

Are You Paid to Do What You Are Worth?

The State of Pay for Information Security Jobs and Skills

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Tonight's Agenda

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Summary: FP's Q1 2008 In-Demand IT Skills

Customer-facing Skills

- ✓ Applications Development skills:
 - SAP modules: FI, CO, MM, CRM, ERP, MDM, NetWeaver BI/BW, HCM, PP, IM, PS SD, WM.
 - SAP skills: NetWeaver applications server, SAP ASAP, BI Accelerator
 - Ajax; Ruby/Ruby On Rails;.NET, PHP; SAS; SQL Windows, XML
 - Oracle Enterprise Apps; Oracle/Business Objects, Oracle Developer AD
- ✓ RAD/Extreme Programming
- ✓ Database skills:
 - Oracle DB/ERP
 - Microsoft: SQL Server, Commerce Server, Identity Integration Server
- ✓ Help desk/tech support
- ✓ Unified messaging

Infrastructure Skills

- ✓ Virtualization (EMC, IBM certs and skills)
- ✓ Storage/SAN mgt (EMC, Brocade, IBM, SNIA certs)
- ✓ Information/Network Security: CISM, CISSP, Cisco, Planet3 (wireless), GIAC/SANS (GSE, intrusion, audit); Check Point master certs
- ✓ Networking skills:
 - Hybrid network management
 - Network security management
 - Cisco
 - VoIP/IP telephony (Cisco)
 - Unified communications
- ✓ Wireless network mgt skills (Planet3, Cisco, SANS/GIAC certs)
- ✓ Systems: Citrix; Windows Server
- ✓ Web services/SOA experience (IBM SOA, WebSphere Process Server certs)
- ✓ DW/BI: Oracle, Teradata SQL, Teradata master cert,
- ✓ Remote and mobile user support
- ✓ Database/data management

Summary: FP's Q1 2008 In-Demand IT Skills

Enabling Skills

- ✓ Business intelligence
- ✓ Architecture experience (IT Certified Architect, Citrix, EMC, SNIA certs)
- ✓ Project management experience (PMP, Microsoft PM certs)
- ✓ Business process design and management

Summary: Hot IT Skills - Next 2 years

Business Skills

- Project/program management (lead, plan, budget, schedule)
- Strategist/Internal consultant
- Internal relationship management
- IT finance
- Vendor management
- IT HR
- Business analysis

Other

- Process Mgt/Governance (ex: ITIL)
- IT change management
- Data mining/DW/BI
- ERP

Technology Skills

- SAP (prolonged skills shortage)
- Applications development (mashups, composite apps)
- Networking/Hybrid networks
- Security (esp. embedded)
- IP telephony/unified communications
- Mobile/remote user support(VPNs)
- Virtualization
- SOA/Web services
- SaaS
- Database management
- Metadata management/MDM/CDI
- Architecture
- Storage/SAN
- Help desk/User support
- Web 2.0

Source: 2008 IT Workforce Research Series, Foote Partners LLC

Non-Tech Skills Most Highly Prized

- **Business analysis; enabling analytical skills (business technology)**
- **Functional area knowledge; specific business process/operations knowledge**
- **Industry-specific experience**
- **Collaboration, team building**
- **Project management, esp. global**
- **Strategic thinking, planning**
- **Problem solving**
- **Oral and written communications**
- **Ability to lead and motivate**
- **Negotiation skills**
- **Ethics and tolerance**

...and multi-lingual, well-traveled, adaptable, and a great attitude doesn't hurt either.

IT Skills & Certifications Pay Trends

Q1 2008 Update

To see a complete list of skills surveyed:

http://www.footepartners.com/htscpi_latest.htm

1Q 2008 Foote Partners Compensation Research Domain

- 78,000 IT workers tracked continuously for their salaries, IT skills pay, attitudes, and management practices. 82 cities in N.America, 1,900 employers
- 30+ private sector industries; federal/state/local governments, educational and not-for-profit institutions.
- Demographics of the participating organizations:
 - 15% of participating organizations have \$3 billion+ in sales/\$15+ billion in total assets
 - 27% of participating organizations earn more than \$1 billion in annual revenues or more than \$3 billion in total assets
 - 45% of participating organizations have \$500+ million in sales/\$1+ billion in total assets/\$500+ million in premiums/\$500+ million operating budget (government, educational, not-for-profit)
 - 55% of participating organizations fall in the SMB (small-to-medium sized business) segment, generally defined as organization under \$500 million in sales.
 - [Public sector] 5% have operating budgets of \$500 million or more, 4% with operating budgets \$100 million to less than \$500million (nonprofit/government/educational sectors)

1Q 2008 Research Engine Reach

Canadian Cities

Calgary, ALTA	London, ONT	Quebec, QUE	Toronto, ONT
Edmonton, ALTA	Mississauga, ONT	Regina, SASK	Vancouver, BC
Halifax, NS	Montreal, QUE	Saskatoon, SASK	Windsor, ONT
Hamilton, ONT	Oshawa, ONT	St. Catherines, ONT	Winnipeg, MAN
Kitchner, ONT	Ottawa, ONT		

Tier 1 Cities (U.S.)

Atlanta, GA	Houston, TX	New York, NY	San Jose, CA
Boston, MA	Los Angeles/Orange Cty, CA	Philadelphia/So. NJ	Seattle, WA
Chicago, IL	Miami, FL	Phoenix, AZ	St. Louis, MO
Dallas, TX	Minneapolis, MN	San Diego, CA	Washington, DC
Detroit, MI	New Jersey/Northern	San Francisco, CA	Westchester County, NY/Lower Fairfield Cty, CT

Tier 2 Cities (U.S.)

Albuquerque/Santa Fe, NM	Greensboro/Winston Salem, NC	Milwaukee, WI	Portland, OR
Austin, TX	Greenville/Spartanburg/ Anderson, SC	Nashville, TN	Princeton/So. NJ
Baltimore, MD	Hartford, CT	New Orleans, LA	Providence, RI
Birmingham, AL	Indianapolis/Ft Wayne	Norfolk/Virginia Beach/ Newport News, VA	Raleigh/Durham, NC
Charlotte, NC	Kansas City, MO	Oakland/Walnut Creek/ Concord CA	Sacramento, CA
Cincinnati, OH	Las Vegas, NV	Oklahoma City, OK	Salt Lake City, UT
Cleveland/Akron, OH	Long Island, NY	Omaha, NE	San Antonio, TX
Columbus, OH	Louisville, KY	Orlando, FL	Tampa, FL
Colorado Springs, CO	Memphis, TN	Peoria, IL	Tulsa, OK
Dayton, OH	Madison, WI	Pittsburgh, PA	Upper Fairfield County/ New Haven, CT
Des Moines, IA	Memphis, TN		
Denver, CO			
Grand Rapids, MI			

IT Skills and Certifications Pay Index™ 1Q 2008 Survey edition (ITSCPI)

- Verified skills pay data from 21,675 IT professionals in North America
- Current market pay premiums for 164 noncertified IT skills and 166 IT certifications
- IT skills trends: historical, current, projections
- Updated and published quarterly since 1999
- 266 pages

IT Skills and Certifications Pay Index™ 1Q 2008 Survey edition

Current market pay premiums for 330 certified and noncertified skills in these categories:

▲ **164 Noncertified Skills:**

- Apps Development Tools/Platforms
- Database
- Enterprise Business Applications
- Messaging/e-mail/Groupware
- Management, Methodology & Process
- Systems/Networking and Communications
- Operating Systems
- Web/e-Commerce Development

▲ **166 Certified Skills:**

- Applications Develop./Prog Languages
- Architecture & Project Management
- Database
- General and Training
- Networking and Internetworking
- IT Security
- Systems Eng./Admin/NOS
- Web Development

Win a free \$2000 ITSCPI !!

