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EXECUTIVE SUMMARY

CIOs Advance their Strategic Role



FROM IDG

WITH DIGITAL TRANSFORMATION WELL UNDER WAY, IT LEADERS ARE EXPANDING INTO BUSINESS STRATEGY RESPONSIBILITIES, IDENTIFYING NEW AREAS OF GROWTH AND PLAYING A HAND IN DRIVING PROFITABILITY.

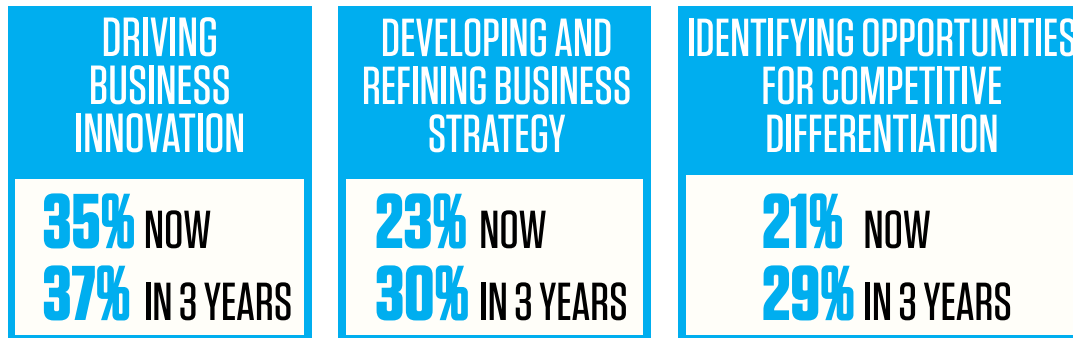
With the technology underpinnings securely in place, CIOs are maturing into a new strategist role, helping to identify new revenue opportunities and operational innovations that will advance organizations to the next phase of digital business.

According to the 2019 State of the CIO, which surveyed 683 IT leaders, 67% said they are spending more time on business strategist activities to help drive innovation and nurture go-to-market plans. While respondents still devote a higher percentage of their time to functional activities (85%) in addition to transformational efforts (88%), the strategist portion of the CIO agenda has blossomed this year, indicating a follow-on planning cycle for digital business and a growing reliance on IT leadership to chart the future course. In comparison, only 53% of IT executives responding to last year's survey reported to spend time on activities associated with a business strategist.

As the framework for digital business matures, a greater number of CIOs are channeling their energy to strategic endeavors, including driving business innovation (35% compared to 28% in 2018) as well as developing and refining business strategy (23% compared to 21% last year). IT leaders are now more actively involved in identifying opportunities for competitive differentiation (21%), crafting new go-to-market strategies and technologies (19%), and studying up on market trends and customer requirements in order to identify new commercial opportunities (16%).

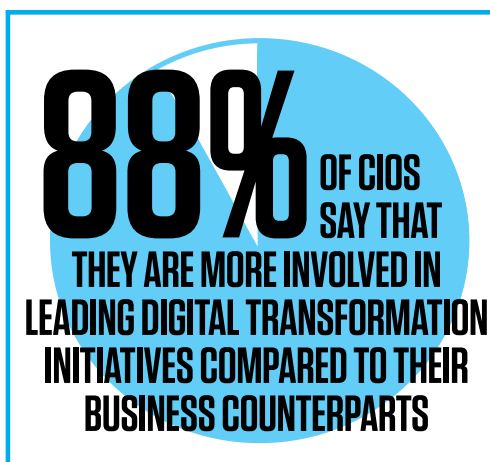
Looking ahead over the next three years, CIOs expect to not only retain, but to expand their newly-established business strategist charter. Seventy-seven percent of respondents are planning to devote time to activities like driving business innovation

INCREASED FOCUS ON STRATEGIC RESPONSIBILITIES



(37%) and developing business strategy (30%), slightly higher than their expected participation in transformational work (74%) and well above the time they anticipate spending on functional activities (58%). Drilling deeper, 30% of survey respondents expect to focus on implementing new systems and architecture over the next three years and 27% plan to redesign business processes while others will prioritize functional duties like security management (26%) and improving IT operations and systems performance (22%).

