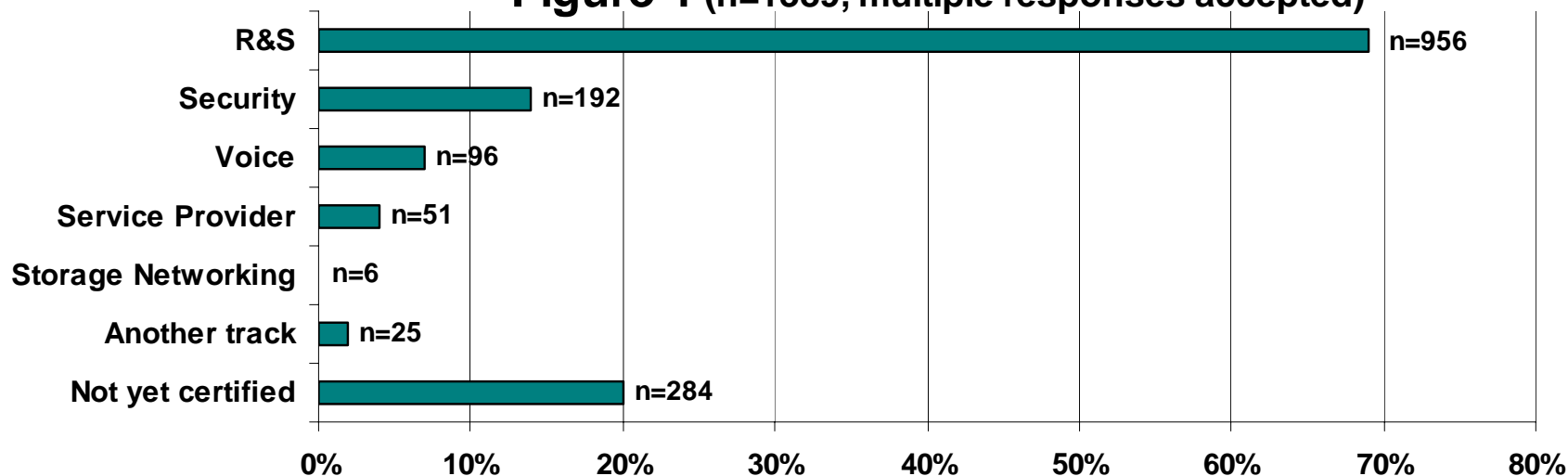
	2006	2004
Respondents with R&S	69%	99%
Respondents with other tracks	47%	28%

Demographics: CCIE Seniority

All Respondents

Figure 2
(n=1,105)

10+ years
6%

Between 5-10 years
23%

< 2 years
35%

Between 2-5 years
36%
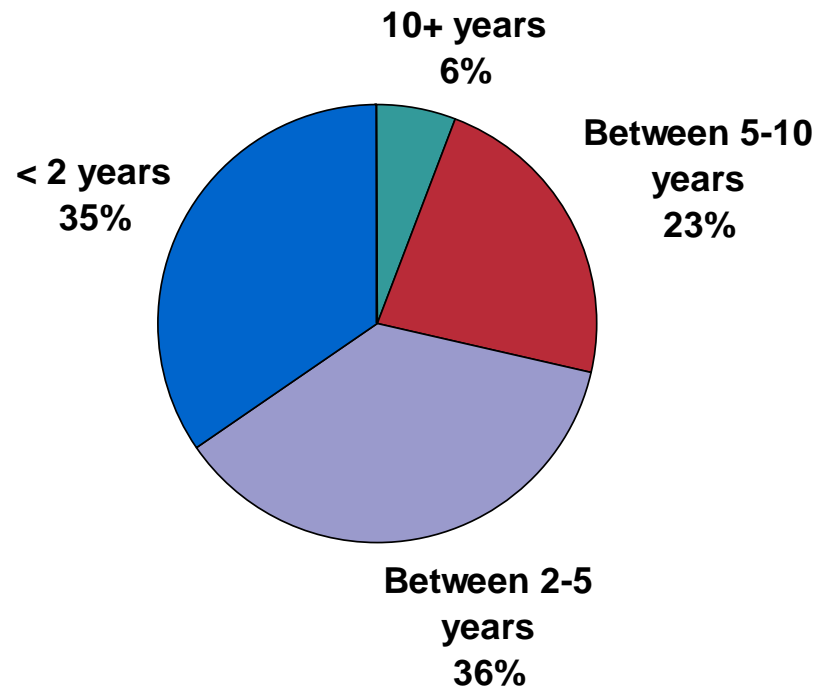
Respondents are skewed somewhat towards the newly certified.

Demographics: Geography

Americas: 501
- Canada; 38
- United States; 463

Emerging Markets: 118
- Argentina; 6
- Brazil; 14
- Bulgaria; 1
- Colombia; 2
- Costa Rica; 1
- Croatia; 6
- Czech Republic; 3
- Egypt; 2
- Hungary; 4
- Iran; 1
- Israel; 2
- Jordan; 1
- Kuwait; 3
- Latvia; 1
- Lebanon; 4
- Lithuania; 1
- Mexico: 5
- Pakistan; 2
- Panama; 1
- Poland; 10
- Romania; 3
- Russia; 13
- Saudi Arabia; 6
- Slovakia; 1
- Slovenia; 1
- South Africa; 11
- Turkey; 2
- U.A.E.; 10
- Ukraine; 2
- Venezuela; 1

Europe: 266
- Austria; 4
- Belgium; 13
- Denmark; 12
- Finland; 3
- France; 22
- Germany; 54
- Greece; 6
- Iceland; 2
- Ireland; 2
- Italy; 18
- Netherlands; 17
- Norway; 4
- Portugal; 10
- Spain; 5
- Sweden; 11
- Switzerland; 20
- United Kingdom; 63

Asia Pacific: 247
- Australia; 33
- China; 94
- Japan; 44
- India; 23
- Indonesia; 4
- Korea; 14
- Malaysia; 4
- New Zealand; 5
- Philippines; 2
- Singapore; 11
- Sri Lanka; 1
- Taiwan; 7
- Thailand; 5

Demographics: Employers

All Respondents

Figure 3
(n=1,142)

Other
8%

A small to medium sized
business
5%

A consulting firm or
systems integrator
39%

An enterprise company
16%

A service provider
16%

Cisco Systems
16%
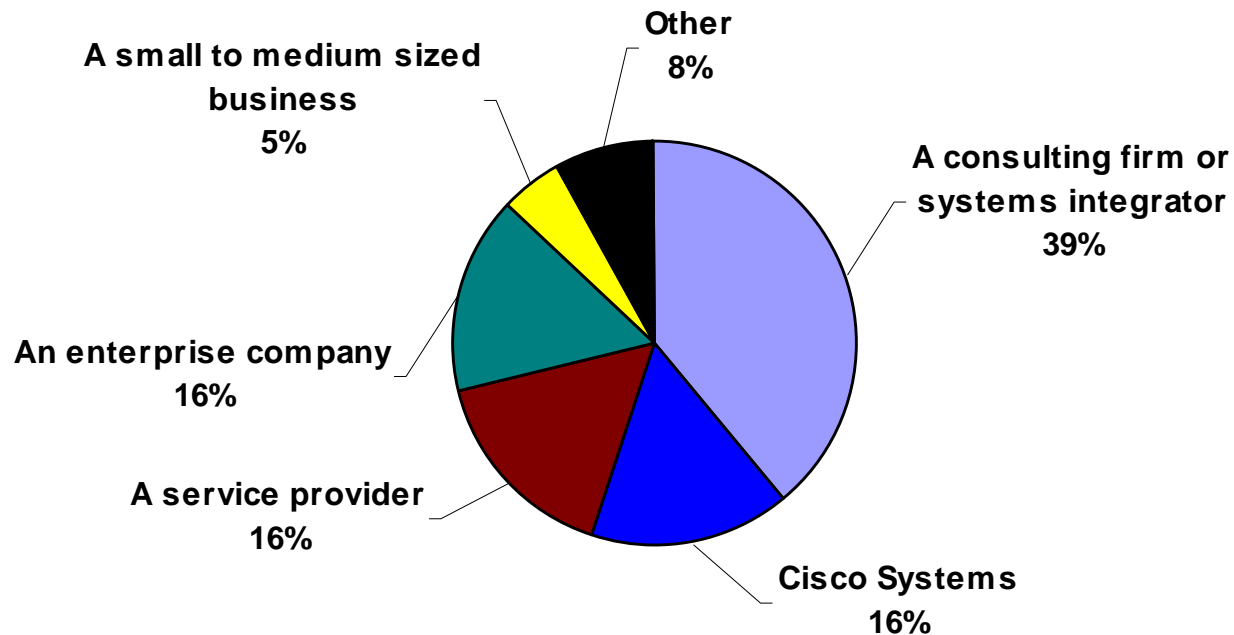
Demographics: Certification Status

Among those pursuing certification

Figure 4; (n=694)

**Passed the written exam,
but not yet studying for lab
13%**

**Considering, or preparing
for, written exam
39%**

**Attempted lab at least once
already; currently preparing
for subsequent attempt
23%**

**Actively studying for first
lab exam attempt
24%**
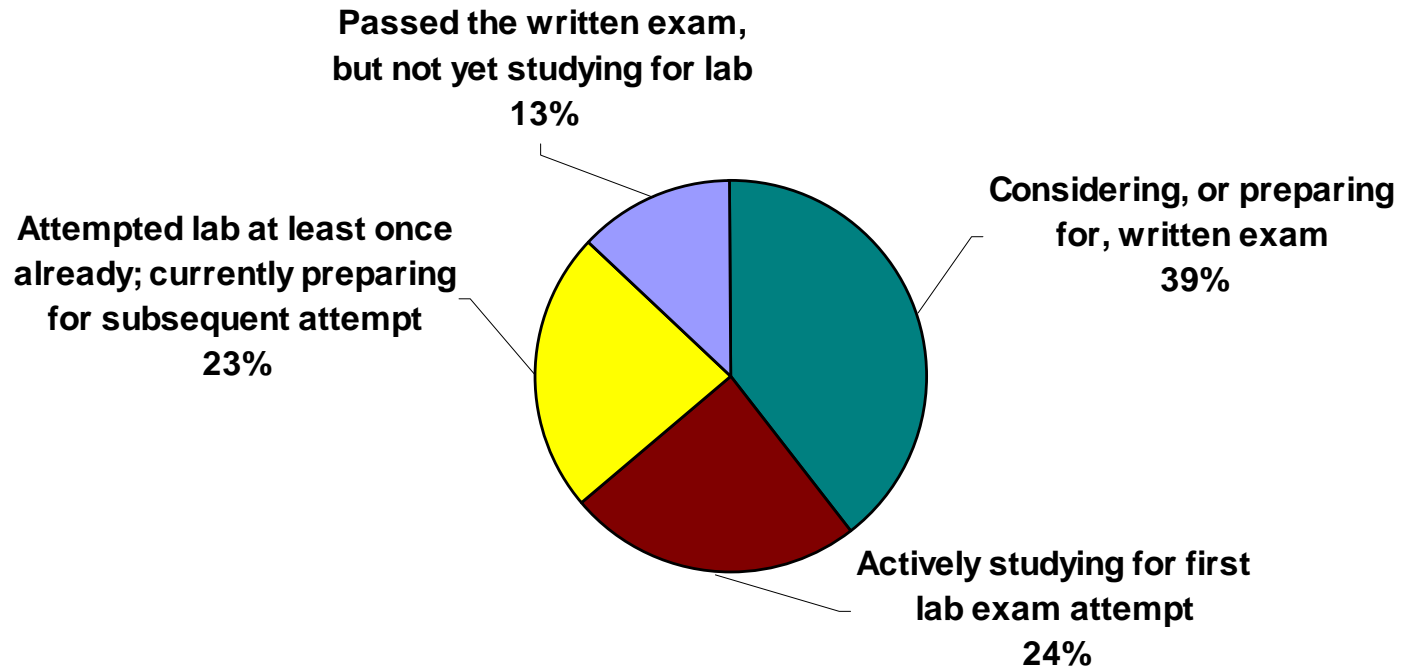
Pursuing CCIE in next 12 months:

All Respondents

**FY 2004
(n=2,383)**

Figure 5
(n=1,351)

