

STRATEGIC GUIDE TO

IT Talent Management

Four Kinds of IT Pros You Need to Hire Now

The Most In-Demand Jobs

Tech Trends Fueling Hiring

The Cloud Skills Shortage

Why You Should Hire Interns



FROM THE EDITORS OF



BUSINESS TECHNOLOGY LEADERSHIP

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*Adapted from articles
published at CIO.com*

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EDITOR'S NOTE

The Triple Whammy

I'm sure you've noticed: There's an IT "talent war" going on. You're competing with cloud providers, IT vendors, Google and Facebook -- not to mention other corporate IT shops -- for great IT talent.

On top of that, there's a shortage of people with skills in the hottest technologies of our times: data analytics, mobile apps and cloud computing.

And yet you also know that to get a competitive advantage with IT you need a talent *advantage*. Business analysts who excel at blending IT and business together for great outcomes. Data analysts who can make sense of the tsunami of data flowing through your systems. Innovators who can help the business develop new products.

So how are you going to do that all that? Recruiting and *nurturing* business-IT talent will have to become (as Ford might put it) "Job No. 1." A research firm once identified the six characteristics of successful CIOs and my favorite one was this: "They allocate more time to talent development than to any other activity."

This report is intended to help guide you along the way.

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Editorial

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Four Kinds of IT Pros You Need to Hire Now

Social networking savvy. Mobile development experience. Business process smarts. Cloud management expertise.

Thanks to rapidly changing technology and evolving business expectations, the skills you need on staff to outcompete your rivals are morphing around you. If you don't hire right, you won't be ready for the future.

Already, that's clear. CIOs see some serious holes in the competencies of their IT groups and their companies generally, according to a joint survey of 370 IT leaders by *CIO* magazine and the MIT Center for Information Systems Research (CISR). The biggest gaps are in social media, collaboration and mobile technology. Forty-four percent of CIOs said their companies lack collaboration expertise; just 8 percent named collaboration as a formal enterprise capability. Meanwhile, 27 percent said they lack expertise in evaluating mobile, tablet and other new technologies.

Yet pressure is mounting to design and deploy systems that use social media and collaboration technologies and that can be accessed by employees anywhere. Meanwhile, most organizations struggle to make sense of the data tsunami crashing over them. Adding to the tumult is the movement among companies emerging from the recession to revamp business processes in order to compete better, says Jeanne Ross, director and principal research scientist at MIT CISR. IT's value has frequently been measured by how well systems are built and maintained, but the dominant metrics in the future will be how well employees use systems to find new customers, make better decisions faster, and drum up new revenues, Ross says.

While CIOs have always had to anticipate—and staff for—technology and business shifts, change now comes faster, says Frank Wander, CIO of the Guardian Life Insurance

75%

of CIOs say it's challenging to find skilled professionals today.

Source: Robert Half Technology survey of 1,400 CIOs, 2012

Company of America. “You’ve got to get on top of this.”

Not only are Wander and other CIOs restructuring their IT groups, they’re also working closely with other departments to let business-unit staff with strong technology skills, as well as their own IT people, migrate between groups as critical projects using new technologies arise. But no one’s sure what the winning staff formula will be.

“Before, we had an understanding of what IT was

and the skills needed that transcended industries and firms. There was a definition, just as the CFO has for finance,” Ross says. “Right now, that’s less true.”

Early signs indicate, however, that at least four new roles for technology professionals are emerging: hybrid business-IT experts; cloud-vendor managers; masters of data and analytics; and designers of dynamic applications that mix social, collaboration and mobile technologies. Looking for pure technologists won’t get you far. These roles require strong business knowledge plus management expertise. When you find these people, you’ll pay dearly: Some of these new IT superstars command salaries north of \$100,000.

Such professionals are not only essential for deploying new systems, they’re also where you will find your future IT leaders, says Gary Curtis, chief technology strategist at Accenture. Arrange enough of these stars in the right orbits, he suggests, and you can

edge past competitors, helping position your company for long-term advantage.

A New Breed of Application Developers

If they hope to attract new revenue, companies must rework IT to match the technology used by their ever-tweeting, always-mobile customers. Spend a day on Twitter or Facebook and you'll see what you're up against.

