Deloitte.

Disruption in the mid-market
How technology is fueling growth

A mid-market perspectives report

Contents

Executive summary

Just a few years ago, the idea that a company could put core financial systems in a computing "cloud" seemed as far-fetched as a self-driving car. The perceived risks of placing classified financial information into third-party hands would appear as unsafe as a car in traffic with no one behind the wheel.

Technology has changed perceptions and reality by quickly disrupting legacy business models, however. Innovation through the cloud and other advancements has provided access to vast new business capabilities, particularly for mid-sized companies. As a result, across a breadth of industries, firms are reaping calculable benefits. What once seemed implausible for businesses is now as conceivable as the autonomous cars engineers want to put on our roads in the near future.[1]

Our third annual survey of technology trends in the middle market demonstrates how technological innovation is driving transformative change within this critical segment of the American economy.

Cloud computing, for instance, has expanded from an abstract notion to a universal need for a growing number of mid-sized firms, our survey indicates. Cloud technologies grant flexibility to mid-tier companies to scale their businesses. With highly specific, subscription-based services through the cloud — supporting sales, marketing and enterprise planning functions, to name a few — mid-sized firms in particular can exercise more precise control over their operations and have the technological capabilities to accelerate innovation.

Automatic upgrades and enhancements available through cloud solutions amplify their impact, enabling IT departments to improve budgeting and planning. And growing numbers of mid-market executives surveyed told us they favor the capabilities of cloud computing to sustain a global footprint without incurring the costs that data centers and proprietary systems entail.

The power of predictive analytics, meanwhile, is providing deeper insight to companies across their organizations. The cognitive capabilities of predictive analytics can enable companies to manage growing volumes of data and interpret customer patterns with sophistication that did not exist even two or three years ago. This gives company leaders rich new information for business-to-business and business-to-consumer engagements. And the technology can enable companies to more accurately predict how and when customers are prone to "like," repost, or tag on social media — a gold mine of marketing insights that can help drive strategy.

Technological innovation is driving transformative change within this critical segment of the American economy.

1 Wayne Cunningham, "Self-driving car tech lets computers see our world like never before," CNet, August 7, 2015.

The specter of cyber attacks and their potential to sink client trust and investor confidence, meanwhile, continues to emerge as a frustration among executives in our survey. Respondents reported varying methods to prepare for and respond to such attacks. And overall concern about the security of data sent to the cloud has increased in the past year, executives indicated.

Nevertheless, respondents in our survey were markedly more positive about expectations for revenue growth than they were compared to a year ago, and they're even more convinced that technology will help them drive increased sales. That confidence arises as respondents are more inclined to reinvest revenue into technology. This year, 30 percent of respondents reported their firms spent more than 5 percent of company revenue on technology. A year ago, only 19 percent of companies spent a similar proportion.

In addition, company leaders are endorsing emerging and next-generation technology with greater intensity. This year's survey signaled greater alignment between IT leaders and the executive suite, particularly as companies focus on paying more attention to customer engagement.

All of these indicators point to the middle market's acceptance of technology as a differentiator, much more so than just an investment.

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Introduction

This year's survey not only looked at technology investments, but also considered the fundamental changes that technology is driving within the middle market. For the first time, we asked company leaders to provide insight into the role of leadership in driving these changes. Respondents also indicated how functions traditionally viewed as back-end are now being linked to the customer experience.

Across a number of industries, the survey responses indicate that technology is increasingly embedded within internal and customer-facing roles. Technology is expanding and it touches the entire product cycle — proficiency is as much of an expectation for the developer as it is for the employee who's delivering the goods.

Generally, it's been a strong year for many companies in the middle market. Virtually all respondents in our survey said their firms had posted revenue gains over the past 12 months. And 59 percent said their company's revenue had surged more than 10 percent compared to the prior year.

Predictably, the general business outlook among firms surveyed is trending upward. A third of respondents are "highly optimistic" about the coming year, while the pessimism of just two years ago virtually has disappeared. Hiring managers also have been busy. Nearly three-quarters of firms reported an increase in headcounts over the past year, compared to 64 percent in 2014.

Increasing revenue was the top driver of companies' investments in technology, edging out customer personalization and cost-cutting. Keeping pace with new technology still is a worry for many companies in our survey, however. This year, a larger proportion of respondents across all industries reported that staying current with technology posed difficulty among their IT ranks. This growing concern was most pronounced among consumer product companies and, notably, among technology, media, and telecommunications firms.

By and large, however, the middle market is determined to apply a host of leading-edge technologies to better engage with their customers.

Generally, it's been a strong year for companies in the middle market… the general business outlook among firms surveyed is trending upward.