Not sure
21%

No Answer
2%

Not sure
23%

Yes
42%

Yes
53%

No
33%

No
26%
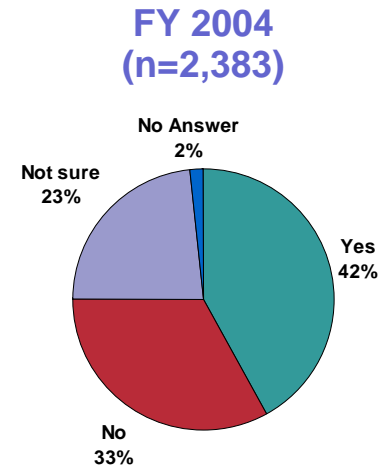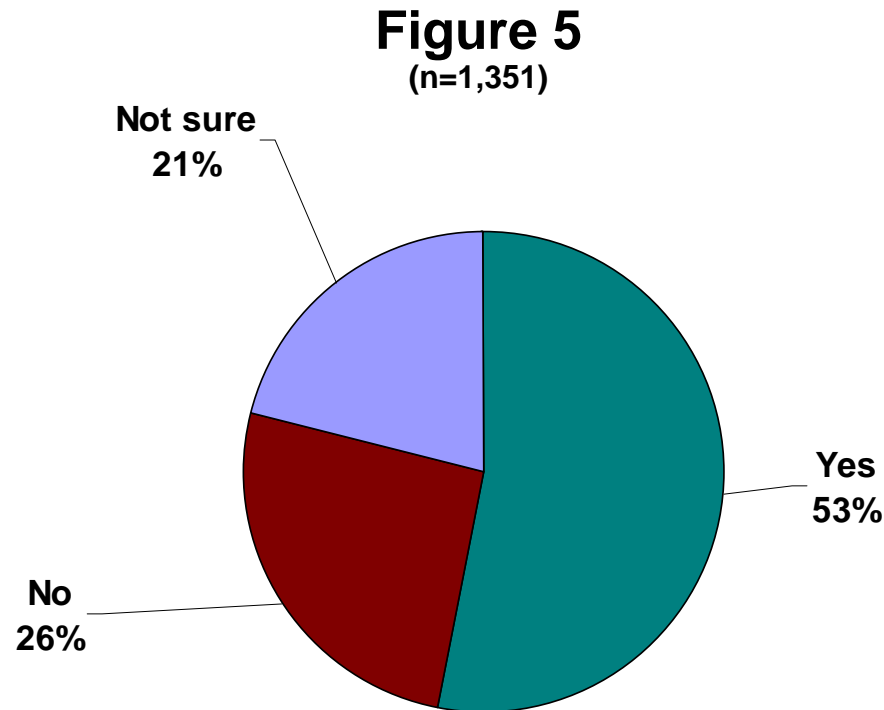
Intent has increased over last year (53% vs 42%) and appears strong, considering majority are already certified (80%).

Certifications being pursued:

Among all those pursuing certification

Figure 6: **(n=716), multiple responses allowed**

Certification	Value
CCIE Security	n=255
CCIE Voice	n=245
CCIE R&S	n=245
CCIE SP	n=151
CCIE Storage	n=31

Total responses = 255+245+245+151+31= 927

* **Thirty percent of responses represent multiple answers**

0% 5% 10% 15% 20% 25% 30% 35% 40%
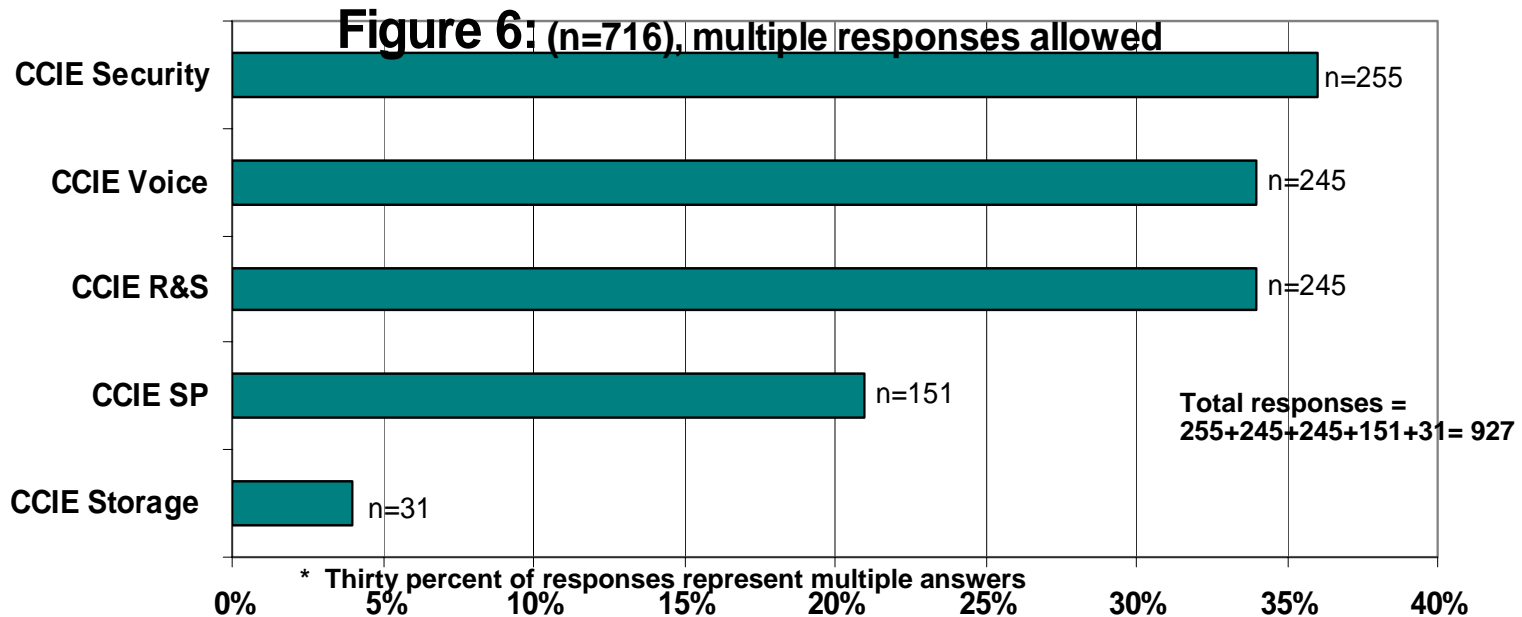
Interest in Security appears strong, while Voice and R&S have relatively equal interest among respondents.

Certifications being pursued:
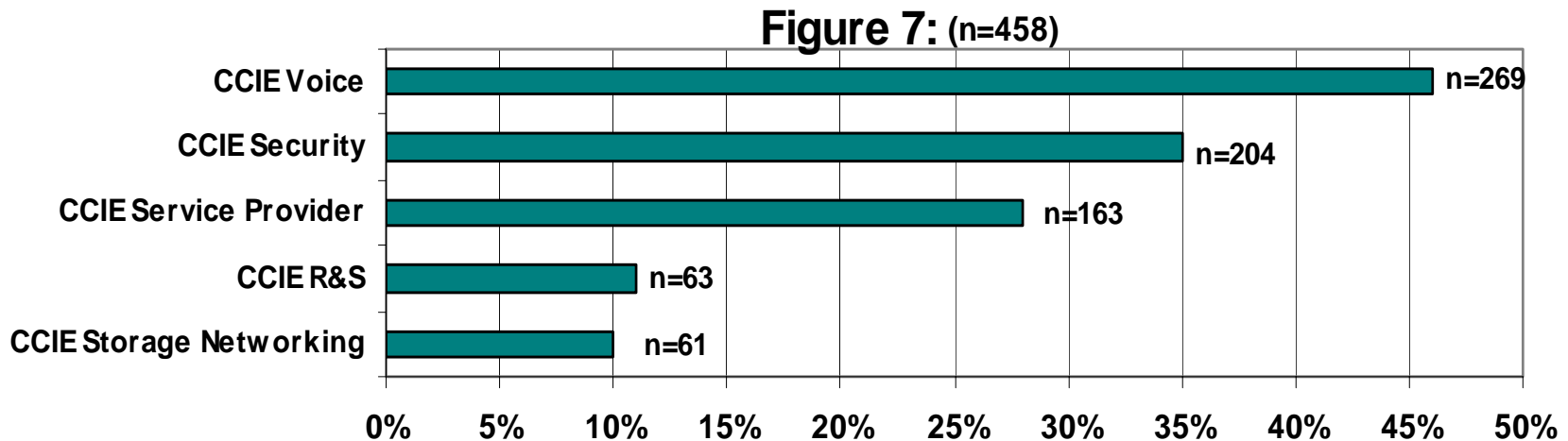
Among those already certified

Figure 7: (n=458)

Among those already certified, interest in CCIE Voice has grown and now outranks CCIE Security (46% to 35%).

Certifications being pursued:

Among those not yet certified

Figure 8 (n=258)

Change from LY for R&S	↓ 12%
Change from LY for Voice	↑ 8%

- CCIE R&S — n=183
- CCIE Security — n=70
- CCIE Voice — n=57
- CCIE Service Provider — n=24
- CCIE Storage Networking — n=3

Axis: 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8
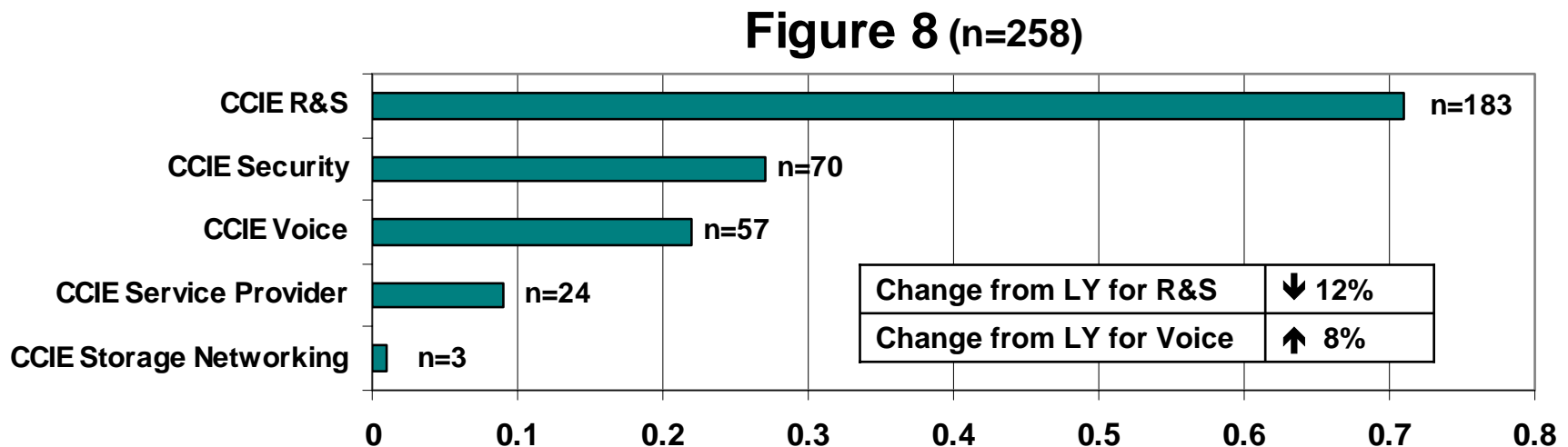
CCIE R&S still top choice of those not yet certified (71%).

