

CompTIA RESEARCH & MARKET INTELLIGENCE

EXECUTIVE SUMMARIES OF KEY TOPICS 2011-2012

RESEARCH





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2012 Outlook: The Year Ahead in Tech



Heading into 2012, CompTIA's IT Industry Business Confidence Index remained essentially flat, reflecting persistent concerns over the pace of the recovery. The forward-looking component of the index projected a gain of 3.8 points (on a 100-point scale), which if realized, puts the index ahead of its rating for much of 2011. What does this mean for industry growth?

For the year ahead, CompTIA projects a worldwide IT industry growth rate of 4.5%, with upside potential of 7.6%. The U.S. forecast trails slightly at 4.0% and 6.9%, respectively.

Compared to U.S. GDP expectations and growth projections for other industry sectors, the outlook for the IT industry looks quite favorable.

The data suggests IT industry executives are most bullish on the IT services and software categories.

A number of trends will inevitably make their mark on the IT industry and the broader economy in 2012.

At a macro level, disintermediation and automation will touch new areas, further reducing layers of complexity, while improving efficiencies. Many organizations will reap the benefits of this innovation, although some will inevitably lag in adoption, potentially resulting in a more pronounced enterprise digital divide.

The technology outlook for the upcoming year will be one of momentum and continuation. Cloud computing, mobility and social communication and collaboration technologies will become more capable, more business-ready and more disruptive. Big data will get even bigger as pervasive connectivity and "smart" devices become the norm.

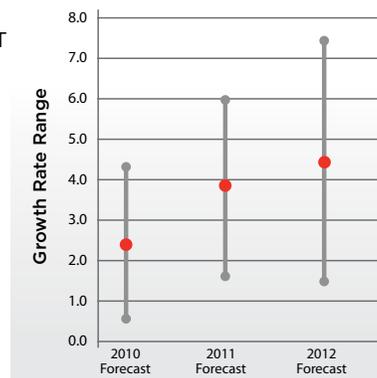
On the channel front, the "everything-as-a-service" approach to IT will continue to push firms to explore new business models, product mixes and partner relationships. Business transformations, such as the shift from transactional product/services sales to recurring revenue models, will present lucrative opportunities for some, while challenging others.

CompTIA's *IT Industry Outlook 2012* was developed with input from a survey of 500 U.S. information technology firms. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

CompTIA Consensus IT Industry Growth Forecasts

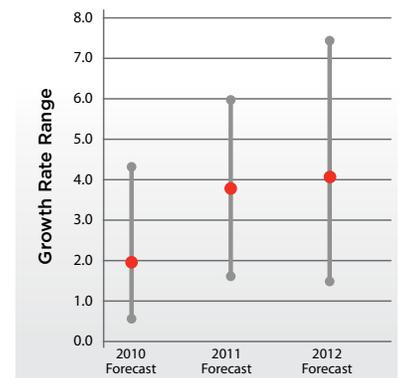
Global IT Industry Revenue Forecast

2012 Optimistic projection: 7.6%
2012 Pessimistic projection: 1.5%
2012 Midpoint projection: 4.5%



U.S. IT Industry Revenue Forecast

2012 Optimistic projection: 6.9%
2012 Pessimistic projection: 1.1%
2012 Midpoint projection: 4.0%



Source: CompTIA *IT Industry Outlook 2012*
Base: 500 U.S. IT firms

Mobile Opportunities Emerge in the Healthcare Market



Mobile health (mHealth) has quickly moved from concept to reality as healthcare practices increasingly embrace mobile technologies. To fully realize the benefits though, a number of challenges will need to be overcome.

As mobile technologies have become more user-friendly, affordable and powerful, the appeal to businesses of all types, including healthcare providers, has grown exponentially. New devices, new form factors, new apps and new methods of connectivity have given physicians a broad array of tools to better care for patients, while contributing to improved efficiencies and cost savings.

Mobile devices such as laptop PCs, netbooks and smartphones are firmly established in the healthcare space. The next wave of mobile adoption will involve tablets and mobile peripherals such as smartphone-powered digital stethoscopes.

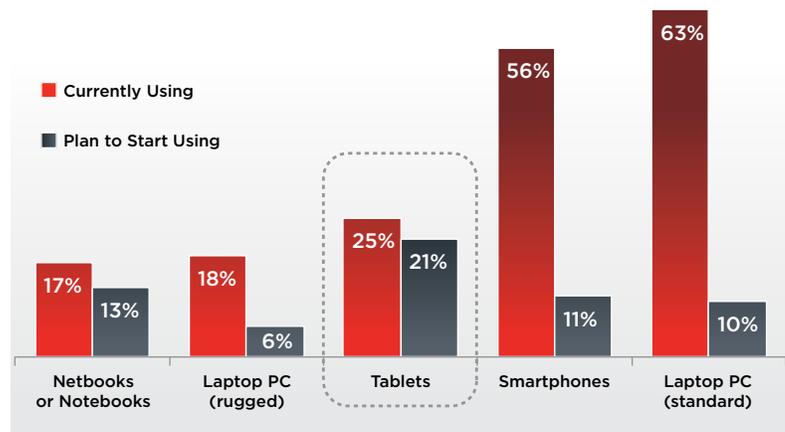
The transition to electronic medical records (EMR) continues to gain momentum. To achieve meaningful use and maximize the effectiveness of EMR systems, healthcare providers must contend with several direct and indirect mobility requirements.