My company's business outlook over
the next 12 months appears to be…

**Optimistic
86.4%**

**Neutral
10.8%**

**Pessimistic
2.8%**
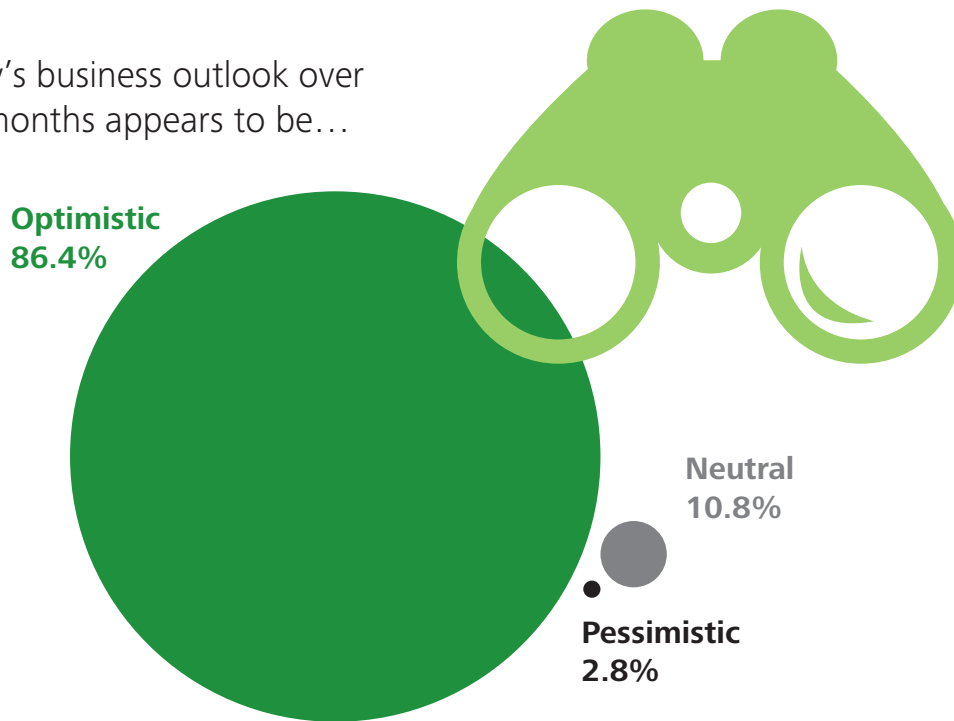
How has your company's headcount
changed over the last 12 months?

**Increased
71.6%**

**No change
20.2%**

**Decreased
8.2%**
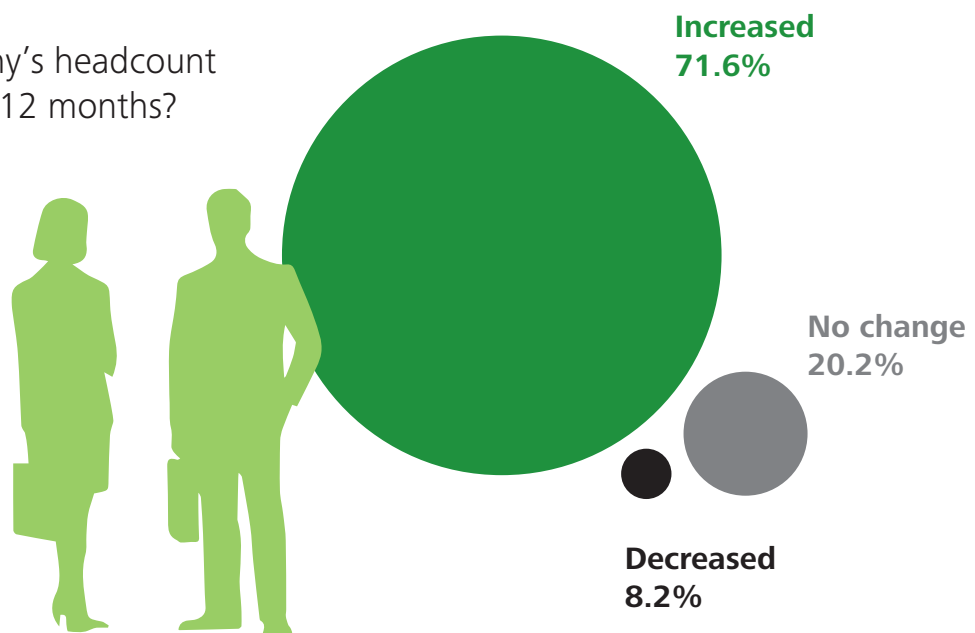
Cloud solutions: productivity, affordability, and competitive advantage

For technology managers, the potential benefits of cloud computing are increasingly apparent. Technology functions handled off-site in the cloud can free up teams for more productive tasks. A virtual network can save both physical space and reduce capital costs. An integrated suite of sales, manufacturing, and accounting applications in the cloud can "speak" to each other and fix network errors before an employee even notices the problem.

A few reasons help explain why mid-sized firms are expressing greater confidence in cloud computing to help them meet their business goals.

Consider the democratization of the resources in the cloud. A startup now can manage a range of employee benefits by tapping into software-as-a-service, enabling an HR department to meet specific talent management needs through cloud-based tools.

Likewise, cloud computing can enable mid-sized firms to satisfy their technology needs without the responsibilities of ownership. Much like the fixed costs of owning a car, a data center requires facilities, hardware, and engineers. In a construction company, for example, cloud computing could enable business-critical staff such as installers to be trained to use cloud-based project planning systems. This type of flexibility saves both computer hardware and server costs, says David Moore, principal and NetSuite practice leader, Deloitte Consulting LLP. "They can start covering more business," Moore says of companies that are shifting to the cloud. "The same people can take on a larger slice of the pie."

Across a number of key business functions, at least half of respondents in our survey reported that these functions are already cloud-based or are in the process of shifting to the cloud. The biggest increase was among finance and accounting, the area most likely to be cloud-based among firms in the survey.

Mid-sized firms are expressing greater confidence in cloud computing to help them meet their business goals.