Project managers and application developers and designers with social, mobile, and collaboration expertise can transform existing systems and build new ones to meet such challenges. A background in Web development and user experience is helpful. CIOs should seek out people who are not only proficient in these new technologies but who also understand compliance and enterprise systems, including ERP, says MIT's Ross. IT professionals who understand the big picture can start to rejigger these core systems into secure,

accessible-anywhere applications, she says, without interrupting the flow of business. They can also conceive of ways to use existing content or data more profitably.

To acquire such a complex skill set, companies may offer big compensation. For example, Bare Escentuals, a privately held cosmetics company, wants a senior developer with at least seven years of Web experience to lead the building of a system combining social networking and content management. The pay, according to the job advertisement on Dice.com, is \$110,000.

Tom Flanagan, who retired recently from his position as CIO of Amgen, a \$14.6 billion pharmaceutical company, has hired recent college graduates with computer science and engineering degrees who are active in social media and know

Arrange enough of these stars in the right orbits and you can gain competitive advantage.

collaboration tools. They count for about one-sixth of the 1,000-member IT group. Most start on Amgen's core development team, then move throughout IT. "The older generation of IT people who work with these college kids see what these new capabilities are," he says. "Together, they come up with innovations."

For example, a team of new hires and senior staffers created private Facebook-like virtual workspaces for Amgen employees called MySite and MyTeams, using Microsoft SharePoint collaboration tools. Employees can more easily find each other by searching others' profiles for key

words and immediately detect, through presence capabilities, whether someone's online. And by using Office Communicator, they can learn how their colleagues like to interact, Flanagan says.

Just because a CIO isn't hiring full-timers doesn't mean he isn't pursuing new development capabilities—or refocusing existing staff on emerging technology. Jim DiMarzio, CIO of Mazda North American Operations, isn't adding workers this year, but he considers contractors to be strategic extensions of his staff. Most of DiMarzio's 85 IT staffers are mid-to senior level. "They're not here for programming and deep technical skills, but to talk to the business areas." Staffers help to shape projects; contractors fill nitty-gritty technology skills gaps.

For example, within Mazda's R&D group, DiMarzio and his IT staff are talking with engineers about ways to incorporate

awareness of cell phones into cars, perhaps by letting dashboards and phones exchange information via built-in Bluetooth. If the project happens, DiMarzio would hire contractors to code for specific cell phone operating systems.

He wants mobile developers, but not necessarily those with experience in the automotive industry. "We're now looking for people with ideas about how to take advantage of new mobile technology from the retail world." That's because retailers, he says, are further along in adopting consumer technology and linking it with legacy systems.

Business-IT Hybrids

Just as technology pervades daily living, so are technology skills infiltrating business departments outside IT. The trend has produced a hybrid business-IT professional who moves easily between functions and is much sought-after all over the company,

says Rick Swanborg, a professor at Boston University and president of ICEX, a consultancy that runs leading-practice communities for IT leaders.

Teams filled with hybrid IT-business people can experiment with new digital products, adds Accenture's Curtis. That may include offerings such as data-analysis options that allow electricity customers to fine-tune their power consumption, or new digital features in established products, such as the dashboard cell-phone sensors DiMarzio imagines for Mazda cars. At Mazda, these staffers with hybrid skills report to IT, but at many other companies, they don't.

Swanborg predicts that CEOs will make a point of ordering CIOs to distribute IT expertise across business units. Unless business people "understand something about the technology and how it works and what you can use it for," he says, "many of your departments are going to be

There's More to IT Than 'Build & Run'

Traditionally, IT departments have focused on doing two things well: building applications and running IT operations. More recently, their deliverable has shifted from isolated applications to enterprise platforms. Still, IT has been about building and running—providing technology that enhances business performance.

A survey of 370 CIOs by CIO magazine and the MIT Center for Information Systems Research (CISR) suggests that IT units have **added a third major responsibility to their traditional build-and-run obligations: technology exploitation.** This is the persistent effort to capitalize on a firm's digital platforms, accumulated data, and new technologies—**and it's IT's new value proposition.**

Technology exploitation requires developing enterprisewide digital capabilities, such as business process optimization, master data management, business analytics and use of social media for collaboration. Our survey found that 88 percent of IT units are developing, maturing and sustaining these capabilities. More than a third of CIOs said their department has more responsibility for providing the staff and expertise for these digital capabilities than the business does.

