



***Skills Gaps in the World's IT Workforce:
A CompTIA International Research Study***

IT Star meeting

Godollo, 8 November 2008

by

Elzbieta de Paiva Leite

CompTIA

Policy Advisor for Central-Eastern Europe



Objectives and Methodology

Primary objectives:

- Identify types of IT skills in demand, any gaps, and possible solutions
- Measure the market demand for IT professionals
- Investigate factors most influencing the IT worker demand

The research was conducted:

- By outside third-party
- Via phone interviews and survey
- Cross-section of Industries: IT, Government, Financial Services, Other Services, Automotive&Other Manufacturing, Education, Wholesale&Retail, Healthcare, Transportation, Mining&Construction, Arts&Entertainment
- 14 countries: ***Australia, Canada, China, France, Germany, India, Italy, Japan, The Netherlands, Poland, Russia, South Africa, U.K., and U.S***
- 3,578 survey respondents, minimum 250 per market

IT Skills by Company Size

- Most opportunities with:
 - Small-size companies
 - Programming
 - Application-level
 - Mid-size companies
 - Networking
 - Operating Systems
 - Large-size companies
 - Security
 - "Soft" skills
 - Server
 - Application-level
 - Programming
 - Networking

IT Skills by Industry

- Most opportunities with:
 - Government
 - Security
 - Healthcare
 - Networking, RF mobile/wireless
 - Education
 - Operating systems, RF mobile/wireless, Security, "Soft" skills, Hardware
 - IT Services
 - "Soft" skills, Application-level, Web-based, Programming
 - Mining/Construction and Telecom
 - RF mobile/Wireless
 - Arts/Recreation/Entertainment
 - Programming



Skills Gaps

Overall: IT Skills in Respondent's Organization	% Important (n=3578)	% Proficient (n=3578)	Gap
Security/firewalls/data privacy	74%	57%	17
General networking, network infrastructure	66%	59%	7
Operating Systems (Linux, Windows, XP, Vista, etc.)	66%	65%	1
Hardware skills/knowledge (including printers, PCs, etc.)	57%	60%	-3
Non-specific server technology (including DB, storage, maintenance, administration, etc.)	57%	49%	8
"Soft" skills (customer service, sales, project management, communication, etc.)	56%	45%	11
Application-level (architecture, design, development, programming, integration, etc.)	54%	47%	7
Specific programming languages (non-MSFT, Java, etc.)	40%	40%	0
Web-based technologies (Web2.0, SOA, SaaS, RIAs, Ajax, etc.)	40%	34%	6
RF mobile/wireless technology	27%	26%	1

"Gaps" in skills were determined by subtracting the percent of respondents saying employees are proficient in a skill from the percent saying that skill is important.



Skills Gaps by Country I

Largest <u>Gaps</u> in Skills by Country	U.S.	Canada	U.K.	Germany	France	Italy	Nether-lands
Security/firewalls/data privacy	9	16	16	12	13	18	17
General networking, network infrastructure	4	2	5	1	0	7	3
Operating Systems (Linux, Windows, XP, Vista, etc.)	-6	-3	1	-6	-2	4	0
Hardware skills/knowledge (including printers, PCs, etc.)	-3	-4	5	-20	-3	-5	-9
Non-specific server technology (including DB, storage, maintenance, administration, etc.)	3	7	7	2	1	10	4
“Soft” skills (customer service, sales, project management, communication, etc.)	13	13	9	10	-1	4	17
Application-level (architecture, design, development, programming, integration, etc.)	9	6	7	1	-1	1	19
Specific programming languages (non-MSFT, Java, etc.)	-6	0	1	-6	-2	-1	-3
Web-based technologies (Web2.0, SOA, SaaS, RIAs, Ajax, etc.)	6	7	5	4	1	3	6
RF mobile/wireless technology	-6	3	-1	1	-5	4	1



Skills Gaps by Country II

Largest <u>Gaps</u> in Skills by Country	Russia	Poland	India	China	Japan	Australia	South Africa
Security/firewalls/data privacy	11	20	19	24	23	20	21
General networking, network infrastructure	1	19	7	5	12	13	15
Operating Systems (Linux, Windows, XP, Vista, etc.)	-1	-4	8	4	5	9	15
Hardware skills/knowledge (including printers, PCs, etc.)	-5	8	-3	-4	2	11	13
Non-specific server technology (including DB, storage, maintenance, administration, etc.)	9	11	4	7	10	14	22
“Soft” skills (customer service, sales, project management, communication, etc.)	9	7	10	16	15	19	23
Application-level (architecture, design, development, programming, integration, etc.)	5	4	8	8	6	9	17
Specific programming languages (non-MSFT, Java, etc.)	-6	-2	-1	2	2	10	15
Web-based technologies (Web2.0, SOA, SaaS, RIAs, Ajax, etc.)	0	5	7	12	4	10	15
RF mobile/wireless technology	-1	-1	4	5	-1	4	10