In fact, reluctance to try cloud computing has all but faded. Only 2 percent of companies said they are waiting to adopt cloud-computing solutions. Two years ago, that number was 14 percent. What's more, over the past two years, the percentage of companies reporting "mature" deployments within cloud computing increased from 9 to 21 percent.

Lineage Logistics, a warehousing and logistics company that provides cold chain solutions to leading food, retail, agriculture and distribution companies, recently migrated to the cloud to help consolidate a range of back-office functions, including finance, invoicing, and payroll. Chief Information Officer Sudarsan Thattai says the breadth of the company's cloud adoption was prompted by its acquisitive nature: Lineage was founded through the combination of premier regional temperature-controlled warehousing companies, acquiring 5 of its 18 legacy companies over the last year. Integrating newly acquired

companies' IT systems in the cloud is now much easier — taking as little as 90 days — and Lineage has eliminated its "stranded islands of investment" by significantly reducing its owned IT infrastructure.

"We were spending an inefficient amount of time and money integrating our acquisitions into the Lineage infrastructure," says Thattai, who adds that his dedicated staff of four was able to manage the cloud migration in less than 14 months. "With a cloud solution, we are now able to focus on what really matters — delivering innovative, sophisticated and customizable supply chain solutions to our customers."

Despite such examples, cloud computing has not taken over exclusively as the go-to technology model for the middle market. Rather, the picture is more complicated. A third of executives in our survey say they still prefer on-premise delivery.

Which term most closely describes your organization's current use of cloud-computing resources?

Mature
(successful deployments)

2013 9.2%
2014 14.0%
2015 21.2%

Building
(in deployment phase)

2013 26.0%
2014 34.4%
2015 42.4%
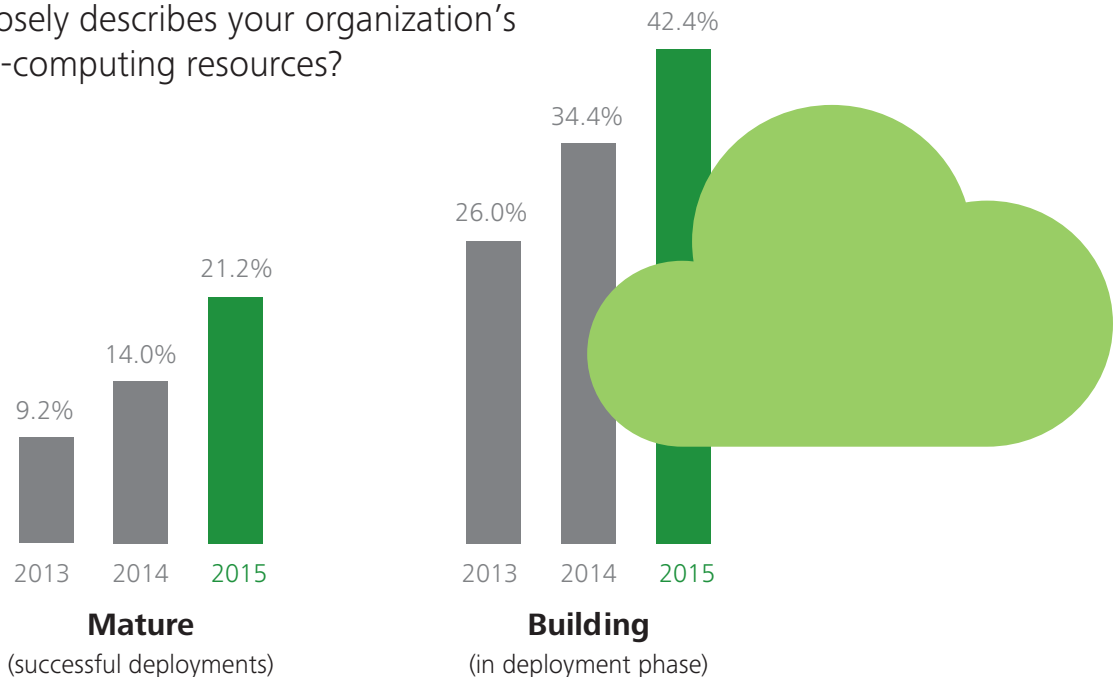
Tradition plays a role. Many organizations have IT departments that are built around legacy systems that represent substantial investments. And making the switch from enterprise systems to cloud-based systems incurs complications and costs that may suppress some companies' appetites for switching to the cloud. When asked to identify the greatest challenge to deploying cloud-based services, 35 percent of respondents cited ensuring data integrity and reliability. Another 34 percent cited confidence in information security.

Some practitioners assert, however, that third-party, cloud-based security provides more peace of mind than managing the function onsite. "I've been having this conversation for years," says Mike McCarron, the chief information officer at Boston-based Bain Capital, a global private investment firm. "What I say to the company is, show me the people in your organization that have more experience and are better at maintaining secured data than the company in the cloud. Their business model depends on their ability to control and maintain that data."

Nonetheless, security was not the only concern among executives regarding the cloud. In nearly every industry represented in our survey, there was an uptick in respondents who cite integration with existing applications and infrastructure as a hindrance to cloud adoption. In fact, leaders from life sciences and health companies were the only respondents who didn't report greater difficultly in integrating cloud solutions into their technology mix.

