



How to keep your tech career afloat

(InfoWorld Daily Via Acquire Media NewsEdge) Anyone who has worked in IT for more than five minutes knows that the field has been in a dramatic transformation for the past 10 years, invading and conquering other organizational domains such as communications and security, while also wrestling with the new issues that technology has wrought such as employee mobility. In most organizations, IT has had to transform itself from a bunch of techies installing and troubleshooting equipment to a key enabler of business strategy and competitiveness.

Throughout, outsourcing and offshoring have shaken the foundations of IT, making some wonder at times if they have a role in their organization at all. And those who work in outsourcing companies also have to figure out what their role is when they are supporting a variety of clients.

What do all these changes mean for the typical IT employee today? What skills should an IT staffer be nurturing to enhance his or her career in a changing market? From InfoWorld's research, it's clear that IT staff need to bolster their skills and certifications in three key categories: technology, process, and business skills.

The essential technology skills for IT staff

Despite all the changes the profession has gone through as it has become intertwined with the business, IT is still about technology at its core. Today, several technologies stand out as enticing career opportunities due to their complexity and the shortage of IT expertise around them. Four stand out in particular: virtualization, unified communications, wireless, and modern application development.

Virtualization. In the rush to consolidate operations and reduce IT capital costs, virtualization has taken off, particularly server virtualization.

But the introduction of virtualization to reduce hardware and energy usage has brought in a new challenge: how to manage the virtual environment. "Virtual machines are so easy to develop and so difficult to manage," says Mike Walsh, a product manager for Global Knowledge, an IT and business training organization. "If you're creating virtual machines that can be moved all around physical servers, updated or not, documented or not, protected or not, how in the world do you manage it all? You can have a single physical server running dozens of different operating systems, including a legacy application on an old version of NT. It's very challenging."

As demand for virtualization skills increases, training and certification programs from both independent trainers and virtualization vendors are starting to appear for virtualization management. Although such training is useful, the best way to enhance your virtualization career, experts say, is to get real-world training on the job, especially through a large virtualization project.

Unified communications. Another emerging hot technology is unified communications, which involves the merging of voice and data networks through technologies such as VoIP (Voice over IP). A Cisco-sponsored report found that 57 percent of companies expected to require additional IP telephony skills in the near future. A recent Forrester report cites unified communications specialists as one of the top growth areas in IT organizations, requiring expertise with networking, user devices, and collaboration applications. "We always thought of networking, server, administration, and application administration

as different disciplines. But with categories like unified communications, they're all merging," says Kimberly Lanzo-Russo, a director of Microsoft-related training at Global Knowledge.

"Security in VoIP is huge," Walsh says. "Today if you want to talk about something involving sensitive information, you typically don't send an e-mail, you pick up the phone so that there's nothing left on the screen, no record, nothing intercepted. Unfortunately, however, it's not all that difficult to put a tap on VoIP calls so that you capture any call in which, for example, the word 'merger' is said."

To a large extent, VoIP security expertise is about knowing how to set up the right controls, policies, procedures, and enforcement mechanisms. The SANS Institute and InfoSec Institute are among those that offer courses on VoIP security.

Hard core networking skills are also crucial when it comes to VoIP and unified communications deployment. "You not only need to know about IP protocols and all that technical networking knowledge, you also need to understand how to layer all these other services on it without breaking anything," says Jeanne Beliveau-Dunn, general manager for Cisco Systems' training group.

Wireless. Wireless networking and related security issues are also hot. The Cisco-sponsored research report found that 59 percent of surveyed organizations were planning on recruiting additional wireless skills.

"We see a huge shortage of real wireless expertise," Beliveau-Dunn says. "Wireless is now a standard part of any network, but you have to understand things about RF [the radiofrequency spectrum], time, distance, and physical space that go beyond typical network expertise. There are so many different wireless security protocols to understand and you have to integrate them with your other security."

Demand has exploded as wireless has increasingly become a mainstream technology. "We see lots of customers who are building new buildings getting a wireless network up fast instead of rewiring the whole building, and we see a lot of the public sector investing in wireless mesh," Beliveau-Dunn says.

Also in demand are IT staff skills in carrier-based wireless and cellular technologies, says Global Knowledge's Walsh.

Modern app dev. For internal and Web application development, Java skills remain in high demand. "An increasing number of end user enterprise apps are written in Java," says Cushing Anderson, an IDC analyst. But Java skills alone won't cut it, he says: "You still need the structured back end. You need to be able to write in Oracle or SAP's development app."

But Java isn't the only hot app dev skill to have. In the last few years, there's been a surge in employers that assess candidates on their C# and ASP.Net skills. "From what we see, .Net is definitely hitting its stride," says Randy Kraemer, product manager for content strategy at Brainbench, a PreVisor company, a firm that does IT employee screening. "In the past, Unix, Linux, and Java had much higher rankings."

Kraemer also sees a big interest in anything related to Web 2.0. AJAX is an obvious hot spot, and Kraemer sees increasing importance of Ruby. These Web 2.0 technologies are in demand because "every site wants to have some sort of social interaction," he says.

Aside from the typical Microsoft and other vendor app dev certifications, IT developers should consider entering programming competitions such as those sponsored by Topcoder. "People who come off Topcoder with top positioning are likely to get offers of various kinds," says Diane Morello, a Gartner researcher.