Challenges pursuing CCIE:

Among those pursuing certification

Figure 9: (n=671, multiple responses allowed)

Challenge	n=	2004
Busy work schedule	n=502	24.6%
Busy/other commitments	n=334	12.1%
Access to lab equipment	n=324	17.9%
Finding practice labs	n=244	N/A
Difficulty of lab exam	n=239	15.2%
Exam and travel costs	n=226	11.1%
Changes to lab exams	n=156	5.6%
Lack of employer support	n=146	6.1%
Lack of training courses	n=1111	7.4%
Other	n=45	N/A

0% 10% 20% 30% 40% 50% 60% 70% 80%
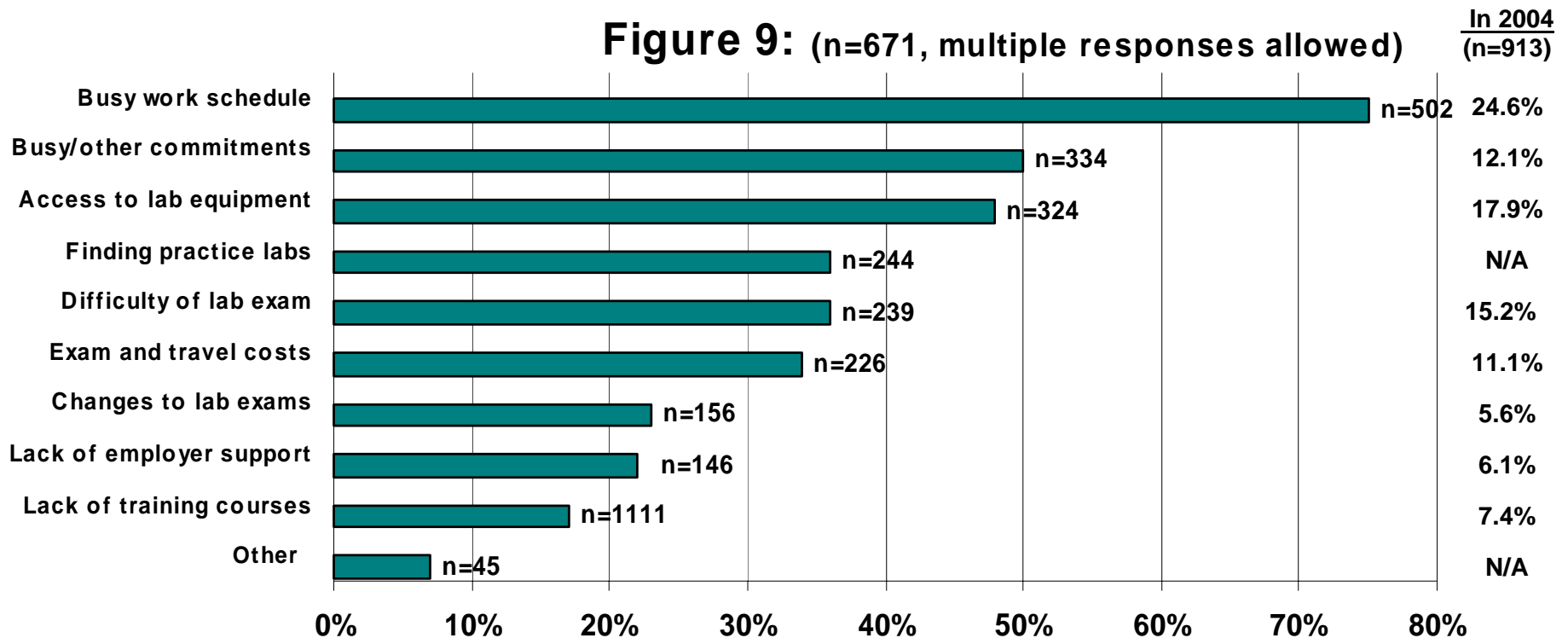
Number one challenge is still busy work schedule. More folks bothered by exam changes this year (IPv6 possibly) and more are also affected by personal commitments.

Challenges pursuing CCIE:

Selected responses, <u>cross-tabulated by track</u>

	CCIE R&S	CCIE Security	CCIE Srvc Prv	CCIE Storage	CCIE Voice	Average
Busy work schedule	72%	76%	72%	68% (19)	75%	75%
Lack of relevant training courses	13%	15%	21%	32% (9)	18%	17%
Availability of practice labs	30%	35%	43%	46% (13)	40%	36%
Access to lab equipment	42%	50%	45%	61% (17)	58% (135)	48%
Personal commitments	45%	48%	48%	61% (17)	52%	50%

Candidates for CCIE Voice are most concerned about equipment access.

Other tracks not significantly different from overall, excepting storage with low number of respondents.

Challenges pursuing CCIE:

Selected responses, <u>cross-tabulated by employer</u>

	Cisco Systems (87)	Service provider (87)	Conslt, Sys Intg (236)	Enter-prise (81)	Small/ med bus (33)	Average
Busy work schedule	77%	63% (55)	77%	83%	70%	75%
Exam and travel costs	13% (11)	36%	36%	43% (35)	42%	34%
Difficulty of lab exams	38%	26% (23)	35%	42%	58% (19)	36%
Lack of employer support	9% (8)	29%	18%	32% (26)	24%	22%

Candidates employed by service providers least concerned about work schedule and difficulty of lab.

Enterprise candidates most concerned about exam and travel costs and lack of employer support. Small/med business candidates more concerned about difficulty of lab.

Concerns about CCIE certification:

Among those not pursuing certification this year

Figure 10: **(n=624, multiple responses allowed)**

	In 2004 (n=1,308)
Already CCIE certified — n=360	**57%**
Lack of time to study — n=325	**57%**
Lack of employer support — n=170	**29%**
Lack of personal funds — n=95	**17%**
Not yet ready — n=49	**4%**
Not relevant to my goals — n=27	**5%**
Other — n=50	**N/A**
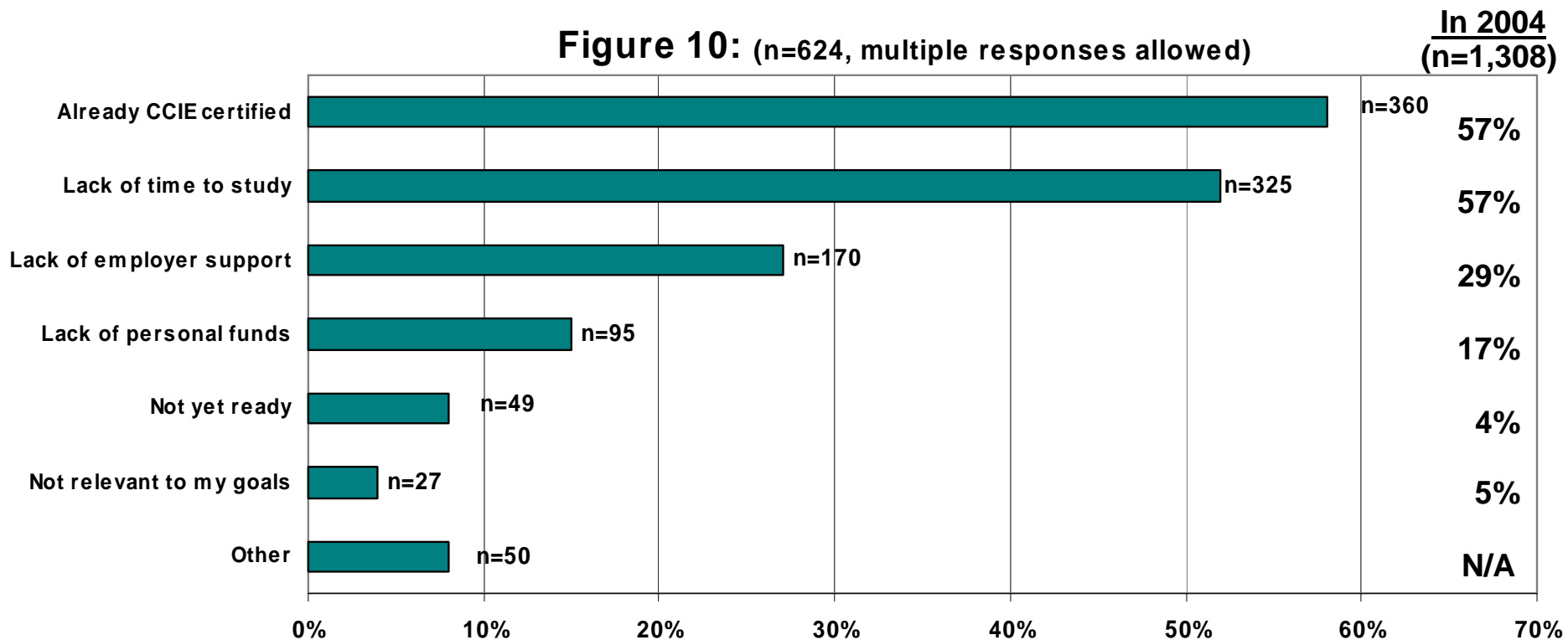
Total CCIE expenses (w/o travel):

Among those pursuing certification

**FY 2004
(n=921)**

Figure 11; (n=661)

More than $15K
7%

$10K - $15K
12%

$5K - $10K
36%

0 - $5K
45%

$10K-$15K
7%

More than
$15K
3%

$5K-$10K
29%

0-$5K
61%

Although concern about costs appears to have fallen (Figure 10), average perceived total cost to pursue CCIE has risen to US$9,050 from US$7,600.

Motivation to pursue CCIE:

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Among those pursuing certification

Figure 12
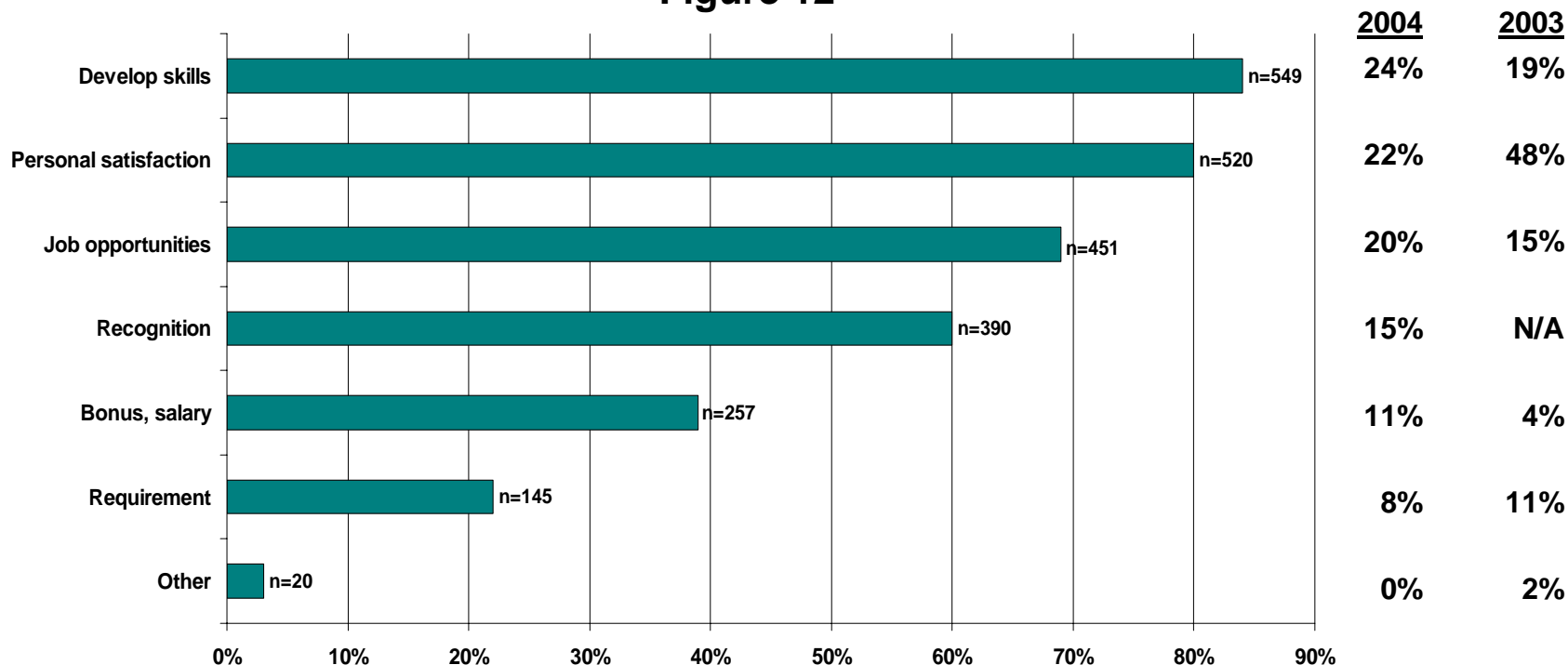
	2004	2003
Develop skills	24%	19%
Personal satisfaction	22%	48%
Job opportunities	20%	15%
Recognition	15%	N/A
Bonus, salary	11%	4%
Requirement	8%	11%
Other	0%	2%

Chart bar values:
- Develop skills: n=549
- Personal satisfaction: n=520
- Job opportunities: n=451
- Recognition: n=390
- Bonus, salary: n=257
- Requirement: n=145
- Other: n=20

Relative ranking of motivations unchanged from prior year. Developing skills and personal satisfaction are strongest motivators.