Both established vendors and new entrants to this market are developing proprietary apps, creating entire crops of cloud integration services. The trend includes pre-integrated solutions that merge third-party cloud applications in order to create a seamless experience.

"These applications are very specific. There are tools that understand the process, where the connections take place," Moore says. "They know how to handle errors, and the user can't see any of that."

Cloud computing: a phased adoption guide

- Understand the key components of your overall IT strategy. Recognize that your organization doesn't have to "virtualize" all systems at once.
- Start with cloud-based applications that support sales, customer service, and other public-facing areas. As potential next steps, expand cloud-computing capabilities in human resources, accounting, and other internal needs.
- IT leaders: think of your work as that of a portfolio manager. How will you manage service delivery? If there are errors, how are they corrected? Work hand-in-hand with legal to manage procurement of such services to avoid missteps.
- Shift resources that were formerly devoted to on-premise technology support to other business-critical areas.

Lineage Logistics: Exploring the science of big data for customers' gain

Some companies talk a big game about employing "data scientists," but Irvine, California-based Lineage Logistics delivers in a real way. The warehousing and logistics company, focused on cold storage and distribution, employs an impactful data analytics team of PhD's who specialize in disciplines ranging from mathematics to statistics and applied physics. The team of six interprets data on an analytics platform that pools operational data from the company's more than 100 warehouses around the country — every five minutes.

"We're in the business of cold air, and it is critical that we fully understand and consider the science of air flow and how to efficiently keep products cold," says Lineage CIO Sudarsan Thattai.

Energy costs, or the price tag associated with keeping customer product cold, are the company's second-biggest expense, and the savings generated from the analytics team's work goes right to Lineage's bottom line. But according to Thattai, Lineage's push into advanced analytics isn't rooted in cost savings — the company's major focus is helping customers operate more efficiently and effectively. "We delight our customers when we bring to the table new and improved solutions to moving their product through the cold chain," he says. "And when our customers are happy, it's a revenue-generator for us."

The analytics team is constantly looking for ways to address customers' evolving needs. Recently, one of the Lineage's sales representatives approached Thattai about a client facing pallet capacity constraints in one of its key markets. The analytics team performed a "bin pack analysis" of Lineage's warehouses in the region, crunching data on the number of pallets the customer stores, the pallet height, and the frequency with which the pallets are moved in order to create additional capacity. The team's analysis helped identify a way to realign the pallets' positioning in the warehouse, boosting the warehouse's capacity by 30 percent and expanding Lineage's relationship with the customer. "We increased the building's square footage without building anything," Thattai said. "That's not an IT project — it's a business growth project."

Other recent analysis performed by the analytics team focused on realizing 30 to 40 percent efficiency gains by examining air flows to improve the time it takes to blast-freeze products coming into its warehouses. With the enormous amount of data available for analysis, Thattai says the team avoids becoming overwhelmed with information by focusing only on the data that supports the agreed-upon priorities of the business. "You have to prioritize or you're going to get lost in the sea of data," he says. "Remaining focused on and in alignment with the business implications of the data has enabled us to make the most of our very valuable resources."

The team's analysis helped identify a way to realign the pallets' positioning in the warehouse, boosting the warehouse's capacity by 30 percent and expanding Lineage's relationship with the customer.
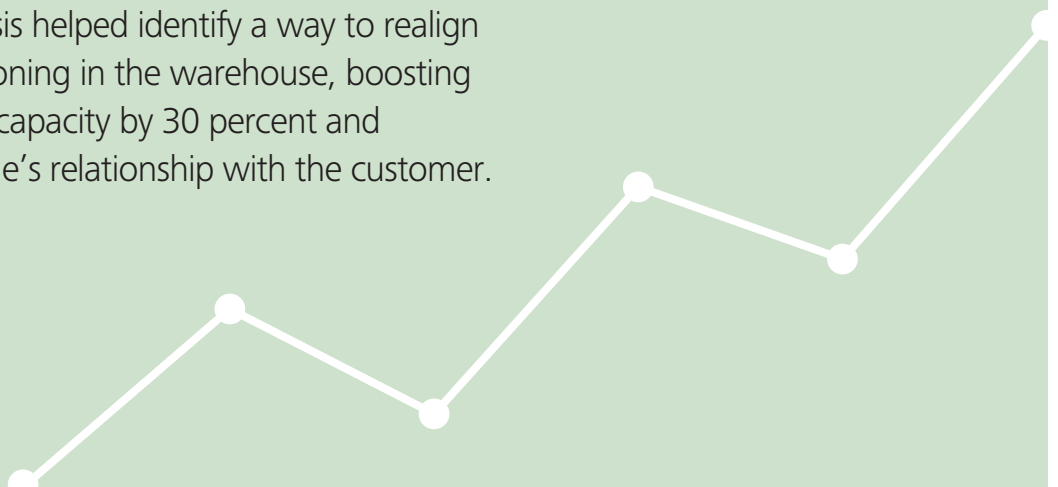
Analytics:
360-degree visibility
for business success

It's an age-old challenge. Since the dawn of commerce, businesses have been trying to figure out how to track customers' behavior and convert those habits into sales. In pre-digital years, it was print ads and store displays. More recently, companies have used heat maps to track customers' movements inside retail shops. Now that mobile devices have become standard shopping equipment, apps and social media listening have emerged as the way to find out what people are buying or avoiding altogether.

