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Research & Market Intelligence Overview

Study Summaries

Table of Contents

4	..... Trends in Data Management +
5	..... Cybersecurity +
6	..... IT Industry Outlook +
7	..... IT Industry Landscape
8	..... 8th State of the Channel +
9	..... International Tech and Skills
10	.... Managed Services* +
11	.... Artificial Intelligence +
12	.... Workforce and Learning
13	.... Customer Experience +
14	.... Drone Market +
15	.... SMB Market* +
16 International Youth Perspectives
17 Tech Trade* +
18 Cloud Computing +
19 CompTIA Research

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Trends in Data Management

Modern technology strategies have become a balancing act. On one side, there are emerging trends and techniques that can give businesses an edge in the digital marketplace. On the other side, there are the foundational technologies and practices that don't generate as much buzz but are still critical for digital transformation. The management of corporate data is a prime example of the foundational side. Digital data has obviously been present for decades, but proper management has become critical in an age of artificial intelligence, predictive analytics, and customer personalization. This study explores current trends in data management and future steps that companies plan to take in order to deal with an expanding set of data issues.

KEY POINTS

Businesses are in the early stages of building their data management strategies

Only 25% of companies feel like they are exactly where they want to be with their corporate data management, down from 31% in 2015. Although digital data has long been a part of IT operations, there has not been much focus in terms of job roles or defined components. The hype around big data highlighted a need for comprehensive data policies, and businesses are now beginning to build discipline around capturing, processing and analyzing data.

New and improved skills are needed

Only 44% of companies say that they have internal IT employees who are dedicated to data management or data analysis. While there has been a focus on newer job titles like data scientist, there is also opportunity around more traditional roles like database administrator. Some firms may need to build these roles for the first time, while other firms with these roles in place may need to expand the skill set. Since building all the necessary skills internally is a costly endeavor, partnering

will also be a viable option, with 65% of companies expecting to explore third party data services for the first time.

Blockchain and other DLT solutions provide a promising option for data structures

Spurred by the use of blockchain in cryptocurrency applications, companies are exploring different solutions that use blockchain or other distributed ledger technologies as the underlying foundation. Adoption numbers are currently skewed by lack of familiarity and marketing hype, but applications such as digital identity or smart contracts could lead the way in demonstrating the benefits of DLT.

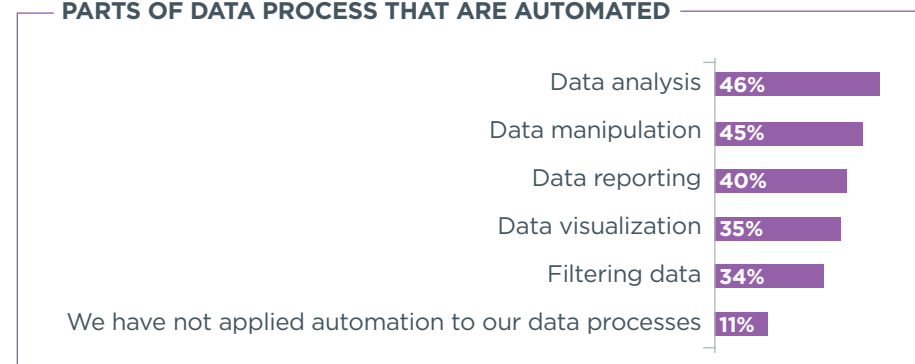
CompTIA's Trends in *Data Management* quantitative study consisted of an online survey fielded during December 2019. A total of 400 IT and business professionals based in the US participated in the survey. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file at www.CompTIA.org or by contacting research@comptia.org.

Top 3 Challenges in Building Data Management Practices

- Speeding up data analysis
- Integrating data
- Dealing with data-related skill gaps

LINK TO REPORT:
CompTIA.org/datatrends

PARTS OF DATA PROCESS THAT ARE AUTOMATED



Cybersecurity for Digital Operations

As the technology industry enters a new phase of maturity, there are more and more questions around the implications of emerging trends operating at global scale. Aside from societal repercussions, an extreme reliance on digital data and the extensive collection of personal information are highlighting the critical nature of cybersecurity and privacy. This report examines the general state of security within business today, exploring the hurdles that are preventing companies from an ideal security posture and suggesting the steps that can lead to improved security in the digital economy.

KEY POINTS

Cybersecurity is evolving into a distinct practice

Although the number of companies that report complete satisfaction with their security posture is rising (45% in 2019 compared to 21% in 2017), the majority of companies still see room for improvement. Dramatic changes in technology mean that a new cybersecurity approach goes beyond a checklist of new techniques. Instead, businesses are shifting to a dedicated practice around cybersecurity, whether that function is performed by internal staff, external partners, or a combination of both.

Understanding tradeoffs will improve prioritization

When it comes to balancing cybersecurity and technology innovation, companies are trying to get the best of both worlds. This is especially true among executives and business staff. IT staff are more likely to recognize that tradeoffs exist, and it is increasingly the responsibility of technology professionals to educate the organization on those tradeoffs in terms of business impact. A change in IT operations is still the leading driver for

a new security approach (cited by 57% of companies), and security should be a primary component in describing the total cost of new adoption.

Skills are the most critical part of the security function

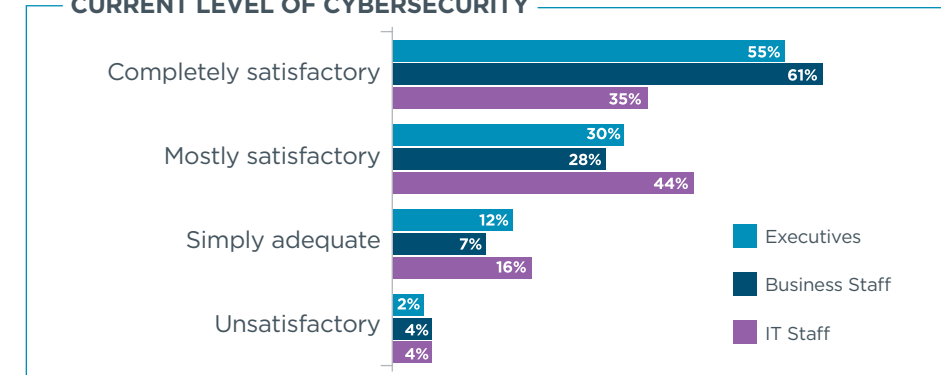
Certain skill groups—such as access control or network security—are relatively strong within businesses, while others—such as vulnerability management or security analytics—are weaker. However, even among the strong skills, companies are looking for improvement. For example, 25% of companies say that significant improvement is needed in network security, and an additional 64% say that moderate improvement is needed.