Although there's still a need to run IT operations and build systems, IT units should recognize that their **longer-term value proposition revolves around ensuring that their firms are exploiting technology for increased competitiveness.** Through its research, MIT CISR has found that some IT units are already morphing—becoming focused on business transformation, global business process design and management, or delivery of shared services. Other IT units are creating new centers of excellence or cross-functional teams responsible for emerging digital needs like master data management and social media strategy.

Jeanne Ross and Cynthia Beath, *CIO* magazine, March 2011

uncompetitive.” –Swanborg says companies fight for graduates of Boston –University's MS-MBA program—which combines a master's degree in information systems with a traditional graduate business curriculum—offering them an average total compensation of \$105,000.

Even when hybrids report outside IT, CIOs will play a big role in nurturing their contributions and careers. Take Chris Colla. Colla is the director of business process management in the logistics and supply chain department at Sharp Electronics, a North American subsidiary of \$29.7 billion Sharp based in Japan. There he reports to the vice president of logistics and environmental supply chain and serves as liaison to the CIO's office.

Colla began his career in IT, working in supply chain management—specifically on SAP—at various companies including Accenture. His experience with enterprise

systems led him to logistics and operations work on Accenture consulting projects and, ultimately, to Sharp. Along the way, he came to specialize in reviewing, redesigning and improving business processes for audit controls and systems. Next, he says, he'd like to return to IT and lead an organization in applications development, become a CIO, then a COO and, eventually, a CEO.

Colla credits a mentor with influencing his career plans. Colla recalls this mentor telling him that if he stays in operations, “they’ll always look at you as the IT guy with three years in operations.” But his operations and business-process experience will make him a standout in IT.

Crossover experience between IT and business groups is critical to innovation, says Colla, and “will make IT more powerful in the organization. [IT] gains credibility and the company gains competitive advantage.”

Crossover experience between IT and business groups is critical to innovation.

The IT-business-process combination isn't the only kind of thriving hybrid. In companies that provide consumer products and services, CIOs are seeking IT professionals with a background in e-commerce and Web marketing. For example, Bruce Shuman is vice president of e-business at the Hartford. Shuman started his career as a consultant for Andersen Consulting, where he focused on ERP software. In the last decade, he worked on e-commerce for companies including Timberland, DuPont, GE Capital and the financial-services firm HSBC.

Reporting to the Hartford's head of e-business, Shuman is

responsible for increasing the revenue gained from one customer segment: retirees buying auto insurance. His portfolio includes managing search-engine optimization—making sure the Hartford comes up prominently in Google searches about auto insurance products—as well as coaxing consumers to buy a policy online.

Shuman was drawn to e-commerce and marketing in part because he saw them as more connected to top-line business objectives. IT seemed too reactive. It's not that the IT departments where he worked didn't care about revenue growth. “But IT is on a never-ending quest for cheaper and faster,” he says. “Marketing is more on the strategic side.”

Shuman thinks younger technology professionals will ultimately shun companies whose senior leaders draw a thick line between IT and marketing, sales,

product development and other departments. People with technology backgrounds can “look at a problem, break it into manageable components and devise a solution,” he says. “That understanding is not function-specific.”

Vendor Manager (a.k.a. Cat Herder)

As companies do more business with cloud, software-as-a-service and other off-premise suppliers, CIOs deal with a range of vendors providing more discrete bits of IT. And it’s likely that no one of those providers has a complete picture of what the CIO is trying to accomplish with technology.

Savvy negotiators and relationship experts who can ride herd on those vendors can save money for the company. But they can also squeeze more creative and useful services from those suppliers. Doing that requires a new kind of vendor-management expert, says Marc Cecere, a vice president and principal analyst at Forrester Research.

Challenge: Finding Mobile Skills

CIOs say the top challenges for IT teams developing mobile applications are **collaborating across departments** and **finding IT professionals with the skills** to build them.

