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The 9 most endangered species in the IT workforce

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Darwinism is no stranger to IT. Given the pace of innovation, today's plum post is almost always one shift away



from becoming tomorrow's pink slip. But the trends currently taking hold of IT organizations may have a broader impact on IT employment than we've seen in years.

It's no secret that the cloud computing revolution and the infusion of consumer devices into the workplace has wrought massive changes in IT. Job titles that were once considered secure are suddenly on the verge of extinction, thanks in part to a world where business users no longer have to go through IT to get to the technology they need to do their jobs.

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Call it the new IT ice age. And tech pros who don't evolve with the times risk joining the T-Rex and the triceratops in the tar pits.

We spoke with a number of IT pros about the jobs they see going away in the years ahead. Here are nine of the most endangered species in IT, along with advice on how you can avoid becoming one of them.

Endangered IT species No. 1: The Brown-Nosed Naysayer (*Negativitus infinitus*)

For decades, the Naysayer held sway over all tech decisions, wielding the word "no" like a razor-sharp claw to slash all requests, citing security or budget concerns. But the BYOD revolution and the universe of public cloud services available to users have rendered the Naysayer as harmless as a newborn kitten.

"We all know this particular type of IT pro -- the ones who think the customer is never right and users are guilty until proven innocent," says Tyler Lessard, CMO of mobile risk management company Fixmo. "They're part of the reason people are now storing business documents on Dropbox and connecting their own iPads to the corporate network without informing IT, creating new security nightmares. They're being replaced by a new generation of consumer-savvy IT pros who appreciate that we need to make room for employee choice and freedom -- as intimidating as that may be."

Organizations where the Naysayer still reigns supreme will have a tough time attracting top talent, warns Vincent Schiavo, CEO of DeviceLock, a provider of data leak prevention solutions.

"The prime habitat for the Naysayer are organizations unable to hire the most sought-after recent graduates," he says. "They'd rather work somewhere with a more progressive stance on enabling Android, iPhones, and other innovations in personal productivity technology."

How to avoid extinction: Practice forming the word "yes" with your lips, and embrace the new tech revolution. Then develop a mobile device management strategy that allows for granular control of devices and policy enforcement for social media, says Schiavo.

Endangered IT species No. 2: The Data Center Dinosaur (*Tyrannoserver rex*)

With deep knowledge of a particular type of hardware, coding language, or development methodology, these once-mighty creatures wore their expertise like a protective shell. Now they're being replaced in the evolutionary chain by flexible generalists with a broader skill set.

"In the past these clever creatures were coveted for their deep experience in one specific skill or tool," says Ed Nathanson, director of talent acquisition at Rapid7, a vulnerability management provider. "But thanks to Darwinism, IT pros with a narrow field of focus are largely confined to the 'short-term contractor' habitat."

At Purdue University, IT people like this are called "server huggers," says CIO Gerry McCartney. "They've defined their job by the piece of equipment they maintain," he says. "That's a risky posture to have from a professional standpoint. I think there will be very little need to have local hardware-oriented technical knowledge."

How to avoid extinction: Broaden and diversify your knowledge base now, while there's still time, says Greg Schulz, senior adviser for the StorageIO Group, an IT infrastructure consultancy.

"If you are the hardware guy, you better start learning and embracing software," he says. "If you are the software geek, time to appreciate the hardware. If you are infrastructure-focused, it's time to learn about the business and its applications. You don't want to be overgeneralized, but make sure to balance broader knowledge with depth in different areas."

Endangered IT species No. 3: The Red-Bellied Repair Tech (*Breakfixus familiarus*)

Repair Techs were once a common sight in offices, called upon to swap out dead hard drives, replace fried motherboards, and keep expensive desktops up and running. But the plummeting cost of hardware and popularity of cheap mobile devices have made them largely an anachronism.

"The species was highly territorial, thriving on the native fauna of the small-business and home computer market," notes John Caughell, marketing coordinator for Argentstratus, a provider of cloud-based applications. "Sadly this once proud beast is fast on its way to extinction as the world moves to devices that seldom see a flat surface, except to recover and recharge."

Hardware has gotten so inexpensive that it's cheaper to replace something that's broken than to waste time and money fixing it, adds Dennis Madderra, chief operations officer for Simpletech Solutions, a managed IT services firm.