Meaningful use criteria such as clinical decision support, e-prescribing and computerized physician order entry (CPOE) are optimally achieved at the point-of-care. For physicians on rounds or specialists working from multiple medical facilities, real-time access to a patient's complete medical history, drug allergies and treatment recommendations is vital to proper treatment.

Almost one-third of healthcare practices with an EMR system in place currently use their smartphone or tablet to access EMR records, with 1 in 5 expecting to start doing so over the next 12 months. Healthcare professionals seek a great user experience, interoperability and speed in their mobile EMR solutions. Robust security and data privacy are assumed, although not always provided at sufficient levels—a key challenge of any mHealth initiative.

CompTIA's 3rd Annual Healthcare IT Insights and Opportunities study was developed with input from a survey of 350 U.S. physicians, nurses and healthcare administrators, as well as data from a study of 400 IT solution providers that do business in the healthcare vertical. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

Mobile Device Usage by Physicians on an Upward Trajectory



Source: CompTIA's 3rd Annual Healthcare IT Insights & Opportunities study
Base: 317 U.S. healthcare practices

Cross-Technology Collaboration Needs Drive Unified Communications Adoption



As companies pursue their strategies for mobility, cloud, and social tools, they will also be looking for a common thread that ties together their technology investments and allows their employees to work together more productively. Unified Communications (UC), while not a new concept, will nonetheless be a highly desired solution to this problem. IDC predicts that the worldwide UC market will hit \$27.3 billion in 2012, including equipment, software, and services.

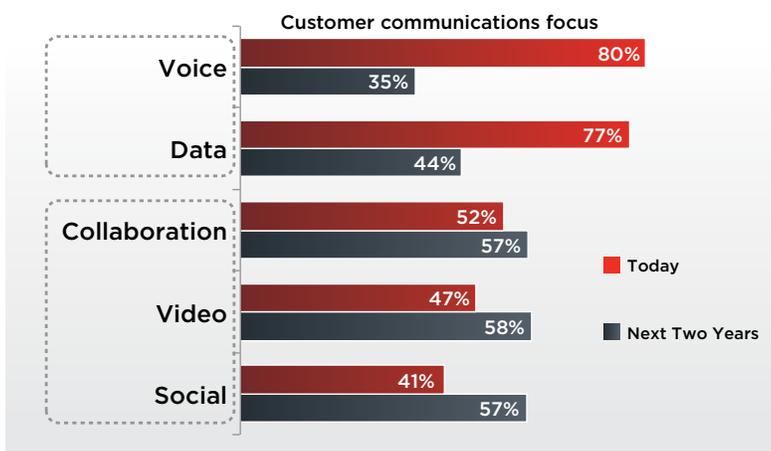
CompTIA released an inaugural study in the field of UC in 2011. The research found that while companies expect to invest in UC (49% expected spending on UC to outpace other IT expenditures), there is still a need to define the overall concept (80% of channel partners believe further clarity will improve the sales and marketing process). One foundational piece of the UC puzzle is clear, though: the expected change in customer focus over the next two years indicates both a shift towards different technologies and a balancing of many areas in an overall communications strategy.

Just as there is a large opportunity in tying a suite of tools together to form a cohesive solution, there is similar opportunity in enabling collaboration using that solution. Fifty-nine percent of UC solution providers see customer demand for improvements in staff productivity and efficiency as a primary market driver. Realizing these improvements requires full use of the benefits of each point tool as well as the know-how to effectively use specific tools and features for specific situations. Solution providers should be prepared to share the value of educational offerings as a follow-on to implementation.

CompTIA's 2012 UC study will continue exploring trends in the field, such as the drivers for videoconferencing and the correlation between a UC strategy and adoption of mobility, cloud, and social tools. Many challenges still exist in UC implementations; there is a high degree of complexity in the solutions, and the ROI can be difficult to calculate. The study will also seek to understand these challenges and present guidance for companies installing or selling UC solutions.

CompTIA's 2011 *Unified Communications and Collaboration Market Trends* study was developed from a survey of 600 end user firms and 300 channel firms in the U.S. The data was collected during March 2011. CompTIA members have free access to the full report (along with the upcoming 2012 report) in the members' section of www.comptia.org/research, or they can contact research@comptia.org for more details.

Evolution of UC: from Voice to Enhanced Communications



Source: CompTIA's *Unified Communications and Collaboration Market Trends* study
Base: 600 U.S. businesses (aka end users)

New Innovations Bring New Security Risks



If organizations haven't already, they will soon be forced to contend with several disruptive information technology trends: 1) mobility, 2) cloud computing, 3) social solutions and 4) big data. While each holds great promise for businesses of all types, they do introduce new risks into the cybersecurity equation.

Mobility – The numbers speak for themselves: 2011 was the first year where worldwide unit sales of mobile devices eclipsed sales of PCs. And yet, few organizations have implemented what would be considered a comprehensive mobile device management and security strategy. The most common safeguard is the use of passcodes—76% of organizations require their use for corporate mobile devices. Other tactics, such as data encryption and remote data wiping capabilities, are employed by less than half of organizations.

