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WINTER 2014

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Latest Trends in IT & Engineering Staffing and Solutions

Tech Trends Expected to Generate Many Jobs and Billions of Dollars

Three major technology research organizations have reported their 2014 IT spending estimates. International Data Corporation (IDC) expects an increase of 5 percent in 2014, totaling $2.1 trillion. Forrester Research anticipates it will expand 6.2 percent to $2.2 trillion, and Gartner estimates a 3.1 percent growth to $3.7 trillion. Gartner is not the outlier though, since its prediction includes telecom services. Despite this, Gartner's estimate is approximately $2.1 trillion. All three IT research firms foresee reasonably strong growth in 2014 after a stagnant 2013.

According to IDC, major growth in IT spending will emerge in BRIC (Brazil, Russia, India, and China) markets, led by China. Although the Chinese market is one-third the volume of the U.S. market, China's IT spending growth (in dollar volume) will equal that of the U.S.

According to Gartner, another development affecting these estimates is the "faster-than-expected moves to cloud computing." IDC expects cloud spending to increase 25 percent in 2014, averaging more than $100 billion. Some of that growth will be due to "a dramatic increase in the number of data centers as cloud players race to achieve global scale [along with] a similar expansion in the variety of workload-specialized cloud infrastructure services, leading to new forms of differentiation among cloud service providers."

IT-centric website TechRepublic hosted a CXO roundtable geared to chief executive, technology, and marketing officers at nearly two dozen technology companies to discuss the cloud. The CEO of a cloud migration, SaaS, has begun to endeavor in building their own private clouds because they "do not want too much of their environments in the public cloud. This may change over the next few years, but right now, they want total control."

The third generation of IT will deliver the next generation of competitive advantage apps and services that will significantly disrupt market leaders in virtually every industry," according to IDC's prediction for 2014.

During the TechRepublic CXO roundtable, two CTOs at Cisco discussed the "rise of a new Internet architecture" that will call for an IT professional. They said "a new set of IT skillsets which accompany the convergence of computing, networking, storage and applications will emerge. IT professionals will need to become much more comfortable and familiar with IT domains beyond their silos…."

Big data will expand in 2014 with IDC predicting spending to increase by 30 percent, equaling more than $14 billion. The cloud and big data will intersect as the applications for big data will be delivered as a cloud service and storage for the data itself. A news website, Business Insider, reports, "With big data so hot, companies will have a hard time hiring people to fill big data jobs."

CIOs Unprepared for Next Phase of Enterprise IT

An international survey of more than 2,300 CIOs by Gartner, Inc. revealed that CIOs do not believe they are prepared for what they call "the third era of enterprise IT." In addition, more than half are worried that changes today are occurring quickly and "42 percent don't feel that they have the talent needed to face [the] future."

Everything is changing in the third era of IT development, which is described as "not only improving what businesses do with technology to make themselves faster, cheaper and more scalable, but fundamentally changing businesses with information and technology, changing the basis of competition and in some cases, creating new industries."

If this indeed is the third era, what were the first two? According to Gartner, providing management with information and big improvements in scale and speed defined the first era of enterprise IT. The next era, which was basically the developments of the past decade, was the "industrialization of IT," which concentrated on IT working as designed and being dependable, "predictable, open and transparent."

The big challenge in the third era is for IT leaders to simultaneously renew essential IT systems and services, and "exploit new technology options."

Unemployment Rates for IT and Engineering Professionals Remain Below the National Average

The overall unemployment rate remained at 7.0 percent in Q4 of 2013, but was much lower for almost all IT and engineering professions. The unemployment rates for the various tech positions can be seen as a proxy demand for different skill sets.

For example, the increased demand for computer and data security is seen as the reason for the low unemployment rate of 1.1 percent for information security analysts. Conversely, as cloud computing gains traction, there is less demand for network and computer systems administrators.

IT Occupations (Q4 2013)	
Computer hardware engineers	2.2%
Computer and information systems managers	3.0
Computer network architects	1.9
Computer programmers	3.4
Computer support specialists	4.6
Computer systems analysts	2.1
Database administrators	1.0
Information security analysts	1.1
Network and computer systems administrators	5.8
Software developers, applications and systems software	4.3
Web developers	4.5
Engineering Occupations (Q4 2013)	
Aerospace engineers	1.5
Civil engineers	2.8
Electrical and electronic engineers	3.2
Engineering technicians, except drafters	3.5
Industrial engineers, including health and safety	0.6
Materials engineers	3.0
Mechanical engineers	2.4

Source: Unpublished tabulations of current population survey data furnished by the U.S. Bureau of Labor Statistics

The Third Platform has Arrived

The Third Platform, or the next phase of technology as labeled by IDC, is here today and will be the place for innovation and growth tomorrow.

The mainframe computer was the first platform, and the PC was the second platform. But the Third Platform is not as easy to define. By most accounts, the Third Platform consists of at least five planks, or components, which are: big data analytics, broadband networks, cloud services, mobile apps and devices, and social networking.

According to a report of an IDC webinar, a third of employers are having trouble finding the right IT talent to work on and in Third Platform technologies. For example, in 2012, the International Institute for Analytics, which is an independent research organization, predicted that there would be a shortage of [big] data scientists in 2013 that will continue into 2014 and beyond.

Developing Uses for 3-D Printers

The emergence of 3-D printers as a significant manufacturing tool continues as it becomes "one of the new frontiers in engineering," according to Business Insider.

NASA recently announced that the International Space Station will soon begin proof-of-concept tests to see how the technology performs in a microgravity environment. The potential uses will be to develop prospective future manufacturing facilities in space as well as "realizing a 'machine shop' in space, a critical enabling component of any deep space mission," according to NASA. Being able to make tools and spare parts, as well as food, via 3-D printers is part of the next space frontier.

Fascinating research is being conducted with 3-D printers right here on Earth. The French Press Agency (Agence France Presse) reports that researchers at the University of Cambridge in England are experimenting with sending live cells through the nozzles of an inkjet printer. Although much work is ahead, the scientists reported that the certain retina cells remained "undamaged and sound" after being sent through an inkjet nozzle. As biotechnologists look into 3-D printing as a means to build artificial human tissue in layers, the ultimate hope for this line of research is that retinal tissue will be able to be built for patients suffering from degenerative diseases of the eye.