CompTIA's *Cybersecurity for Digital Operations* quantitative study consisted of an online survey fielded during July 2019. A total of 400 IT and business professionals based in the US participated in the survey. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file at www.CompTIA.org or by contacting research@comptia.org.

More than half report using third-party firms on an *ongoing* basis for cybersecurity activities (54%). Another 36% use external firms on an *occasional* basis to address temporary gaps or for individual projects.

LINK TO REPORT:
CompTIA.org/cybersecurityops

CURRENT LEVEL OF CYBERSECURITY



IT Industry Outlook 2020

The global information technology industry was expected to reach \$5.2 trillion in 2020, according to the research consultancy IDC in 2019¹. The enormity of the industry is a function of many of the trends discussed in CompTIA's annual *IT Industry Outlook* report. Economies, jobs, and personal lives are becoming more digital, more connected, and more automated. Waves of innovation build over time, powering the technology growth engine that appears to be on the cusp of another major step forward.

The United States is the largest tech market in the world, representing 32% of the total, or approximately \$1.7 trillion for 2020. In the U.S., as well as in many other countries, the tech sector accounts for a significant portion of economic activity. CompTIA's *Cyberstates* report reveals that the economic impact of the U.S. tech sector, measured as a percentage of gross domestic product, exceeds that of most other industries, including notable sectors such as retail, construction, and transportation.

Despite the size of the U.S. market, the majority of technology spending (68%) occurs beyond its borders. Spending is often correlated with factors such as population, GDP, and market maturity. Among global regions, western Europe remains a significant contributor, accounting for approximately one of every five technology dollars spent worldwide.

CompTIA projects the global information technology industry will grow at a rate of 3.7% in 2020. The

optimistic upside forecast is in the 5.4% range, with a downside floor of 1.9%.

CompTIA's *IT Industry Outlook 2020* quantitative study consisted of an online survey fielded during September - October 2019. A total of 400 IT firm executives and managers in the US participated in the survey. A separate survey was also conducted among IT pros in US (400), UK (100), Canada (100), Belgium/Netherlands/Luxembourg (105), and Australia/New Zealand (102). The complete report - including 10 trends to watch - and International Supplement are available at no cost to CompTIA corporate members and registered users who can access the file at www.CompTIA.org or by contacting research@comptia.org.

¹As of the end of 2019, at the time of report publication. IDC has since revised its forecast downward due to COVID-19.

Top 3 Factors in Hitting Pessimistic Side of Forecast

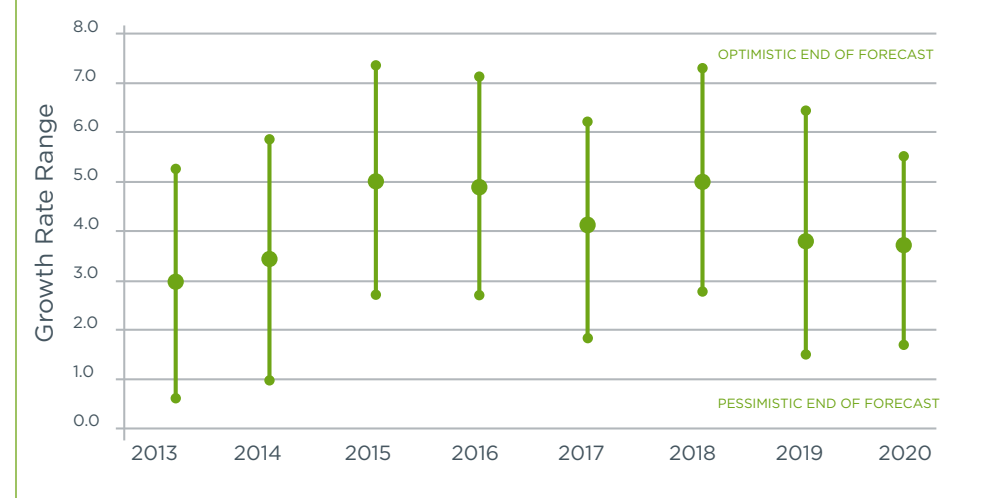
- Customers postponing purchases / taking a wait & see approach
- Unexpected shock (e.g. new financial crisis, natural disaster)
- Negative government action (e.g. regulation, trade policy)

Top 3 Factors in Hitting Optimistic Side of Forecast

- Reaching new customer segments
- Pick-up in business from existing customer base
- Launching new products