CIOs' evolution to business strategist is directly connected to their success taking ownership of digital innovation and playing a leadership role in steering the transformational journey. The majority of CIO respondents (88%) agree that they are more involved in leading digital transformation efforts than any of their business



counterparts—a sentiment shared nearly universally by functional (85%), transformational (89%), and strategic CIOs (89%). Their line of business (LOB) colleagues, however, were not exactly in sync— 47% agreed with that characterization of the CIO role. Nevertheless, only 10% of those interviewed strongly disagreed that the CIO played an out-sized leadership role in digital transformation.

It helps that the top executive team has every expectation that CIOs will spearhead leadership of digital transformation. According to this year's survey, CEO's No. 1 priority for CIOs was to lead digital business/digital transformation initiatives, cited by 38% of respondents and moving up from its third ranking in the 2018 State of the CIO survey. Following that directive, CEOs' other top objectives for CIOs this year were to upgrade IT and data security to boost corporate resiliency (32%) and to identify new data-driven business opportunities (30%). Line of business (LOB) respondents had a slightly different interpretation of CIO priorities: They cited IT's help reaching revenue goals, satisfying employees' technical needs, and upgrading IT and data security to boost corporate resiliency as the CEO's primary mandate.

A Maturing Digital Business Playbook

As part of the maturation of the digital business playbook, CIOs are shouldering more responsibility in areas where they didn't necessarily have a strong presence before. Eighty-one percent of respondents acknowledged an expanding role with greater responsibilities—more so among strategic (87%) and transformational CIOs (80%) and slightly less so for functional IT leaders (75%).

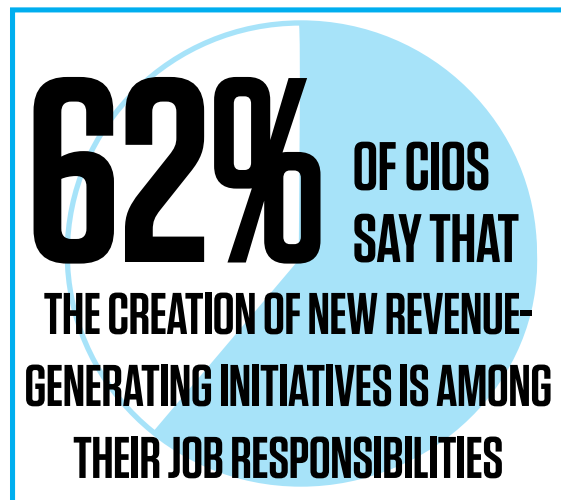
Overwhelmingly, data analytics is the most high-profile new area of oversight for CIOs, cited by 64% of heads of IT. IT leaders in the manufacturing (71%) and retail (73%) sectors were more likely to have data analytics responsibilities added to their plate while those in the high-tech industry (52%) were less inclined to branch out into this emerging and important discipline.

TAKING ON NEW RESPONSIBILITIES IN . . .

Data Analytics	64%
Operations	43%
Business Development	38%
Customer Service	32%
Product Development	29%

As part of their expanded portfolio, CIO respondents are taking ownership of projects and work products in other areas such as operations (43%), business development (38%), customer service (32%), and product development (29%). These new areas of responsibility come at a time when CIOs are transitioning away from the heavy lifting of planning and deploying IT infrastructure and redirecting their focus to monetizing and productizing new goods and services for digital business.