Cloud Computing – As organizations transition from low-risk, “test the waters” use of cloud computing to mission critical use, security will become a more pressing issue. CompTIA research reveals the strongest concerns around system downtime of cloud providers, data exposure during transfers between on-premise and cloud systems, the physical security of cloud data centers and data segregation in a multi-tenant environment. Despite the security concerns, only 29% of organizations report conducting a heavy review of their cloud service provider's security policies, procedures and capabilities.

Social Solutions – Social technologies have grown at a startling rate. Arguably, the security threat level hasn't been as severe as might be expected. That may change though. A net 87% of IT and business executives rate social engineering and phishing/spear phishing a serious or moderate security concern. A nearly equal number believe risks associated with social networking are on the rise.

Big Data – With organizations producing more data than ever before, the threat of loss and leakage has increased accordingly. CompTIA research indicates slightly more than half of organizations knowingly experienced data loss/leakage. Among those experiencing a loss, sensitive corporate financial data was cited at the highest rate (65%). Data in motion (e.g. unencrypted email) generated the greatest concern, followed by data at rest.

CompTIA's 9th Annual Information Security Trends study was developed with input from a survey of 500 U.S. executives with security responsibility, as well as data from 683 managers from Brazil, India, Japan, South Africa and UK. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

Despite Best Efforts, Security Incidents Regularly Occur at Most Organizations

Organizations Catch Many Security Incidents, But Not All...

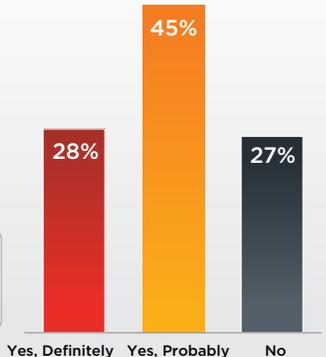
76% % of organizations that report experiencing a security incident in 2011

7 Mean # of incidents experienced

3 Median # of incidents experienced

Among organizations experiencing a security incident in 2011, on average, 3.6 of the incidents, or about half of the incidents experienced, were classified as *serious*.

Likelihood of Experiencing an Undetected Security Incident



Source: CompTIA's 9th Annual Security Trends study
Base: 500 U.S. IT or Business executives (aka end users)

Trends in Managed Services



For many in the IT channel, managed services ushered in the Holy Grail of recurring revenue. The model also has helped cash-strapped customers shift cap-ex IT spending to a more predictable operational expense. CompTIA's study, *Trends in Managed Services*, finds managed services growth among both end users (adopting) and channel companies (selling) is expected to continue apace in the next two years.

CompTIA's two-part study of 750 end users and channel partners reveals a number of opportunities, as well as challenges in the managed services space. Nearly half of channel respondents that sell managed services today said that portion of their business accounted for between half and 75% of revenue during that last 12 months. Meanwhile, planned investments in managed services by both the channel and end users are also increasing. Roughly 7 in 10 end user organizations today contract with a managed services provider (MSP) for some or all of their technology needs, versus 29% that handle all of IT on their own. Of those companies, 62% said they plan to increase their IT spend on managed services over the next two years, with the balance opting to remain at current levels.

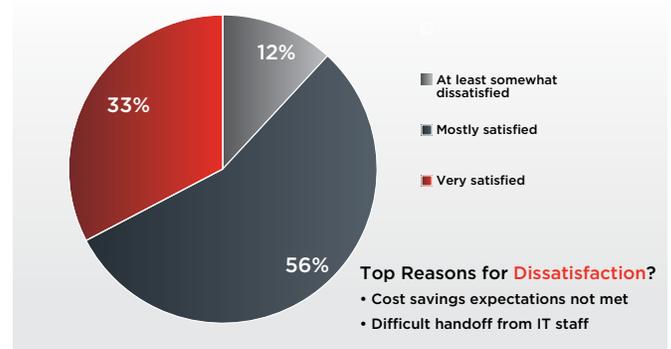
On a positive note, end user organizations that rely on MSPs for some or all of their IT needs are reaping significant annual costs savings on those IT functions they are outsourcing. Among current users of managed services, 46% of firms have trimmed their annual IT expenditures by 25% or more as a result of their shift to managed services, including 13% that have slashed annual IT expenditures by 50% or more on the IT functions they have given over to an MSP. Another half of organizations have saved between 1% and 24% in IT costs annually on what they have moved to an MSP-managed environment.

Now while end users are embracing managed services today, their incidence rates remain low, signaling untapped opportunity for MSPs to sell more services into individual organizations. In other words, a broad swath of end users outsource some IT function to an MSP, but the vast majority of IT functions remain handled internally.

From a channel perspective, the opportunity to get into the MSP market is still quite viable. Just 4 in 10 companies report offering managed services today, with 37% of them operating what they characterize as a hybrid business that includes a mix of managed services (typically less than half of overall revenue) alongside more conventional IT product and services offerings. This space in the channel is far from saturated.

CompTIA's *Trends in Managed Services* study was developed from a survey of 400 end user firms and 364 IT firms in the U.S. (aka channel). The data was collected during June 2011. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

End User Satisfaction Levels with Current Managed Services Experience



Source: CompTIA's *Trends in Managed Services* study
Base: 273 managed services users

Managed Print Services Gains Momentum as Businesses Seek Greater Efficiencies



The reality of the modern day office is that printing is embedded in day-to-day operations. Even though 4 out of 5 firms surveyed in CompTIA's *Examining the Print and Document Management Market* study said that moving to a "paperless office" was a priority for them, printing occurs daily at 75% of offices. The research also found that companies expect printing levels and costs to increase or stay at the same level over the next two years. Given the saliency of document management and the costs associated with it, this is an area that companies look to in order to gain the most efficiency and productivity.