Value to employers:

Among non-Cisco respondents

Figure 13

(n=955)
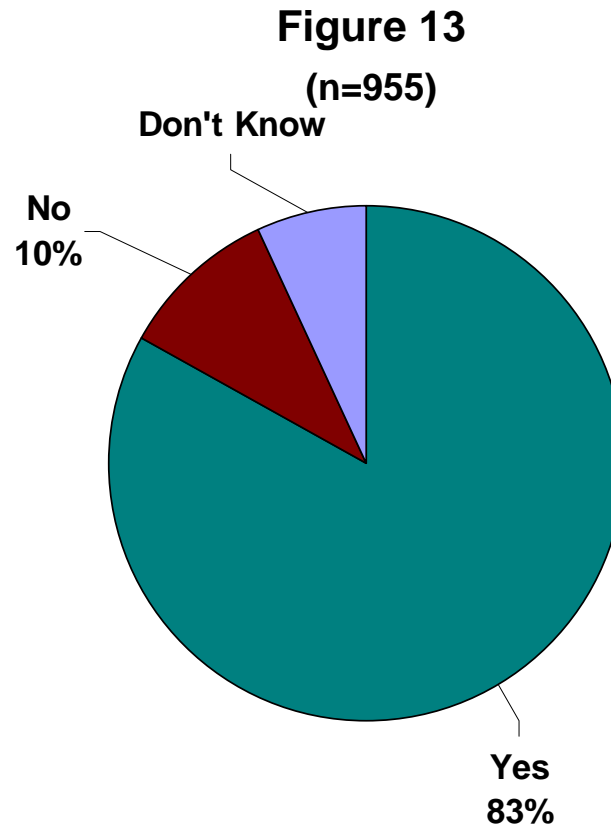
FY 2004 (n=2,383)
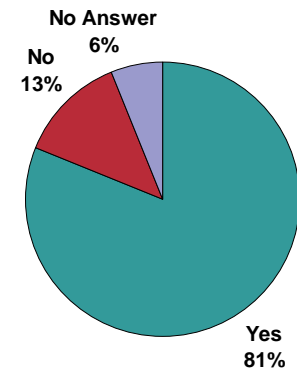
Specific value of CCIEs:

Among all respondents

Figure 14; (n=1,042; multiple responses allowed)

	2004 n=1921	2003 n=400
Credibility with customers — n=812	78.8%	20.8%
Superior technical support — n=750	70.6%	56.1%
Better understanding of Cisco products — n=691	67.0%	11.6%
Satisfy partner requirement — n=528	51.1%	1.7%
Other — n=21	3.9%	9.8%

0%   10%   20%   30%   40%   50%   60%   70%   80%   90%
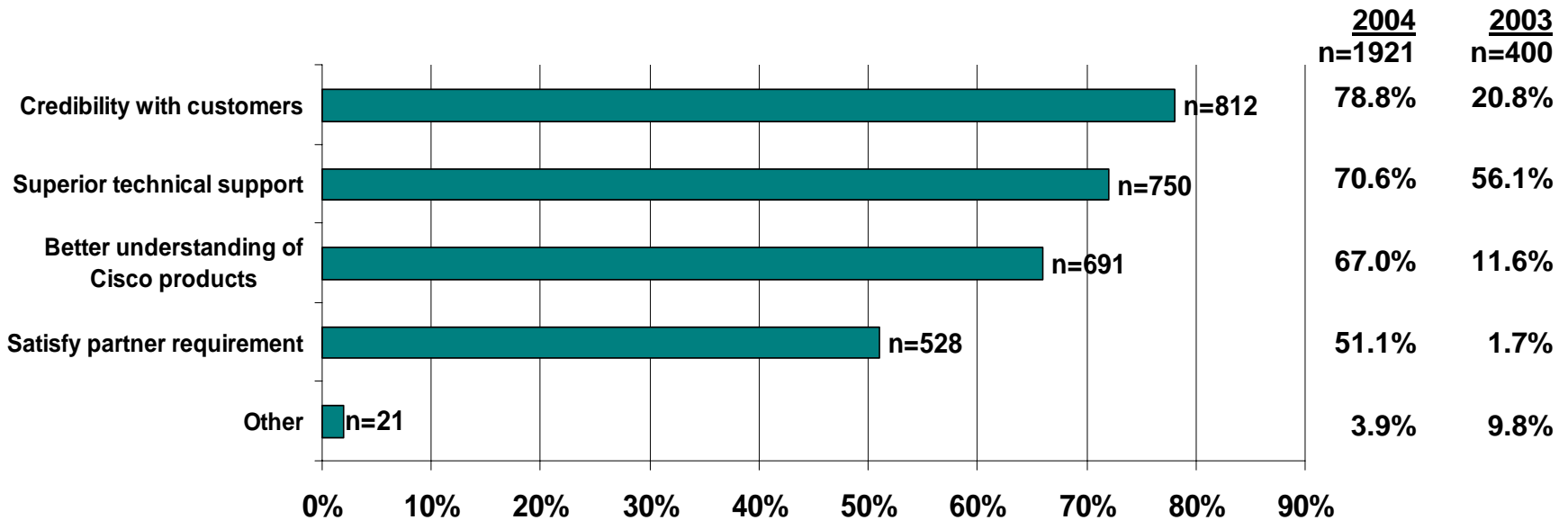
No change in relative ranking for value of CCIE.

All Respondents

Figure 15: (n=1,236, multiple responses allowed)

	2004	2003
Status and recognition — n=614	54%	n/a
Salary increases — n=454	*49%	*38%
Promotions, new assignments — n=385	32%	15%
Bonuses — n=287	*	*
Required for position — n=240	24%	n/a
Other — n=36	6%	n/a
None — n=340	n/a	n/a

* **Previously combined**

0%   10%   20%   30%   40%   50%   60%
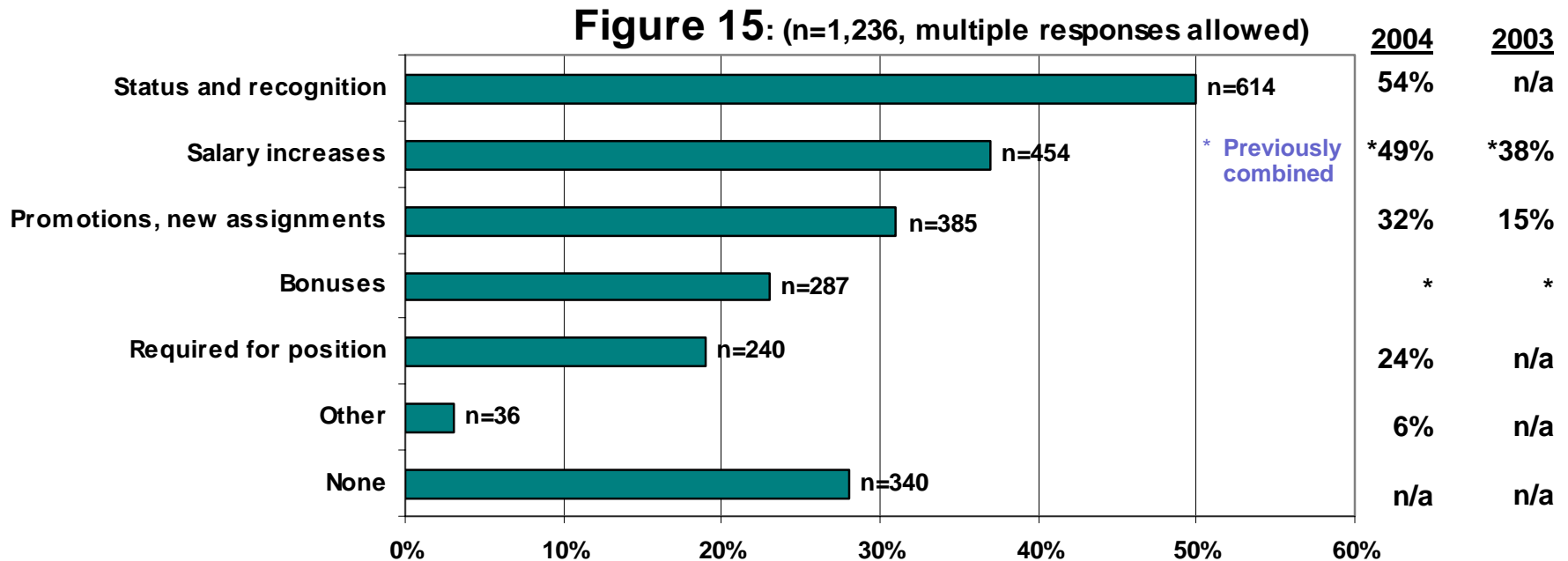
Higher status and more money remain the #1 and #2 incentives to earn CCIE.

(New response options will allow us to track changes in salary separately from bonuses and also the number of employers who do not offer any incentives.)

Employer support:

Among non-Cisco respondents

Table 16; (n=1,257; multiple responses allowed)

*/ ** Previously combined

	2006 1257 responses	**2004** 1985 responses	**2003** 330 responses
Pay for exams	56%	n/a	n/a
*Pay for time off to take exam	43%	*37.6%	* 22.7%
Provide equipment access for study	41%	59.2%	44.5%
**Pay for training	35%	** 54.4%	** 40.3%
**Pay for exam prep or practice lab	34%	**	**
*Pay for time off to study	30%	*	*
None	18%	n/a	n/a
Not sure	8%	n/a	n/a
Other, self-employed, unemployed	4%	6.4%	n/a

Employer-paid training and exam preparation, and equipment access appears to have decreased.

Paying for CCIE:

Among non-Cisco respondents

**Figure 17
(n=491)**
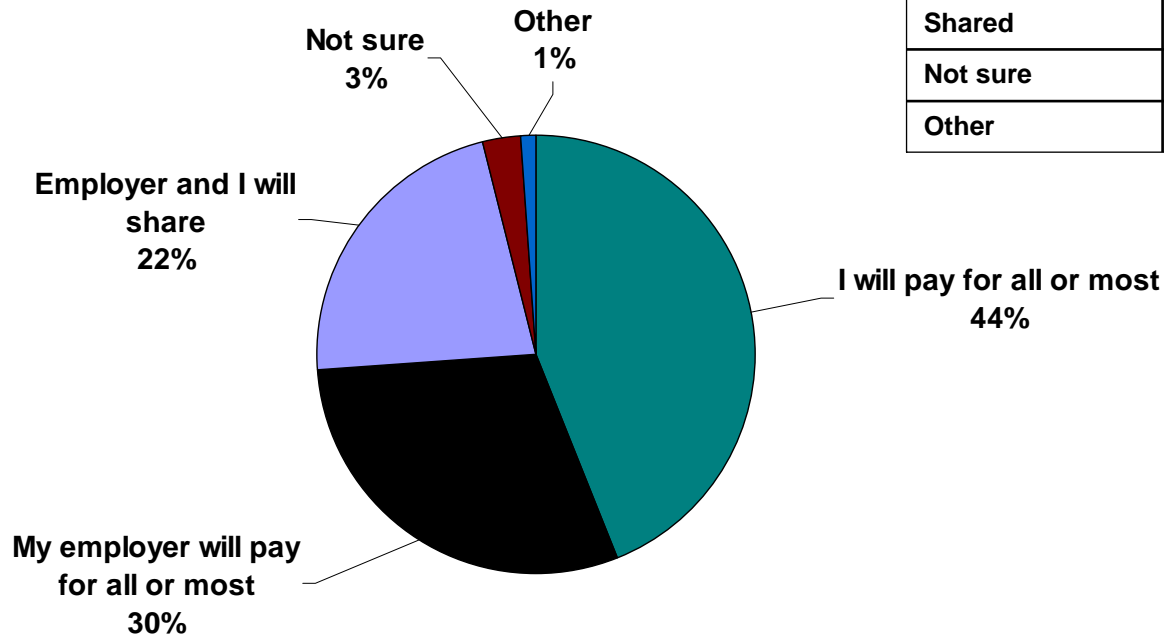
	2004 n=921	2003 n=156
Mostly candidate	45%	42%
Mostly employer	33%	29%
Shared	17%	25%
Not sure	4%	4%
Other	1%	0%

**Other
1%**

**Not sure
3%**

**Employer and I will
share
22%**

**I will pay for all or most
44%**

**My employer will pay
for all or most
30%**

Employees still very likely to pay all or some of CCIE expenses.