In fact, more than half of respondents participating in the 2019 State of the CIO survey (62%) counted the creation of revenue-generating initiatives, including new products and services, as part of their evolving job descriptions. Twenty-nine percent

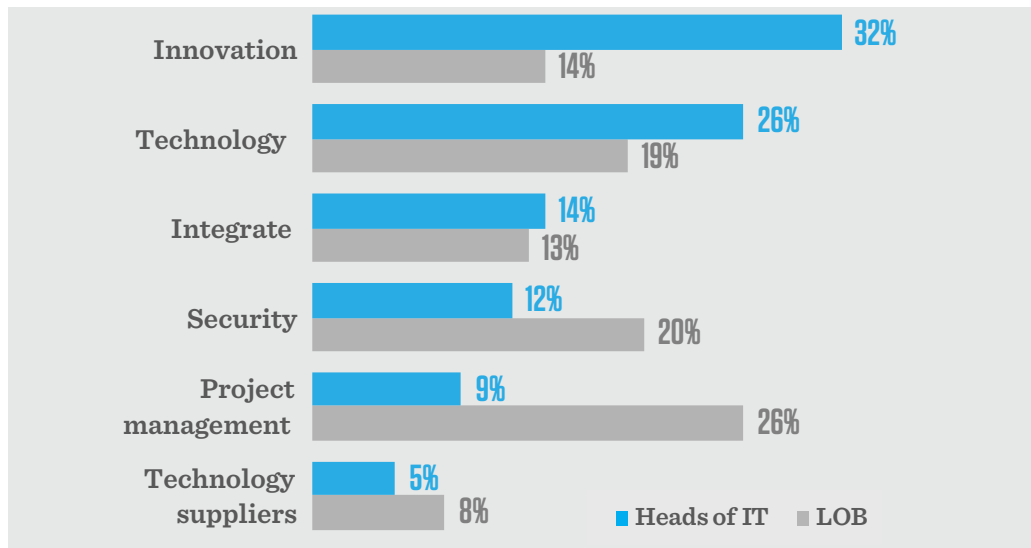


of respondents are managing teams tasked with developing new revenue-generating initiatives while 34% of IT leaders surveyed consider themselves a key part of such a team. CIO respondents in high-tech companies (86%) were far more likely to play a chief role in the development of new business opportunities while the dynamic was much less pronounced in government, non-profit, and educational sectors (37%). Overall,

slightly more than a third (38%) of respondents said they or their team had no role in conceptualizing new digital business-related products and services—a scenario that was far more prevalent among functional CIOs (59%).

CIOs on the frontline of strategizing for digital business are taking a number of steps to drive innovation and foster new ideas for products and services. Nearly a third (32%) of those interviewed said the single most important role for IT organizations to play in digital transformation is around innovation, specifically working with the business to identify what areas are ripe for improvement or transformation through use of digital technologies. Only a quarter (26%) believe IT's primary contribution is limited to technology while 14% said IT's expertise is most critical for integrating new digital solutions into the enterprise system foundation.

CIO'S DIGITAL BUSINESS ROLE

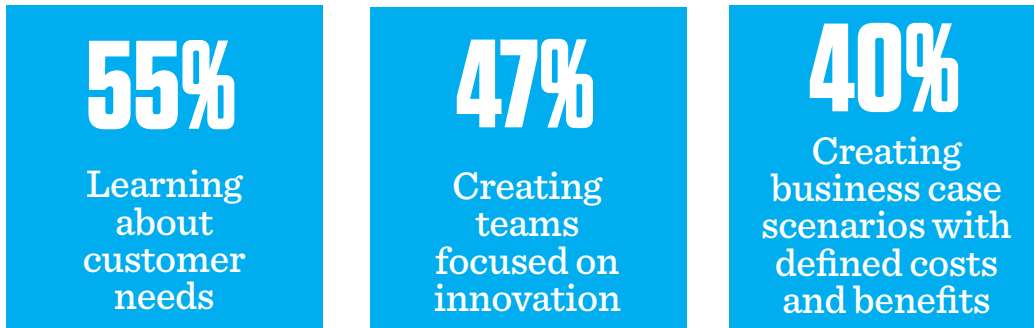


Similarly, more than half of CIOs interviewed (59%) characterized IT as a strategic advisor for technology initiatives, up from 52% last year. In this role, IT proactively identifies business opportunities and makes recommendations about technology or provider selections. Less than a quarter (23%) relegated IT to a consulting role, down from last year at 32%. These findings, coupled with the tiny 4% that saw IT as a cautious voice of reason on technology purchases, illustrates that how far CIOs believe IT organizations have come to be recognized for their strategic input. On the other hand, there's still a bit of a disconnect with LOB perceptions. While 41% of LOB respondents view IT as a strategic advisor, a higher 18% still characterize IT as a cautious voice of reason.

