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Mobility, cloud, analytics to reshape IT in 2012

Caution remains, but it's not stopping enterprises from investing in mobility, social networking, cloud computing and business analytics initiatives.

By [Ann Bednarz](#), Network World
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Despite some hopeful fits and starts, the U.S. economy didn't escape the doldrums in 2011. [Unemployment](#) remained stubbornly high, the U.S. debt-ceiling crisis and budget scuffles spurred more economic uncertainty, and Europe's ongoing financial problems threatened global markets. If there's an upside, at least it's familiar territory.

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"Back in 2008, nobody knew what was going to happen as a result of the global financial crisis and IT spending almost stopped overnight," says Richard Gordon, a research vice president at Gartner. "We're not in that kind of situation now. The solutions to the problems [in the U.S. and Europe] are understood and known. The question is now, is there a political way to execute and make them happen?"

Against the worrisome economic backdrop, enterprises have continued to spend on IT, albeit with caution. IT budgets grew in 2011, but not by much when the impact of exchange rates is factored in.

"If you look at constant dollars -- in other words, if you strip out exchange rates -- we've seen marginal growth in 2011 in the very low single digits, maybe 1% or 2% globally," Gordon says. Healthier growth in emerging economies compensated for sluggish growth in the U.S. and Europe, but the net effect is essentially flat IT spending in 2011 compared to 2010.

We'll see more of the same in 2012, Gordon says. "From an enterprise IT perspective, folks are planning for a period of slow economic growth."

Research firm IDC is more bullish, estimating that worldwide IT spending will grow 6.9% year over year to \$1.8 trillion in 2012. A healthy chunk of spending -- as much as 20%, IDC says -- will be driven by a handful of technologies that are reshaping the IT industry: smartphones, media [tablets](#), mobile networks, [social networking](#)

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and big data analytics.

Mobility is introducing significant management and [security](#) headaches for IT, while at the same time enabling the business to increase employee productivity and improve customer service. Social networking is spawning a treasure trove of customer data, but also creating an enormous challenge for companies that want to make any sense of all that data.

Fighting for talent

As companies try to balance the technical challenges and opportunities, they're also grappling with a shortage of skilled professionals. IT pros with application development, [virtualization](#) or [cloud computing skills](#) are in short supply, as are those with business analytics expertise.

The number of available IT jobs in the U.S. is up about 12% compared to a year ago, and demand for tech professionals is expected to get even stronger in 2012, according to Dice.com. When the jobs site surveyed 1,200 IT hiring managers and recruiters, 65% said they're planning to [add tech pros](#) in the first half of 2012. Among those in hiring mode, 27% said they plan to expand headcount by more than 20%. (See "[Can you keep your IT staff in 2012?](#)")

Tech pros with in-demand skills and relevant experience aren't having trouble finding jobs, says Jack Cullen, president of IT staffing and recruiting firm Modis. "If candidates have strong skills, robust backgrounds, and they communicate well, they're [getting snapped up fast](#)," he says. In fact, many hiring managers haven't adjusted to the new pace. "They're still slow to react, still very deliberate in the hiring cycle," Cullen says. "They're really looking for that quality hire."

Cars.com has been on an IT hiring spree for the past year and remains bullish as 2012 kicks off and the hard-hit automotive industry's recovery continues.

"We're optimistic," says Bill Swislow, CIO at Cars.com, a pricing and reviews site for online car shoppers. "We suffered in the recession just like everyone else, but the auto industry has been rebounding. Even though we're still not close to pre-recession levels of auto sales, the incremental climb in sales has been pretty steady."

As a result, Cars.com has been investing heavily in IT. "In 2010 and 2011 we made substantial investments. We increased headcount, increased overall IT spending and executed a number of different strategic initiatives and infrastructure upgrades," Swislow says.

That growth will continue in 2012, he says, though he won't be increasing headcount by as much as he did in 2011, when his IT team grew by about 30%. Swislow is predicting about 10% growth in headcount for 2012.