Lack of support:

Figure 18: (n=121, multiple responses allowed)

	2004 n=314	2003 n=95
No value — n=71	50.5%	46.3%
Rise in salary — n=36	44.3%	8.4%
Training and exam costs — n=34	97.4%	22.1%
Potential loss of employee — n=27	45.5%	5.3%
Already partner — n=25	44.7%	n/a
Time lost on job — n=21	68.2%	6.3%
Other — n=21	n/a	n/a

0%   10%   20%   30%   40%   50%   60%   70%
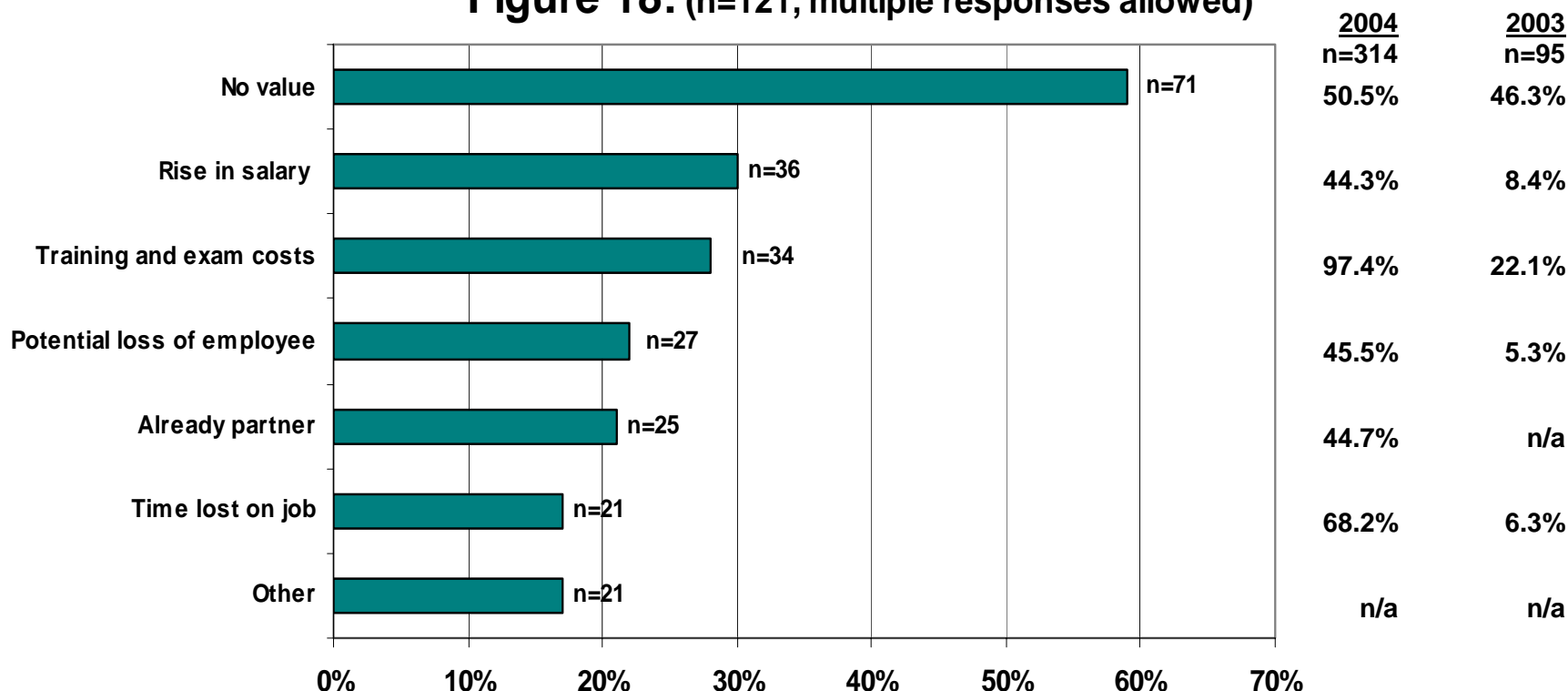
Among small number of employers who don't support CCIE, lack of perceived value remains a concern. Cost appears less of an issue than last year.

Importance of topics for CCIE R&S:

Figure 19; (n=871)

		2004 n=1980	2003 n=~400
Security	3.96	n/a	n/a
IP Multicast	3.84	3.86	3.75
Network management	3.55	3.50	3.45
MPLS-VPN	3.49	n/a	3.45
Wireless	3.40	3.55	n/a

1	2	3	4	5
Not at all Important	Not Very Important	Somewhat Important	Important	Extremely Important
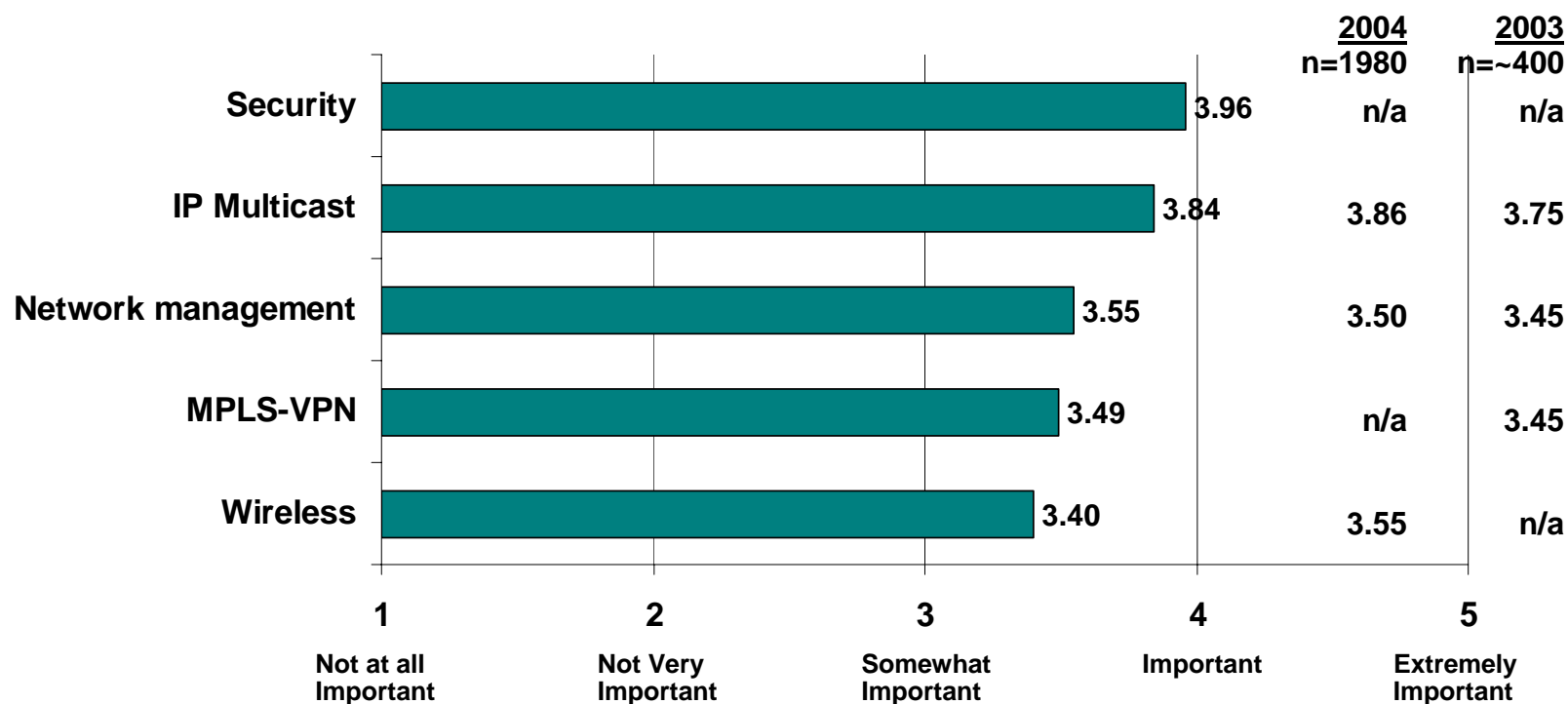
Importance of topics for Security:

Figure 20; (n=318)

	April 2006	2004 n=851	2003 n=~400
Cisco Security Applications	3.87	3.51	n/a
Cisco Adaptive Sec Appliance	3.86	n/a	n/a
Cisco Self-defending Netwk	3.80	3.45	n/a
Wireless Security	3.79	4.03	n/a
Live DoS Attacks	3.71	3.68	4.00
Catalyst 6500 modules	3.69	3.74	n/a
DDoS Mitigation/ Anomaly Detector	3.68	3.51	n/a
Voice Security	3.54	3.69	n/a
Cisco AVS	3.39	n/a	n/a
CiscoWorks VPN/ VMS	3.33	3.43	n/a
Velocity System	3.11	n/a	n/a

1	2	3	4	5
Not at all Important	Not Very Important	Somewhat Important	Important	Extremely Important

(ISC)2 Security Certification:

All respondents who are certified or are planning to be certified in 12 months.

**Figure 21
(n=318)**

**Yes, currently hold CISSP
18%**

**Yes, currently hold SSCP
1%**

**No plans to pursue any of
these certifications
47%**

**May pursue, or planning to
pursue an (ISC)2
certification in the future
34%**
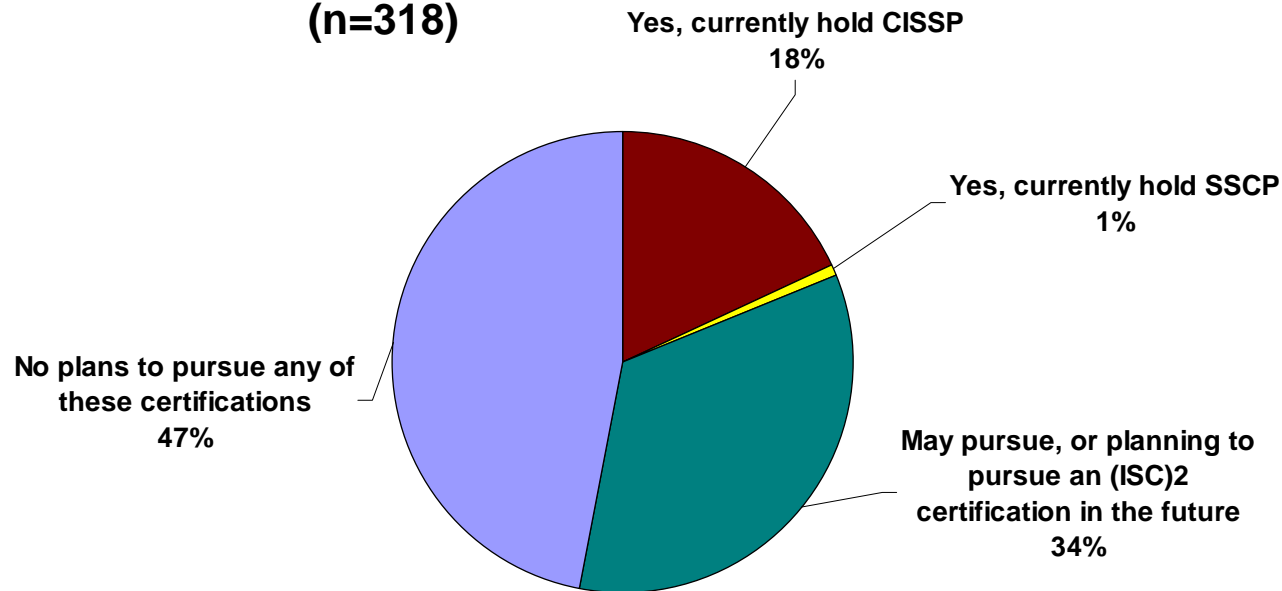
**Respondents are pretty evenly divided on obtaining CISSP
certification. SSCP is not of interest to our audience.**

Importance of (ISC)2's CBK?

All respondents who are certified or are planning to be certified in 12 months.

Table 22
(n=317)

5.0	4.0	3.0	2.0	1.0	0
Very important	Somewhat important	Neither important nor unimportant	Somewhat unimportant	Unimportant	Don't know
19%	32%	16%	10%	9%	14%

Median score on this question was 3.65—between 'somewhat important' and 'neither important nor unimportant'.

Importance of topics for CCIE SP:

All Respondents Certified or Planning to Be Certified in SP

Figure 23; (n=145)

In 2004
(n=352)

Topic	April 2006	In 2004
High availability	4.28	4.22
Traffic engineering	4.24	4.25
L2 VPN	4.07	3.86
SP Security	4.04	N/A
SP Multicast	3.96	3.93
IPv6	3.68	3.66
SP Policy Management	3.63	N/A
IOS XR	3.41	N/A
ATM	3.32	3.39
Call Session Control	3.26	N/A
Service Control Engine	3.21	N/A
BRAS/SSG	3.16	N/A