"With workstation prices falling, and more and more applications running from virtualized platforms or Web-based interfaces, waiting for a tech to replace a failed power supply or video card is quickly becoming more expensive than just replacing the box entirely," he says. "Why not replace the box with a freshly imaged computer and be off and running in minutes rather than hours?"

How to avoid extinction: Consider taking a horizontal leap to server maintenance, says Madderra. "Anyone who can quickly diagnose hardware issues and errors on a server will have work for years to come."

Endangered IT species No. 4: The Lesser-Spotted System Administrator (*Networkus rebooti*)

Like worker ants or soldier bees, System Administrators have played a small but vital role in the IT ecosphere by keeping the lights on and the bits flowing. Now their numbers are in peril, as admin jobs that haven't been outsourced already may soon find a home in the cloud.

Jerry Kelly, North American CIO for holding company Diversified Agency Services, says email admins, for one, may soon be found only in museums.

"Ask any startup if they want to build and manage their own email server," says Kelly. "They will stare at you like you're crazy. Most IT directors want to get email out of their environments even more. If your company hasn't moved email to either a private or public cloud, there is a good chance they will soon. Either way, the traditional email admin role at a company will end up like the dodo."

Low-level administrator jobs will be tougher to come by, particularly at small and midsize firms, says Brian Finnegan, associate professor and faculty chair of IT at Peirce College in Philadelphia. While they won't disappear entirely, these tasks will migrate to cloud companies where the demands are higher and the competition stiffer.

"Network, storage, and related infrastructure administration jobs -- the kind of work that keeps the bits flowing through the pipes in individual organizations -- are available with the cloud providers, but you need to be ready for the big leagues," he says. "Those that do remain will require engineer- and architect-grade skills. Working in the server room at your small or midsize company is a world apart from working in a server room at Google or Rackspace."

How to avoid extinction: Become a security wonk or a data analytics expert, two tech fields that are flourishing and will for some time to come, says Purdue's McCartney.

Endangered IT species No. 5: The Pink-Crested Credentialist (*Certificatus maximus*)

Trailing a long list of technical certifications behind it like a vestigial tail, the Credentialist can still be found in its natural habitat -- usually the HR department of a company it wants to work for. But it has been marginalized by IT pros with actual skills and experience, says Mike Meikle, CEO of the Hawthorne Group, a boutique management and technology consulting firm.

"This species is known for taking so many certification courses you can't figure out how they manage to get actual work done -- besides installing Transcender software," he adds.

The days when you could slap some Cisco or Microsoft certifications onto your résumé and write your own ticket are long over, says Lenny Fuchs, owner of My IT Department, which provides contract tech services to small businesses.

"Without the work experience to back it up, certifications are almost useless," he says. Fuchs adds he gets a kick out of seeing résumés that read "John Doe, MCTS, CCA, CTSGIT, MCITP, CCNA, MCP. Last held position: Assistant manager at Starbucks."

Thanks to increased automation, even high-level Cisco Certified Infrastructure Engineers could be facing the same fate as encyclopedia salesmen, paperboys, and switchboard operators, says Dante Malagrino, CEO and co-founder of Embrane, a platform-as-a-service vendor.

"In the new programmed network model, it will no longer be about humans configuring machines via a CLI or GUI, but rather more about machines and software communicating via programmatic interfaces," he says.

How to avoid extinction: Become an engineer/programmer by mastering a scripting language like Python, Ruby, or PHP, says Malagrino. Or turn your attention to creating your own intellectual property, such as journal articles and presentations at industry conferences, advises Meikle. "That will help you truly stand out from the crazed credentialists."

Endangered IT species No. 6: The Common Web Designer (*Templator fillerupus*)

At one time they numbered in the millions; now there are only a handful left. Automated site-creation tools and increasing dependence on sophisticated marketing techniques has deprived millions of HTML and Flash designers of the natural Web lands they once called home.

"Dropping boring prose into a template isn't going to cut it in today's marketing maelstrom," says Simpletech's Madderra. "Companies that wish to flourish online need to build content based upon solid SEO [search engine optimization] principles utilizing media, writing, and design elements organized around a marketing plan. The Internet is swarming with companies champing at the bit to provide these services, some even for free."