LINK TO REPORT:
CompTIA.org/industryoutlook

GLOBAL IT INDUSTRY GROWTH PROJECTED TO HIT 3.7 PERCENT

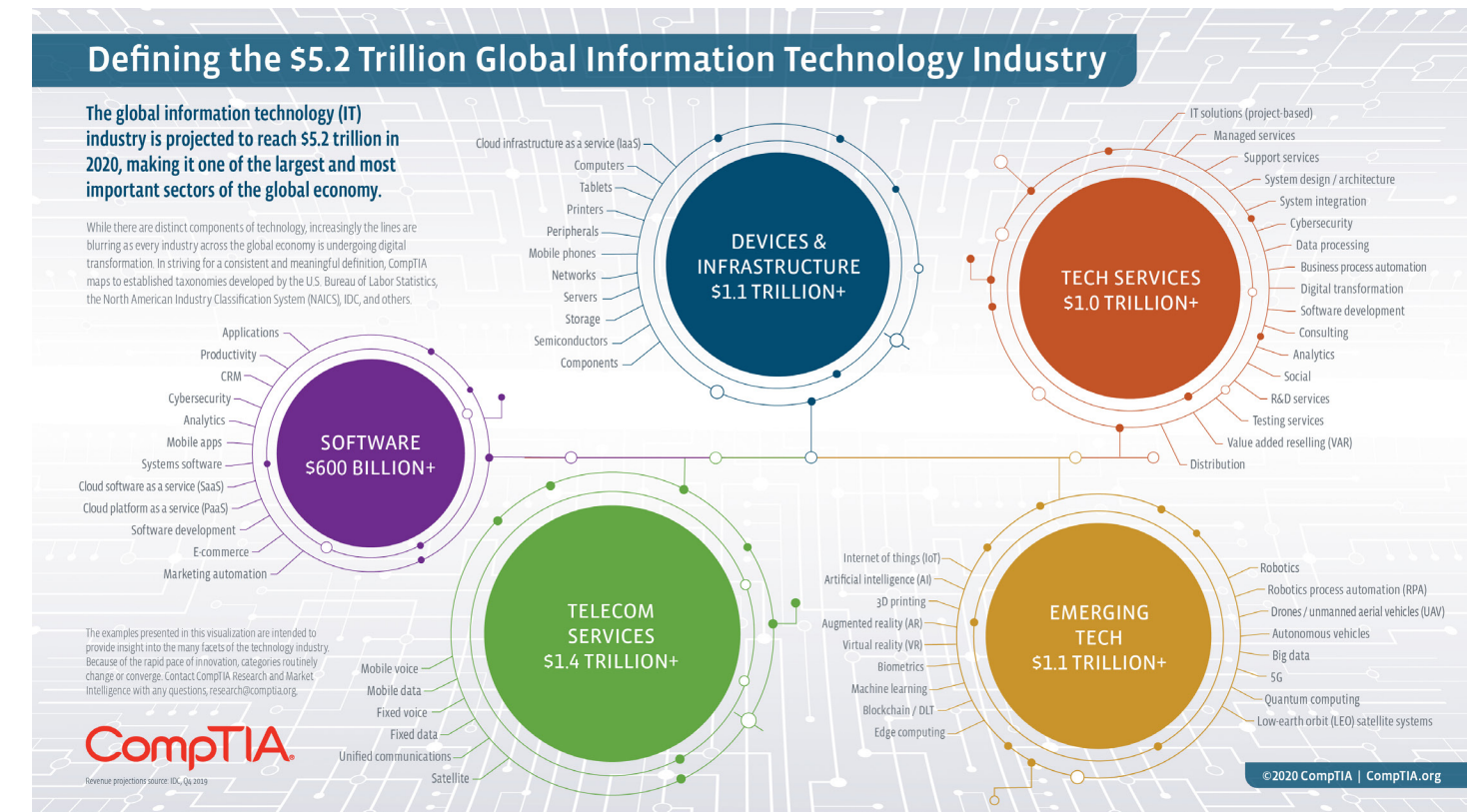


IT Industry Landscape

The information technology industry has grown from a supporting player to a primary driver in the global economy. One characteristic that makes the IT industry different from other leading sectors is the rapid rate of innovation taking place, leading to a complex landscape. The different pieces of the IT industry drive digital transformation across all companies, and understanding the various components is critical for business success. These visualizations provide an overview of the IT industry, with examples in every area to help build a better understanding of this growing field.

Category Growth
Tech Services: STEADY
Telecom Services: MATURE
Software: RAPID
Emerging Tech: RAPID
Devices & Infrastructure: STEADY

LINK TO REPORT:
CompTIA.org/industryviz



8th State of the Channel: Trends in the Technology Ecosystem

The IT channel is in flux. New players, emerging technologies, different customers, blossoming partnerships, and more, have combined to also make this a dynamic time to be in the business of technology. The disruption of the digital age has changed how the industry does business dramatically. This research report highlights, how they are embracing new technologies, and how they are reacting to an expanding universe of players that now have a role in the sale of technology to the public.

KEY POINTS

Health of channel remains strong, but concerns loom

For years, industry pundits have offered some not-so-rosy predictions for the future of the channel, ranging from total demise to a modest shrinkage in size and relevance. The cloud era has intensified that outlook for some based on the ease with which customers can now self-provision much of their technology and work directly with large cloud providers. Do channel firms agree? Most adopt a measured attitude about the prognostications. Sixty percent believe there's some truth to them, but wholly dependent on the business model and solutions portfolio a firm currently has or pursues. A quarter call foul on the gloom and doom, finding these predictions overblown hype. A small, but notable group (15%) think the negative outlook is an accurate one for most of the channel.

Emerging technology progress slow, but steady

No discussion of the channel's future should leave out the role of emerging technologies. Whether it's blockchain, AI, VR, drones or IoT, these techs are capturing the channel's attention in steadily growing numbers. Adoption, as it has been on the end customer side, is mostly iterative, with a lot of in-house experimentation at this point. That said, more than half (56%) of respondents

report selling at least one category of emerging tech to customers today, a jump of five percentage points from 2018. IoT hardware and software ranked at the top of that list.

Partnering behavior accelerates

The incidence of partnering between traditional and non-traditional channel companies such as SaaS specialists, accounting firms and marketers is on the upswing. In 2019, the number of channel firms that partnered frequently with newer entrants to the ecosystem increased from 20% to 30% compared to 2018. Those that did so occasionally edged up from 42% in 2018 to 45% this year. These arrangements help fill gaps in skill sets or solutions portfolios, mitigate technical complexity that prevents some companies from entering new markets, and enable an easier entry into the emerging tech arena.

This quantitative study consisted of an online survey fielded during July 2019. A total of 505 IT firm executives and managers in the US participated in the survey. A separate study was also conducted in the UK. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file upon signing in at www.CompTIA.org or by contacting research@comptia.org.

Two-thirds of channel firms in the medium- to large-size range are actively selling emerging tech solutions today.