One of the most important efforts IT organizations are taking to support business innovation is learning about customer needs—a task now embraced by 55% of responding IT leaders. The newly-empowered IT leaders are also creating teams to focus on innovation (47%), although it varies greatly by company size—those firms with more than 1,000 employees are more apt to go this route (52%) compared to companies with less than 1,000 employees (40%). IT organizations are also formulating business case scenarios to help define costs as well as benefits (40%). Given the heightened emphasis on creativity, CIOs are also doing their part to cultivate an environment that encourages the free-flow exchange of ideas while fostering collaboration. To that end, 33% of those surveyed are building test labs or spaces where teams can explore ideas that aren't fully baked and 32% are doing what they can to cultivate a more

entrepreneurial spirit. The high-tech industry was far more likely than any other sector to implement these novel approaches, with 61% spending time learning about customer requirements, 47% committed to cost/benefit exploration of business case scenarios, 40% building test labs, and 41% on board with cultivating an entrepreneurial spirit.

INITIATIVES IN PLACE TO BECOME MORE REVENUE-DRIVEN



Top Initiatives for 2019

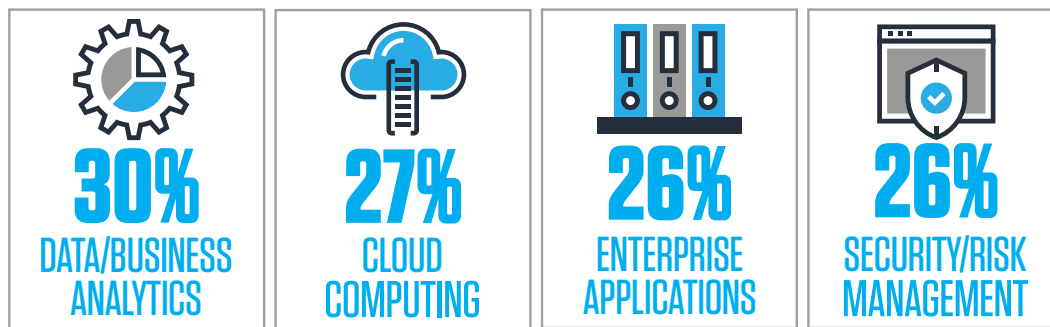
Heading into 2019, IT groups will direct their muscle and IT budgets to initiatives aimed at increasing operational efficiency and boosting cybersecurity protections, both cited by 40% of respondents and improving cybersecurity protections is up from 31% last year. CIOs more involved in strategic activities were less likely to be behind efforts to bolster operational efficiency (29%) and were instead more likely to direct investment towards projects that grow the business (39%), improve profitability (30%), and introduce new digital revenue streams (25%). In comparison, CIOs with more functional responsibilities were more likely to direct spend to cybersecurity projects (48%) and compliance efforts (27%) while CIOs focused on transformational tasks were more apt than other CIO archetypes to fund efforts to improve customer experience (40%) and transform existing business processes (35%).

Data analytics is expected to drive the most IT investments in 2019, cited by 30% of overall respondents and moving up a notch on the list from the 2018 State of the CIO. The discipline, which became the responsibility of many responding IT leaders' this year, is being adopted more readily in the retail (37%) and manufacturing (36%) sectors, used to promote cross-selling opportunities, optimize inventory and forecasting, and aid in plant floor performance.