“Building mobile applications requires intense collaboration between numerous groups within the organization, including marketing, IT, operations and sales,” says John Reed, executive director of Robert Half Technology. “It’s important for mobile application developers to have strong **soft skills**, in addition to the ability to write code and test and debug software applications.”

As more companies look to develop mobile apps, the demand for IT professionals who specialize in this area has increased. **Starting salaries** for mobile applications developers are expected to increase 9 percent next year – one of the largest increases of any IT position.

“Because the demand for professionals with a track record of building successful mobile apps currently outpaces the supply,” Reed says, “companies are willing to **pay a premium** for professionals with these skills.”

Source: Robert Half Technology survey of more than 1,400 CIOs from companies across the United States with 100 or more employees, February 2012

The traditional approach is to hold vendors accountable for service levels, enforcing penalties for breaches, says Cecere. Modern vendor managers take a wider view, looking at the combined performance of all suppliers.

They can, Cecere says, ask vendors to work together for faster application response time, which may improve customer satisfaction or drive more sales.

Ross at MIT suggests these new vendor managers may also

“We need strong vendor managers to work with internal colleagues to build relationships and not let that get contentious.”

assume responsibility for strategic experiments. The CIO may want to test a new, online product but not want to try it on production servers for fear of disrupting daily business. The vendor manager can oversee a cloud provider that conducts the experiment, she says. In the past, IT might have bought extra servers to set up an internal sandbox for such testing. A cloud provider can run bigger tests more cheaply, she says.

The new cat herders may have a legal background as well as knowledge of IT, says Swanborg. And in addition to expertise in a

particular technology, business area or type of project, up-and-coming vendor managers need excellent communication skills, notes Cecere. The ability to persuade is critical, he says, because cat herding is not just about managing outsiders.

“They have to force business leaders to prioritize and compromise about what they’re asking IT to do. That’s very difficult.”

Certainly in the past if a vendor manager wanted to fire an IT provider or renegotiate service levels, the business sponsor had to be on board. However, as use of the cloud increases, such situations will arise more frequently. Plus, when CIOs increase the ratio of outside providers to internal staff, IT can become vulnerable, says William Swislow, CIO of Cars.com. Business units can more easily

contract with cloud providers for technology services, circumventing the IT department, he says. “We need strong vendor managers to work with internal colleagues to build relationships and not let that get contentious.”

Swislow expects to hire a few cat herders this year to improve collaboration among the providers who help to build systems that run on IBM WebSphere, the platform powering the company’s e-commerce site. As Cars.com steps into mobile e-commerce, these vendors will have to work together closely, under the supervision of Swislow’s staff as well as departments such as marketing and product development.

Swislow just hired a senior director for planning and strategy and an offshore engagement manager. He warns that vendor managers should never be junior-level jobs.

“You better hire someone good. So much of your strategic future is in their hands.”

Yes, You Need a Deputy CIO

Jon Harris spent decades in IT leadership positions, and is deeply aware of the struggles IT leaders face: finding time to be strategic, thereby proving to the board that IT can produce business benefits, while still dealing with operational matters. For Harris, **the solution is having a second-in-command**. He recently retired from such a role, as CTO for the University of Texas at Arlington, and worked for many years as the deputy to city of Austin CIO Brownlee Bowmer. In Harris's case, those high-level operations roles were in place before he arrived, **freeing the CIO to deal with business issues**.

For companies without such a position already, he concedes "it's a hard sell. The CEO doesn't [always] get the benefit of a number two to free up the CIO to do other things." Nonetheless, he says, "it's critical if the CIO is going to move into the **transformational role**. You can't serve two masters—one being the business, one being IT." If you don't have a deputy, it's time to start developing the role and **grooming someone on your staff** to take on your operational responsibilities.

The right deputy, says Harris, is someone you're comfortable working closely with who also has the respect of others in IT—both above and below them. Look for someone, for example, among your IT directors. Once you've identified that person, says Harris, "The first strategy is to tell them exactly what you're doing: 'I'm trying to groom you to take my job.'"

Then, place your ego in check. Part of letting go of control is realizing you can't—and don't have to—do everything. You'll know you're successful when you can trust that operations are running smoothly while you focus on strategy.