LINK TO REPORT: CompTIA.org/8thchannel

28%

Mostly specializing on a narrow range of vertical industry services & solutions

47%

Mostly engaging across a wide range of horizontal services & solutions

22%

Evenly split between some vertical specialization & some general horizontal business

GENERAL BUSINESS APPROACHES TAKEN BY TODAY'S CHANNEL

International Trends in Technology and Workforce

The impact of technology continues to grow. The intersection of technology and business operations, technology and people, technology and government, and technology and just about everything else, will mean more change on more fronts in the years to come. While it is impossible to know precisely how these changes will unfold, CompTIA's latest international research provides a number of clues as to how businesses are responding and the challenges they are working to overcome

According to the data, innovation remains a top business priority. Likewise, robust spending projections on emerging technologies, such as the internet of things, big data, artificial intelligence, and robotics confirm the steady advance of digitization.

At the same time, the demand for tech talent has never been higher. Across every business type and industry sector, employers recognize the importance of cultivating a tech-savvy workforce.

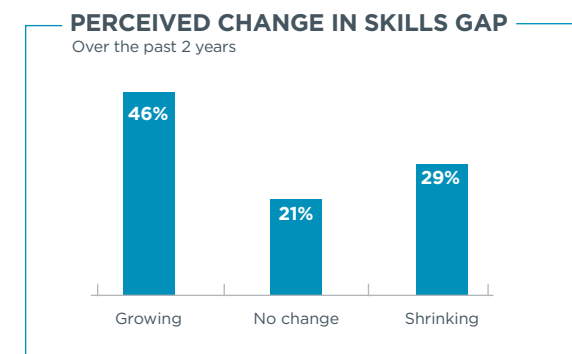
While there are common threads underpinning many of these trends, there is much to learn from the unique experiences and approaches taken by countries around the world.

6 in 10

% of employers with some degree of difficulty in identifying and addressing skills gaps

43%

citing the speed of innovation as a factor contributing to workforce gaps



87%

NET % of businesses relying on outside technology service providers at least occasionally

3 in 4

NET % with some degree of excitement for opportunities associated with emerging technologies

CompTIA's *International Trends in Technology and Workforce* quantitative study consisted of an online survey fielded during August 2019. A total of 1,554 IT and business professionals around the world participated in the survey. The complete report (including a global overview and summary for each of the 12 countries/regions covered) is available at no cost to CompTIA corporate members and registered users who can access the file at www.CompTIA.org or by contacting research@comptia.org.

Top Requests for Improving Staff Knowledge, Retention, Performance, & Satisfaction

- More time set aside for training
- More training alignment with development goals
- More cross-training (e.g. other functions)
- More e-Learning
- More apprenticeship-type work-study programs

LINK TO REPORT: CompTIA.org/internationaltech

Trends in Managed Services

Managed services hasn't been the new kid on the block in terms of business models in a long time, but its staying power and value to a broad swath of those in the business of technology cannot be denied. MSPs are at an interesting time too in their evolution. The era of cloud has both frustrated MSPs and fueled new growth opportunities. Emerging technologies such as IoT and AI are providing new potential revenue streams for MSPs that learn to harness those technologies. Challenges exist as well, from security threats to MSPs themselves to ongoing concerns about commoditization and margin erosion.

KEY POINTS

Bread-and-butter services still reign supreme

Help desk. Network services. IT support. These three categories still top the list of offerings that today's managed services providers predominantly sell. These are bedrock services that constitute what the MSP market was built on. Their continued ubiquity in the MSP toolkit, along with managed device services, basic security, and storage, remain one of the main reasons that customers, especially SMB's, choose to work with a third party provider. That said, many newer types of services are creeping into portfolios with the expectation that a variety of solutions will continue to blossom among providers.

Management of internet of things on the rise

Managed IoT is increasingly taking up space among the newer offerings that today's MSPs are placing bets on. More than half of MSPs offering Managed IoT report seeing significant revenue opportunities today, which means they are both experiencing solid sales now

and feel able to forecast out how much business this could bring in over the next few years.

Security specialization opens new doors

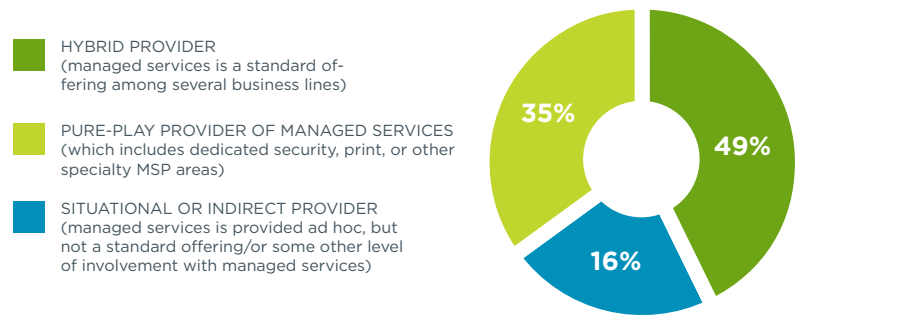
A segment of MSPs today have chosen to specialize in security services almost exclusively, donning the moniker of an MSSP, or managed security services provider. MSSPs apply security-specific expertise across all customer systems, infrastructure, applications, and data. Their portfolio spans a much more plentiful number of security services than the average MSP.

CompTIA's *Trends in Managed Services* quantitative study consisted of an online survey fielded during December 2019. A total of 400 IT and business professionals at MSPs based in the US participated in the survey. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file upon signing in at www.CompTIA.org or by contacting research@comptia.org.

52% of MSPs say gaining more skills in cybersecurity will be the No. 1 action to help ensure solid market performance over the next two years

LINK TO REPORT: CompTIA.org/managedservicestrends

SELF-DESCRIBED TYPE OF MANAGED SERVICES BUSINESS MODEL



Emerging Business Opportunities in AI

Among the many emerging technologies that companies are exploring to gain a competitive edge, artificial intelligence may be the most enticing thanks to the way that science fiction has inflated expectations. It may also be the most misunderstood thanks to excessive hype from marketers and distinct differences from previous IT models. This research report provides context for the state of AI adoption, describing general perceptions around the concept, current implementation status, and hurdles in the way of future success.