As Fuchs from My IT Department notes, "My mom has a website. She made it herself with Go Daddy's tools. Once your mom can master a technology, experts begin to disappear."

How to avoid becoming extinct: Become an SEO maven, says Fuchs.

"With all these site-creation tools and the move to less dynamic websites that are more friendly to mobile devices, Web designers need to become to SEO experts very quickly or they will be out of a job."

Endangered IT species No. 7: The Woolly Unix Mammoth (*Mainframus obsolete*)

Once one of the dominant creatures in the enterprise biosphere, Unix servers -- and, by extension, the people paid to tend them -- are heading for the tar pits. Not because they can't still do the work, but because they're being replaced by more nimble and less expensive Linux boxes, says Anthony R. Howard, author of "The Invisible Enemy: Black Fox" and a technology consultant for Fortune 50 companies and the U.S. military.

When Oracle bought Sun in 2010, it de-emphasized Sun hardware and let Unix support dwindle, says Howard, while failing to keep up with the increased capabilities and dramatically lower costs of open source alternatives.

"A Unix server costs more than \$25,000 per server," says Howard. "Linux can now run most of the same applications and costs only around \$3,000 per server. One company I personally worked with saved more than a billion dollars over five years by migrating off of proprietary Unix architecture onto Linux. As more folks migrate onto Linux, the Unix admin will eventually go the way of the T-Rex. They ate well during their time upon the earth, but their days are numbered."

How to avoid extinction: Build up your Linux chops in a hurry, and become an expert on which applications can migrate to Linux and which ones need to stay on Sun, says Howard. "When your org does decide to migrate, you can lead the effort instead of getting left behind."

Endangered IT species No. 8: The Purple-Tufted Programmer (*Codus cobolus*)

Developers who cut their teeth on Cobol or Fortran are a dying breed, but they're not the only ones. IT pros who hack code -- and only hack code -- may quickly wind up on the wrong side of the evolutionary divide.

Routine programming jobs are largely being offshored or eliminated outright, notes Peirce College's Finnegan.

"If you aspire to plan to write code for a living, you'd better be prepared to do it at the level of software engineer," he says. "That means doing it for a large organization on a very large scale, with an engineer's attention to process and quality control, as well as the people skills to function in such an environment."

Even mobile developers aren't immune, notes Chris O'Connor, CEO of Taptera, a provider of enterprise-ready, social sales mobile applications.

"Apps are too cheap and too awesome these days to truly warrant having an internal mobile team building a company a proprietary app," he says. "These internal teams, who spend most of their time navel-gazing at their BlackBerrys, are being replaced by people who listen to end-users and adopt best-of-breed apps for specific enterprise problems."

How to avoid extinction: As with the Data Center Dinosaur and the Sys Admin, coders who want to survive need to expand their expertise and align their skills with the needs of the business, says StorageIO's Schulz.

"Coders and script junkies need to also be integrators of business logic, cloud tools, and more, or they'll join the ranks of mainframers who are becoming extinct," he says.

Endangered IT species No. 9: The Ridge-Backed Technocrat (*Bureacratus extremis*)

For years they ensured job security by building technology silos and defending their turf via arcane policies only they could understand. Now their natural habitat is overrun by business managers who no longer need to seek approval for technology purchases, and threatened by executives who don't understand why they need to buy more boxes to "scale" their already sprawling networks.

"This species is being forcibly driven into extinction because of the convoluted and archaic policies they force on unsuspecting users and line managers," notes Rob Enderle, principal consultant with the Enderle Group. "They can single-handedly turn jobs into a living hell and make surviving an approval process harder than swimming to the center of the earth."

The technocrat purposefully creates network sprawl to address scalability and performance problems, but ends up creating massive amounts of maintenance and management work, says

Peter Duggart, director of product marketing for Crossbeam, a network security platform provider.

"In the past when products failed to perform as expected, technocrats could just insist more boxes were needed and no one would be the wiser," he says. "That day is coming to an end."

How to avoid extinction: Stop defending your turf and start building alliances with other teams, says Duggart.

"Technocrats can survive by making things more efficient and saving money for the application guys," he adds. "They need to embrace a next-generation model and adopt consolidation technologies that can eliminate pain within the organization."

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