The importance of multiple skills. Having an in-demand skill is certainly good for your career, but it's

not enough for the long term. Companies are increasingly looking for cross-functional expertise. "The ability to make systems work together has become more important than ever before," says IDC's Anderson. "You can be a Cisco guy, but you'll be more valuable if you can optimize Cisco routing tables with your company's SAP financial applications. It shows you recognize how your piece fits in the broader circle of the organization." That might mean a combination of higher-level Cisco certifications with those of an SAP administrator. Unified communications and wireless obviously cross disciplines as well.

Crossing disciplines requires a firm expertise in the basics. "If you're a networking person who really understands connectivity, routing, and how networks really work, you'll be much more useful for a cross-disciplinary project than someone who knows just how to configure a specific router," says Global Knowledge's Walsh.

"We find that people are more likely than before to get several different certifications and that customers look at new technologies in an integrated fashion. You can't just know one area and not another," concurs Cisco's Beliveau-Dunn. That's why Cisco has started to embed security, wireless, and quality of service for voice in its CCNA, CCNP, and CCIE certifications in addition to offering speciality certifications for security, wireless, and voice. "Unlike five years ago, today, you have to start with all this on Day 1."

The essential process skills for IT

New technology skills are important, but having just technology skills will get you only so far. As IT gets more involved with massive projects such as corporate telephony systems, and with integrating new technologies that affect directly how business processes operate, project management and process skills are increasingly taking center stage.

"In IT today, just about everything is project work," says Kirsten Lora, a business training director at Global Knowledge. The exceptions are mundane, operational jobs such as backup." Concur her colleague Walsh, "It's like a military campaign and requires tremendous project management skills."

Trainers recommended five key process-oriented certifications that career-minded IT staff should consider getting: PMP or CAPM, ITIL, CBAP, ISO 20000, and COBIT.

The Project Management Institute's Project Management Professional (PMP) credential requires three to five years of direct project management experience just to get in the door. For those who don't have the requisite experience, the Certified Associate in Project Management (CAPM) is a good start, indicating that you have a fundamental knowledge of project management principals as defined by the PMI and can be a valuable contributor to a project team as a subject matter expert, liaison, or coordinator.

With companies struggling to run IT more like a service organization aligned to company business objectives, ITIL is the third key process-oriented certification to get. "For people looking at career paths, ITIL is where many IT organizations are headed," says Global Knowledge's Lora. She suggests starting with the foundation-level training to become familiar with ITIL principles and the organizational attitude involved. "If you're going to join a business that is using ITIL, you really have to understand the culture." Even if your business isn't doing ITIL, Lora says the training adds to your marketability if you're considering a career change. "We're seeing ITIL pop up in state government, hospitals, finance, systems integrators, the federal government, utilities, and so on."

The ability to effectively collect, define, and manage customer requirements are especially valuable skills in project management. "I've seen more deployments fail because people didn't know how to gather customer requirements," Walsh says. "You might roll out a new IP PBX with all kinds of cool new features, and then the customer says, 'Didn't you know we needed such and such features to handle customer transfers, etc.?' They were on the old PBX. Bring it back."

A certification that is especially useful for gaining skills in gathering customer requirements is the International Institute of Business Analysts' Certified Business Analysis Professional (CBAP), Lora says. The CBAP requires five years of business analysis experience, but you can often get credit for many aspects of your IT project management.

Knowing how to measure risk and success effectively is also a process skill in demand. "For that, you're looking at ISO 20000 or COBIT training," Lora says. ISO 20000 is an international standard for delivery of IT services based on customer requirements, and COBIT is a set of best practices for IT management.

The essential business skills for IT

The third set of critical skills for IT -- business skills -- are increasingly important. Many of these are people-oriented skills. In fact a 2007 Microsoft-commissioned survey of 500 U.K.-based board-level executives found that 61 percent said that interpersonal and teamwork skills were more important than IT skills.

According to BrainBench's Kraemer, English and business communications skills are among his firm's most popular courses. The reason: "Companies want to know if this person can communicate in the office place."

In recognition of the need for people-oriented business skills, technical certification courses have started incorporating these types of skills in the curriculum as well. "Our CCDE (Cisco Certified Design Engineer) certification not only certifies technical skills but your ability to respond to an RFP for a business need and present your decision, including how the technology translates to the business problem and why you made the choices you made, and defend that in front of a panel of experts," says Cisco's Beliveau-Dunn.

But in-demand business skills are not limited to people-oriented ones. Some business-analysis skills are also in demand. One is understanding regulatory and compliance issues. Another is the ability to do portfolio analysis, to understand the right mix of capabilities for the business context. "IT modernization is about taking a look at what the portfolio is looking for and recognizing ways to shrink it down," says Gartner's Morello. "You need more sophisticated business insight to do this."

That business insight is critical to succeed in IT's ultimate purpose: helping the business do better. "Your ability to articulate the value proposition of technology to the business your company is trying to deliver is critical," says IDC's Anderson, who suggests stepping out of the IT role for 18 to 24 months as part of an active career plan with your boss or mentor. "Take job rotations in the lines of business," Anderson says. "If you can't do that, then go out and see how the branch office works for 18 months, or become the financial IT liaison."