Christine Celli, *CIO* magazine, September 2011

All Hail the Data Masters

Do you know how much an exabyte of data is? Thanks mainly to the Web, WiFi and enterprise computing, we humans create about five exabytes of data every other day, according to former Google CEO Eric Schmidt. That's 5,000,000,000,000,000,000 (yes, 5 quintillion) bytes of numbers, letters, images and sound. Though no single company has to manage even one exabyte of information, CIOs nevertheless face what's becoming known as Big Data.

We know how to set up databases and spreadsheets, with their defined structures. But now most corporate data is unstructured. E-mail, video and PowerPoint presentations, instant messages, images and diagrams of new products, voice mail, and social networking conversations with customers are all potentially valuable for uncovering new revenue sources. Running a mix

of on- and off-premise systems further complicates data management and analytics, if only because keeping track of where which data resides is more difficult. Extracting the right information at the right time for competitive advantage, Flanagan says, “is one of the more complicated IT issues out there today.”

Terabytes Upon Terabytes

The twofold problem—managing the data and interpreting the data—drives CIOs to look for seasoned IT professionals with deep experience designing business intelligence (BI) and analytics systems. They must wrestle terabytes upon terabytes that buzz between a company and its vendors—cloud, software-as-a-service and outsourcing—as well as data from public sources and on-premise legacy systems. Then these data masters must create applications and tools for

analyzing the information. While hybrid professionals such as Colla and Shuman look at how a department or whole company operates, data masters apply their combined IT and business talents specifically to data. Best suited for the job are those with intimate knowledge of core corporate systems who can also step back to ponder questions such as, How does information flow? What forces underlie those currents? What’s the best way to pull insights from that sea? And how does the way a company works influence what data is available and who can find it?

For example, AkzoNobel Paints, a U.S. division of the \$15.9 billion AkzoNobel chemicals firm in the Netherlands, recently advertised for a BI specialist with experience interpreting business processes. Disney wants an enterprise search specialist who has built search and recommendation engines and

who would report to the marketing technology group, a team responsible for ensuring “the right technologies are in place to support our business strategy.”

Under way at Amgen is a large enterprise search project, which the company views as an engineering puzzle whose solution could provide a big competitive advantage. If drug researchers can draw connections between data quickly and easily and can share it with other researchers internally and externally, new products can be brought to market faster and generate revenue longer, Flanagan says. “We have got to find a way to make data meaningful and get access to data when [scientists] need it.”

But so far, Amgen hasn’t found just one kind of person to solve this problem; IT leaders have had to be creative. They’ve found some data masters in corporate legal

departments, where staff often have to pull information relevant to a lawsuit or audit from masses of structured and unstructured data. But Flanagan would also like to see database administrators and other IT staff who manage information become experts at integrating data

“We get a very clear picture of what feeder system of talent we need.”

streams.

Most of the search experts he hired are senior IT engineers from the federal government, which has funded large data-management projects over the years, he says. He has also consulted with the FBI, among several federal agencies, to

understand the kind of talent it is applying to a massive enterprise search project there involving its 8.2 million case files.

Time to Get Going

At Guardian Life, CIO Wander is in the thick of Talent 2020, his plan to inventory the expertise of his IT department and systematically add employees with fresh skills. Working with the human resources group, Wander has identified the skills of retiring Baby Boomers and is working on replenishing them while hiring new staff. Among those he is looking to hire are mobile and analytics experts, along with vendor manager cat herders. To identify skills gaps and the pace at which to fill them, Wander advises CIOs to calculate, among other variables, the degree of competency each member of the IT staff possesses on various

platforms, plus demographic cohorts, such as age and tenure. “We get a very clear picture of what feeder system of talent we need to make sure knowledge transfer takes place.”

As with any new technology, adding staff with fresh competencies helps bring the existing staff up to speed. At Amgen, superstars who can design and build systems that include social networking and mobile computing are spurring existing staff with less up-to-date skills to do new, better work, Flanagan says. That strengthens Amgen’s competitive position, he says. “They’re excited and interested and bring in energy. They’re getting ranked as top performers and are pushing senior people to increase their own performance.”

Kim S. Nash, *CIO* magazine, March 2011

VIEWPOINT

In-Demand IT Jobs Demand Attention

Candidates for high-demand IT jobs are declaring their independence. They want flexibility in the workplace. They want compensation and opportunities for promotion that astound hiring managers. And many of these top candidates have a take-it-or-leave-it attitude.