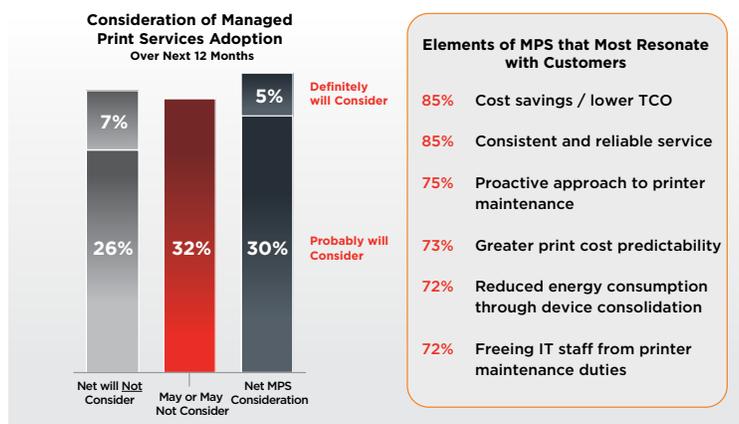
Users express high rates of satisfaction with the print function, but room for improvement certainly exists. Overall, two-thirds of respondents express a desire for significant or modest improvement in how print and document management devices are maintained at their company. Users seek ever-greater levels of reliability, lower total cost of ownership (TCO), functionality and ease of maintenance. These needs have laid the foundation for the emerging concept of managed print services (MPS).

The adoption of managed print services is correlated to company size. Larger firms express the strongest interest in MPS, a reflection of their desire to tame a more complex and costly print function relative to smaller firms. Among the non-users of managed print services, 35% expect to definitely or probably consider adoption of MPS over the next 12 months. Given that this concept is relatively new to many companies, this net intent rate is solid.

CompTIA's research found that greater adoption of new technology like tablets and the drive to a paperless office might reduce printing levels, but there exists the need for formal document management processes. This study found that a little less than 50% of companies do not have a formal document retention policy and this opportunity is more pronounced in small and medium sized firms.

This CompTIA study is based on separate online surveys among 400 IT and business executives involved in print and document management at their firms (aka end users); and 400 IT firms (aka channel partners) including both firms currently involved in managed print services as well those planning to enter the market. Both surveys were conducted in July 2011. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

Managed Print Market Potential and Demand Drivers



Source: CompTIA's *Examining the Print and Document Management Market* study
Base: 239 U.S. IT and Business Executives (aka end users) not currently using managed print services

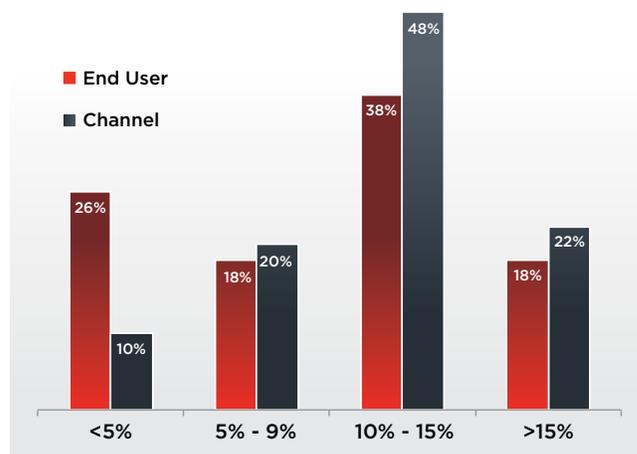
Strong Momentum for Cloud Computing Drives Changes in Business Models



CompTIA's inaugural study on cloud computing found that many companies were experimenting with this new strategy, but there was still measured investment and resource allocation from both end users and channel firms. The *2nd Annual Trends in Cloud Computing* study shows that the hesitation is disappearing and companies are moving quickly past experimentation and into heavier use of cloud computing. The major points from the study give a foundation for understanding the shape of the cloud market today.

To begin with, end users are moving into more complex uses of cloud computing. Both understanding and perception of cloud solutions have increased dramatically in the past year—72% of respondents feel more positive about cloud today than they did one year ago. With a newfound appreciation for how the cloud works and what it can do for a business, companies are moving beyond simple Software as a Service applications and even using cloud to build new capabilities. Infrastructure as a Service and Platform as a Service are currently used by 32% of companies, but 36% plan on that type of usage in the next year, indicating that companies will be moving or beginning application development in the cloud. As companies also work through the best mix of cloud services and on-premise tools, service providers will find opportunities to assist with integration, security, and network reliability.

Plans to Increase Cloud Investment



Source: CompTIA's *2nd Annual Trends in Cloud Computing* study
Base: 376 U.S. businesses (aka end users) currently using cloud and 281 channel firms currently using cloud

Solution providers are also seeing their businesses change as they offer cloud solutions and services. As the number of channel firms with no cloud involvement has dropped from 40% to 13%, the business models have gone through transitions that match the technical transitions. These companies have had to work through issues dealing with sales and compensation, and 43% have invested in training to bring staff up to speed on the cloud. In addition, relationships with vendors are changing, with 4 in 10 channel companies partnering with between 1-4 vendors for cloud programs. Fighting through the challenges is paying off, especially in the form of recurring revenue and services-attach opportunities around cloud.