Advances in analytics are helping take the guesswork out of the behavior equation. The developments come at a time when organizations need to find ways to tame, measure, and monetize the massive amounts of data flowing into and out of their enterprises. The insights these

companies pick up through social listening are critically important, too. Embedded within product ratings, video shares, and trending topics on social media lies rich data companies can use in real time to shape their campaigns. The stakes are incredibly high: companies will get left behind if they are unable act on these signals.

This year's survey indicates growing interest among mid-market executives to take action in analytics related to sales, customer management, and marketing functions. And among operational functions, more companies indicate they are using analytics for their talent acquisition and management needs. Even more convincing proof that mid-sized companies are more comfortable with analytics is the diminishing number of respondents who believe their size is a disadvantage to adoption of analytics.

Nearly 40 percent of respondents said predictive analytics held the most potential to predict business events, such as equipment breakdowns and supply shortages.

Planning for business events

Nearly 40 percent of respondents said predictive analytics held the most potential to predict business events, such as equipment breakdowns and supply shortages. Among front-end needs, the percentage of respondents who say they are using analytics for sales and customer relationship management activities was up to 60 percent of all respondents this year, compared to 46 percent in 2014. Meanwhile, half of the respondents say they are applying analytics to their marketing activities.

Survey respondents told us they want to use analytics to help them prepare for the unexpected: to tell them when to act on leads; to indicate where investments will reap dividends; to decide how to react to trends and consumer behavior; and to provide a dashboard with a clear view of both opportunities and obstacles for their businesses.

Application performance monitoring company New Relic has a view of those obstacles down to the millisecond. The San Francisco-based firm provides its clients with a real-time view of response times, a critical metric for e-commerce companies that increasingly rely on selling products or services on mobile devices. New Relic links to clients' servers, gathering and analyzing data on location, frequency, and other user behaviors so the client can make changes if necessary. This type of capability is critical for spikes in online traffic, such as a one-day online sale.

"As load increases, performance degrades," says Mark Sachleben, New Relic's chief financial officer. "If you see response time degrading from 200 to 500 milliseconds, we can help isolate the slowdown. We help you fix problems before your users notice them."

Which business areas are using or leveraging analytics within your company?

Sales/customer management 60.1%

Marketing 49.1%

Finance/tax 42.4%

Manufacturing 32.7%

Human resources 32.9%

Big data challenges

Managing the staggering amount of data and making sense of the information collected through analytics is a formidable challenge. Every minute of the day, some 200 million emails are sent, Twitter users send more than 250,000 tweets, and Google records well over 2 million searches.[3] It's little surprise that industries that handle customer information, such as retail, or highly regulated industries such as financial services, are wrestling with the volume and complexity of data. To complicate matters, the vast majority of that data is an unstructured, irregular mixture of numbers, text, videos, and audio that must be deciphered.

By far, the mid-market firms surveyed say their biggest hurdle in adopting analytics is the proliferation of unstructured data. While just over a quarter of executives said it was their biggest problem last year, the proportion swelled to 38 percent this year. It's worth noting that both traditional and startup companies have stepped in to fill enterprise needs in this space. A search of startup accelerators across the country is likely to yield portfolio firms focused on big data.

Information officers traditionally have been the ones who have been in charge of managing this information. That's no longer the case. It's becoming increasingly important for all decision makers, from a marketing officer or a manufacturing lead, to get comfortable with managing big data.

Analytics: a practical guide

- Start at the top: Appoint a leader who understands the technology and will see implementation through from investment to execution.
- Establish the business case: Which processes in your firm would best be served by predictive, cognitive capabilities?
- Prioritize: Focus only on that data that helps you realize your most pressing strategic objectives so you don't become overwhelmed.
- Start small: Evaluate a pilot in manufacturing or finance. Measure the ROI on that experience to expand analytics capabilities to other parts of the business.
- Tap new sources: Shop for a provider who can help your company crowdsource some of your analytics capabilities, which often results in faster execution and lower costs.

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[3] Mahbubul Majumder, PhD, lecture, "Big data technology," Nov. 25, 2014, and University of Oregon lecture, "Transportation – Sensors – and the Smart City," April 6, 2015.

New Relic: On-time performance through analytics

Frequent fliers know the frustration of waiting for bags, especially when carriers don't live up to promises to deliver them promptly. On the back end of pledges for quick bag service is San Francisco-based software analytics company New Relic. The company has a reputation for helping organizations deliver effective customer experiences through real-time analytics.

Chief Financial Officer Mark Sachleben offers a definition for the firm's mission: to give organizations useful information about the performance of their applications. And he embarks on that challenge by asking a few questions reflecting the goals of improving the user experience:

"What's the customer experience like?"

"How long does it take?"

"Is it successful?"

New Relic drew praise for helping the government troubleshoot the Healthcare.gov website in the wake of its much-maligned 2013 launch.[2] Likewise, the company's private-sector clients want to improve their responsiveness, Sachleben says. New Relic can run its analytics software on a travel company's e-commerce site, for instance, and find out immediately how long a user has to wait for the app to respond. With analytics, it's also possible to know

where people are accessing the app, how it's behaving during peak times such as special offers, and whether trial users are being converted to paying customers. Having such information helps a company make instant decisions about the direction of a campaign, Sachleben says.