KEY POINTS

Artificial intelligence represents a new way of thinking about software

Most business—especially on the smaller end of the scale—are not actively developing their own artificial intelligence algorithms. Instead, they are adopting products that have AI features built in. Even so, there must be an understanding of how AI differs from previous software applications. Rather than operating on inputs in a deterministic way to produce results, AI programs take in large amounts of data and work in a probabilistic manner. This means that there is a higher degree of uncertainty in the results. AI may produce unique and disruptive insights, but those insights require some amount of validation.

A mix of basic skills and new skills is needed

From an ownership perspective, 51% of companies say that AI projects are mostly handled by the IT team. Considering the scope of potential impact, businesses should make sure that AI projects are handled similar to most technology projects in a digital organization—as a collaboration between IT and business units. When it comes to detailed implementation, companies are often looking for

specific skills around troubleshooting or developing AI, but there are also foundational skills in software development, security, and data management that contribute to AI success.

Strong data management is key to AI operations

Consistent with previous research, very few companies say that they are exactly where they want to be in terms of managing their internal data. The end goal for most AI solutions involves making sense of large amounts of data, so companies face the same challenge in building AI input that they faced in transitioning to a big data strategy. Data silos must be identified, and processes must be built for consistently handling the capture, processing, and visualization of different data streams.

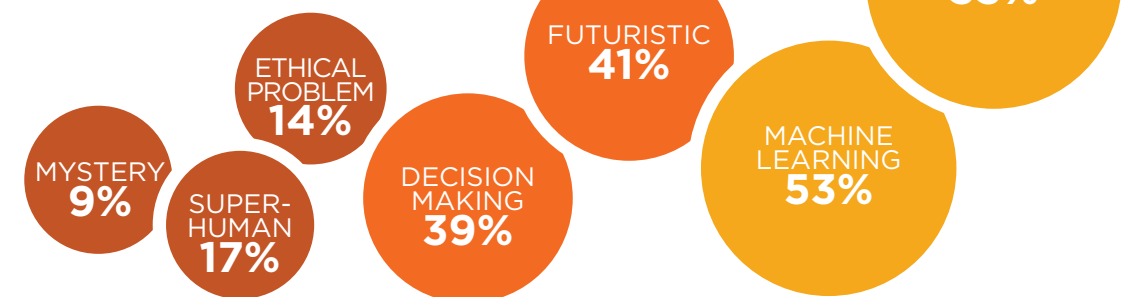
CompTIA's *Emerging Business Opportunities in AI* quantitative study consisted of an online survey fielded during March - April 2019. A total of 500 IT and business professionals based in the US participated in the survey. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file at www.CompTIA.org or by contacting research@comptia.org.

Top 3 Expected Benefits of AI

- Cost savings
- Handling basic repetitive tasks
- Ability to handle large scale

LINK TO REPORT: CompTIA.org/aitrends

TERMS ASSOCIATED WITH ARTIFICIAL INTELLIGENCE



Workforce and Learning Trends 2020

Evolving technologies, demographics and digital business models are changing the workplace at a faster pace than ever before. Meanwhile, available technologies – AI, people analytics, AR/VR, everything-as-a-service and more – promise to reshape the way learning is delivered and consumed. Learning and development (L&D) professionals – and the employers that rely on them for a future-ready workforce – are grappling to understand which innovations really matter.

What is the result of these forces and their responses by L&D professionals? CompTIA's *Workforce and Learning Trends 2020* finds that the training industry is mixing a new blend of familiar learning and certification methods with some technological twists. Think of this as the "New Traditional" training model that seeks out scalable tech-savvy improvements to L&D but relies on tried-and-true methods that remain essential to the learner experience.

For example, L&D leaders are often excited about technology that extends their ability to personalize instruction and communication. But some are more lukewarm on the innovative tech that enables mass distribution of learning content, which may reflect their personal experience or lack of exposure to successful, data-backed engagements.

New Traditional training models are also concerned with blending old and new subject matter. On one hand, domain-specific knowledge is critically important in subjects like cybersecurity, cloud computing and emerging technologies. On the other hand, L&D professionals are increasingly sensitive to the importance of "soft skills."

Trends to Watch 2020

1. The pace of change requires agility on many fronts
2. L&D increasingly shapes strategic direction, but resources don't always follow
3. A soft skills gap is bringing a new focus on challenges and solutions
4. Subject-matter experts remain core to the learning experience
5. Talent shortages push the reskilling and upskilling envelope
6. L&D aspires to create the seamless, blended experiences learners expect

CompTIA's *Workforce and Learning Trends 2020* quantitative portion of the study consisted of an online survey fielded during August 2019. A total of 400 HR and L&D professionals based in the US participated in the survey. The qualitative component of the study consisted of 1:1 interviews with experts in the fields of learning and development, certifications, edtech, and more. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file at www.comptia.org or by contacting research@comptia.org

"As long as the need for training is there, people are willing to spend. If there's no budget, they find another way to budget for it. If there's no time, they make time by consuming it differently."

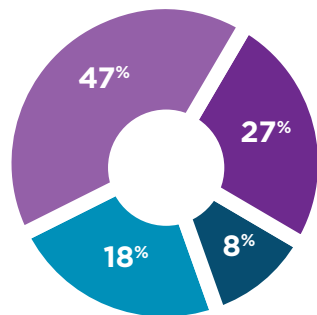
- Mike Kilgore, Director of Products & Programs, New Horizons Computer Learning Centers

LINK TO REPORT:
CompTIA.org/learningtrends

DEGREE OF CHANGES MADE TO HIRING APPROACHES

Due to tight labor market

- Many changes made
- Some changes made
- No changes yet, but considering
- No changes & nothing planned



Customer Experience Trends in the Channel

Today, Gartner reports that 89% of companies in the overall economy say they compete primarily on the basis of the customer experience they deliver, determining, correctly, that CX is often the main reason clients decide to stick with a brand. This is happening notably in the retail space, but also across all industries today. The IT channel ecosystem is no different. Technology practitioners selling products, IT services, or consulting are all trying to find ways to improve the experience they provide from initial recruitment of a customer, through the sales process, technical and business support, and renewal.