Ultimately, the experiences with cloud are leading both end users and channel firms to invest more heavily in cloud efforts. Many companies are planning sizable increases, which will likely cover a wide range of services, from the cloud solution itself to integration to training. These investments signal that cloud computing will continue to be a dominant topic in the IT industry and that the opportunities surrounding cloud will be significant.

CompTIA's *2nd Annual Trends in Cloud Computing* study was developed from a survey of 500 end user firms and 400 channel firms in the U.S. The data was collected during June 2011. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

Opportunities Abound as Small and Medium Business Increasingly Use Technology



Small and medium businesses form a critical segment of the United States economy, making up 99.7% of the six million employer firms and creating more than half the nonfarm private GDP (according to the Office of Advocacy of the U.S. Small Business Administration). These firms have limited access to capital, but they often prioritize technology spending as a way to elevate their capabilities. The data from CompTIA's *3rd Annual Small and Medium Business Technology Adoption Trends* study gives insight into successfully navigating the SMB IT purchase process.

First, the study found that most SMBs are planning IT budget increases this year. Many firms are planning substantial increases, indicating sizable upgrades or service purchases that may have been delayed during the economic downturn. Knowing that businesses have spending plans, solution providers can inquire as to the exact nature of the purchases and look for opportunities to build on those purchase plans.

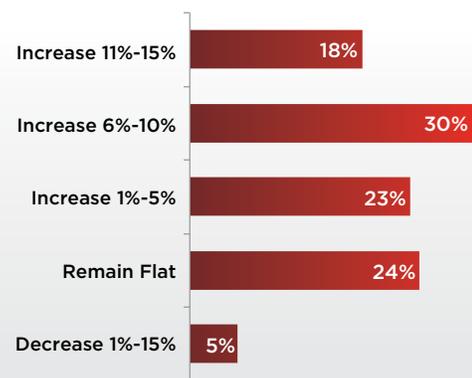
Solution providers also have an opportunity to promote the outsourcing of IT. The majority of small and medium businesses primarily handle IT support internally, whether by using a formal IT department or informally using employees who have some IT experience. Many SMBs are familiar with managed services, but they are unsure of which parts of their IT infrastructure might be best suited for outsourcing. Detailed business analyses and clear ROI descriptions will help small firms better understand the value in outsourcing IT.

Finally, it is critical to understand which emerging technologies are being adopted by small and medium businesses. Business analytics (38%) and social media (35%) are the most commonly used technologies currently, while cloud computing (35%) and mobile solutions (35%) are the top technologies in future plans. On the other hand, virtualization, unified communications, and green IT have the lowest rate of familiarity. These technologies have definite bottom-line implications, and education in these areas will help SMBs understand the full range of technology solutions that are available to them.

CompTIA's *3rd Annual Small and Medium Business Technology Adoption Trends* study was developed from a survey of 600 small and medium businesses in the U.S. The data was collected during May 2011. The full report is available at no cost to CompTIA members.

Visit www.comptia.org/research or contact research@comptia.org for details.

Expected Change in IT Budget



Source: CompTIA's 3rd Annual Small and Medium Business Technology Adoption Trends study
Base: 602 U.S. small and medium businesses

The State of IT Channel Programs



IT vendors and their channel partners engage in a multifaceted business relationship that requires constant tinkering, give and take on both sides, and clear communications. When the partner programs that sit at the core of these relationships work well, both vendors and channel companies typically have a good shot at hitting revenue and profitability goals. When programs don't work well—often as the result of poor communications between parties—both sides can suffer.

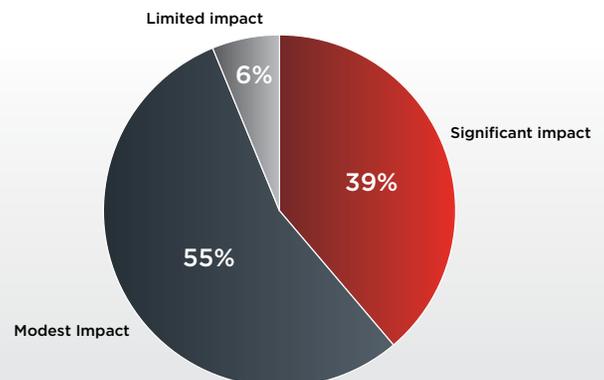
As business models begin to morph, chiefly around the transition to cloud and recurring revenue operations, many channel companies are evaluating their options and seeking education and training to guide them to be competitive in the channel of the future. In this climate, the ways in which vendors incent and engage their partners will grow even more critical. The development of partner programs that feature enablement tools, resources and requirements that address trends in cloud, specialization, emerging technologies and new revenue models will greatly influence the ultimate success of the channel and may guide solution providers' loyalty toward specific IT vendors that meet their needs best.

To begin tracking some of these issues, CompTIA released an inaugural study into trends across vendor channel partner programs in 2011, surveying more than 400 IT solution providers, VARs, managed services providers and other channel players about program participation, member satisfaction levels, and overall effectiveness from the perspective of the channel. The research found that one of the primary factors influencing a channel company's decision to join a partner program hinged on the ease of doing business with a vendor. This is not surprising; difficulty communicating with vendor partners regarding everything from how to redeem rebates to accessing pre- or post-sales technical support on the fly is a perennial solution provider complaint.