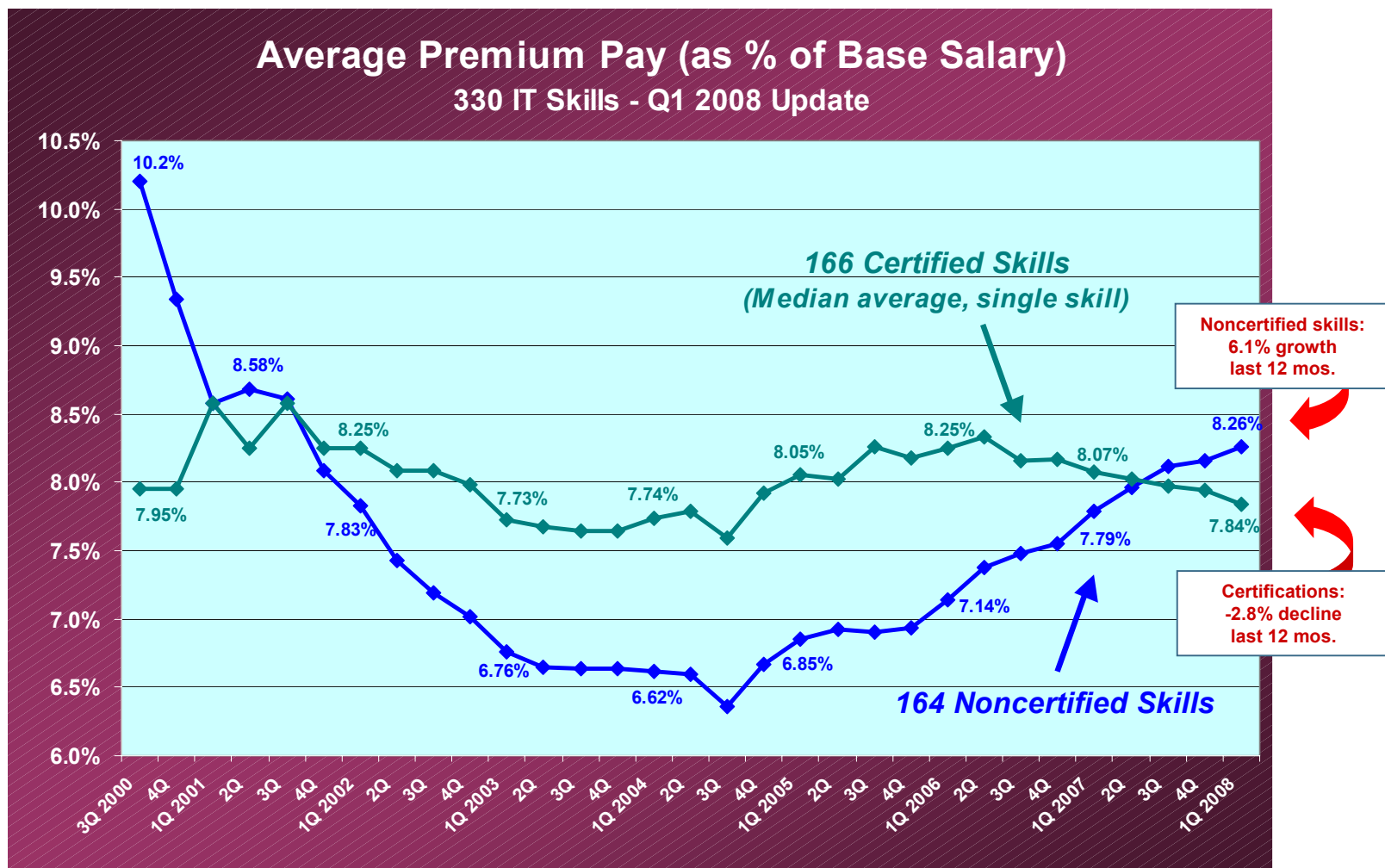
- **Monthly drawing**
- **Losers automatically re-entered**
- **All FISD entrants will qualify to opt-in select mail list (receive free research)**

HOW TO ENTER

--Your business card tonight

--http://www.footepartners.com/Monthlydrawing_ITSCPI.htm

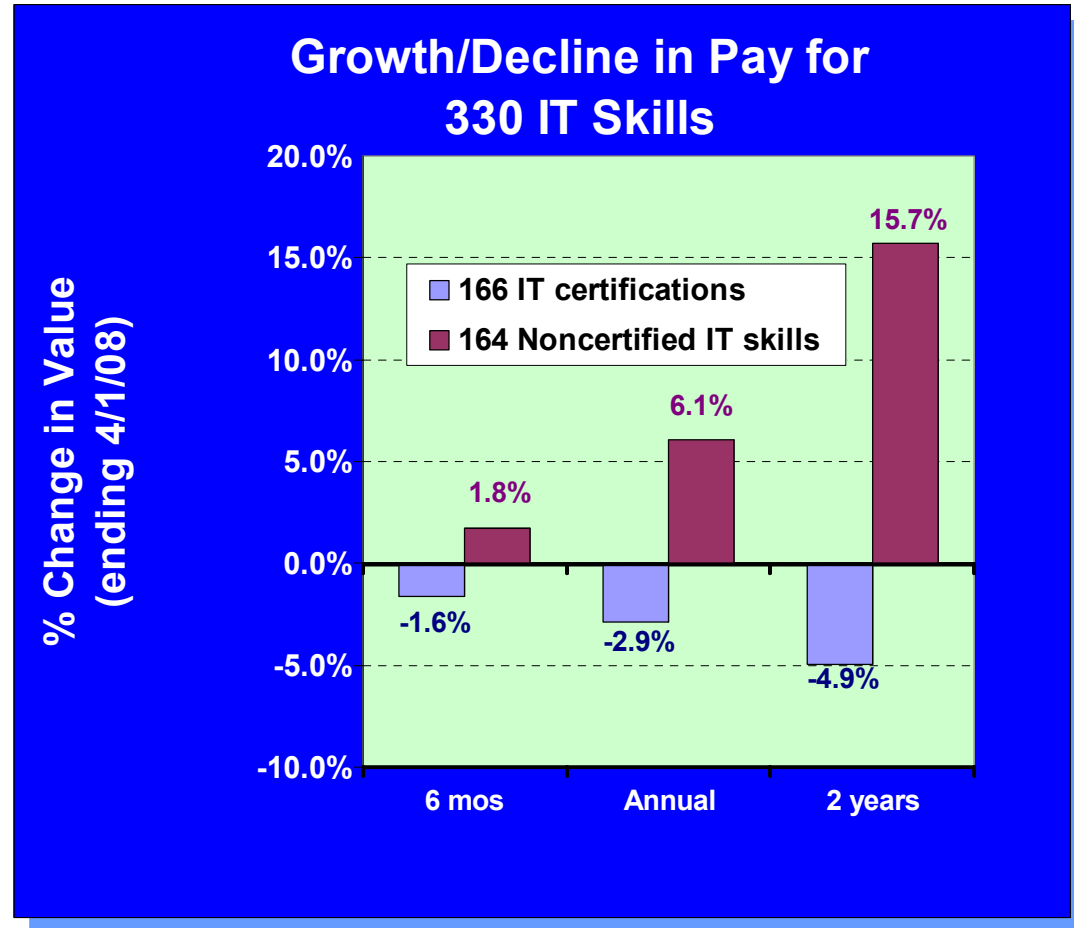
What are individual IT skills earning? Certified vs. Noncertified, 2000 to 2008



Pay for Certified vs. Noncertified IT Skills: 6/12/24 Month Trends

Pay Performance Certified & Noncertified IT Skills

(330 IT Skills Surveyed; 21,675 IT professionals)