"We help companies understand how many people are using their application right now, over the last week. We look at all that information in real time," Sachleben says. The company also has made a foray into operational analytics, such as bottlenecks that might occur in a warehouse or fulfillment center setting. Sachleben says the company, which generates more than 700 million data points each day, removes the burden of information storage and analytics from its clients via its software as a service (SaaS) architecture.

"We store the data, and then we present it in ways that help you make better business decisions in real time," Sachleben says. "We take that very seriously."

New Relic recently appointed its first chief information officer, Yvonne Wassenaar, who assumed the position after serving as the company's senior vice president of operations. A key assignment for his colleague in the wake of the appointment, Sachleben says: "to really look across the company and come up with a strategy to manage the ever proliferating amount of data."

With analytics, it's possible to know where people are accessing the app, how it's behaving during peak times such as special offers, and whether trial users are being converted to paying customers.

[2] Video interview with New Relic Founder and CEO Lew Cirne, "How New Relic Helped to Fix Healthcare.org Glitches," Bloomberg Television, December 17, 2014.
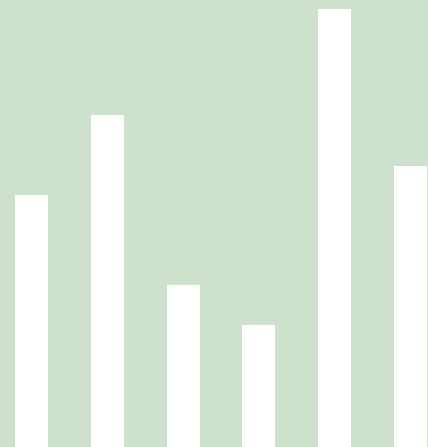
Cyber security: bracing for risks

From subways to cafés and many places in between, technology has made it possible for data to be transferred across devices and networks. Public Wi-Fi connections are nearly universal in airports. Consumers can tap wearable devices against a point-of-sale terminal, transferring their banking information in an instant. Pharmacy chains are using the cloud to manage patient health and wellness information.

As it becomes easier to transfer personal data, this information also has become more vulnerable. Attacks are increasing in frequency and costing companies more. In a recent global survey of 350 firms, the companies reported that the average cost of a data breach had increased by 23 percent between 2013 and 2015, with an average price tag of nearly $3.8 million per breach.[4] The types of information are as varied as the industries that have been hit. Hackers may be looking for chemical recipes held by oil and gas companies. Or cyber criminals may be on the hunt for transactional data regarding a merger or acquisition.

Cyber experts posit that it's only a matter of time before a company's records are compromised in some fashion through a cyber breach. Adnan Amjad, partner, Deloitte & Touche LLP, who leads Deloitte's Vigilant Cyber Threat Management Practice, says an issue of particular concern for mid-sized companies is enacting training to spot the types of attempts to get information. Amjad says hackers are becoming sophisticated in particular with phishing methods, providing names, email addresses, and personal details about employees that convince even the most skeptical employees within organizations to divulge proprietary information or even write a check. An email address off by one letter can be devastating.

In one particularly noteworthy case, an employee received a series of emails purportedly from the company's chief executive officer. "The treasurer kept getting emails and ended up wiring the money. Someone knew that the CEO was not around. By the time the CEO came back, the bank account had been closed, the money had been transferred to another account and that was the end of it," Amjad said.

As it becomes easier to transfer personal data, information has become more vulnerable. Attacks are increasing in frequency and costing companies more.

[4] Ponemon Institute LLC, *2015 Cost of Data Breach Study: Global Analysis,* May 2015.

Practitioners say this type of fraud, known as spear phishing, can be ruinous to the individuals and organizations targeted through such tactics. "That's what I mean by sophisticated," says McCarron, the chief information officer at Bain Capital. Cyber criminals are "building organization charts to understand who reports to whom. They're able to send an email to the person who does wire transfers for the company. If you don't have good process control, then there is no way to stop that from happening."

Securing sensitive information remains a top-of-mind concern among respondents in our survey. But safeguards against data breaches are approached in vastly different ways, executives reported.

Spending on cyber security confirms that the topic is top of mind. While the lion's share of respondents report directing between 1 and 5 percent of revenue spend to security, 19 percent of executives dedicate more than 5 percent of revenue to information security.

In a new question in our survey, 44 percent of respondents say they encrypt sensitive information as a way to handle security risks. Sixty-one percent of respondents say they have some measure of plans to manage internal information threats. Two-thirds of respondents say they're equipped to manage external threats. Yet only 30 percent of respondents say they offer internal education and training on information security matters.

In our survey, the biggest concerns within data security emerged in a few industries. Two-thirds of energy firms reported that moving sensitive information to the cloud posed a security risk, up substantially from 41 percent in 2014. Executives from energy companies also displayed growing concerns about internal security threats, with more than twice as many respondents calling it a risk this year compared to one year ago.

Of your company's technology spend, what percentage is tied to information security?