On the project front, Cars.com is planning a handful of major projects in 2012, including reengineering its CRM and fulfillment systems, deploying a new data warehouse platform, and rolling out new business intelligence technologies.

"There's an increasing market expectation with our customers, especially car dealers, that they can log into a tool and see real-time metrics. Our current data warehouse architecture requires an overnight batch process, and we want to load continuously throughout the day," Swislow says. "On the business intelligence layer, we're looking to greatly upgrade our visualization and dashboard capabilities, both for internal use and for customer-facing reporting."

Successful execution of some major IT projects over the last couple of years -- in particular shifting from a waterfall to an agile development methodology, which dramatically increased developer productivity -- makes it easier to justify further increases in headcount and IT budgets, Swislow says. "Our ability to spend effectively enables us to make a credible case for spending more."

Keeping it lean

Not all enterprises are staffing up and spending more, however. Many organizations are still struggling to pare back expenses.

IT headcount and budgets are remaining flat in the city of Ridgeland, Miss. "We're still cautious," says Joe Kirchner, information systems manager for the city. "We're taking care of the essentials, and there's beginning to be some optimism."

A key project for 2012 will be to extend a VoIP rollout. Ridgeland analyzed its [VoIP](#) options for several years before starting to deploy the technology at city hall and the police department. Beginning in January, more city departments, including the fire department, will be brought on board.

Further out, Ridgeland is researching its options for a [virtual desktop](#) deployment, though the purchase won't happen in 2012, Kirchner says. "We have a lot of legacy [applications](#) that communicate in a unique way, so you can't rush to everything."

The city of Ridgeland is replacing IT staff who leave, but it's not adding new positions. Nucleus Research says it's seeing more of that: IT departments putting money into technology rather than more personnel. Among the ROI-driven case studies Nucleus published in 2011, 60% said they were able to reduce or avoid adding staff as a benefit of technology investments. (See story, "[The CIO's lament: 20-somethings who quit after a year.](#)")

"With uncertainty about what corporate taxes are going to look like in 2012, and what unemployment is going to look like, companies are opting to invest in technology that makes their existing employees more productive," says Rebecca Wettemann, vice president of research at the firm.

Know thy customer and business

Enterprises are deploying technologies that can help them improve customer service, analyze data for better decision making, and get the most out of their workforce.

Companies have continued to spend on CRM, even during the recession, because it's important for businesses to know their customers -- to be able to identify and retain the customers who generate profit for the company, to cut loose the ones who don't, and to track new customers who are willing to spend, Wettemann says. "For every dollar you spend on CRM, you get \$5.60 back."

[Analytics technology](#) is hot because it enables businesses to make decisions based on data instead of gut, and it doesn't require an enormous IT outlay. "We've seen companies make a relatively small investment, do a pilot analytics project, understand how the technology works, and see what it delivers in terms of returns," Wettemann says.

In upstate New York, analytics are helping cash-strapped school districts to track academic performance trends and identify students who are most likely to benefit from targeted education services.

Nicole Catapano is data analysis coordinator at the Washington-Saratoga-Warren-Hamilton-Essex Board of Cooperative Educational Services (WSWHE BOCES), which serves 31 school districts in a five-county New York region. WSWHE BOCES manages and analyzes volumes of school data from different districts, customizing projects based on each district's needs.

"We're taking the burden of organization and analytics away from the school districts and helping them pinpoint where they should focus their time and attention regarding student achievement," Catapano explains. "For one group we looked to see what variables predicted student readiness for college classes. In another district, we looked at early literacy indicators to see what skills students had or were lacking in order to be demonstrating a level of proficiency by third grade."

Catapano's team invested in predictive analytics software from IBM, which has significantly shortened the amount of time it takes to create a predictive model from weeks or even months to just days or hours.