Source: ©2008 Foote Partners LLC, IT Skills and Certifications Pay Index™

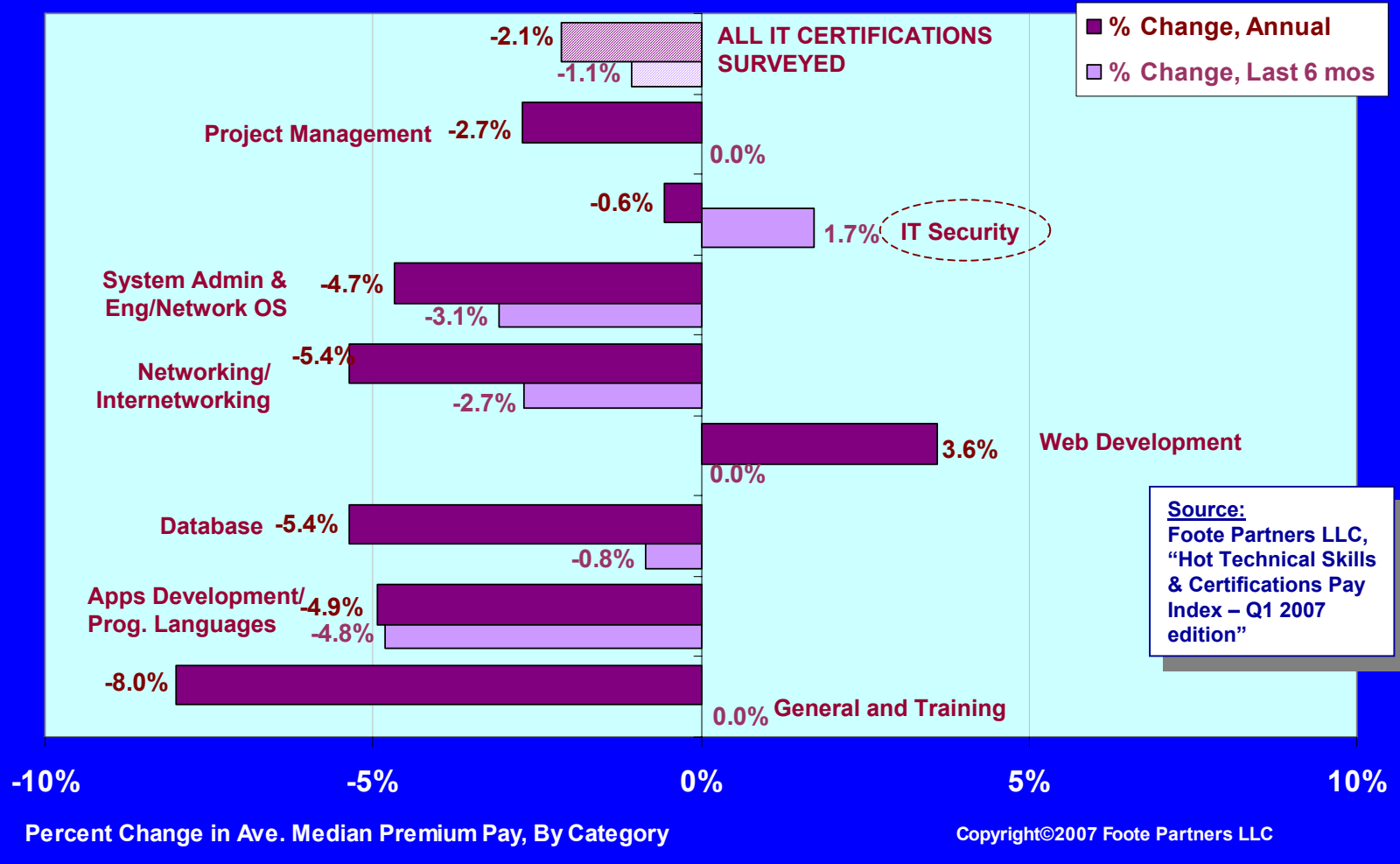
Certified IT Skills Pay Trends

Q1 2008 Update

Certified IT Skills Pay: 1 year ago

1Q 2007 data

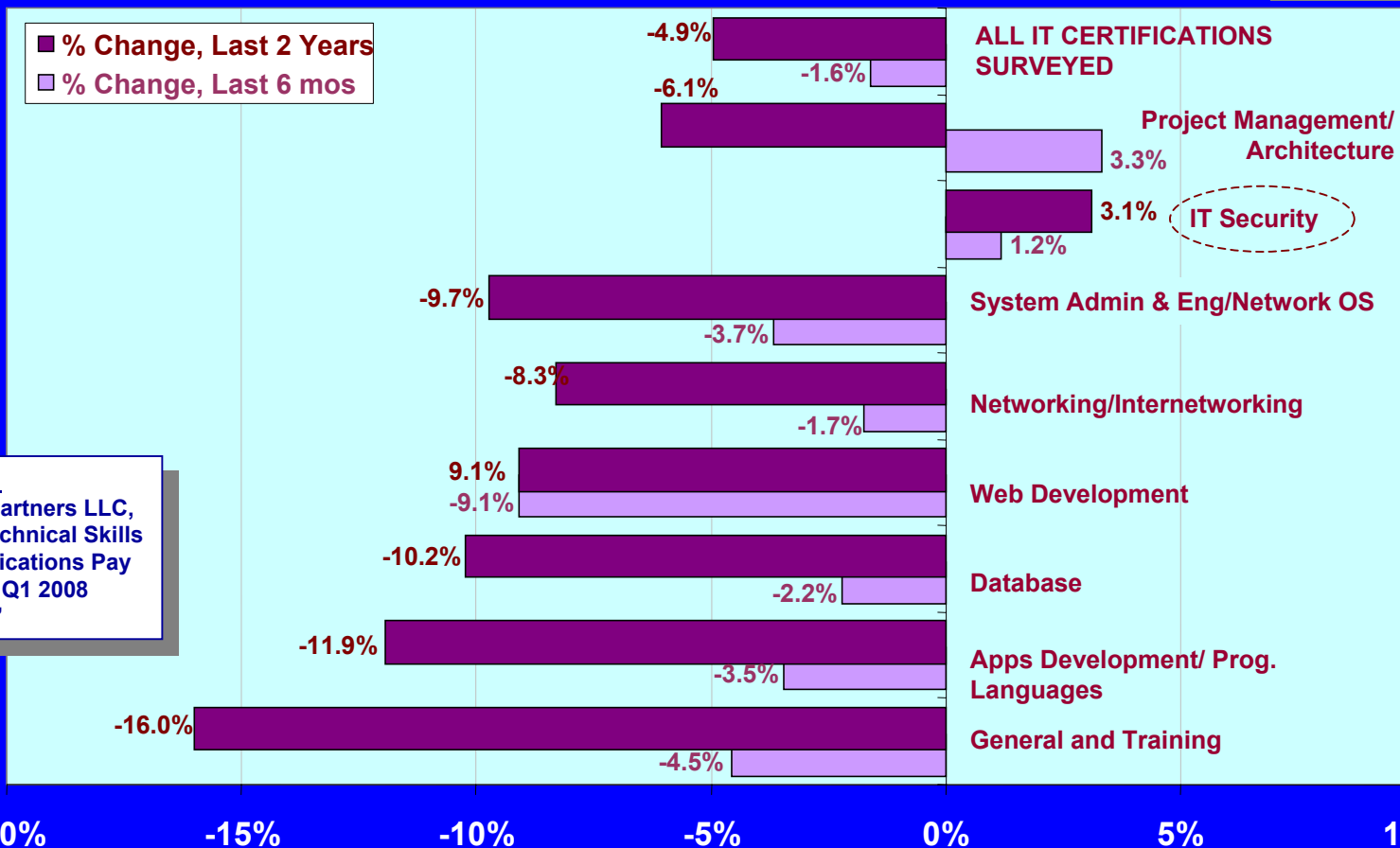
Growth/Decline - IT Certifications Value(through 4/1/07)



Certified IT Skills Pay: NOW

Growth/Decline - IT Certifications Value(through 4/1/08)

Q1 2008 data



Source:
Foote Partners LLC,
"Hot Technical Skills
& Certifications Pay
Index - Q1 2008
edition"

Percent Change in Ave. Median Premium Pay, By Category

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Certified IT Skills Pay

Certification Pay Premiums by Category (median)

CERTIFICATIONS CATEGORIES	Ave. Premium Pay - Single Skill as a % of Base Salary (Median)			% Change 6 mos	% Change ANNUAL	% Change 2 yrs
	1Q 2006	1Q 2007	1Q 2008			
General and Training	5.0%	4.6%	4.2%	-4.5%	-8.7%	-16.0%
Apps Development/Prog. Languages	8.1%	7.7%	7.1%	-3.4%	-7.3%	-11.9%
Database	8.8%	8.3%	7.9%	-2.2%	-5.2%	-10.3%
Web Development	6.1%	6.3%	5.6%	-9.0%	-12.2%	-9.0%
Networking	9.1%	8.6%	8.4%	-1.8%	-3.1%	-8.3%
System Admin & Eng/Network OS	7.9%	7.6%	7.2%	-3.6%	-5.3%	-9.7%
Security	8.9%	8.9%	9.2%	1.2%	3.7%	3.1%
Architecture/Project Management	11.0%	10.7%	10.3%	3.3%	-3.2%	-6.1%
164 CERTIFIED SKILLS SURVEYED	8.3%	8.1%	7.8%	-1.6%	-2.9%	-5.0%

Source: ©2008 Foote Partners LLC, IT Skills and Certifications Pay Index™



Certified IT Skills Pay: Ranked by Most Growth - Last 6 mos. (through 4/1/08)

Q1 2008	6 mos.	ANNUAL
	% change - last 6 mos	% change - last 12 mos
RISING PAY: CERTIFIED SKILLS		
Certified Information Security Manager (CISM)	27.3%	33.0%
GIAC Security Expert (GSE)	25.0%	34.5%
Planet3 Certified Wireless Network Administrator (CWNA)	20.0%	20.0%
IT Certified Architect(ITCA/Open Group)	20.0%	20.0%
SAS Certified Advanced Programmer	14.3%	14.3%
Planet3 Certified Wireless Analysis Professional (CWAP)	14.3%	14.3%
Cisco Certified Network Professional (CCNP)	14.3%	14.3%
Planet3 Certified Wireless Security Professional (CWSP)	12.5%	12.5%
Brocade Certified SAN Manager (BCSM)	10.0%	10.0%
Citrix Certified Integration Architect (CCIA)	10.0%	10.0%
Cisco Certified Security Professional (CCSP)	9.2%	20.0%
InfoSys Security Architecture Professional (ISSAP/CISSP)	8.3%	0.0%
Cisco Certified Internetwork Expert (CCIE)	7.7%	7.7%
Certified Information Systems Security Professional(CISSP)	7.7%	7.7%

Source: ©2008 Foote Partners LLC, IT Skills and Certifications Pay Index™



Certified IT Skills Pay: Ranked by Most Growth - Last 12 mos. (through 4/1/08)