This isn't new, but with the unstable economic conditions over the past three years, companies have mistakenly come to believe the myth, "If you post it, they will come."

Today, CIOs need to balance financial discipline with in-demand technologies. "With improving conditions comes the reality of pent-up demand, and employers need to be increasingly

nimble and creative with regard to finding talent," says Dave Ballai, CIO and vice president of commercial solutions at Reed Technology and Information Services. Rick Fabrizio, CIO at propane provider AmeriGas, agrees, adding that "the market is abundant with mediocre talent, but we're willing to stretch further to snag the high performers."

Time to Get Creative

Finding the money for in-demand candidates isn't easy. "Creativity is paramount to being successful in hiring in today's marketplace," says Guy Lavalette, a CIO at a company in the Northeast. "Partnering with business-unit

executives such as CMOs and reallocating some of their internal budgets [is] a strategy that has worked for me." For example, he says, CIOs and chief marketing officers must use social media and develop cost-effective search-engine optimization (SEO) and search-engine marketing (SEM) strategies to increase online exposure. Lavalette has successfully reallocated third-party SEO and SEM budgets to create roles that affect the bottom line. "It's a win-win: The company saves money, and IT [or] marketing has an internal expert to work on these key initiatives," he says.

CIO involvement during the interview process also brings cachet, as it demonstrates the role's value to the organization. Superstars have egos, and visibility and criticality can intrigue such candidates and potentially mitigate compensation concerns.

Ballai says it's important to give in-demand candidates access to senior management during

recruiting, so they get a broader view. Fabrizio also emphasizes executive participation. “It’s great when candidates feel the excitement and energy from the interviewers themselves,” he says. “I personally want to be involved in the final round of interviews to either stop the hiring of someone who isn’t a good fit or put on the full-court press” for the right candidate.

Craft Your Message

All three CIOs stressed the importance of crafting an – overarching recruitment message. “We describe the exciting environment, where the candidates will be challenged and rewarded for making a positive impact on the business,” says Fabrizio. “I’ll share with them the many examples of individuals advancing their careers here at AmeriGas and how they’re helping the company to transform itself.”

For AmeriGas, that approach has paid off. “We’ve hired a lot of

Skills in Demand

The functional areas in which executives say they are experiencing the greatest challenge in finding skilled IT professionals are **networking** (16 percent) and **IT security** (15 percent). Help desk/technical support, applications development and data/database management followed, cited by 14 percent, 13 percent and 10 percent of survey respondents, respectively.

Network administration remains the skill set in greatest demand, cited by 55 percent of CIOs. Database management and desktop support were next, with 54 percent and 51 percent of the response, respectively.

Source: Robert Half Technology survey of 1,400 CIOs, 2012

high performers over the past year,” Fabrizio notes. “Most job seekers want to be part of an organization that’s making

investments in technology and its future.”

Of course, Fabrizio counters candidate demands with requirements of his own. “Experience, competency and attitude have to be part of the package,” he says. “In the past, every department has had its mix of A-, B- and C-rated employees, but with [business] demands today, we can’t tolerate the lower-rated staff anymore.”

Don’t waste the time of good candidates for high-demand roles. Put them into an expedited hiring process, and engage their hearts and minds. If they meld with your culture, get creative on the compensation. Wouldn’t getting a product out to market faster be worth going the extra mile for an employee who’s key to making that happen?

Kristen Lamoreaux, CIO magazine, July 2011. Lamoreaux is president and CEO of Lamoreaux Search, which focuses on sourcing IT professionals for hiring managers.

Four Tech Trends Fueling Hiring



Mobile Media

Continued growth of smartphones and tablets is heightening the demand for individuals with experience creating and organizing content for the small screen. As a result,

starting salaries for mobile applications developers are expected to rise 9.1 percent over 2011 levels to a range of \$85,000 to \$122,500.

Increasing Amounts of Data

Thanks to technology, companies can access more data than ever before. Businesses seek those who can gather and organize this information and highlight what's relevant to business goals. Among the positions most in demand are business intelligence analysts, who will see a 6.3 percent increase in average starting salaries to a range of \$87,750 to \$123,500.

