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Latest Trends in IT & Engineering Staffing and Solutions

IT & Engineering Services Update

Current and future trends point to specific skills gaps

The IBM 2012 Tech Trends Report attempts to foretell what the future will hold for IT was published by the computing giant's IBM Center for Applied Insights in December 2012. The trends identified are based on a survey of more than 1,200 technology decision makers in 16 different sectors as well as more than 250 academics and 450 students.

Close to two-thirds of the respondents identified just four areas that are strategically important to their organizations and plan significant investments in the next two years.

Those key technologies are business analytics, mobile technologies, cloud computing, and social technologies or social business.

But two major hurdles preventing further adoption of those technologies were identified: security concerns and finding enough people with the right skills; only 10 percent of the organizations report they have all the sufficient skills they need at this time. The report goes on to say "These shortages are not trivial or isolated. Within each area, roughly one-quarter [of respondents] report major skill gaps, and 60 percent or more report moderate to major shortfalls."

To meet the skills gaps, the recommendation is that IT managers follow several steps:

- Push staff to develop skills across disciplines (i.e. outside of their "silo").
- Utilize social media and other outside resources to assemble teams with the sought after skills.
- Expand "mission beyond IT" so business leaders throughout the organization understand the value of business analytics and other products and services provided by the IT organization.

Beyond developing strong policies to protect data assets to address the security concerns, IT administrators should also:

- Work with other organizations, including academia, on solutions.
- Dedicate resources (e.g. budget) for security skills development and technology.

Not surprisingly, IBM's findings are somewhat consistent with InformationWeek's 2012 State of IT Staffing report published at the end of the year based upon a survey of nearly 1,400 business technology professionals. One-quarter (25 percent) said that Application development will be the area with the most significant increase in staff followed by Security (17 percent) and Application delivery (17 percent).

The "App" economy booming

Although federal government statistical agencies do not have a classification for 'mobile app developer," it's clear that this unofficial occupation is hot. According to The Miami Herald, TechNet, a lobbying group of high-tech CEOs, estimates that nearly 500,000 mobile-tech jobs have been created since 2007 when the iPhone was introduced.

Most economists expect the number of tech and engineering jobs to grow. But recent studies indicate it's not just tech jobs that grow in number in areas of that are recognized as technology centers. According to an analysis by economist professor Enrico Moretti at the University of California, Berkeley, every new technology job, in turn, creates five additional jobs outside of the tech sector. According to Bloomberg Finance L.P. Moretti, the author of The New Geography of Jobs, said "every software engineer attracted to Twitter will indirectly support many more service jobs. My research suggests that this multiplier effect is particularly large for high-tech jobs."

A report published in December 2012 commissioned by Engine Advocacy, a San Francisco public-private partnership of labor, government, and higher education, found that high-tech sectors are also "an important source of secondary job creation and local economic development." "High-tech" is defined as sectors with relatively high percentages of workers in science, technology, engineering, and math occupations (STEM). According to Engine Advocacy, jobs growth in STEM occupations outpaced job gains for all occupations by a ratio of 27 to one between 2002 and 2011. In addition, they estimate that for every one job created in the high-tech sector, 4.3 additional jobs are created in goods and services in the local economy, which is considerably higher than the multiplier effect for the manufacturing sector that is 1.4.

Unemployment rates much lower in 2012 for IT and engineering pros

While the nation's unemployment rate hovered around 8.0 percent throughout 2012, the unemployment rates for those in IT and engineering professions were significantly lower.

IT Occupations (2012)	
Computer hardware engineers	1.9
Computer and information research scientists	2.2
Computer and information systems managers	3.2
Computer network architects	2.2
Computer programmers	4.5
Computer support specialists	6.6
Computer systems analysts	3.6
Database administrators	3.6
Information security analysts	0.9
Network and computer systems administrators	4.1
Software developers, applications and systems software	2.8
Web developers	4.2
Engineering Occupations (2012)	
Aerospace engineers	3.7
Architectural and engineering managers	2.3
Chemical engineers	2.7
Civil engineers	3.4
Electrical and electronic engineers	3.4
Engineering technicians	4.7
Materials engineers	4.4
Mechanical engineers	3.1
Nuclear engineers	1.7
Petroleum engineers	0.6

Source: unpublished tabulations of Current Population Survey data furnished by the U.S. Bureau of Labor Statistics

Real-world IT job titles for start-ups

Official federal occupational job titles are useful to see big picture trends, but they are often too broad and sometimes outdated for real-world relevance. TechCrunch, a technology media resource and part of AOL Tech, recently posted an entry listing five positions that are in high demand, often by start-ups.

- **Designers Who Code:** The description of this title is fairly self-explanatory – someone, in addition to being able to write great HTML/JavaScript/CSS, also can create first-rate design, and are as rare as a unicorn or purple squirrel.
- **DevOps:** As a job title that has been around for a couple of years, this portmanteau of development and operations is some who can facilitate the integration of software developers and IT operations as it stresses collaboration and communication between work groups; some companies may call these individuals as chief engineers.
- **[Ruby, Python, iOS, Android, and others] Engineers:** Actually this real-world occupation equates to the official occupational title of Web developer; it's just more specific detailing a precise skill set.
- **Growth Hacker:** Essentially, this is the equivalent of a VP/marketing and has been described as "a hybrid of marketer and coder, one who looks at the traditional question of 'How do I get customers for my product?' and answers with A/B tests, landing pages, viral factor, email deliverability, and Open Graph."
- **Startup Sales Guru:** Technically not a technical position, even very successful salespeople from other organizations may not necessarily be able to operate in a start-up environment often with neither many resources nor defined processes. Being able to find great salespeople who can thrive and succeed in an often chaotic environment can be a very hard task, and as with many openings at leading technology and engineering organizations may be best outsourced to a professional staffing and solutions company.

Beyond the cloud in 2013

The passing of Steve Jobs has renewed interest on Apple's other co-founder, Steve Wozniak. "The Woz" recently posted his forecasts for IT for 2013 on Forbes.com. Although his "predictions" for 2013 are not anything groundbreaking, they do hint of a shift in direction for IT. Recognizing that "Cloud and Consumerization of IT trend ... have been so hot these past few years," he expands that concept by seeing "the data center really stepping up to share the limelight" and saying "Data center technologies will be to 2013 what the Cloud was for 2012."