Q1 2008	6 mos.	ANNUAL
	% change - last 6 mos	% change - last 12 mos
RISING PAY: CERTIFIED SKILLS		
GIAC Security Expert (GSE)	25.0%	34.5%
Certified Information Security Manager (CISM)	27.3%	33.0%
Planet3 Certified Wireless Network Administrator (CWNA)	20.0%	20.0%
IT Certified Architect(ITCA/Open Group)	20.0%	20.0%
Cisco Certified Security Professional (CCSP)	9.2%	20.0%
Teradata Certified SQL Specialist	0.0%	16.7%
SAS Certified Advanced Programmer	14.3%	14.3%
Planet3 Certified Wireless Analysis Professional (CWAP)	14.3%	14.3%
Cisco Certified Network Professional (CCNP)	14.3%	14.3%
Certified Hacking Forensics Investigator (CHF1)	0.0%	14.3%
Planet3 Certified Wireless Security Professional (CWSP)	12.5%	12.5%
GIAC Certified Intrusion Analyst (GCIA)	0.0%	11.1%
GIAC Systems and Network Auditor (GSNA)	0.0%	11.1%
Brocade Certified SAN Manager (BCSM)	10.0%	10.0%
Citrix Certified Integration Architect (CCIA)	10.0%	10.0%
InfoSys Security Engineering Professional (ISSEP/CISSP)	0.0%	8.3%
Cisco Certified Internetwork Expert (CCIE)	7.7%	7.7%
Certified Information Systems Security Professional(CISSP)	7.7%	7.7%

Source: ©2008 Foote Partners LLC, IT Skills and Certifications Pay Index™



Certified IT Skills Pay: Ranked by Most Decline – Last 6 mos. (through 4/1/08)

Q1 2008	6 mos.	ANNUAL
	% change - last 6 mos	% change - last 12 mos
DECLINING PAY: CERTIFIED SKILLS		
CompTIA Internet Technician (I-Net+)	-33.3%	-33.3%
Microsoft Certified Professional+Internet (MCP+I)	-20.0%	-20.0%
IBM Certified Specialist - iSeries	-16.7%	-27.5%
Linux Professional Institute certification (LPIC-Level 2)	-16.7%	-16.7%
EC-Council Certified Security Analyst	-16.7%	-16.7%
Prosoft Master CIW Administrator	-14.3%	-25.0%
CompTIA Certified Technical Trainer (CTT+)	-14.3%	-14.3%
IBM Certified Systems Expert - i5 iSeries	-14.3%	-14.3%
Sun Certified Systems Administrator for Solaris	-14.3%	-14.3%
GIAC Certified Firewall Analyst (GCFW)	-14.3%	-14.3%
IBM Certified Application Developer – Lotus Notes/Domino	-12.5%	-25.0%
IBM Certified Advanced Application Developer – Lotus Notes/Domino	-12.5%	-12.5%
Microsoft Certified IT Professional (MCITP/all)	-12.5%	-12.5%
Novell/Certified Internet Professional (CIP)	-12.5%	-12.5%
Brocade Certified SAN Designer (BCSD)	-12.5%	-12.5%
Check Point Certified Security Administrator (CCSA)	-12.5%	-12.5%
IBM Certified Advanced Technical Expert - pSeries and AIX 5L	-11.1%	-11.1%
Novell/Certified Novell Engineer (CNE)	-11.1%	-11.1%
GIAC Certified Unix Security Administrator (GCUX)	-11.1%	-11.1%
Oracle Forms Developer Certified Professional (OCP)	-10.0%	-15.2%
IBM DB2 Universal Database Certified Solutions Expert (DB2)	-10.0%	-10.0%
IBM Certified Solutions Developer: WebSphere (all)	-9.1%	-9.1%
SNIA Certified Storage Networking Expert	-8.3%	-8.3%
Project Management Professional(PMP)	-6.7%	-6.7%

Source: ©2008 Foote Partners LLC, IT Skills and Certifications Pay Index™



**Certified IT Skills
Pay: Ranked by
*Most Decline -
Last 12 mos.*
(through 4/1/08)**

Source: ©2008 Foote Partners LLC, *IT Skills and Certifications Pay Index™*

Q1 2008	6 mos.	ANNUAL
	% change - last 6 mos	% change - last 12 mos
DECLINING PAY: CERTIFIED SKILLS		
Teradata Certified Professional	0.0%	-40.0%
CompTIA Internet Technician (I-Net+)	-33.3%	-33.3%
LAN Server Engineer (LSE)	0.0%	-33.3%
IBM Certified Specialist - iSeries	-16.7%	-27.5%
Prosoft Master CIW Administrator	-14.3%	-25.0%
IBM Certified Application Developer – Lotus Notes/Domino	-12.5%	-25.0%
Microsoft Certified Professional (MCP)	0.0%	-25.0%
CompTIA Linux+	0.0%	-25.0%
Microsoft Certified Professional+Internet (MCP+I)	-20.0%	-20.0%
Microsoft Certified Solution Developer (MCSD)	0.0%	-20.0%
Cisco IP Telephony Design Specialist	0.0%	-20.0%
Linux Professional Institute certification (LPIC-Level 2)	-16.7%	-16.7%
EC-Council Certified Security Analyst	-16.7%	-16.7%
Prosoft Master CIW Designer	0.0%	-16.7%
Microsoft Certified Desktop Support Technician(MCDST)	0.0%	-16.7%
Oracle Forms Developer Certified Professional (OCP)	-10.0%	-15.2%
CompTIA Certified Technical Trainer (CTT+)	-14.3%	-14.3%
IBM Certified Systems Expert - i5 iSeries	-14.3%	-14.3%
Sun Certified Systems Administrator for Solaris	-14.3%	-14.3%
GIAC Certified Firewall Analyst (GCFW)	-14.3%	-14.3%
CompTIA Server+	0.0%	-14.3%
Microsoft Certified Systems Administrator(MCSA)	0.0%	-14.3%
IBM Certified Advanced Application Developer – Lotus Notes/Domino	-12.5%	-12.5%
Microsoft Certified IT Professional (MCITP/all)	-12.5%	-12.5%
Novell/Certified Internet Professional (CIP)	-12.5%	-12.5%
Brocade Certified SAN Designer (BCSD)	-12.5%	-12.5%
Check Point Certified Security Administrator (CCSA)	-12.5%	-12.5%
Microsoft Certified Applications Developer(MCAD)	0.0%	-12.5%
Microsoft Certified Professional Developer (all)	0.0%	-12.5%
Novell Certified Linux Engineer (CLE)	0.0%	-12.5%
IBM Certified Specialist - AIX Basic Ops	0.0%	-12.5%
Microsoft Certified Systems Engineer(MCSE)	0.0%	-12.5%
Sun Certified Network Administrator for Solaris	0.0%	-12.5%
IBM Certified Advanced Technical Expert - pSeries and AIX 5L	-11.1%	-11.1%
Novell/Certified Novell Engineer (CNE)	-11.1%	-11.1%
GIAC Certified Unix Security Administrator (GCUX)	-11.1%	-11.1%
Planet3 Certified Wireless Network Trainer (CWNT)	0.0%	-11.1%
IBM DB2 Universal Database Certified Solutions Expert (DB2)	-10.0%	-10.0%
Sniffer Certified Master	0.0%	-10.0%
Red Hat Certified Architect (RHCA)	0.0%	-10.0%

Certified IT Skills Pay: Ranked by Highest Paying (through 4/1/08)

Depending on corporate compensation policies, IT skills premiums are typically paid out as a cash bonus or incorporated directly into base salary (as a solution to the job title/job content mismatch problem common with IT professionals).

HIGHEST PAYING CERTIFIED IT SKILLS	% of base pay* 1Q 2008
GIAC Security Expert (GSE)	15%
Certified Information Security Manager (CISM)	14%
Certified Information Systems Security Professional(CISSP)	14%
Cisco Certified Internetwork Expert (CCIE)	14%
InfoSys Security Management Professional (ISSMP/CISSP)	14%
Project Management Professional(PMP)	14%
Certified Information Systems Auditor (CISA)	13%
InfoSys Security Architecture Professional (ISSAP/CISSP)	13%
InfoSys Security Engineering Professional (ISSEP/CISSP)	13%
Cisco Certified Security Professional (CCSP)	12%
EMC Proven Professional Technology Architect - Expert	12%
HP/Master Accredited Systems Engineer (Master ASE)	12%
IT Certified Architect(ITCA/Open Group)	12%
Oracle DBA Administrator Certified Master (OCM)	12%
	* at median

Certified IT Skills Pay: Ranked by *Lowest Paying* (through 4/1/08)

Depending on corporate compensation policies, IT skills premiums are typically paid out as a cash bonus or incorporated directly into base salary (as a solution to the job title/job content mismatch problem common with IT professionals).