Constantly Evolving Security Threats

Data security and protection continue to be a priority for companies, particularly in industries such as banking and healthcare. Starting salaries for data security analysts are expected to increase 6 percent to a range of \$89,000 to \$121,500.

Growing Online Collaboration

As firms increase their use of internal social media to facilitate collaboration and online learning, there's an increasing need for software developers, especially those with SharePoint and .NET experience. The base compensation for software developers is expected to rise 6.5 percent next year to a range of \$70,000 to \$111,000.

Source: Robert Half Technology, October 2011

Cloud Skills Shortage?

CIOs Grow Their Own

When Majestic Realty Co., a Los Angeles-based commercial real estate developer, moved to Microsoft's Business Productivity Online Suite (BPOS) for cloud-based email in early 2011, CIO Jon Grunzweig was shocked by the lack of technical support he found for BPOS in the marketplace.



"A year ago, no one knew anything about BPOS," he says. "We couldn't get good advice ahead of time on what to look out for, what to think about. That knowledge wasn't there. Microsoft didn't have it. Neither did third-parties."

The dearth of BPOS know-how complicated Majestic Realty's migration off of its on-premise Exchange servers. It also put a lot of pressure on Grunzweig's staff. They had to figure out how to configure Outlook for the cloud and how to integrate it with Majestic Realty's on-premise systems largely on their own. Of course, they made

mistakes along the way.

For instance, when Grunzweig's network infrastructure team first configured Outlook for the cloud, his staff set it up so that email headers would come in to users' inboxes first, followed by the "detail" or body of the message. This way, users would see emails—more specifically, the headers—coming into their inboxes in near real-time. But this configuration created a problem: Because Majestic Realty's cloud email was slower than its on-premise email, when users saw new headers in their inboxes and clicked to open them, the messages didn't open because they hadn't finished downloading. Users didn't understand why their email wasn't opening.

"We realized that we needed to configure the desktop differently so that it wouldn't show new email in users' inboxes until the header and the detail were all there," says Grunzweig. "We

encountered dozens of little things like that."

Majestic Realty's BPOS migration illustrates many of the challenges CIOs face as they move infrastructure and applications to the cloud. The biggest hurdle of them all—and the one that menaces cloud deployments the most—is the lack of IT

The demand for cloud skills far outstrips supply.

professionals who are familiar with cloud offerings and know how to implement them.

Across the IT industry, CIOs, technology vendors and consultants agree that there is a serious shortage of cloud computing skills that threatens to hamper adoption. Whether it's software engineers who know how to develop applications for

the cloud, resource planners who can estimate an enterprise's need for computing capacity, architects who can integrate services from different cloud vendors, or administrators who understand how to configure and support cloud-based services, a wide range of cloud-related skills are in great demand, and companies

can't leverage the benefits of cloud computing without them.

To illustrate the scope of the skills shortage, a recent analysis of hiring trends from

Wanted Analytics, a provider of recruiting data, quantifies that the demand for cloud skills far outstrips supply. The company counted more than 3,400 job ads for IT professionals that required cloud computing skills in February 2012, a 99 percent increase over February 2011.

"People who understand cloud operations and how to deploy

cloud solutions are really sought after right now," says Greg Pierce, cloud strategy officer with consultancy TriBridge. "Talent is very difficult to find and very expensive."

Can You Spell Cloud?

Mark Thiele, executive vice president of data center technologies at Switch, a Las Vegas-based provider of data center and colocation facilities, says the organizations that are currently struggling the most with this skills shortage are the ones that are trying to support other companies and their cloud requirements. "All the hosting providers and small cloud startups and professional services organizations are cruising around the world trying to find anyone and everyone who can spell cloud," he says. "If you have successfully built and delivered any kind of cloud environment for someone and can put that on your resume, you can write your own ticket."

Indeed, without these cloud-savvy IT professionals, everyone suffers: the vendors, the consultants and their customers.

CIOs need people—both internal staff and third-party providers—who can help them think through their cloud computing plans, develop business cases, determine what to move into the cloud, how to get it there, how to integrate it with on-premise systems, and how to secure it. The stakes for getting these plans right are high.