Cloudy forecast

Cloud computing is another area of accelerated growth as 2012 gets underway. The shift from traditional IT acquisition models to public cloud services is still in the early stages but growing at much faster rate (19% annually through 2015) than overall enterprise IT spending, according to Gartner. (See "[Cloud activity to explode in 2012.](#)")

The appeal of the cloud, with its potential to reduce capital expenses and enable greater IT agility, is proving strong enough to convince companies to entrust their data to a cloud provider. More than 50% of the world's largest companies will have stored customer-sensitive data in the public cloud by year-end 2016, Gartner predicts. Under pressure to reduce costs and operate more efficiently, more than 20% of organizations are already selectively storing customer-sensitive data in a hybrid cloud environment, Gartner says.

Cars.com has adopted some software-as-a-service apps, and this year is implementing a cloud-based desktop backup solution. So far, it has resisted outsourcing its Web infrastructure to a cloud provider, though the appeal of a service that can handle extreme spikes in traffic (such as when Cars.com advertises during the Super Bowl) is tempting, Swislow says. "That's something we continue to consider."

In the financial services industry, the current economic environment and regulatory climate are driving firms that traditionally would have built and maintained their own trading infrastructures, and procured market data on their own, to consider outsourcing those functions to a provider such as NYSE Technologies, the tech division of NYSE Euronext.

"People are going to have to make painful decisions" as financial organizations work to cut costs, trim IT budgets and staff, and transform their operating models, says Stanley Young, CEO of NYSE Technologies.

"The natural tendency for all companies is to do everything themselves. Trusting somebody to provide a critical part of your infrastructure is a tough decision. But I think they've reached a tipping point where doing the same things they've always done is no longer an option."

Mobile, social mayhem

Two complementary trends -- the meteoric adoption of the mobile devices and the increasing use of personal smartphones and tablets for business purposes -- are further disrupting the IT status quo and driving new investments.

Enterprises are grappling with how to incorporate employees' mobile devices into existing corporate technology infrastructures. The city of Ridgeland, Miss., is so far prohibiting employees from using personal devices to access internal systems. Limited personnel is one reason, Kirchner says, along with the management and security challenges that employee-owned devices introduce. (Read: "[Security minefield: Bring your own device will bedevil IT security in 2012.](#)")

Digirad, a maker of cameras used for medical purposes, allows employee-owned iPhones and iPads at work, but limits their application access. "We're only trying to support email," says Jon Martin, vice president of IT at Digirad. "And the users can't contact us for advice. We say, 'check with your provider.'"

A recent survey by the Enterprise Device Alliance found that 66% of organizations allow some employees to bring their own devices, which IT supports at least to some degree. But while employee-owned devices are showing up at work, many IT organizations are under-investing in tools to manage and secure those devices. Just 16% of organizations reported using [mobile device management](#) tools -- a percentage that is expected to more than triple to 50% by the end of 2012.

There's a similar tug-of-war going on in the social media realm.

Sales and marketing teams want to engage customers through social networking sites, end users want to access

personal accounts from the workplace, and HR wants to be able to recruit, hire and retain social media-savvy employees. But IT doesn't want to expose the company to unnecessary risk.

In a recent a Ponemon Institute survey, 63% of respondents said use of social media puts the organization at risk, and 52% said their organizations suffered increased virus and malware attacks as a result of employees' use of social media. Yet only 29% have security controls in place to mitigate or reduce the risk.

Looking ahead, industry watchers say organizations will adopt enterprise tools that bundle compliance, content management and analytics features so companies can stay on top of content created by employees and measure the effectiveness of their social media activities.



In the big picture, enterprises aren't waiting around for the economy to improve. IT executives are spending in new areas and dramatically rethinking how they acquire technology and deliver services to end users. After a period of unrelenting focus on cost-cutting, these course adjustments are a breath of fresh air.

Ann Bednarz covers IT [careers](#), [outsourcing](#) and [Internet culture](#) for Network World. Follow Ann on [Twitter](#) at [@annbednarz](#) <http://twitter.com/annbednarz> and check out her blog, [Occupational Hazards](#). Her e-mail address is abednarz@nww.com.

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