LOWEST PAYING CERTIFIED SKILLS	% of base pay 1Q2008*
Certified Computing Professional (CCP)	2%
CompTIA PC Technician (A+)	2%
LAN Server Engineer (LSE)	2%
CompTIA Convergence+	3%
CompTIA Linux+	3%
CompTIA RFID+	3%
CompTIA Security+	3%
GIAC Security Essentials Certification (GSEC)	3%
Microsoft Certified Professional (MCP)	3%
Prosoft CIW Associate	3%
Siebel Certified Consultant (SCC)	3%
Siebel Customer Certified Consultant (SCCC)	3%
Teradata Certified Implementation Specialist	3%
Teradata Certified Professional	3%
Cisco Certified Network Associate (CCNA)	4%
CompTIA Internet Technician (I-Net+)	4%
CompTIA Network Technician (Network+)	4%
Microsoft Certified Professional+Internet (MCP+I)	4%
RedHat Certified Technician	4%
	* at median

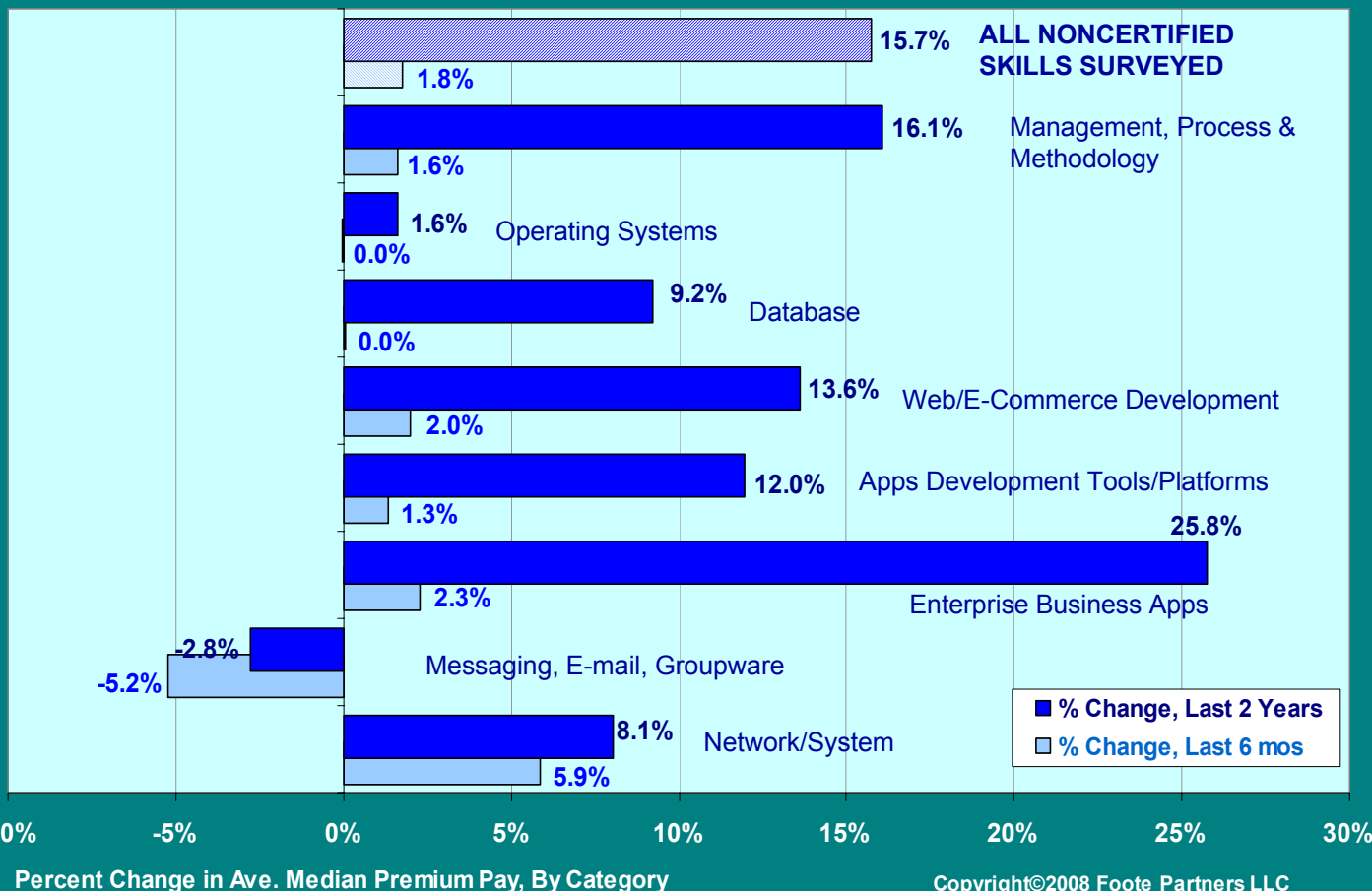
Noncertified IT Skills Pay Trends

Q1 2008 Update

Noncertified IT Skills Pay: NOW

Growth/Decline - Noncertified IT Skills Value (4/1/08)

Q1 2008 data



Source:
Foote Partners LLC,
"Hot Technical Skills
& Certifications Pay
Index - Q1 2008
edition"

IT Noncertified Skill Pay: Ranked by Most Growth – Last 6 mos. (through 4/1/08)

Q1 2008	6 mos.	ANNUAL
	% change - last 6 mos	% change - last 12 mos
RISING SKILLS PAY: Noncertified Skills		
Network security management	25.0%	37.0%
Wireless network management (LANs, GSM)	22.2%	22.2%
Business intelligence	20.0%	33.3%
PHP	20.0%	20.0%
SAP MDM (Master Data Management)	20.0%	20.0%
Oracle DB / 8i/9i/10g/11i	18.2%	30.0%
SAP ERP	18.0%	na
NetWeaver BI (SAP BW)	16.7%	16.7%
SAN/Storage Area Networking	14.3%	23.1%
Oracle Workflow	12.5%	na
XML (all variants)	12.5%	23.0%
SAP Business Objects	12.5%	12.5%
Security (various, project-based)	12.5%	12.5%
Unified messaging (various)	12.5%	12.5%
Windows Server 2003 (all editions)	12.5%	12.5%
Database management	11.1%	22.0%
VoIP/IP telephony	11.1%	11.1%
SAP HCM (SAP HR)	11.1%	0.0%
CRM	10.0%	na
SAP CRM (Customer Relationship Management)	10.0%	na
SAP MM (Materials Management)	10.0%	18.2%
SAP Netweaver Applications Server	9.1%	na
AJAX (Asynchronous JavaScript and XML)	9.1%	20.0%
Oracle Enterprise Apps	9.1%	19.0%
Apple OSX/Leopard	9.0%	12.0%
NetWeaver	7.1%	15.4%
Microsoft .Net (Visual Studio .Net, Visual Basic .Net, ASP.Net)	6.7%	14.3%

Source: ©2008 Foote Partners LLC, *IT Skills and Certifications Pay Index™*

IT Noncertified Skill Pay: Ranked by *Highest Paying* (through 4/1/08)

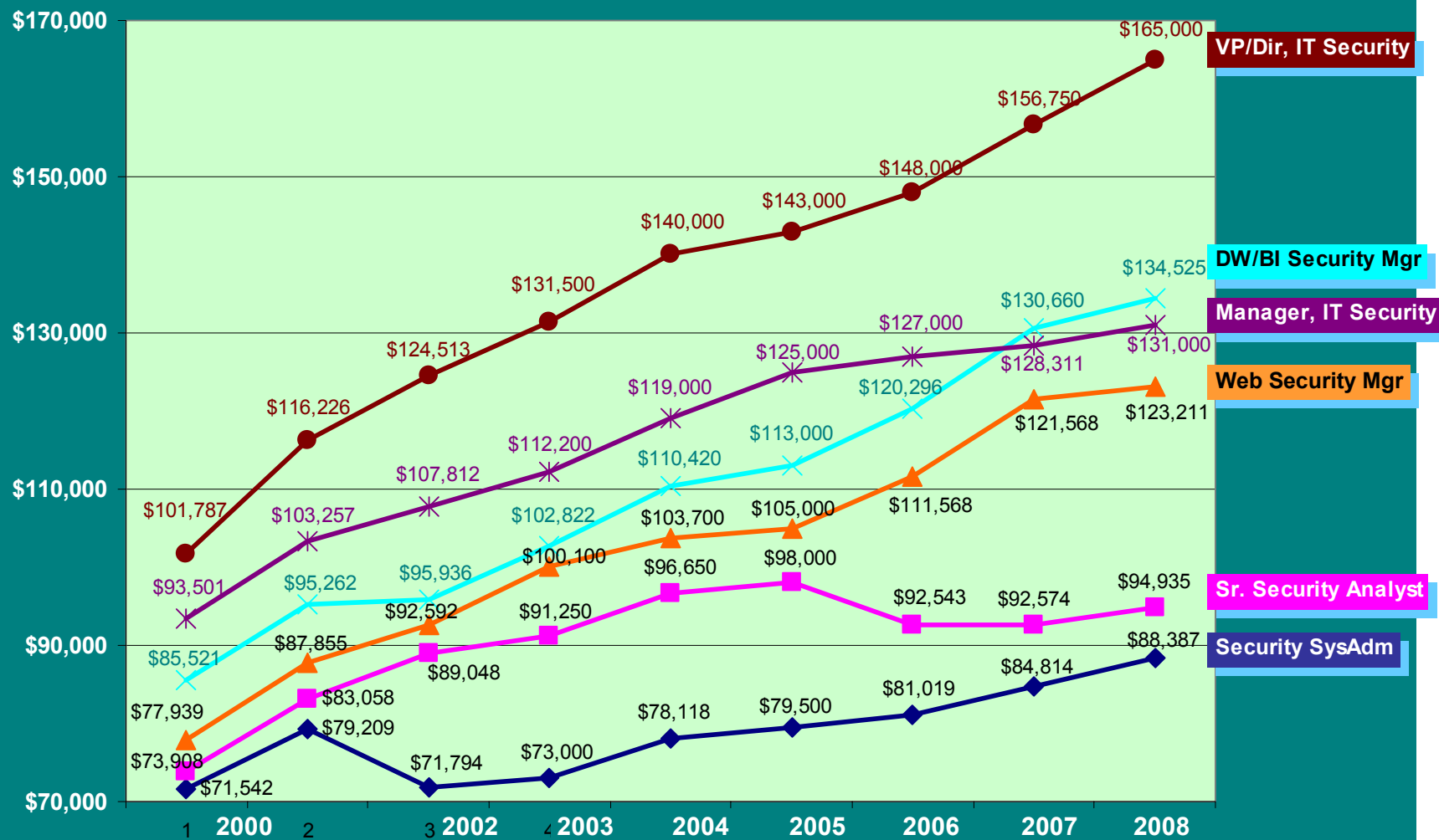
Depending on corporate compensation policies, IT skills premiums are typically incorporated directly into base salary (as a solution to the job title/job content mismatch problem common with IT professionals) or paid out as a cash bonus.