"The CIOs who will fail will do so because they've forced the cloud issue with a less than holistic view of their entire organization," says Thiele. "They will end up investing millions of dollars to put something in [at the behest of their CEOs] that becomes an anchor or an eyesore for the IT organization. There's no way to underestimate the potential for that risk."

"The best way to build talent is to start doing cloud deployments and learn as you go."

Thiele says he has observed that nightmare scenario play out inside several big financial services companies that he says spent millions of dollars to build their own private clouds only to have them fail completely.

"Without those skills, you'll be wasting your time," warns Thiele. "It'll be like having a Ferrari engine without any Ferrari mechanics around to service it."

If Grunzweig's experience is any indicator, CIOs will not be able to rely exclusively on professional services firms to take the lead on cloud deployments. A year ago, he couldn't find any consulting firms in his budget with any knowledge of BPOS. Nor could he identify third-parties that could help him do data

replication and back-up in his company's private cloud, another project he was pursuing at the time (and continues to pursue). A year later, Grunzweig says he has a handful of consulting companies in the Los Angeles area that

he can call who have a better understanding of how to back-up data in his company's private cloud. But, he is quick to add, "there is still a void of information."

Even consultants agree that CIOs will have to focus on shoring up their internal staffs' cloud computing know-how.

"By 2016, there will be more deployments of software in the cloud than on premise," says TriBridge's Pierce. "If that holds true, then right now you can't afford not to build those skills in your organization. The best way to build talent is to start doing cloud deployments and learn as you go."

Meridith Levinson, CIO.com, April 2012

VIEWPOINT

Why You Should Hire Interns

Tempting though it may be, you can't put off hiring young people forever. As IT budgets expand, the pressure on you to innovate increases while your current workforce ages and retires. Eventually, adding some energy, enthusiasm and newer skills from the entry-level talent pool will be critical to your business.

By bringing in younger workers now—as interns, for example—you'll have more, better-equipped talent when you need it most.

“There are so many things happening in the field that the old guard doesn't want to deal with,” observes Eric Hungate, CIO of the Texas Board of Schools. Hungate has used his leadership in groups like the Association of IT Professionals to build student chapters at the high school and

college levels as a means of developing IT's future ranks. “Students have the wherewithal, savvy and need—because they need jobs—to embrace” new skills and emerging technologies, he says.

Hungate adds that strategies to hire recent college grads are a tough sell to CEOs. “There's a mentoring piece, slicing out different tasks and setting performance milestones, that is pretty time-consuming.”

Most CEOs want employees who can contribute right away. But according to Barbara Ray, co-author of *Not Quite Adults*, it's

not fair to expect that from today's college grads. They're not slackers; Ray's book draws on a decade of research on 20-somethings that suggests that only the hardest working, most driven students from the class of 2011 are sending you their



“There are so many things happening in the field that the old guard doesn’t want to deal with.”

resumes. But helicopter parenting and an emphasis on education over work experience means today’s grads may not know workplace conventions, such as how to dress or how to behave when on a deadline.

On the flip side, these hires are good at following orders and tend to thrive when given a clear sense of what it takes to advance.

Tom Flanagan, former CIO of Amgen, knows the investment in young workers pays off. Amgen created a strategy to change the age distribution in IT, hiring roughly 20 college students a

year. “We retained almost 90 percent of those kids over the last five to six years, and they now make up about one-sixth of the IT organization,” says Flanagan.

Amgen’s program works and is affordable because it gets both the college students and team members who are alumni of area schools

involved.

“We took senior people at Amgen that graduated from UCLA and got them to volunteer as liaisons—they became the recruiters,” Flanagan says.

Good Assignments

Since students start as interns, Amgen can judge whether they’ll be good hires. Flanagan stresses interns should get real work. “We tried to make them feel important right away and give them good assignments.”

He says the interns have even pushed more senior people to

improve themselves. “It’s had an enormously positive effect across the organization.”

Meanwhile, Amgen also communicates with the heads of various programs at each school about how well its students are prepared for the workplace. That’s important, says Hungate, because university curricula often trend two or three years behind business in the technology they use and skills they teach. Including the schools in your efforts will yield results.

Christine Celli, *CIO* magazine, June 2011