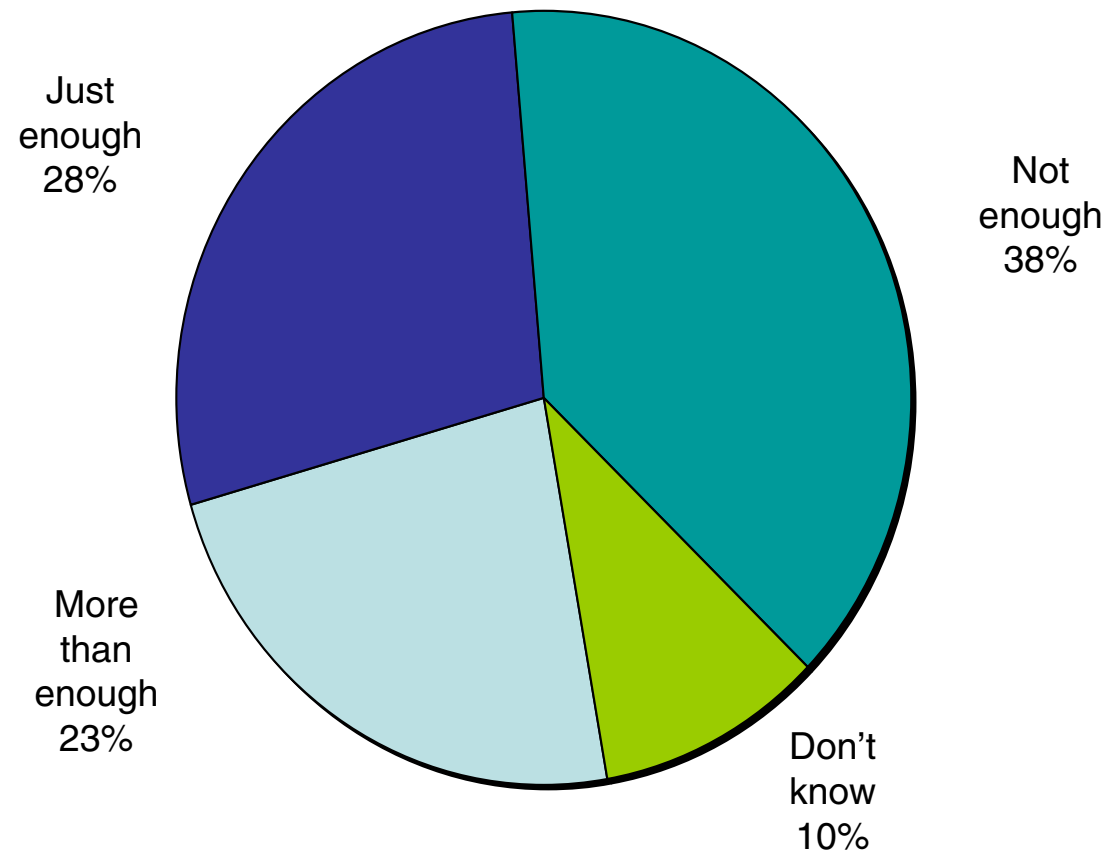
Skills Gaps by Company Size

- Small-size companies less proficient in:
 - Security
 - Non-specific server technology
 - General networking/network infrastructure
 - RF Mobile/Wireless technology
 - Operating Systems
 - Hardware
 - Web-based
- Mid-size less proficient in:
 - Application-level skills
 - Programming
 - Web-based
- Large-size less proficient in:
 - Hardware

Skills Gaps by Industry

- Healthcare less proficient in:
 - Application-level
 - Programming
- Government less proficient in:
 - Application-level
 - "Soft" skills
 - RF mobile/wireless
 - Web-based
- Education less proficient in:
 - "Soft" skills
- Auto/Manufacturing less proficient in:
 - "Soft" skills
 - Web-based technologies
- IT Services less proficient in:
 - Hardware
 - Security

Amount of Qualified Candidates





Factors Driving Change

Factors: Overall	Currently	One Year from Now	Five Years from Now	Trend
The fast pace of technological change	52%	51%	43%	-9
Budget constraints/costs	51%	40%	30%	-21
Security and compliance	48%	43%	33%	-15
Consumer needs/demand for goods/services	47%	42%	33%	-14
Outsourcing	37%	39%	32%	-5
The convergence of various technologies	34%	42%	37%	3
Increasing globalization	33%	39%	41%	8
The global shift of IT jobs between countries and across the world	32%	36%	41%	9
An increasingly mobile workforce	31%	38%	35%	4
Open Source Software	30%	35%	34%	4
Government policies/leadership of country	27%	32%	31%	4
An aging workforce	21%	22%	45%	24
None of the above	5%	4%	6%	1

Factors Driving Change by Company Size

- Small-size companies: Technological change, Budget constraints
- Mid-size companies: Security and compliance, Technological change, Budget constraints/costs, Government policies
- Large-size companies: Fast pace of technological change, Increasing globalization, Global shift of IT jobs between countries, Budget constraints/costs, Aging workforce, Outsourcing, Security and compliance, Government policies

Summary and Conclusions

- The top three most important IT skills are: security (74%), general networking (66%) and operating systems (66%)
- When comparing reported proficiency in skills to importance of skills, the skill with the widest “gap” in proficiency is security/firewalls/data privacy
- When asked what their organizations should be doing to enhance employees’ IT skills, the top two answers are: sending employees for professional training externally (42%), and providing incentives, rewards (41%). Third in order of importance is sending employees for certification (36%)
- The plurality of respondents (38%) report there are not enough qualified IT candidates in their countries



About CompTIA

- The Computing Technology Industry Association (CompTIA) is the voice of the world's IT industry
- Our goal is to provide a unified voice, global advocacy and leadership, and to advance industry growth through standards, professional competence, education and business solutions
- Our members are the companies at the forefront of innovation; and the professionals responsible for maximizing the benefits organizations receive from their technology investment

www.comptia.eu

Contact

Elzbieta de Paiva Leite

CompTIA Policy Advisor for Central-Eastern Europe
Babimojska 8/12, Poznan
tel: +48 660 705 266
e-mail: eleite@comptia.org

CompTIA Public Policy Office EMEA
B-1040 Brussels/EU
6, Rond Point Schuman
tel: +32-2/234.78.22/23