Data analytics supplanted enterprise applications as the top initiative that will drive IT investment in 2019: Enterprise applications, cited by 26% of IT leaders and now at No. 3, closely followed cloud computing deployments, which were cited by 27% of respondents. Security and risk management held steady as the fourth initiative, called out by 26% of respondents, but a much higher priority for healthcare organizations at 38%.

With data analytics taking center stage, it makes sense that artificial intelligence (AI) and machine learning investments made a big leap this year. Fourteen percent of CIO respondents to this year's survey plan to purchase AI technology, up from 8% last year, and 10% are targeting machine learning and cognitive systems.

2019 TECH INVESTMENTS DRIVING IT INVESTMENTS



Other newer and widely-hyped technologies still rank fairly low in terms of budget allocation. For example, Internet of Things (IoT) and agile/DevOps held steady, cited by 9% of respondents, robotic process automation (RPA) was highlighted by 7%, and virtual reality/augment reality (AR/VR) was only touted by 2% of respondents.

Most IT organizations will have the money to fund all these new initiatives as 57% of respondents said there are plans to increase IT budgets this year, more so at companies with over 1,000 employees (60%) compared to those with fewer than 1,000 employees (53%). Even better, the gains are fairly significant: On average, survey respondents expecting budget increases anticipate an 18% hike in funding.

Only 9% of IT leaders predict budget decreases, and 33% said they expect funding to remain consistent with last year's budgets. IT organizations spending most of the budget on "keeping the lights on" or functional activities are less likely to be the beneficiaries of budget increases—in fact, 40% of functional CIOs said they expect their budgets to remain static while 12% were anticipating budget cuts.

Breaking Down the Budget

As with past years, IT spending is becoming much more decentralized, with IT in command of a little more than half of the IT budget and expected to continue that way over the next three years. IT organizations retain oversight of about 51% of the total technology budget today and expect to control 54% in the next three years. In 21% of responding companies IT commands ownership of 90% to 100% of the total IT budget.

TECH BUDGETS MAINTAIN STABILITY

57% INCREASE
33% REMAIN THE SAME
9% DECREASE

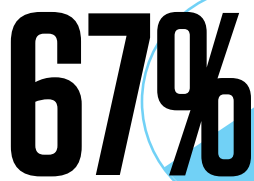
When asking heads of IT which other groups or functions in their organization have/ will have budgets specifically earmarked for technology investments, marketing and operations come out on top. Forty-two percent say that marketing groups have specific technology budgets, followed by 37% for operations and 35% for finance/accounting. Groups that are less likely to have budgets specifically earmarked for technology investments are sales (26%) and human resources (29%). This is yet another indicator that companies are maturing into developing and implementing the next phases of their digital business roadmap.

Even when individual departments purchase technology products or services with their own budget, IT still plays a significant role. Eighty-five percent of heads of IT said IT is involved in some capacity, most (43%) operating within some sort of shared project oversight arrangement. Only 24% of survey respondents said IT retains complete oversight of technology projects while 18% said the group plays an advisory role.

This shared oversight model continued to hold this year. Sixty-seven percent of respondents (down from 71% last year) said that IT and business cooperate more frequently on collaborative IT projects where IT shares responsibility and oversight-- again an arrangement more prevalent in companies with strategic-focused CIOs (72%).

Security Still in the Hot Seat

As with years past, cybersecurity continues to be a big focus for IT organizations across the board, and companies are making headway eliminating previously siloed security approaches. Ninety-four percent of respondents to this year's survey said IT security strategy is tightly or somewhat integrated into the overall enterprise IT roadmap while 64% of IT heads described their security strategy as tightly integrated, up from 54% last year. Only 4% said there was no integration and security investments were reactive. On a positive note, there is little change looking out the next three years. Most companies are allocating 15% of their total IT budgets, on average, to IT security, and a growing number of shops are installing dedicated security leaders. For example, 31% of organizations surveyed now have a CISO, up from 25% last year, and 13% have brought on a CSO—both positions more prevalent in companies where the CIO is more involved in strategic activities. Both the CSO and CISO position are also more prevalent in companies with over 1,000 employees.