Between 1 and 5 %

56.6% of respondents

Above 5%

19.4% of respondents

Less than 1%

20.6% of respondents
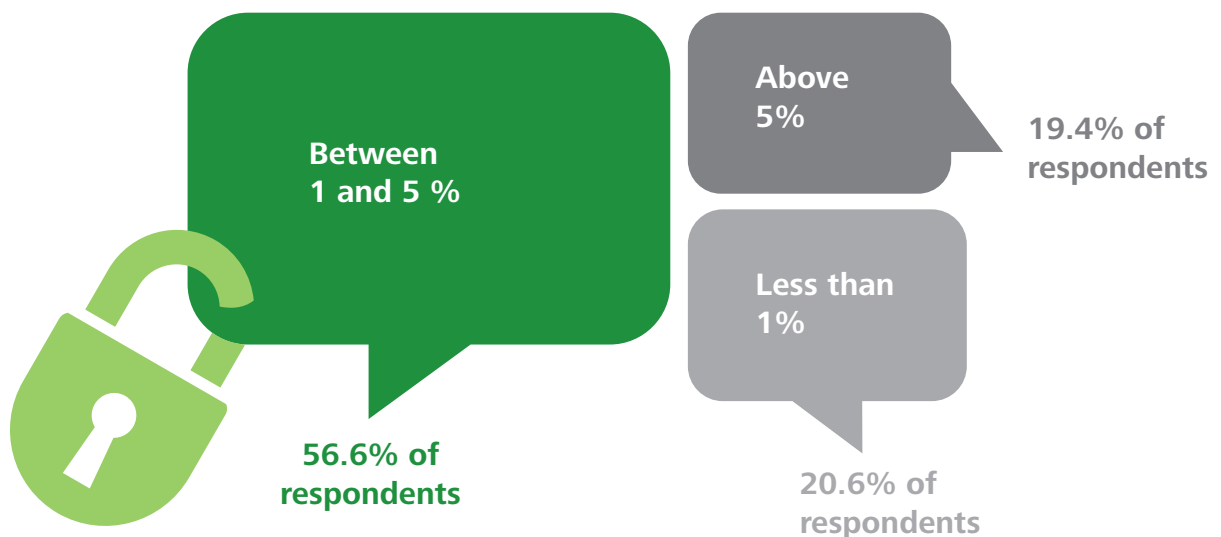
Concerns about cloud security spurred an international standard-setting body to take up the topic. In 2014, the International Organization for Standardization adopted the first international, cloud-specific privacy standard. Among the most significant provisions of ISO 27018, cloud providers are required to disclose names of sub-processors and potential locations where personal information may be stored prior to signing a contract. In addition, cloud providers are subject to regular independent reviews of information security.[8]

The potential for malicious activity through mobile devices also was on the minds of technology and media executives we surveyed. Fifty-nine percent of these respondents perceived risks in their mobile operations this year, a significant jump from only 17 percent the year before.

Organizations that embrace a "Bring Your Own Device" environment are often subject to increased risk, says Amjad. "It's relatively easy to exploit and harder to cope with from an IT perspective," Amjad says, adding that organizations are well-served if they have the ability to remotely delete files on devices that are lost or otherwise exit the company.

Cyber security: a practical guide to managing risk

• View cyber security as a business issue: Senior executives must be able understand the potential for threats to cause a business disruption, reputational damage, and destruction of infrastructure. They must lead and enlist collaboration across the business in the event of a crisis.
• Assess your risk tolerance: Determine which business assets matter most. Establish priorities and funding accordingly.
• Create awareness across your organization: Develop active learning scenarios; understand common techniques that potentially could be used to extract sensitive information from your company; rehearse your crisis response.
• Build monitoring capabilities: Perform periodic reviews; build relationships with law enforcement, regulators, and vendors.

[8] Maria-Martina Yalamova, "ISO's New Cloud Privacy Standard," InsidePrivacy website, Covington & Burling LLC, September 23, 2014, and ISO webste.

Bain Capital:
Process control, value
guide outlook at investment giant

Mike McCarron, the chief information officer at Bain Capital, firmly believes in process control.

Multiple sets of eyes track movements of money before transactions are approved by the private investment firm. The checks and balances extend to financial institutions where Bain Capital conducts business – the firm enacts strict controls with banks that disburse funds. Frequent attempts to breach the company's systems means control over process is king.

"We are getting extraordinarily sophisticated attacks," McCarron says, citing the new normal of cyber risk. "The mistake is that companies don't think (hackers) are as sophisticated as we are. And I will argue that they are."

Bain Capital emerged in the pre-digital world of the mid 1980s with an initial fund of $37 million that was managed by founding partners including former presidential nominee Mitt Romney. Since then, Bain Capital and its affiliates have grown to become a global investment company with approximately $75 billion in assets under management.[5] The Boston-based firm lists payments provider WorldPay, and the "buy one, give one" company TOMS, among its private equity investments.[6] The venture capital affiliate includes consumer brands and enterprise companies across the spectrum of business functions.[7]

In addition to venture capital and private equity, Bain Capital also provides strategic management expertise, corporate credit and asset management through its affiliates. McCarron joined Bain Capital in 2010, and says the firm looks for companies with a long-term view on

smart business strategy. Technology is one of many elements within the context of helping companies grow and reach new markets, McCarron says.

"It's not about whether there's a CIO, about the technology a company uses, or a platform the company's on," McCarron says. "One of the criteria that we look at is there an opportunity to invest in technology to make the company better?"

Since taking the reins of IT at Bain Capital, McCarron has overseen a cyber education program that includes awareness through random, "dummy" phishing attacks. Bain Capital conducts regular, mandatory training that aims to instruct employees on what not to do, and importantly, where not to click.

"Protecting the IT environment has totally become our focus," McCarron says.