KEY POINTS

Customer support is just one element of a CX strategy

While customer service has historically been the most notable piece of the CX puzzle, it is not the entire pie. Every company engages in a broad amalgam of customer-related activities, from onboarding and training to recruitment and renewal. None can be ignored. Each step in the customer engagement process factors into their impression of the provider and influences, ultimately, whether they decide to stick with the brand, product or service.

Metrics matter

For modern-day CX assessment, there are a wide variety of metrics vehicles that channel firms are using. The age-tested customer satisfaction survey still reigns as the preferred feedback tool, with 4 in 10 respondents saying they issue an annual one. But other measurement techniques are in play.

Omnichannel approach is where channel is headed

Three in 10 respondents said they have moved to an omnichannel approach for interacting with customers in the

last year. These firms offer a variety of engagement options ranging from an in-store experience to traditional e-commerce to online customization of products/services. They enable purchasing and support via chat/video chat, email, social media, and other platforms. Communications are transferrable across multiple devices, including in the midst of a transaction. Personalization fueled by data analytics is also gaining a foothold.

CompTIA's *Customer Experience Trends in the Channel* quantitative study consisted of an online survey fielded during April – May 2019. A total of 406 IT firm executives and managers in the US participated in the survey. A separate qualitative study was also conducted among 12 channel and end user executives during March 2019 and is available to corporate members only. The complete quantitative report is available at no cost to CompTIA corporate members and registered users who can access the file at www.comptia.org or by contacting research@comptia.org.

Corporate Members – See the supplemental piece *Executive Insights: Customer Experience in the Channel* for findings from qualitative interviews conducted among channel and end user executives.

LINK TO REPORT:
CompTIA.org/channelcustomertrends



The Drone Market: Insights from Customers and Providers

Until recently, use cases for drones have been closely tied to military and recreational applications, with little consideration of the way these technologies could be utilized in the business community. The public perception of these devices as toys or weapons, rather than as viable commercial vehicles, limited the market potential to an extent until recently. Strong global investment, new business use cases, and potential regulatory changes are increasing the revenue and profit opportunities for manufacturers, solution providers, distributors, operators, and other drone-related professionals.

KEY POINTS

Business value on the rise

Appreciation for drone technologies is increasing, as are their real-world benefits for a growing number of vertical markets. In the survey, business leaders gave these devices and applications high ratings for ease of use, capabilities, content, and efficiency. User needs are continuing to shift, and engagement demands and support requirements for third party providers is rising as organizations look for larger partners with higher capabilities, including data analytics, broad-based IT expertise, software development proficiencies, and cybersecurity skills.

Watch for market growth obstacles

Limitations imposed by government regulations are a major concern for drone operators and those who develop and support these emerging technologies. Other potential inhibitors to growth include conflicts with hobbyists and unlicensed operators, shrinking margins, automation, and organizations hiring and developing in-house staff to replace pilots, solution providers, and other drone experts.

The skills gap presents challenges and opportunities

As with any thriving market, it can be difficult finding talent to fill drone-related jobs. Innovation is rapidly outpacing training, and the lack of qualified personnel can stifle growth opportunities for providers as well as suppliers. That skills gap is rising, leaving an estimated 90% of drone service providers and related organizations scrambling to fill drone-related positions. Companies that succeed in recruitment and training in this area have a greater chance of growing sales and profits.

This quantitative study consisted of three online surveys spanning 1). Current drone customers, 2). Prospective drone customers, and 3). Drone services providers and related technology firms. A total of 669 US respondents completed the survey. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file at www.CompTIA.org or by contacting research@comptia.org.

Top 3 Reasons Cited for Not Using Drone Technology

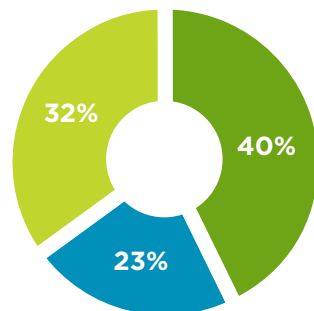
- Lack of need
- Lack of budget
- Lack of staff resources to spearhead / manage

LINK TO REPORT:

CompTIA.org/dronemarket

DRONE CUSTOMER UTILIZATION PROFILE

- Generally on-going uses
- About an even mix between situational uses and on-going uses
- Generally situational, one-time uses



SMB Technology Buying Trends

Small businesses are commonly described as the lifeblood of the US economy. This is not hyperbole as SMBs account for the vast majority of the nation's business entities, while serving as a key driver of job growth and innovation. Success as a small business owner means overcoming challenges on many fronts, but also embracing new opportunities in technology and business. CompTIA's research explores the business relevance of technology to SMBs and the factors affecting their perceptions, decisions, and investments in established and emerging technologies.

KEY POINTS

SMBs place a high priority on technology

Roughly two thirds (64%) of SMBs indicate technology is a primary factor in pursuing their business objectives, including 73% of companies in the medium category of 99-249 employees. Top SMB priorities for the year ahead – implementing new systems and processes, identifying new customer segments and markets, renewing existing customer accounts, innovation, and launching new products and services. Thirty-five percent of companies also prioritize hiring skilled workers to help them drive technology initiatives into the future.

Hardware still a priority among SMB buyers

In the last two years, 36% of respondents said that their tech purchases are best characterized as focusing on core infrastructure. This means devices such as laptops, desktops, mobile phones, servers, as well as networking equipment, security software, storage etc. Despite the fact that many workloads – think storage, for example – have moved into the cloud, companies nonetheless require

the basic hardware and workstation devices that enable their employees to do their jobs every day.