Communications is going to be especially important as the transition to cloud takes hold. Among the focal points of CompTIA's *2nd Annual Channel Partner Program Trends* study is a deeper dive on the various facets of vendor-partner communication. The 2012 iteration of the study aims to gauge areas of effective and non-effective tools and methods, including how the use of social media is or is not impacting the way that channel companies exchange information with the vendors they work with.

As an adjunct to the 2012 quantitative research, CompTIA is seeking the vendor perspective on channel programs and trends via a series of in-depth one-on-one interviews with IT industry channel executives. CompTIA members have free access to the 2011 full report (along with the upcoming 2012 report) in the members' section of www.comptia.org/research, or they can contact research@comptia.org for more details.

How Will Cloud Computing Impact Partner Programs in Next 12 Months



Source: CompTIA's *State of IT Channel Programs* study
Base: 400 U.S. IT firms involved in channel programs

IT Skills Gaps Increasingly Affect Organizations



It would be challenging to find an organization that is perfectly content with the level of skills and expertise their employees possess. Couple that with today's unforgiving competitive environment and the skills needed to effectively support ever-changing technology, IT skills gaps can and do exist.

As the data in CompTIA's *State of the IT Skills Gap* study echoes, a vast majority of employers (93%) indicate there is an overall skills gap, the difference between existing and desired skill levels, among their IT staff. Unfortunately, nearly 6 in 10 companies report being either not close or only moderately close to where they want to be with IT skills. As a result, gaps in IT skills are likely hindering companies' optimal utilization of technology and presumably hampering business success.

In fact, a large majority (80%) of employers point to at least one specific business area potentially affected by their organization's IT skills gap. Top areas influenced by shortcomings in IT skills include staff productivity (41%), customer service / customer engagement (32%), and security (31%). Skills gaps also especially affect speed to market for IT businesses (34%) versus firms in other industries (20%).

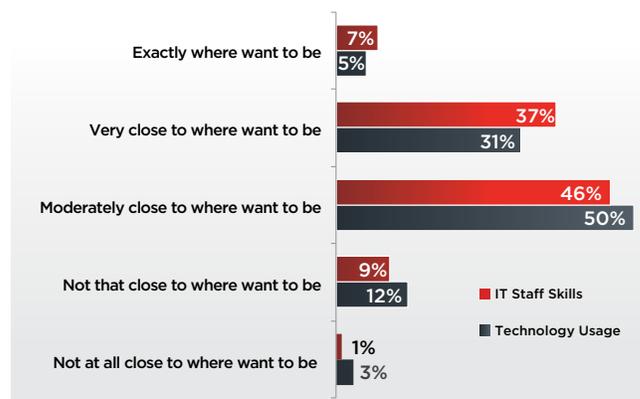
In most organizations, strategic priorities align with and influence IT skills needs. Core IT priorities, as well as longer-term priorities in emerging areas, are reflected in skills ranking. Respondents place the highest levels of importance on skills associated with what could be described as the IT foundation—the fundamental elements of hardware, software and IT support required to exist in today's digital economy.

Top Tier IT Skills Priorities (NET rating of >70%)

- Networks / Infrastructure
- Server / data center management
- Storage / data back-up
- Cybersecurity
- Database / Information management
- Help desk / IT support
- Telecommunications / Unified communications
- Printers, copiers, multifunction devices
- Data analytics / Business intelligence
- Web design and development
- Customer relationship management

CompTIA's *State of the IT Skills Gap* study was developed with input from a survey of 502 U.S. IT and business managers, as well as input from more than 500 managers in Canada, Japan, South Africa and the U.K. All data was collected December 2011 – January 2012. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

Majority of Organizations Seek to Improve Use of Technology and Skills of IT Staff



Source: CompTIA's *IT Skills Gap* study
Base: 500 U.S. IT and Business Executives

Social Technologies Present New Opportunities for the Enterprise



Social networks have transformed the Internet, and the technology and behavior that have driven this transformation are making their way into the enterprise. It is estimated that enterprise social adoption is currently 2-4 years behind social adoption, and many companies are still skeptical that this trend has business use. Many other companies, though, are proving that social data and communications are providing value and leading to new ways of doing business.

CompTIA's *Social Business: Trends and Opportunities* study examined adoption and usage of social tools, breaking them into two large categories. The first is social media, meaning public sites such as Facebook, Twitter, and LinkedIn. This is where most companies have started adoption. The second category is social enterprise tools, meaning internal tools such as Chatter, Yammer, or IBM Connections. The goal of these tools is to bring social behavior inside the enterprise and incorporate social data into other business tools or processes. Adoption in this area is substantially lower than social media.