1	2	3	4	5
Not at all Important	Not Very Important	Somewhat Important	Important	Extremely Important
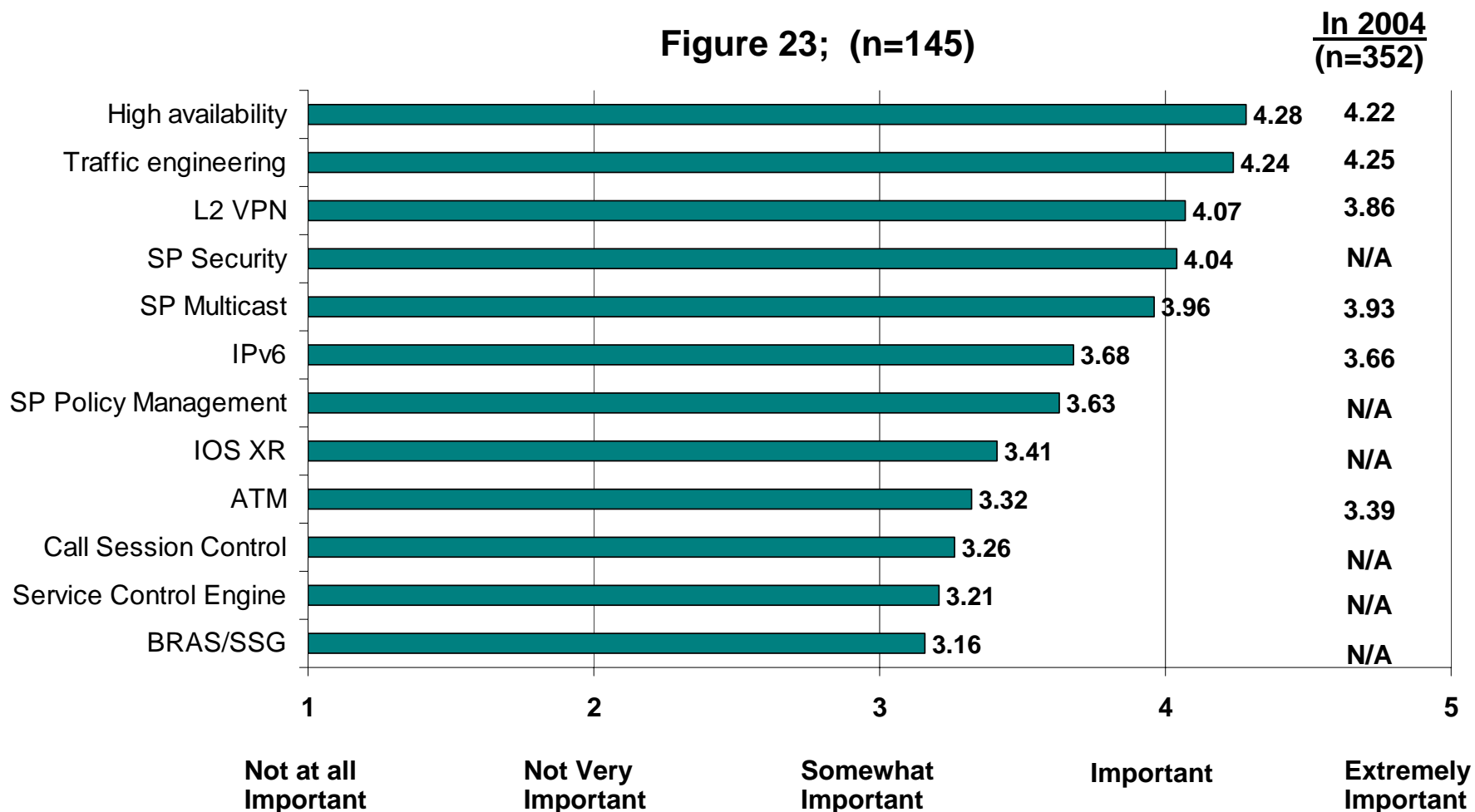
Importance of topics for CCIE Voice:

All Respondents Certified or Planning to Be Certified in Voice

Figure 24; (n=232)

In 2004
(n=570)

Topic	2006	In 2004
Voice Troubleshooting	4.12	N/A
Voice Security	4.06	4.10
Video	3.81	3.63
Meeting Place	3.51	3.04
SIP	3.86	3.82
Add'l Voice Appl Servers	3.77	3.53
Add'l CM or Unity Servers	3.45	3.86

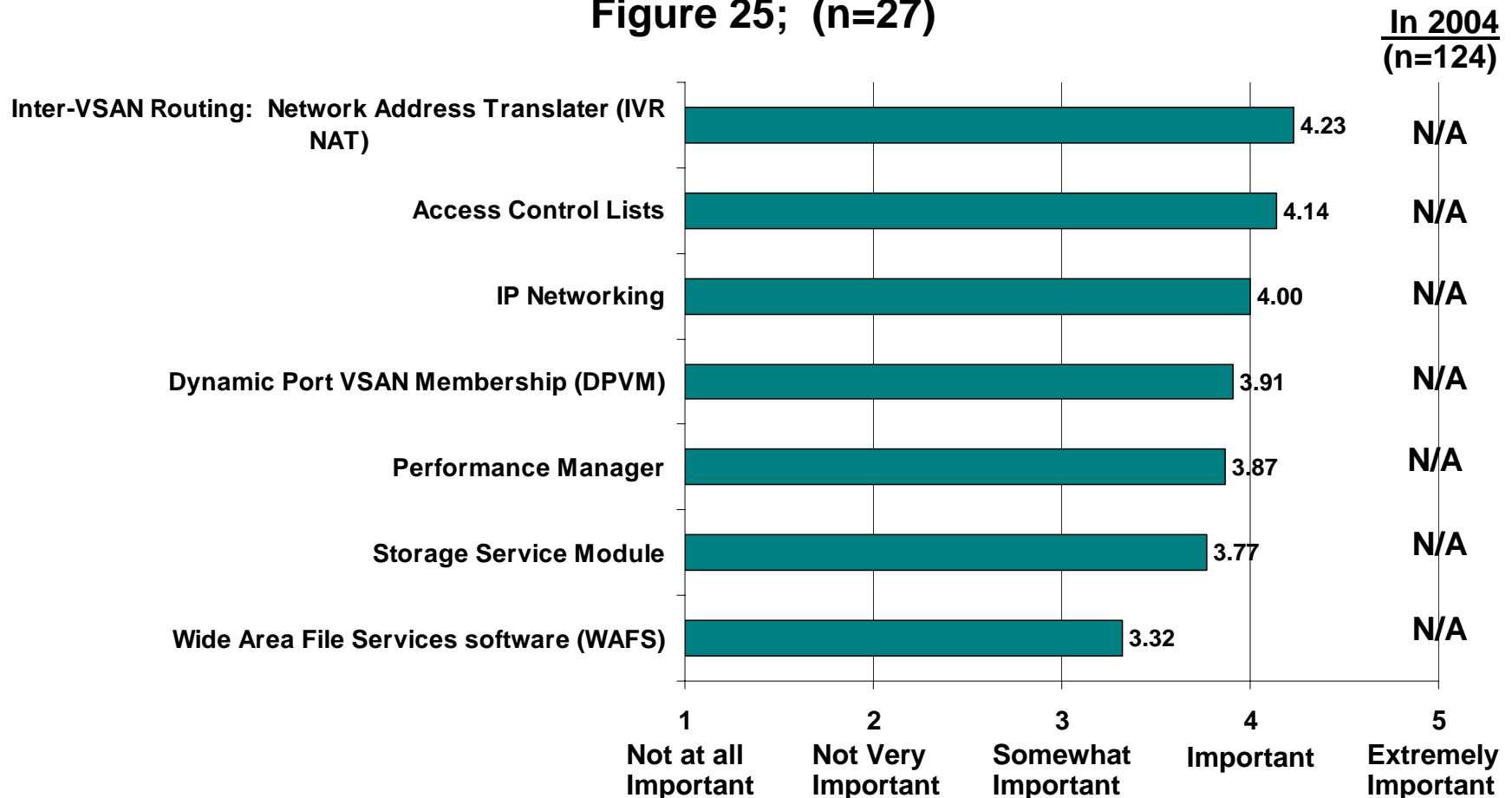| 1	2	3	4	5
Not at all Important	Not Very Important	Somewhat Important	Important	Extremely Important
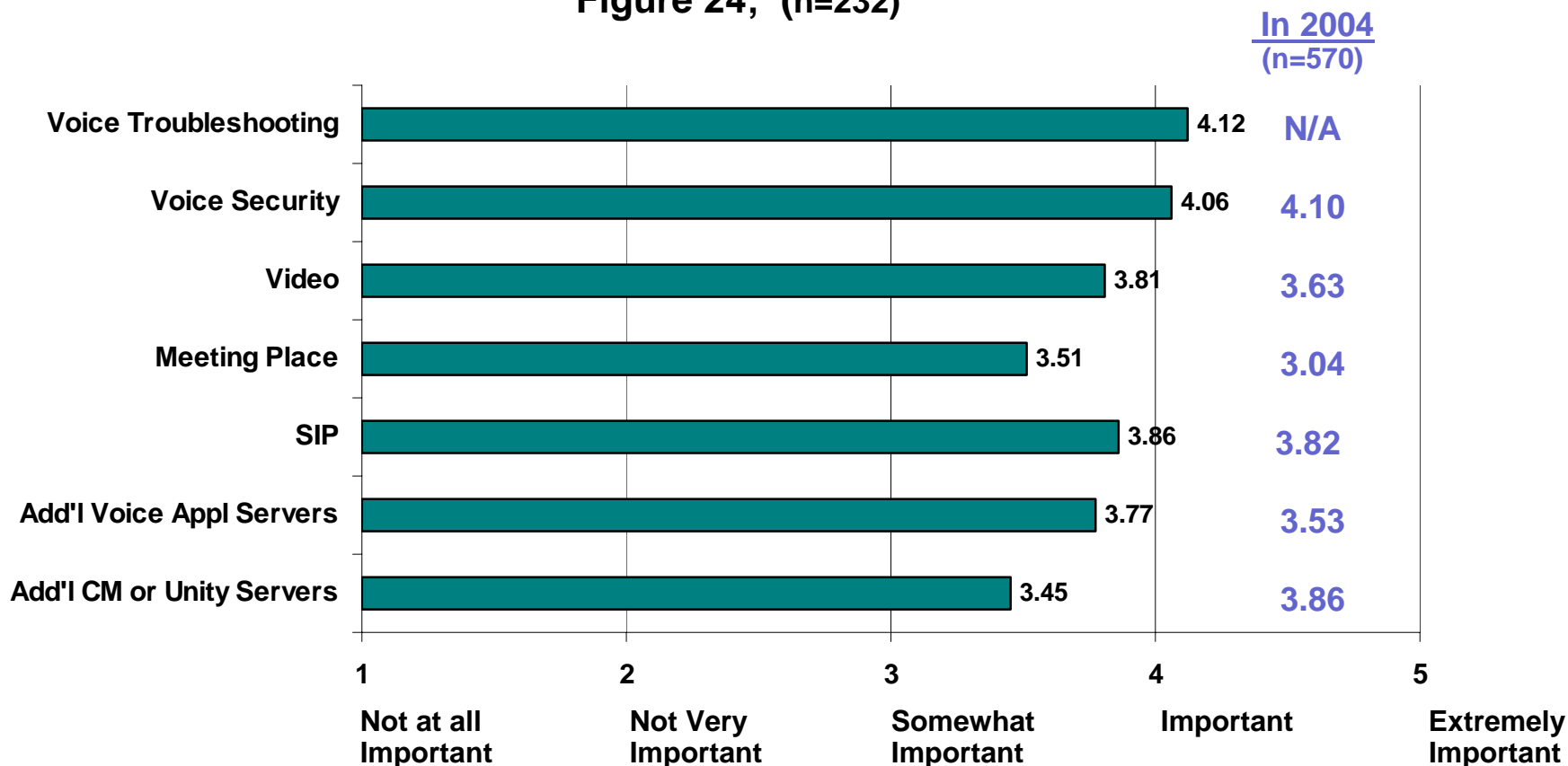
Importance of topics for CCIE Storage: April 2006

All Respondents Certified or Pursuing Storage Certification

Figure 25; (n=27)

In 2004 (n=124)

Topic	Rating	In 2004 (n=124)
Inter-VSAN Routing: Network Address Translater (IVR NAT)	4.23	N/A
Access Control Lists	4.14	N/A
IP Networking	4.00	N/A
Dynamic Port VSAN Membership (DPVM)	3.91	N/A
Performance Manager	3.87	N/A
Storage Service Module	3.77	N/A
Wide Area File Services software (WAFS)	3.32	N/A

1	2	3	4	5
Not at all Important	Not Very Important	Somewhat Important	Important	Extremely Important

Importance of potential CCIE tracks: April 2006

All Respondents

Figure 26; (n=1,168)

Track	Rating
Network Management	3.49
Optical Networking	3.38
Wireless Networking	3.34
LAN Switching	2.68
Networking Design	2.05