But sometimes, even with tight controls, criminals are able to breach systems. McCarron, a former officer in the U.S. Army who later held global chief information officer roles before joining Bain Capital, says organizations need a combination of people, tools and data to combat this issue.

"The first layer of defense is training the people that work in your company. The next step is understanding when there is a breach, putting in place tools that actually identify the breach," McCarron says. "Then you have to ask yourselves, 'Have I done everything I can to protect that data, the things I hold dear, the keys to the kingdom?'"

Bain conducts regular, mandatory training that aims to instruct employees on what not to do, and importantly, where not to click.

[5] Bain Capital website
[6] Bain Capital Private Equity website
[7] Bain Capital Ventures website

Shifting responsibilities, customer focus

Our survey indicates that increased executive engagement is having a strong impact on business strategy. While just 10 percent of executives were "leading the charge" in 2013, a third are now.

Mid-market companies have many different titles for technology leaders — even digital "evangelist," as some companies have labeled the job. Whatever the title, the expectations for the role have morphed into a position that seeks to fill customers' needs. Our survey indicates a groundswell of interest in increased focus on designing better customer interactions. Half of respondents say their IT department is actively building tech platforms to better engage with customers. About the same percentage say the IT department is involved in designing products and customer solutions. And for a third of respondents, technology and marketing have established joint processes and governance.

New Relic, the San Francisco-based application performance monitoring firm, recently added a chief information officer position to its ranks.[9] "Our CIO is focused on making sure that we're consistent across the company and have a unified approach to data across the company," said Mark Sachleben, the CFO. "We'll be looking at a consistent set of facts. We want to take a more holistic approach and become a data-driven company."

And increasingly, says Deloitte's Stephen J. Keathley, IT leaders are being pulled into the user experience. Forward-thinking companies can establish a partnership between IT and business in order to make this happen. "It's about defining the brand, defining how you want to interact with customers, and then executing the plan through technology."

It's about defining the brand, defining how you want to interact with customers, and then executing the plan through technology.

[9] Clint Boulton, "Analytics Software Maker New Relic Names First CIO to Drive Data Strategy," *The Wall Street Journal* online *CIO Journal,* June 29, 2015.
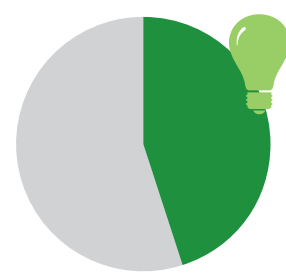
Which of the following statements is true about your IT department's involvement with the end customer of your organization?
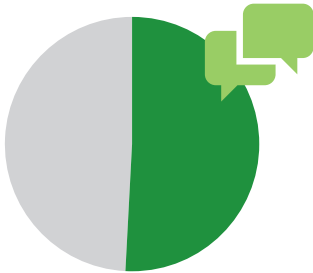
51.0% said:

We are actively building technology platforms to better engage with customers

48.4% said:

Our IT department is focused on delivering seamless/integrated customer experiences

45.0% said:

Our IT department is involved in designing of products and customer solutions

41.8% said:

Gathering and analyzing customer data is a priority for the IT organization
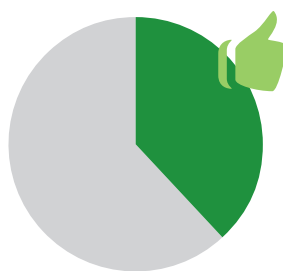
38.6% said:

Our corporate strategy emphasizes customer acquisition, retention and loyalty

31.8% said:

Technology and Marketing departments have established joint processes and governance

Conclusion

Carmakers and technology companies are testing autonomous cars in the hopes of adding convenience, ease and safety to our daily transportation routines. Likewise, mid-sized firms that embed leading technologies into their operations can leverage speed to value and enhance their ability to serve their audiences — customers, i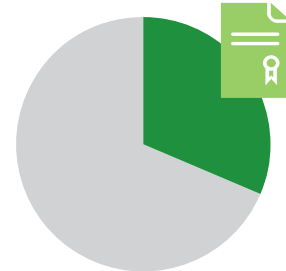nvestors, employees, and other partners. That success is dependent, however, on companies that are strategic in their technology investments, hold their leaders accountable for managing the investments, and instill the value of technology to people throughout their organizations.

Mindsets are changing in the middle market. Executives who explore the predictive modeling capabilities of analytics, for instance, can position their firms to win greater market share. As evidence, companies are demonstrating the impact of analytics extends far beyond front-end solution for sales and marketing — warehouses, fulfillment centers, and distribution-related functions also can benefit from the technology.

Cloud computing packages, meanwhile, are increasingly resilient, function-specific, and better equipped to integrate into a company's existing architecture. What's more, the cloud environment can manage costs, an important consideration as the talent supply tightens and external demands increase.

In a period of heightened alert over cyber threats, companies have to see the matter as an organizational capability, not a function-specific task. Mid-size firms are particularly at risk for breaches as many of them have not built sufficient awareness and monitoring, the very weaknesses malicious actors seek to exploit. Regardless of the industry, executives must develop processes to identify, protect, and monitor the company's most valuable data.

Across a company's technology pursuits, leaders can be most effective if they adopt a consistent approach. Technology investments in marketing should matter to finance. Innovation that's critical to the human resources function has an impact on sales.

Vast new possibilities to increase efficiency, reach customers, and grow the bottom line have opened up through technology. Companies that seize these innovations are most likely to widen their reach.

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