Professional services firms getting into tech business

Across the SMB landscape, professional services firms in the worlds of accounting, law and marketing have been getting into the tech game. CompTIA found that 52% of these firms are offering some technology services to their customers. Three in 10 are not doing so, but considering it. More noteworthy, nearly half of respondents (45%) said revenue from tech-related activities and services is growing faster than the rest of the business, while another 43% said the pace comparatively is about the same.

This quantitative study consisted of an online survey fielded during November 2018. A total of 650 IT and business professionals at SMBs based in the US participated in the survey. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file upon signing in at www.CompTIA.org or by contacting research@comptia.org.

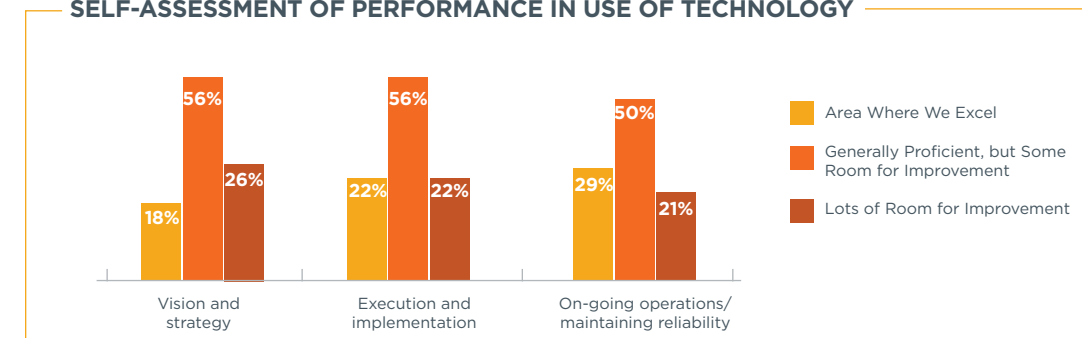
SMB Wish List Spending: What Should Tech Support?

- Make organization more productive
- Increase revenue
- Make me personally more productive
- Cut costs across organization
- Automate more tasks/processes

LINK TO REPORT:

CompTIA.org/smbmarket

SELF-ASSESSMENT OF PERFORMANCE IN USE OF TECHNOLOGY



International Youth Perspectives of Technology and Careers

Technology plays a pivotal role in the lives of 13 to 18-year-olds and they expect their reliance and usage of technology to increase over the next two years. Most teenagers believe technology is generally moving in a positive direction and is a force for good. Their primary concerns are privacy, online civility, and cybersecurity when it comes to the potential negative impacts of technology.

The latest youth-focused research from CompTIA reveals a healthy interest in information technology (IT) careers. The interest is encouraging, but could it be even higher? Perceptions of careers in technology are largely positive – among both girls and boys, but information gaps undoubtedly play a role in discouraging segments of students from pursuing a career in technology.

Given its prevalence in the news, young people are quite familiar with trends relating to automating technologies and the potential impact on future jobs. While there is some level of concern, most young people see it as another reason to further develop their skills and experience with technology.

1 in 2

% currently considering or may consider in the future a career in technology

66%

NET % expecting to need even more training in technology due to the likely impact of automating technologies

9 in 10

% regularly accessing the internet via mobile phone vs. 55% via computer

54%

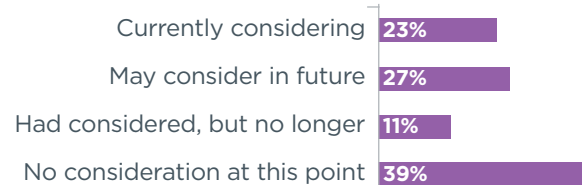
% expecting their usage and reliance on technology will increase over the next 2 years

CompTIA's *International Youth Perspectives of Technology and Careers* quantitative study consisted of an online survey fielded during August 2019. A total of 1,508 young people (ages 13-18 years) based in Australia, Brazil, Canada, India, Japan, Netherlands, Saudi Arabia/UAE, South Africa, UK, and US participated in the survey. The complete report (including a global overview and summary for each of the 10 countries/regions covered) is available at no cost to CompTIA corporate members and registered users who can access the file at www.CompTIA.org or by contacting research@comptia.org.

Addressing the Encouragement Gap
52% vs. 38%
Teenage boys receive notably higher levels of encouragement to consider a career in tech compared to teenage girls, according to the data.

LINK TO REPORT:
CompTIA.org/internationalyouth

CONSIDERATION FOR PURSUING A CAREER IN TECHNOLOGY



Tech Trade Snapshot 2019

The growth of international trade is one of the defining trends of our time. While trade has shaped societies and economies for as long as societies and economies have existed, its impact over the past half century has been nothing short of extraordinary. During this time, trade volumes of goods and services increased 20-fold and now top \$23 trillion. As a percentage of global GDP, exports now account for nearly one-third of global economic activity, a 100 percent increase since 1970¹.

Technology plays a unique role in the international trade landscape. As a category, it represents one of the largest segments of U.S. trade. This reflects the insatiable demand of consumers and businesses for the latest and greatest in devices, applications, content – and by extension, the underlying digital infrastructure to make it all work.

U.S. information technology exports reached an estimated \$338 billion in 2018, an increase of 2.5 percent over the previous year. Growth slowed slightly compared to the 2017 rate of 4.5 percent. Since 2010, U.S. exports of technology added nearly \$65 billion in new earnings and aggregate growth of 23 percent.

Growth in the tech sector, especially as it relates to international trade, is a function of many factors. Macro technology trends, such as the ongoing

push of digital business transformation, combined with economic conditions – are customers in the mood to buy, currency fluctuations, and government trade policies all have a bearing on growth.

CompTIA's *Tech Trade Snapshot* is based on data provided by the Foreign Trade Division of the U.S. Census Bureau, the U.S. International Trade Administration of the Department of Commerce, the U.S. Bureau of Economic Analysis, and The Trade Partnership's CDExports database. A supplemental snapshot examining the U.S.-China export trends is also available. The complete reports are available at no cost to CompTIA corporate members and registered users who can access the file upon signing in at www.CompTIA.org or by contacting research@comptia.org.