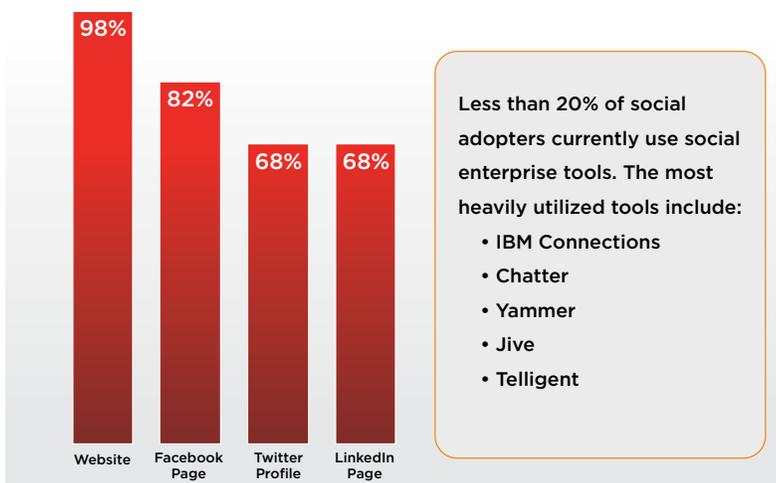
Marketing is the typical example of companies using social media, and 93% companies in the study who had adopted social media used it for that purpose, making it the most popular use. However, communications with customers was not far behind, at 90%. As companies become more familiar and comfortable with their social presence, they are finding that they can use social media for a host of externally facing opportunities.

While social enterprise tools have not yet reached the same level of adoption, this is projected to be a rapidly growing space. Forrester predicts that the social enterprise software market will reach \$6.4 billion in global revenue by 2016. These tools can play a role in improving collaboration among a workforce, and the analysis of social streams, which capture richer sentiment and quality information than standard data, will be an invaluable part of corporate strategy in the future.

Social media tends to be associated with the marketing department, but the technology used to interface with social media drives an association with the IT team as well. Thirty percent of companies actually list the IT department as the owner of social activity, and the IT department is the most commonly cited department involved in building social policy (64%). IT teams and solution providers can help lead social initiatives by proactively driving topics such as security education and social analytics.

CompTIA's *Social Business: Trends and Opportunities* study was developed from a survey of 400 end user firms in the U.S. The data was collected during January 2012. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

Tool Usage Among Social Adopters



Source: CompTIA's *Social Business: Trends and Opportunities* study
Base: 241 U.S. companies using social tools

Assessing the Impact of IT in the Education Market



Technology's impact on today's schools has been significant, advancing how students learn, how teachers teach and how efficiently and effectively services can be delivered. And with emerging technologies such as tablet PCs, interactive whiteboards and wireless solutions gaining ground in the classroom, the reliance on information technology (IT) by the education market will only grow in the years ahead. That translates into serious opportunities for IT vendors and the channel.

CompTIA's report, *IT Opportunities in the Education Market*, provides insights into the education market's use, consumption and purchase plans for technology. The study is based on a survey of decision makers and influencers of technology use in primary schools and higher education institutions.

Unsurprisingly, respondents cited improving student performance as their top technology priority. Fifty-five percent of K-12 educators and 55% of those in higher education cited that as their main objective for technology.

The study found general optimism about technology's impact on schools. Nearly two-thirds of respondents said that the use of technology in schools has boosted productivity in students beyond where it stood three years ago. And when asked about the impact technology has had on education and student performance in general, 59% reported a positive impact while 19% described it as significantly positive.

That said, schools continue to face challenges when it comes to technology adoption, most notably based on cost considerations. Three-quarters of respondents cited budget cutbacks as the primary obstacle in front of new technology purchases. This fact likely influenced both the K-12 (59%) and higher education (57%) respondents who characterized their institutions as "middle adopters" of technology versus early adopters or late adopters.

Respondents also expressed ongoing concern about IT security issues, including 16% that singled out online bullying via social networking as having major impact on their institutions in the last 12 months.

CompTIA's *IT Opportunities in the Education Market* survey was fielded in February 2011 among 353 primary school/K-12 educators and staff, as well as 147 higher education employees in the U.S. The full report is available at no cost to CompTIA members. Go to the members' section of comptia.org or contact research@comptia.org for details.

K-12 Educators Top Goals for Technology in Schools

Improving student performance through use of technology	56%
Saving time/boosting productivity	44%
Online learning/instruction	37%
Real-time electronic access to student data to track and assess performance	28%
Collaborating on documents with others, including parents and other school systems or universities	25%
Ability to access data remotely	25%
E-learning capabilities for closer student contact/homework	24%
Knowledge management	17%
Automating processes	14%
Dealing with information overload	12%

Influx of Devices and Changes in Workforce are Driving Need for Enterprise Mobility



While laptops have been present in many companies for some time now, smartphones and tablets are starting to flood into the enterprise from the consumer space, seriously complicating the management of corporate devices and data. In addition, workers are utilizing these devices to be more mobile and flexible in their working hours and location. Businesses are realizing productivity gains from these changes, and CompTIA's *Trends in Enterprise Mobility* study examines some of the behaviors and issues related to supporting mobile initiatives.

As businesses build strategies to address mobile needs of both employees and customers, policies must be put in place to govern the use of corporate devices and data. Only 22% of all organizations in the survey have built a formal mobility policy. This number is significantly higher (42%) among larger firms, highlighting opportunity for education and assistance in building policy at small and medium-sized businesses. All areas related to mobility should be considered when building policy: mobile devices (including procedure for lost devices), mobile applications (including consideration of approved apps for business use), and data in mobile environments (including policy for using public Wi-Fi networks).