HIGHEST PAYING NONCERTIFIED IT SKILLS	% of base pay 1Q2008*
Security (various, project-based)	18%
Microsoft .Net (Visual Studio .Net, Visual Basic .Net, ASP.Net)	16%
RAD, Extreme Programming (XP)	16%
SAN/Storage Area Networking	16%
Virtualization (various)	16%
NetWeaver	15%
Network security management	15%
NetWeaver BI (SAP BW)	14%
SAP ERP (multi-skills)	14%
Oracle DB / 8i/9i/10g/11i	13%
Accelerated SAP (ASAP)	12%
AJAX (Asynchronous JavaScript and XML)	12%
Business intelligence	12%
Oracle Enterprise Apps	12%
Project management	12%
SAP BI Accelerator	12%
SAP Controlling (CO)	12%
SAP Financial Accounting (FI)	12%
SAP MDM (Master Data Management)	12%
SAP Netweaver Applications Server	12%
	* at median

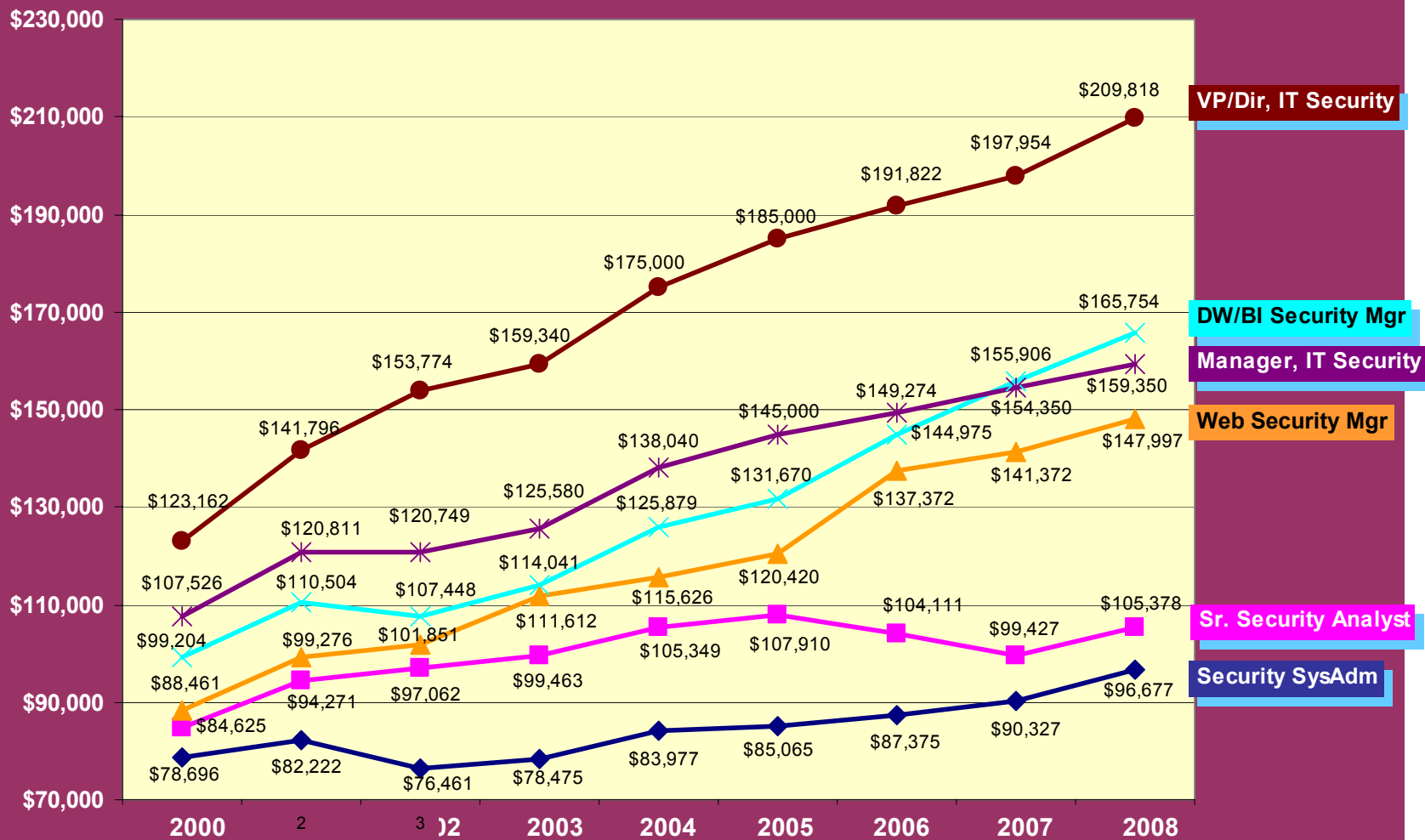
IT Security Salary Trends

Q1 2008 Update

Average ANNUAL BASE PAY - NE, Mid-Atlantic



Annual TOTAL CASH Compensation - NE, Mid-Atlantic



Specialized Security Skills

- Bank anti-money-laundering (prevention, detection, investigation)
- Tech support security engineers (post sales support to customers)
 - \$75 - \$110K (staff); \$100K - \$130 (managers)
- Consulting: penetration testing, vulnerability assessment, security audit, ethical hacking
 - Nmap; Nassus; Snort; dsniff; LophtCrack; NTO Spider; WevScarab; Wireshark; WebInspect; AppDetective; Nikto
 - \$60 - \$100/hour
- E-discovery and litigation support

Specialized Security Skills

- Technical
 - Autocorrelation
 - Incident response
 - Forensics
 - Packet-level network skills
 - Applications network use and packet skills
 - Identity management and LDAP
 - Wireless security
 - VoIP security
 - Legal compliance, audit and remediation
 - Data-leak prevention/DLP
 - Two-factor authentication
 - ID/access
- Incident response as a management team, outsourced technical resources
- Emphasis on communications skills and documentation effort vs. tech stuff

IT Spending Trends (driving skills acquisition)

Q1 2008 Update

FP 2008 IT Spending Trends (2007 Actuals vs. 2008 Budgeted)

IT execs have amped up spending in 2008 in key areas and are searching for appropriately skilled workers.

change from 2007 spending (points)	% change 2008 budget vs. actual 2007 spend	Technology or Service (all cos.)
15%	20.1%	Virtualization (servers/storage)
5%	16.6%	Customer self-service technologies and applications
2%	15.4%	Open source applications/systems
5%	14.8%	Collaboration software
2%	13.9%	Storage equipment
10%	13.8%	VoIP
2%	13.2%	CRM software
9%	13.1%	BI/analytics/data mining software
6%	13.1%	Corporate portals
4%	12.8%	SaaS/ASPs
3%	12.7%	ERP systems
8%	12.6%	Content/Information lifecycle mgt. software (incl. digital asset/document mgt)
-1%	12.1%	Database systems
7%	11.8%	Business process mgt. and modelling SW
7%	10.8%	IT governance, asset mgt. software
4%	10.7%	IT strategy consulting and advisory services
1%	10.2%	E-commerce systems
-1%	10.1%	Servers (mainframe)
4%	9.5%	Web services/SOA
-7%	9.0%	E-mail/instant messaging SW
8%	8.8%	Disaster recovery/business continuity services
3%	8.1%	BPO outsourcing
7%	8.1%	Telecommunications equipment
0%	7.7%	Intrusion prevention/detection systems
0%	7.5%	Servers (non-mainframe)
4%	7.2%	Storage/remote backup systems

FP 2008 IT Spending Trends (2007 Actuals vs. 2008 Budgeted)

change from 2007 spending (points)	% change 2008 budget vs. actual 2007 spend	Technology or Service (all cos.) - cont'd.
2%	7.0%	Compliance/corporate governance SW
8%	7.0%	Network access control/Identity mgt sys.
3%	7.0%	Storage mgt. software
4%	6.9%	OS upgrades
1%	6.6%	Data center/server monitoring and mgt services
4%	6.5%	Management/leadership training
-1%	6.4%	Engineering/product development SW
-1%	6.4%	Networking equipment (wireless)
-6%	6.3%	Applications development tools
5%	6.3%	Systems development & integration outsourcing
1%	6.2%	Integration tools/middleware (non SOA)
4%	6.0%	Mobile devices and telecomm services
-2%	5.6%	Client PCs (desktops, laptops)
-3%	5.6%	Networking equipment (non-wireless)
-7%	5.3%	Anti-virus/spyware/malware software and suites
5%	5.3%	Security mgt. services
5%	5.3%	Technical training
1%	5.0%	Telecommunications services
-7%	4.1%	A/V equipment
-3%	3.9%	VPNs
4%	3.5%	Patch management
1%	3.3%	Network monitoring/mgt services
4%	3.0%	Desktop mgt services
3%	2.8%	Web hosting services

IT execs have amped up spending in 2008 in key areas and are searching for appropriately skilled workers.