1	2	3	4	5
Not at all Important	Not Very Important	Somewhat Important	Important	Extremely Important
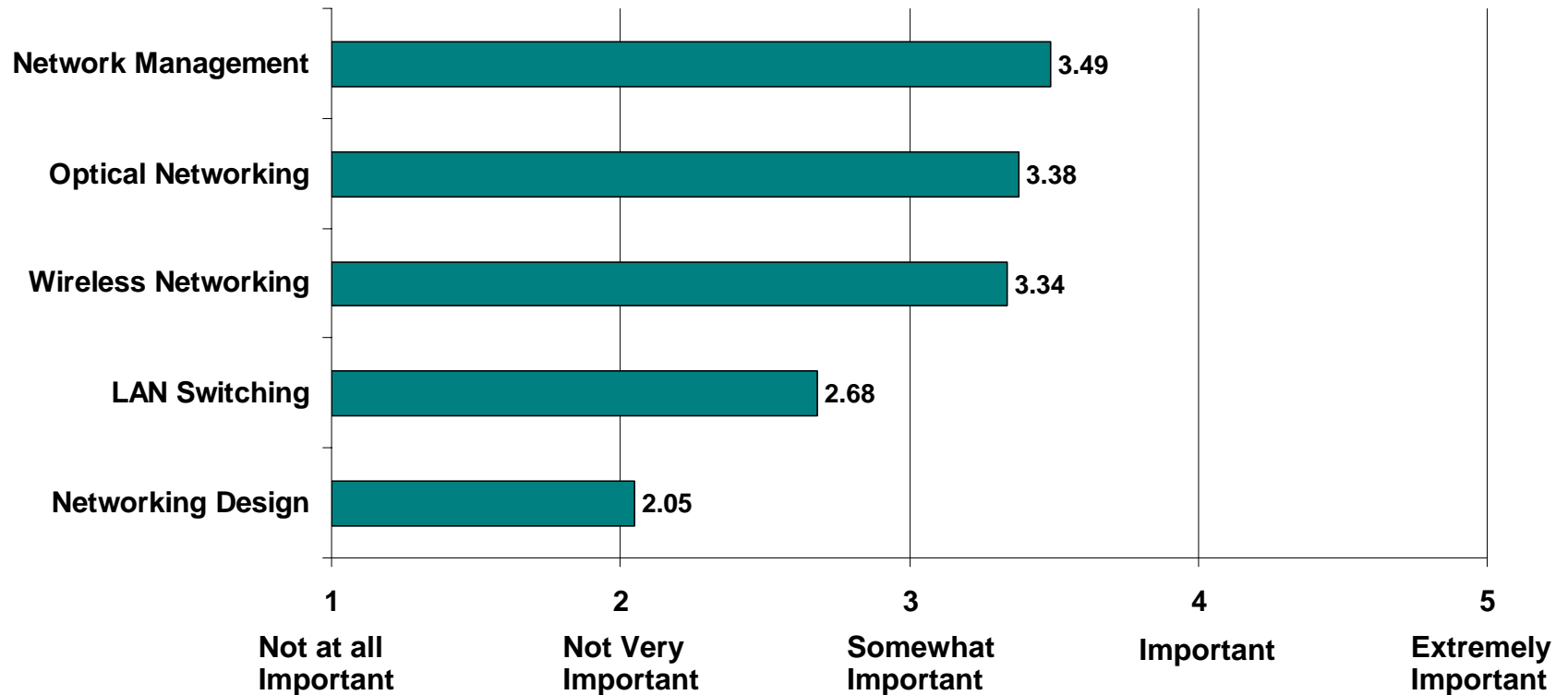
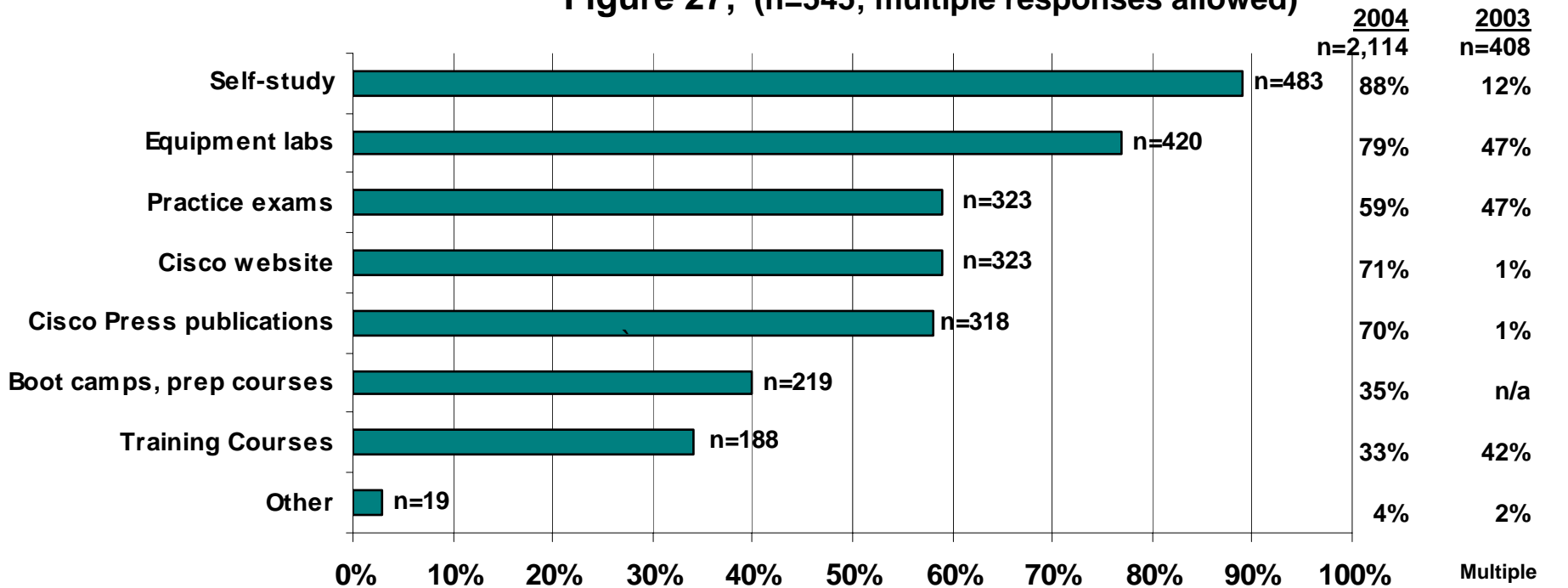# Preferred preparation methods:

Respondents not pursuing or unsure about certification in the next 12 months

Figure 27; (n=545; multiple responses allowed)

	2006	2004 n=2,114	2003 n=408
Self-study	n=483	88%	12%
Equipment labs	n=420	79%	47%
Practice exams	n=323	59%	47%
Cisco website	n=323	71%	1%
Cisco Press publications	n=318	70%	1%
Boot camps, prep courses	n=219	35%	n/a
Training Courses	n=188	33%	42%
Other	n=19	4%	2%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Multiple responses were not permitted in 2003.

Collection error prevents comparison of results with last year, though trends appear similar.

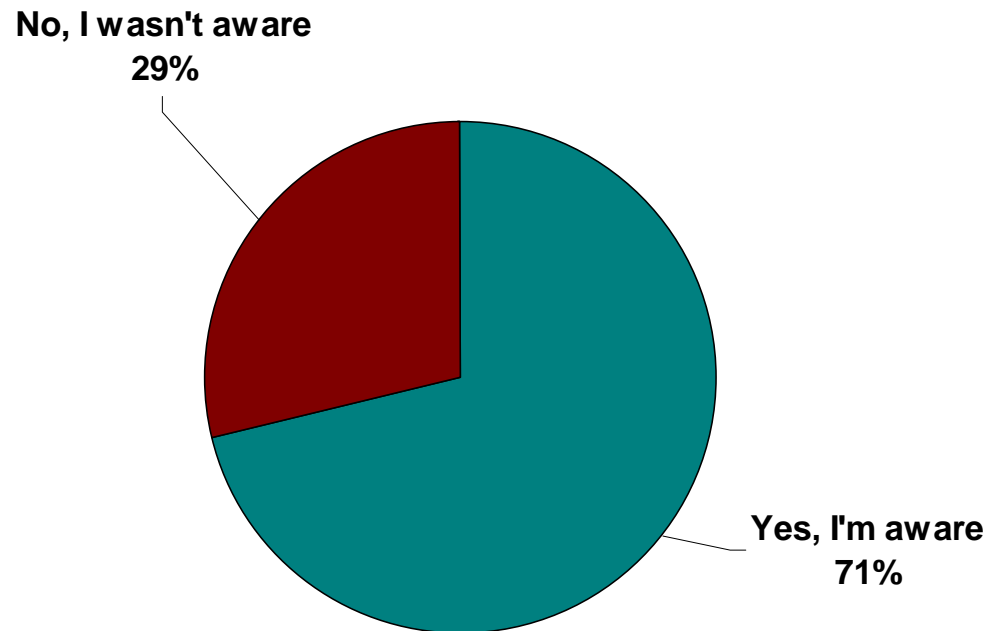# Awareness of CCIE Assessor:

All Respondents

Figure 28
(n=1,154)

No, I wasn't aware
29%

Yes, I'm aware
71%

Awareness of CCIE Assessor was high among respondents.

Candidates were even more likely to know about CCIE Assessor (84% v. 71)
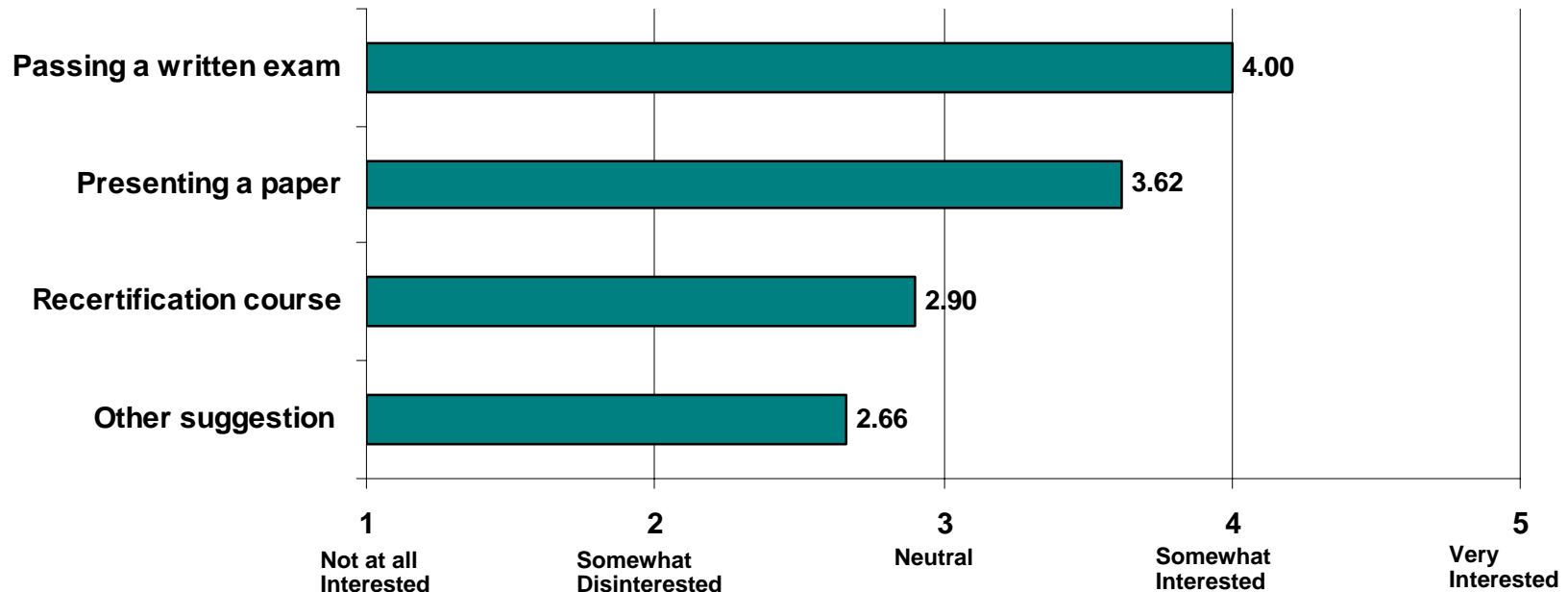
Recertification options

April 2006

Cisco.com

All Respondents

New Question

Figure 29; (n=625)

Passing a written exam	4.00
Presenting a paper	3.62
Recertification course	2.90
Other suggestion	2.66

1	2	3	4	5
Not at all Interested	Somewhat Disinterested	Neutral	Somewhat Interested	Very Interested

Recert exams and presenting papers are two recertification options that scored better than neutral among respondents.

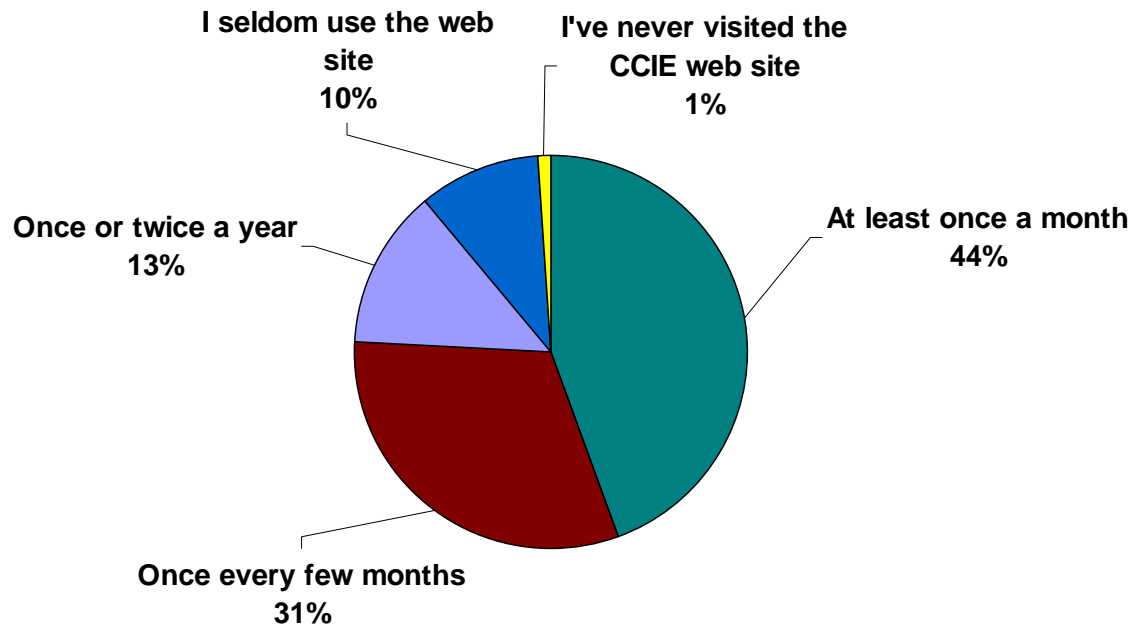**Voice CCIEs more likely to prefer presenting a paper and less likely to want a recert exam.**

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CCIE Program; April 21, 2006

Use of the CCIE web site:

All Respondents

Figure 30
(n=1,151)

I seldom use the web site
10%

I've never visited the CCIE web site
1%

Once or twice a year
13%

At least once a month
44%

Once every few months
31%

Use of website appears consistent with 44% of respondents visiting at least once per month.