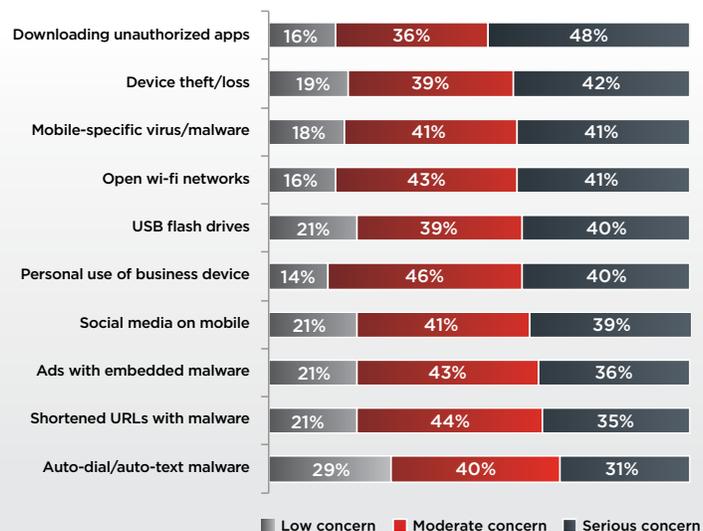
While policies may dictate how corporate devices are used, there is also the question of which devices the corporation provides. As employees

become more familiar with the capabilities of smartphones and tablets from personal use, companies are seeing certain tasks handled more productively on these tools. Smartphones remain primarily a communication device, though 84% of end users indicate using smartphones for light work while traveling. Employees using tablets find a wider variety of uses, indicating that a three-device strategy may well become the norm for workers requiring a range of computing options.

Whatever approach is taken to mobility, security will be a major issue to consider. Seventy percent of survey respondents working in IT departments say that security of mobile devices is the largest risk to deal with when building a mobility strategy. As there are many areas to consider in a mobility policy, there are many areas that must be secured. Companies may well look externally for assistance with this complicated matter, which may involve such practices as curated app stores or mobile virtualization.

CompTIA's *Trends in Enterprise Mobility* study was developed from a survey of 500 end user firms in the U.S. The data was collected during November 2011. The full report is available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

Areas of Concern in Mobility Security



Source: CompTIA's 9th Annual Security Trends study
Base: 500 U.S. businesses (aka end users) in a variety of industries

International Technology and Workforce Trends



Regardless of where a company is located, emerging technology presents a challenge in that there are tremendous opportunities but also myriad options to consider. As CompTIA's *UK Small and Medium Enterprise Technology Adoption Trends* study found, there is general awareness and use of many emerging technologies, with the exception of Green IT, virtualization, and unified communications.

More UK SMEs plan on using cloud computing in the next year than any other emerging technology (30%). Companies will focus more on mobile aspects of cloud and the expanded capabilities that cloud solutions can bring, especially given the top priorities UK SMEs are looking to address right now including mobile environment for customers, mobile employee access, and online customer interactions.

Similar to domestic organizations, top general concerns to bear in mind for UK SMEs are backup needs, data storage needs, and security. CompTIA's international *9th Annual Information Security Trends* study also identified data storage/backup as the top strategic priority for companies (of all sizes) in the UK, with cybersecurity a close second. For UK firms, information security is more of a priority today than it was two years ago.

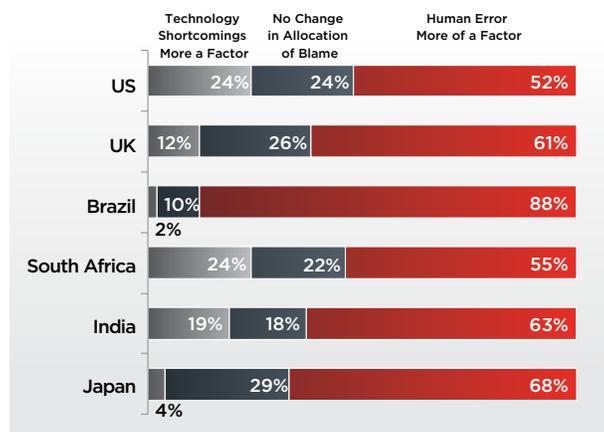
The main security concerns of UK companies are malware, hacking, and data loss. Physical security threats, intentional abuse by staff and social engineering/phishing are also key areas of concern. Additionally, 72% of respondents believe that they have experienced an 'undetected' breach.

UK companies attribute a little more than half of the breaches they experienced to human error. This often stems from the failure of end users and IT staff to follow security policies and procedures. The lack of security expertise is also cited as a contributing factor.

Regarding general IT skills and expertise, a vast majority of employers in CompTIA's international *State of IT Skills Gap* study indicate there is an overall skills gap, the difference between existing and desired skill levels, among their IT staff (93% in the five countries covered). Nearly 6 in 10 companies report being only moderately close or not close to where they want to be with IT skills. As a result, gaps in IT skills are likely hindering companies' optimal utilization of technology and presumably hampering business success. In fact, 80% of employers point to at least one specific business area potentially affected by their organization's IT skills gap.

The data for all the above referenced studies was collected during 2011. The full reports are available at no cost to CompTIA members. Visit www.comptia.org/research or contact research@comptia.org for details.

Organizations Increasingly Attribute Security Incidents/Breaches to Human Error



Base: IT & Business Executives Responsible for Security who have experienced a breach. US=382, UK=149, Brazil=121, S. Africa=90, India=114, Japan=63

Research & Market Intelligence Overview



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