FP 2008 IT Spending Trends – SMBs* (2007 Actuals vs. 2008 Budgeted)

Higher spending priorities for SMBs v. large cos:

- ERP systems
- E-commerce systems
- Storage/remote BU
- Data center/server services
- Technical training
- Management/Leader training

Lower spending priorities for SMBs v. large:

- Customer Self-service tech.
- Collaboration S/W

change from 2007 spending (points)	% change 2008 budget vs. actual 2007 spend	Technology or Service (SMB only)
17%	23.4%	Virtualization (servers/storage)
12%	15.8%	VoIP
5%	14.7%	ERP systems
1%	13.7%	E-commerce systems
2%	13.5%	CRM software
0%	12.5%	Storage equipment
5%	11.7%	Storage/remote backup systems
10%	10.9%	Content/Information lifecycle mgt. software (incl. digital asset/document mgt)
-6%	10.8%	E-mail/instant messaging SW
1%	10.7%	Database systems
2%	10.3%	Data center/server monitoring and mgt services
11%	9.9%	BI/analytics/data mining software
2%	9.4%	Intrusion prevention/detection systems
10%	9.1%	Telecommunications equipment
6%	8.6%	IT strategy consulting and advisory services
5%	8.1%	Collaboration software
4%	8.1%	Web services/SOA
11%	8.0%	Disaster recovery/business continuity services
4%	8.0%	Systems development & integration outsourcing
3%	7.9%	OS upgrades
8%	7.7%	Network access control/Identity mgt sys.
-1%	7.5%	Servers (non-mainframe)
-6%	7.2%	Applications development tools
7%	7.2%	Technical training
8%	6.9%	Management/leadership training
4%	6.8%	Storage mgt. software
4%	6.3%	Mobile devices and telecomm services
-6%	5.4%	Anti-virus/spyware/malware software and suites
3%	5.4%	Telecommunications services
-3%	4.5%	Client PCs (desktops, laptops)
4%	4.2%	Network monitoring/mgt services
4%	4.2%	Web hosting services
-1%	3.7%	VPNs
8%	3.5%	Patch management
-9%	1.7%	A/V equipment

*SMB: < \$500 million revs

Other Indicators of Demand for IT Skills and Jobs in 2008

2008: Top IT Technologies & Strategies (Opinion Survey)

Mid-Market companies \$100-\$999M

1. Business intelligence/data mining
2. Collaboration and workflow
3. Data and systems integration ←
4. Virtualization ←
5. Business process management and modeling

All companies

1. Business intelligence/data mining
2. Collaboration and workflow
3. Data and systems integration ←
4. Business process management and modeling
5. Virtualization ←
6. Web services/SOA
7. Disaster recovery/business continuity/enterprise risk mgt ←
8. Bandwidth, load and demand management tools
9. CRM
10. Corporate portals

Least mentioned: Social networking; Blog/podcast/Webcast production; virtual world tech

Source: CIO Insight by-invitation survey

251 respondents, (all heads of IT).

Company size: '07 revenue: ≤\$100M (68 resp.), \$100M to \$999.9M (82 resp.), \$1B+ (101 resp.)

2008: Top Technology Priorities (Opinion Survey)

GARTNER 2008 CIO Agenda Survey (n=1500)

1. Business intelligence applications
2. Enterprise applications (ERP, CRM and others)
3. Servers and storage technologies
4. Legacy modernisation, upgrade or enhancement
5. Technical infrastructure
6. **Security technologies** ←
7. Networking, voice and data
8. Collaboration technologies
9. Document management
10. Service-oriented architecture (SOA) and service-oriented business applications (SOBA)

Technology priorities attracting the most CIO involvement – All cos.

1. Creating or improving strategic applications
2. Expanding infrastructure to keep up with growth
3. **Improving IT security and continuity** ←
4. Instituting a more flexible IT architecture (e.g. SaaS)
5. Improving the quality of investment
6. Standardizing and consolidating IT infrastructure
7. Discovering and deploying innovative technologies
8. Improving ROI of IT investments
9. Reducing complexity of information systems

Least mentioned: Reducing energy consumption

Source: ibid. CIO Insight

2008: Top Business Priorities for IT (Opinion Survey)

GARTNER 2008 CIO Agenda Survey (n=1500)

1. Business process improvement
2. Attracting and retaining new customers
3. Creating new products and services (innovation)
4. Expanding into new markets or geographies
5. Reducing enterprise costs
6. Improving enterprise workforce effectiveness
7. Expanding current customer relationships
8. Increasing the use of information and analytics
9. Targeting customers and markets more effectively
10. Acquiring new companies and capabilities (mergers and acquisitions)

Business priorities attracting the most CIO involvement

1. Delivering better service to customers ←
2. Improving business processes
3. Contributing to creation of new business strategies
4. Cutting costs
5. Coming up with innovative new products and services
6. Generating more business from new and current customers
7. Improving workforce productivity
8. Ensuring business continuity
9. Complying with regulatory requirements ←
10. Differentiating from competitors through use of IT

Source: ibid. CIO Insight

2008: Top Management Priorities (Opinion Survey)


Management priorities attracting the most CIO involvement – All cos. (2008 survey)

1. Improving alignment with business objectives
2. Improving IT planning processes
3. Improving project management capabilities
4. Reducing IT costs
5. Improving ROI on IT spending
6. Improving leadership and management development
7. Improving systems development capabilities
8. Recruiting and retaining IT staff
9. Instituting ITIL
10. Reorganizing the IT dept.

Source: ibid. CIO Insight

Toughest IT Challenges: Next 5 – 10 years

IT management priorities attracting the most CIO involvement: \$5M - \$500M (2008 survey)

1. Maintaining IT security and data privacy 
2. Maintaining a 24/7 infrastructure
3. Developing IT strategies for competitive advantage
4. Demonstrating and measuring IT's value
5. Managing and integrating information
6. Providing real-time, cost-effective capabilities
7. Attracting young people to the IT profession
8. Recruiting and retaining IT professionals, managers
9. Retaining a loyal, stable core IT staff
10. Reducing IT costs

IT management priorities attracting the most CIO involvement – All companies (2008 survey)

1. Maintaining IT security and data privacy 
2. Developing IT strategies for competitive advantage
3. Maintaining a 24/7 infrastructure
4. Attracting young Americans to the IT profession
5. Demonstrating and measuring IT's value
6. Recruiting and retaining IT professionals, managers
7. Managing and integrating information
8. Retaining a loyal, stable core IT staff
9. Providing real-time, cost-effective capabilities
10. Reducing IT costs

Source: ibid. CIO Insight

IT Security and Privacy Skills Demand

Foote Partners Analysis

IT Security Trends Driving Pay (Macro)

- Dismantling of the IT security "empire"
 - Overall information risk management versus tactical, technical focus on IT operations
- IT governance, IT risk management and IT compliance (GRC) will continue to converge into one discipline
 - But convergence is moving very slowly
 - Greater attention paid to metrics, staffing and organizational structure
- Regulation...SarBox, FFIEC, FISMA, HSPD-12, FIPS, EDPA, CA SB1286, just for starters
 - Public Company Accounting Oversight Board (PCAOB) continues to evolve
 - Requirements for automated, repeatable controls and processes around the classic information compliance drivers

IT Security Trends Driving Pay (Macro), cont.

- Legal risk and the implications of noncompliance intensifying
 - Fines, irrevocable damage of company brand and reputation; jail time for executives
 - Changes to the Rules of Civil Procedure regarding document retention making it harder for companies to mount effective litigation defense.
- Customers are pressuring vendors to build better security into products and services...or else
- Big vendor dominance (more acquisitions)
- Security organizations splitting into strategy teams (business issues of risk management) and operational teams (technical, esp. networking)
 - Security technology baked into infrastructure

IT Security Trends Driving Pay (Macro), cont.