¹Data from World Bank and IMF

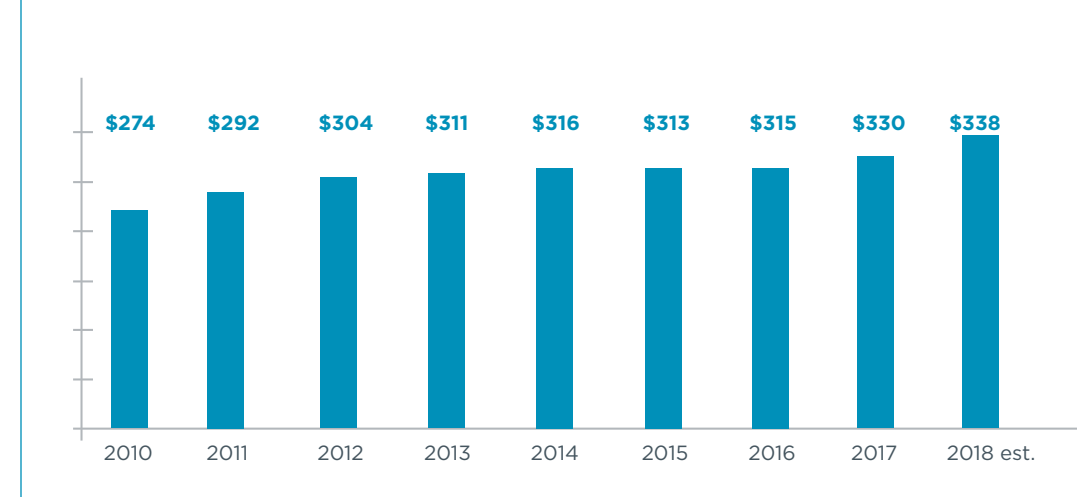
Top States Where Tech is the #1 Goods Export

- Arizona
- California
- Colorado
- Florida
- Idaho

[LINK TO 2019 REPORT](#)

[LINK TO 2020 REPORT HERE](#)

U.S. TECH PRODUCT + SERVICES EXPORTS



Trends in Cloud Computing

In its early incarnations, cloud computing was the latest in a series of new models for IT operations. Existing systems were migrated to cloud providers, and companies found benefits in cost and flexibility while working through issues around security and integration. Today, cloud offers a path for business transformation. Powerful new capabilities and complex automation can completely change not just the role of the IT department, but the entire organization. Cloud computing bridges two eras of enterprise technology, moving IT from a heavily tactical function to a valuable strategic asset.

KEY POINTS

Cloud computing is a critical part of today's IT operations

Although cloud computing has ceded the spotlight to emerging trends such as artificial intelligence or Internet of Things, it has become a foundational piece for modern IT architecture. Nearly half of all companies claim that 31% to 60% of their IT systems are cloud-based, and many firms are exploring optimization and orchestration to get the most out of the new models.

The IT function is evolving in a cloud world

Rather than disappearing or shrinking as many feared, the IT function is transforming to handle more strategic work as routine pieces can be offloaded to cloud providers. Common changes fall into three buckets: policies (51% of companies have built new policies for cloud usage), skills (39% of companies have added skills or restructured their internal team), and tools (36% have adapted IT tools to manage cloud resources).

Cloud is a key enabler for emerging technology

The rising interest in cutting-edge trends is driven largely by cloud computing. By providing access to new tools or allowing companies to consolidate their datasets, cloud simplifies the process of exploring new topics and lowers the cost. In addition, cloud plays a role in stitching together technology for broad applications. Eighty-one percent of companies say that cloud has greatly enhanced or moderately enhanced their efforts around automation.

This quantitative study consisted of an online survey fielded among 502 IT managers in the US during April 2018. The complete report is available at no cost to CompTIA corporate members and registered users who can access the file at www.CompTIA.org or by contacting research@comptia.org.

91% of companies claim to be using some form of cloud computing

LINK TO REPORT:
CompTIA.org/trendsincloud

AREAS ADDRESSED BY NEW OR UPDATED CLOUD POLICIES



Research and Market Intelligence

CompTIA Research and Market Intelligence provides timely, relevant data and insights aimed at informing and driving the tech industry. CompTIA has a library of over 100 research reports, whitepapers, briefs, snapshots, infographics, blogs, podcasts, videos and webinars, with new material produced each month. Using rigorous research techniques, CompTIA collects data from tens of thousands of end users and tech companies on a wide range of issues covering tech trends, channel

dynamics and the tech workforce.

Corporate members cannot get access to this amount of independent and vendor-neutral data for the money anywhere else. Our studies are uniquely designed to address the informational needs of the tech industry. CompTIA analysts are dedicated to measuring, tracking, exploring and explaining technology adoption, business attitudes and workforce issues in order to forecast new industry opportunities and growth.

CompTIA Corporate members enjoy full access to the resource library covering various topics such as:

Technology Focused Research

- Cloud Computing
- Cybersecurity
- Data / Big Data
- Emerging Tech, e.g. AI, IoT, Drones

Business & Channel Focused Research

- Customer Experience
- Managed Services
- Partner Experience
- State of Channel

Market Focused Research

- ANZ, Canada, UK, etc.
- Generational / Youth
- Government
- SMBs

Policy & Workforce Focused Research

- Cyberstates & Cyberprovinces
- IT Industry Outlook
- Tech Skills, Training & Certification
- Tech Trade

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about CompTIA

The Computing Technology Industry Association (CompTIA) is a leading voice and advocate for the \$5.2 trillion global information technology ecosystem; and the estimated 75 million industry and tech professionals who design, implement, manage, and safeguard the technology that powers the world's economy. Through education, training, certifications, advocacy, philanthropy, and market research, CompTIA is the hub for advancing the tech industry and its workforce. For more information visit www.comptia.org or follow CompTIA on Twitter at [Twitter.com/CompTIA](https://twitter.com/CompTIA).

CompTIA

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CompTIA

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Sign your sales staff up for IT channel and technology training courses as well as appropriate Technology Communities tied to your business objectives to gain greater insight and networking opportunities.

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