Website experience:

Cisco.com

Figure 31
(2006 n=1,022; 2004 n=1,896)

Content

Ease of use

Overall satisfaction

2004
2006

0	1	2	3	4	5
Don't Know	Very Negative	Somewhat Negative	Neutral	Somewhat Positive	Very Positive
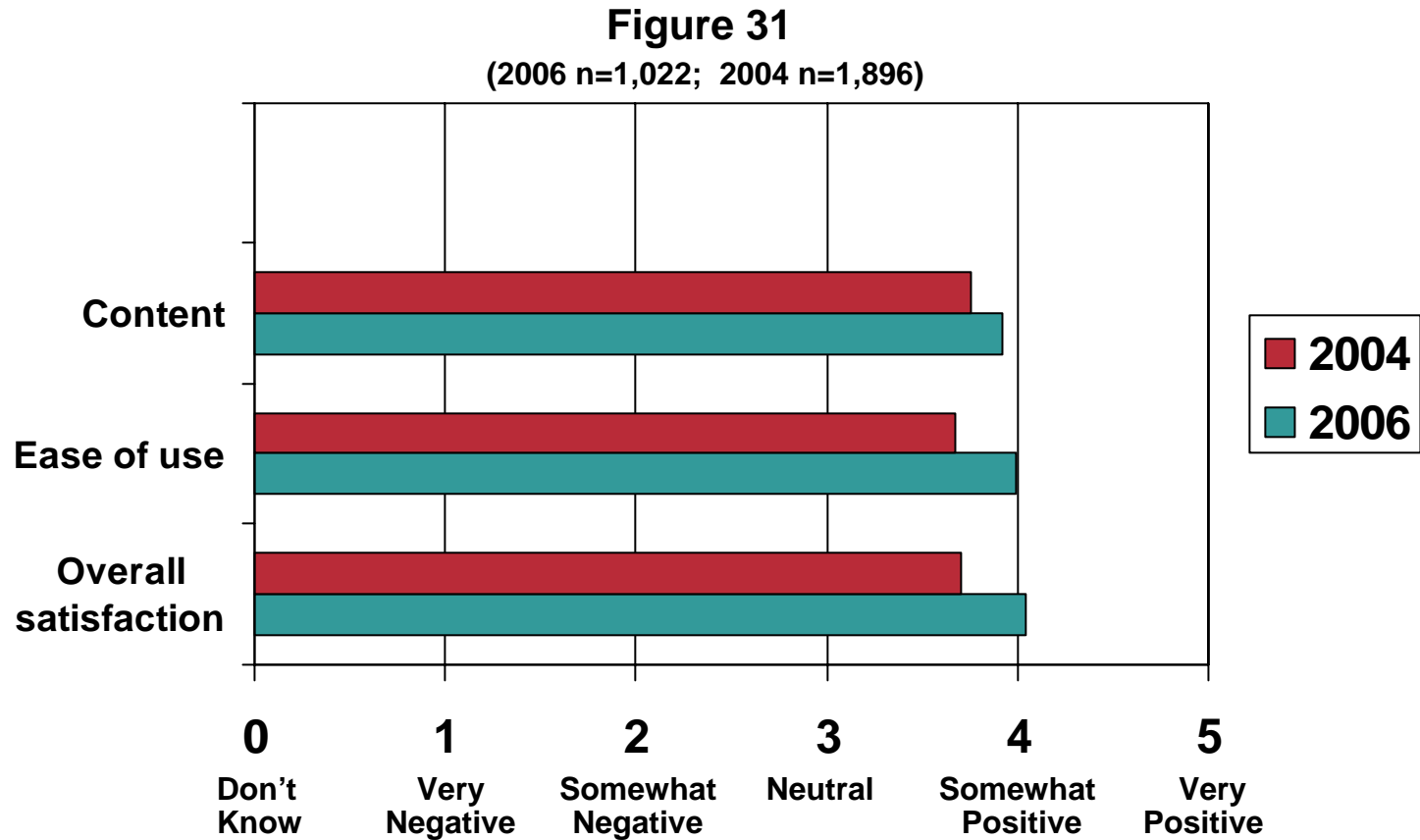
Satisfaction with CCIE website has improved in all measures since last year.

Use of CCIE website:

All Respondents; multiple responses allowed

Figure 32; (n=1,022)

Check news and announcements	n=819
Review exam blueprints	n=805
Schedule or reschedule exams	n=588
Look up recertification requirements	n=551
Look up program policies	n=471
Review preparation resources	n=433
Look up benefits or events	n=364
Other	n=14

0% 10% 20% 30% 40% 50% 60% 70% 80% 90%
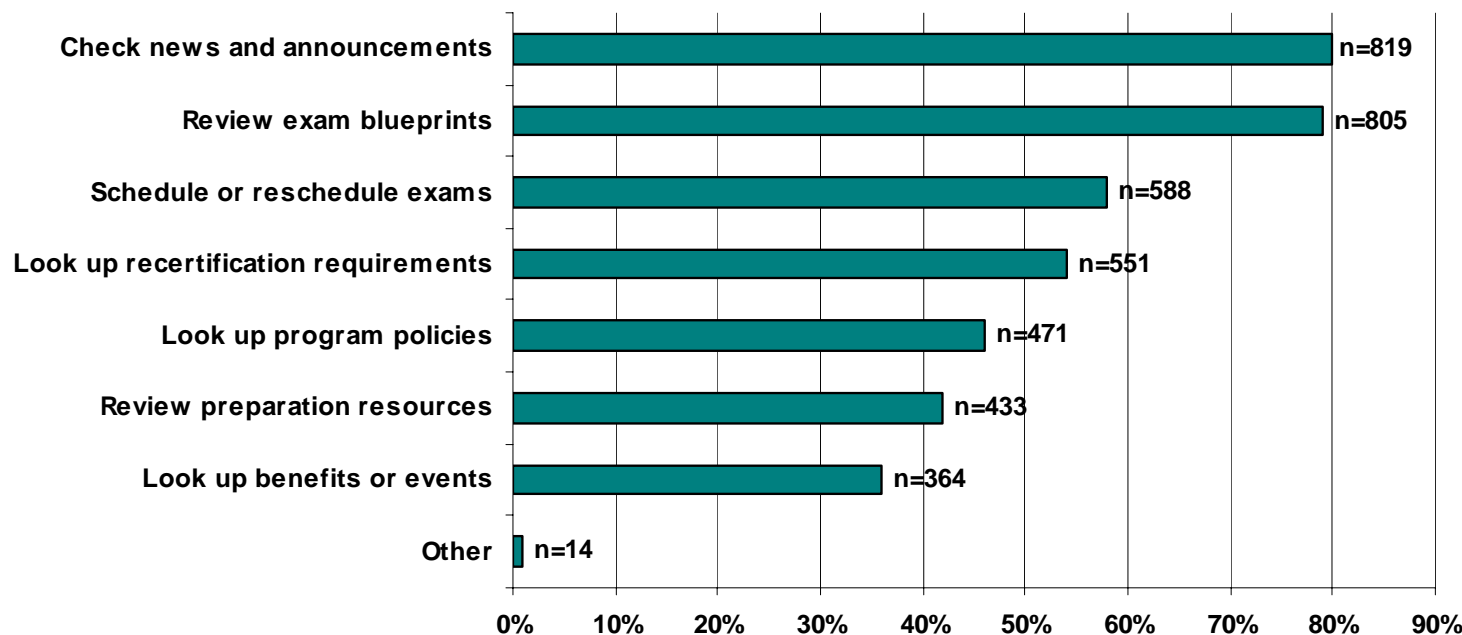
News and blueprints are most popular website items.

Less than half of respondents used website for information on program policies, upcoming events or to review preparation resources.
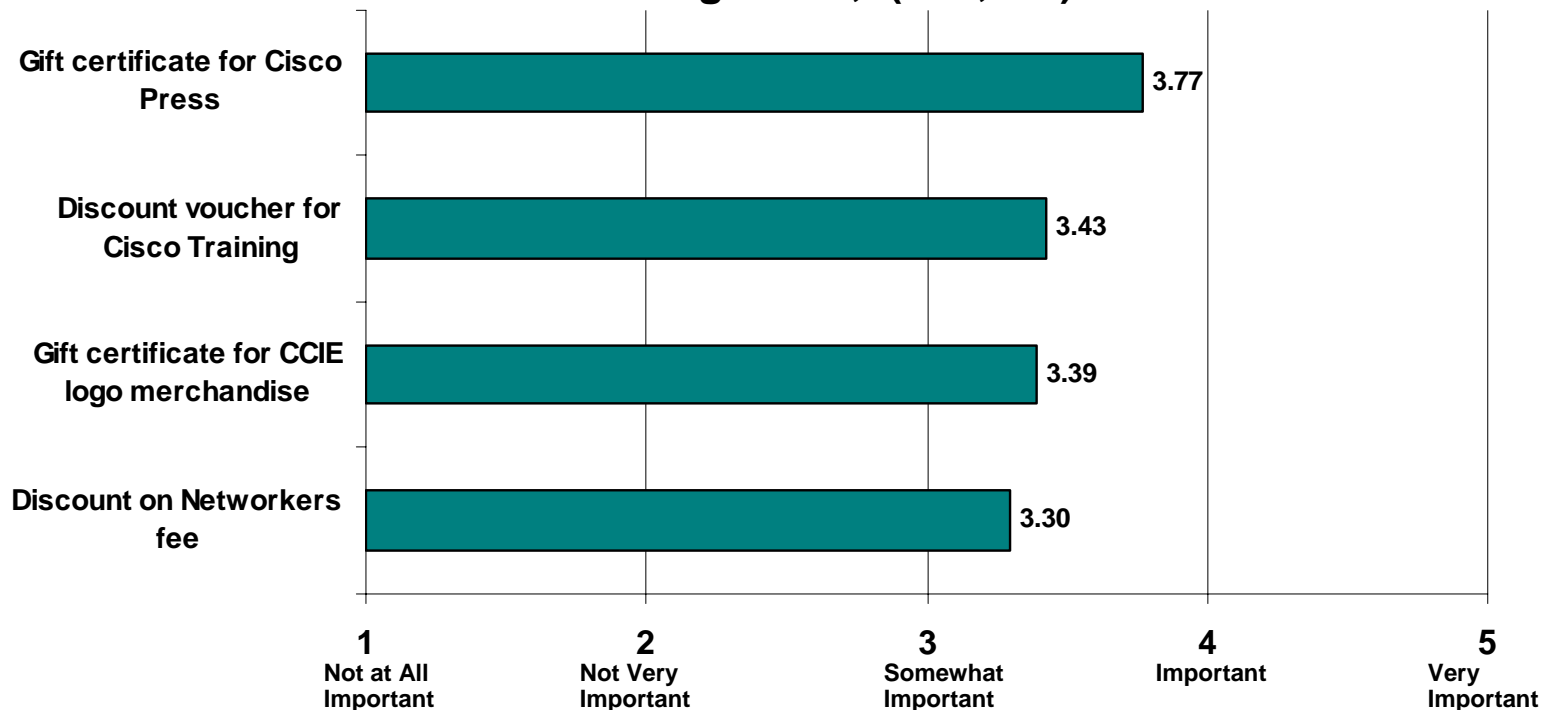
Potential Benefits:

All Respondents; multiple responses allowed

Figure 33; (n=1,145)

All suggestions considered at least 'somewhat important', most popular gift certificate for Cisco Press.

Voice CCIEs more likely to value Cisco Press, and SP CCIEs more likely to value logo merchandise.