**67%**

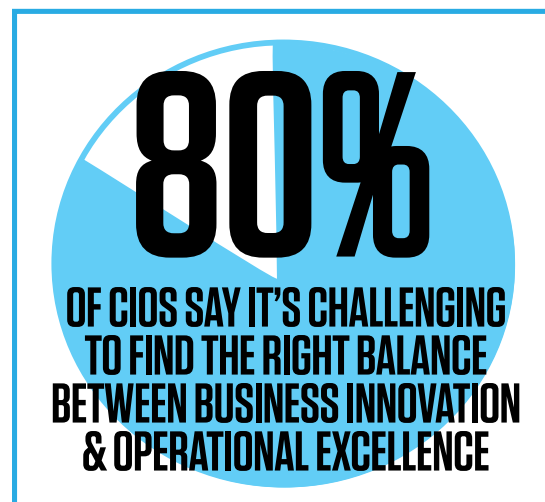
**OF CIOs SAY COLLABORATIVE IT (WHEN IT SHARES
OVERSIGHT TO SOME DEGREE WITH DEPARTMENTS
OR LOB) HAS BECOME MORE FREQUENT**

Top security professionals are also accompanying CIOs to grab a seat at the executive table. Forty-three percent of CSOs are reporting into a CEO and 30% to a corporate CIO. Nearly half of CISOs (47%) take direction from the corporate CIO and 18% from the CEO. For their part, 43% of CIOs are reporting in to the CEO, and 78% are communicating regularly with the board of directors, up from 67% in 2018—another proof point of their strategic value.

CIO Challenges Remain

As CIOs settle into their strategist role, they still face challenges, some related to technology and staffing, and others having to do with the on-going struggle to build alignment with the business ranks. With more on their plate, CIOs continue to strike a balance between business innovation and operational excellence—a juggling act that remains difficult for the lion's share of respondents—80% compared to 73% last year. Compounding the dynamic is a disconnect with LOB, which doesn't fully appreciate how far CIOs feel stretched—only half (50%) of LOB respondents agreed that CIOs were challenged by trying to achieve both objectives in parallel.

As the pendulum swings to digital business, all eyes on are these initiatives, especially in the C-suite, which is heavily invested in ensuring success. As a result, CIOs are under extreme pressure to defend technology investments and prove ROI, a mandate cited by 81% of survey respondents, and pretty consistent across functional, transformational, and strategic CIOs. Only 18% of those surveyed didn't feel they were under the gun to defend IT investments and prove ROI.



Finding the right skills to support digital transformation and other elements of the IT agenda are also a continuing problem for many IT shops. Respondents to this year's survey overwhelmingly anticipated hurdles finding the appropriate data science and analytics skills (42%), up from 36% last year. Security and risk management skills (33%) also topped the hard-to-find list along with AI/machine learning (31%) and cloud services/integration (22%).

IT organizations are lacking other critical skills to support digital transformation. While technology skills were the biggest gap—50% percent of respondents said they

were in need of technology integration and implementation skills—soft skills were equally in short supply. Forty percent of respondents said they were in the market for employees with change management and strategy building skills while 32% were targeting project management acumen and 25% looking for business relationship management skills. In terms of specific job titles, CIO respondents identified chief data analytics officers, data scientists, chief digital marketing officers, business process experts, and cloud architects among the titles essential for their digital transformation efforts.

Much of what the CIO can accomplish and how strategically they are perceived within the organization is dependent on the corporate culture—a sentiment expressed by more than half of those surveyed (81%). In addition, a vast majority of CIOs (90%) believe their success is contingent of having a trusted network of advisors to help navigate the increasingly complex landscape of new technologies, processes, and methodologies.

While the journey isn't without its share of bumps, the 2019 State of the CIO reveals that IT leaders are making steady progress. IT leadership is increasingly viewed as a high-value asset not just for technology innovation, but as a strategy partner essential to unleashing new revenue models and profitability streams in the wake of digital business.

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