- Security organizations split into strategy teams (business issues of risk management) and operational teams (technical, esp. networking)
 - Security technology baked into infrastructure
- *Datacentric security*: Working with business to classify data to determine who gets to see it and how to protect it.
- Proactive security programs spanning entire application lifecycles

Virtualization and Security

- 70% of enterprises report they're running at least one virtualized server, *yet < 12% report that they have a VM security strategy (FP survey)*
 - Nearly half without VM security plans believe that virtual machines are as secure as traditional servers
 - Another 18% admit they don't know whether virtualization changes the rules of the game for security
- Two fronts for new security threats:
 - Additional software footprint for both desktop and servers
 - How multiple virtual machines communicate with each other on the same system, plus the ability to move running VMs from machine to machine

Special needs for:

- VM-specific operational security
- Disaster recovery plans need to incorporate changes to virtualized servers using blade technology
- Architecture and life-cycle processes to manage a wide variety of "VM sprawl" issues

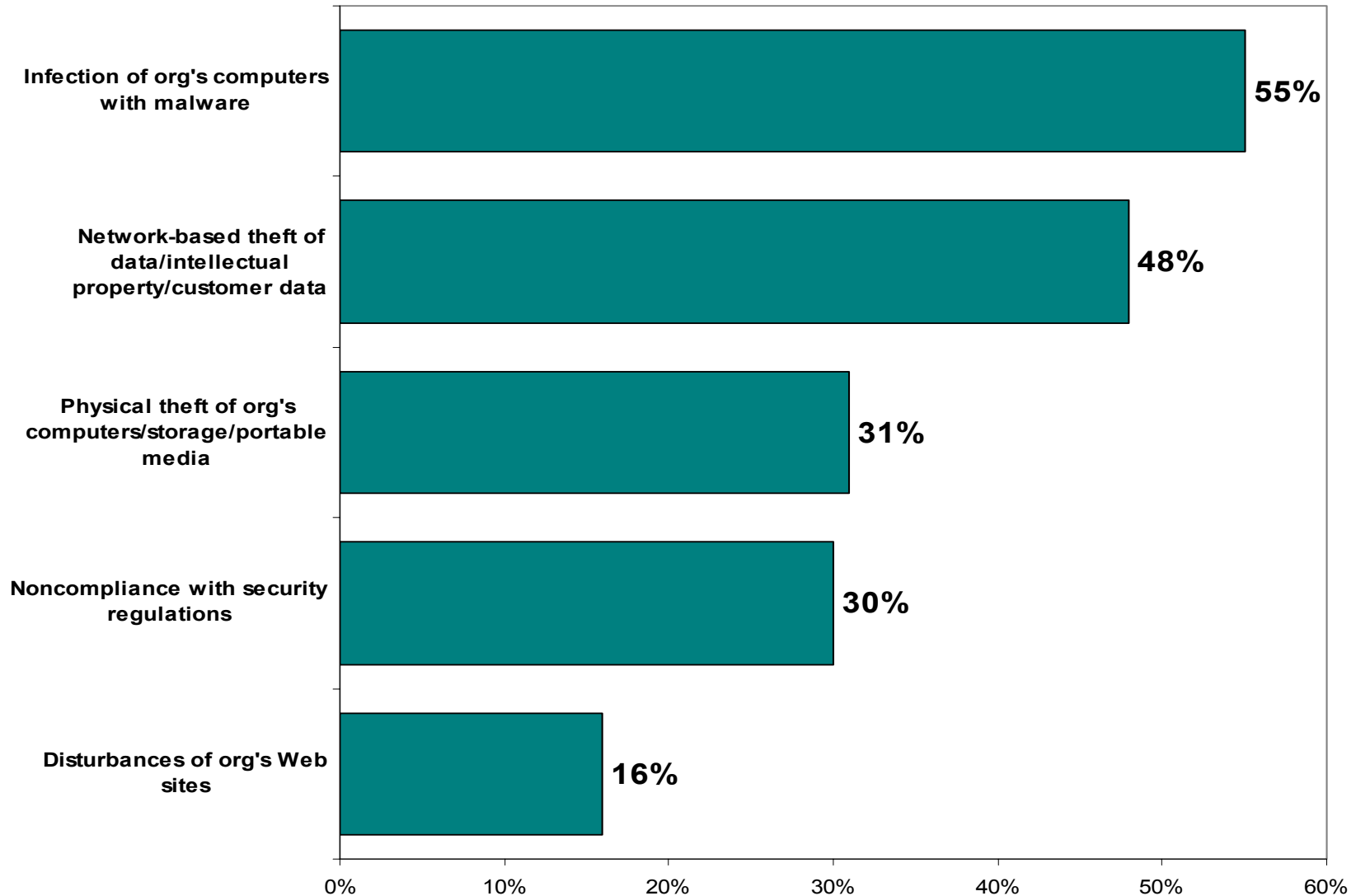
Virtualization Security Issues

- A virtual OS/applications machine can be attacked in the same way as a physical system (PS)
- A system containing a trusted virtual machine (VM) on an untrusted host poses a greater risk than a system containing a trusted host with an untrusted VM
- Arguments:
 - A VM poses a higher security risk than an identically configured PS OS/apps system (reason: hypervisor)
 - A VM can be made more secure than similar PS when functionality and content is separated
 - Aggregated VMs on the same PS can only be made more secure (than separate PS's) by modifying the VMs configurations to offset hypervisor risk

Virtualization Security Solutions

- Hardware vendors designing end-user systems from the ground up, provide administrator-controlled VM partitions and hypervisor layers
- Virtual appliances (e.g. grid computing, SaaS)

Areas of Greatest Security Risk Exposure



Security Challenges and Holes

- User education on security issues (more people than ever have access to critical data, ignorance of privacy regs, etc.)
- Communication between IT and business executives about security: understanding the business and where it's heading...not letting technology drive strategy.
- Traditional perimeter-type approaches are missing many threats.
 - **Trusted users and partners:** They have access to sensitive data
 - **Web applications vulnerabilities:** 75% of attacks at apps layer, many through quick-code Web apps with little 'baked-in' security
 - **Missing devices:** Unencrypted lost laptops, mobile devices containing sensitive info
 - **Custom malware:** Proliferating malware operating under the radar of established signatures
 - **Social engineering:** Policy creation + education + enforcement = incremental success.

Security Challenges and Holes, cont.

- Aligning security spending with the true risks and threats being addressed
 - Gap between security spend and today's risk is shocking
 - EX: spending for network-centric perimeter type technologies vs. data and information security threat levels
- Comprehensive knowledge of IT architecture to enable secure design (ground-up secure infrastructures)
- Full awareness and security coverage of the enterprise computing environment
 - Mobility security
 - Identity and access management
 - Protecting data and intellectual property
 - Vulnerability management
 - Threat management
 - Trust management

Security Challenges and Holes, cont.

- Immaturity and expense of newer technologies (EX: DLP)
- Security metrics: finding better ones, using them more adroitly

Security Strategies

- Pushing for active, not passive, anticipatory prevention defenses
- Combating acceleration of hacker efforts between vulnerability publication and exploit
- Inclusion of security components in traditional technologies (routers, switches, servers, desktops, PDAs, etc.)
- Aggressive attacks on zombie technologies, which are becoming stealthier

Security Strategies

- Staffing is arguably the biggest issue for most
 - Too expensive to create/maintain a security team; credentialed, skilled expertise is tough to find
 - Not enough in-house experience or time to deal with all manner of deadly serious security issues common to operational environments
 - Diversity of security requirements: Problems get ignored when they are beyond internal capabilities, institutional understanding
- Outsourcing of security technology functions
- Outsourcing of security skill sets

Footnote Partners Information

Foote Partners, LLC
Foote Research Group

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Foote Partners LLC (est. 1997)

- Senior team of former Gartner, Meta Group, McKinsey & Co., and Towers Perrin analysts and consultants; former HR, IT, and business executives and managers
- Grounding in evolving technology, HR and business drivers of IT workforce change
- Research partnerships with 1,900 employers/78,000 IT workers yields high quality validated, reliable data, updated regularly
 - Only industry compensation survey that correct for IT job title/job content disconnects before loading data into survey engine
 - Industry's most comprehensive and up-to-date IT skills pay survey
 - All primary research: no aggregated data sources

All products and services backed by a proprietary research database and custom surveys/data collection methods

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“IT Insider” Analytical Research Series

- Research engine continuously tracking IT pay, attitudes, and management practices at thousands of North American employers

2008 IT Workforce and Compensation Survey Publications

- IT Insider Professional Salary Survey™ reports (140 positions)
- IT Skills and Certifications Pay Index™ (330 certified/noncertified skills)
- IT Salary+Skills Pay Survey™ reports
- IT Insider Workforce Trends Series™ reports
- IT Insider Professional Job Descriptions™

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IT Professional Salary Survey (job families)

Business Applications Delivery
Business Systems Analysts
Business Technology
Data Warehousing/BI
Database Administration
Database Developers
E-Commerce
Enterprise Applications
Enterprise Infrastructure
Enterprise Messaging
Help Desk
IT Architecture
IT Security Management

Java Developers
Lotus Notes
.NET Developers
Network Engineering
Network Operations
Systems Engineering
Systems Operations Project
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