EXECUTIVE SUMMARY

2018

CIOs Race Towards Digital Business

CIO
FROM IDG

CIOs Race Towards Digital Business

As IT organizations press the pedal on new digital business initiatives, CIOs struggle to balance traditional operational duties with demand for agility and innovation.

With the race for digital business well underway, CIOs in every industry and across companies of all sizes are feeling the heat to operate at two speeds: Leading a high-performance charge towards innovation while keeping a steady hand on the wheel of traditional IT operations, according to the 2018 State of the CIO survey.

> **Increasingly, CIOs view their role as more digital and innovation focused**

Increasingly, CIOs view their role as more digital and innovation focused, a shift cited by 88% of respondents in the survey of 738 IT leaders. The CEO mandate for CIOs is to lead digital business initiatives and to help organizations reach corporate revenue growth goals, (both at 35%), just after boosting cyber security protections (36%). Those CIOs identified as strategic and transformational are more likely to embrace the new marching orders, cited by 90% and 89% respectively, the survey found. Yet even IT leaders identified as functional CIOs find themselves steering more time and energy toward digital business efforts, a fact confirmed by 83% of respondents.

As a result of increased activity on the digital front, the lion's share of CIOs' time this year was devoted to transformational and functional activities with significantly less emphasis on strategic work, according to the 2018 State of the CIO research. This seems to indicate that the pendulum is now swinging from planning initiatives, including those for digital business, towards execution and deployment of specific projects.

To this point, this year's crop of CIOs find their time split between operational activities related to security management (54%), improving IT operations/ systems performance (49%), and cost control/expense management (37%) and higher level work in areas like cultivating the IT/business partnership (38%), implementing new systems and architecture (36%) and leading change efforts (33%). Strategic duties such as driving business innovation and developing and refining business strategy remain on the CIO's docket, but aren't consuming as much of their bandwidth compared to years past.

SECURITY TAKES UP MORE CIO TIME

Functional	Now	In 3 Years	Transformational	Now	In 3 Years	Strategic	Now	In 3 Years
Security Management	54%	31%	Aligning IT initiatives with business goals	50%	29%	Driving business innovation	28%	44%
	+13	-23		-3	-21		-5	+16
Improving IT operations/systems performance	49%	22%	Cultivating the IT/ business partnership	38%	27%	Developing and refining business strategy	21%	33%
	+4	-27		+/-0	-11		-3	+12
Cost control/ expense management	37%	20%	Implementing new systems and architecture	36%	30%	Identifying opportunities for competitive differentiation	17%	34%
	+4	-17		-4	-6		-4	+17
Negotiating with IT vendors	22%	14%	Leading change efforts	33%	31%	Developing new go-to-market strategies & technologies	14%	28%
	+1	-8		-2	-2		-3	-14
Managing IT crises	19%	8%	Redesigning business processes	26%	29%	Studying market trends/customer needs to identify commercial opportunities.	10%	21%
	+/-0	-11		+2	+3		-3	+11

As digital transformation efforts get underway, 37% of IT leaders are confident that their IT organizations can be an instrumental force in innovation, helping to define the parts of the business most ripe for digital change and enhancement. At the same time, 22% of IT leaders see significant opportunity for IT organizations to help accelerate digital transformation by identifying the right mix of emerging technologies. Thirteen percent view IT's most important role as integrating digital innovations into existing business systems while 12% cited building a secure infrastructure to safeguard digital technologies as IT's single greatest contribution.

37%

of IT leaders are confident that their IT organizations can be an instrumental force in innovation

Here again, there were discrepancies among the different CIO archetypes. Strategic and transformational CIOs are more likely to see the IT organization able to step up and assist in innovation efforts (45% and 36%) compared to their functional counterparts, at only 32%. Strategic and transformational CIOs are also more likely to seek involvement in digital technology choices (24% of both) compared to only 17% of functional CIOs. For their part, functional CIOs are more comfortable stepping in to assist with integration (14%) and security (18%) tasks.

Budget Breakdown

In the upcoming year, IT organizations will be channeling investment to business initiatives focused on increasing operational efficiency (39%), improving customer experience (38%), growing the business (33%), and increasing cybersecurity protections (31%). IT organizations headed by functional and transformational CIOs are prioritizing efforts to increase operational efficiency (45% and 43%, respectively) compared to only 26% of strategic CIOs. In contrast, strategic CIOs are concentrating on initiatives to grow the business (41%), improve customer experience (39%), transform existing business processes (30%), and introduce new digital revenue streams (28%).

CIOₛ AND LOB ALIGN ON
BUSINESS INITIATIVES DRIVING IT INVESTMENTS

	Head of IT		LOB	
Increase Operational Efficiency	39%	1	43%	1
Improve Customer Experience	38%	2	25%	4
Growing the Business	33%	3	26%	3
Increase Cybersecurity Protections	31%	4	32%	2
Transform Existing Business Processes	30%	5	14%	
Optimize Worker Productivity	20%		24%	5

As far as technology investments go, enterprise applications like ERP and CRM are expected to draw the largest share of spending by all CIOs (35%), higher among transformational CIOs (39%) and functional IT leaders (34%) and less so among strategic CIOs (28%). The industry sectors that are leading purchases in ERP include retail (47%) and manufacturing (57%).

IT dollars marked for data/business analytics technology were high across the board, cited by 33% of responding CIOs. Cloud computing and security/risk management were other high-intent technology purchase areas, cited by 28% of responding CIOs. Functional CIOs are more likely to allocate spending to security/risk management technology (36%) compared to their transformational (25%) and strategic (24%) counterparts. Spending on cloud technologies ranked significantly higher among companies in the high-tech and telecommunications space, cited by 44% of responding CIOs in that sector — an indication, perhaps, that they are starting with a clean slate and are less dependent on legacy software. Cloud technologies also ranked high among government organizations (36%).

33%
of CIOs say data/business analytics will drive the most IT investment

Emerging technologies, while widely hyped, are still nowhere near mainstream investments. Only 9% of tech leaders say agile/devops tools and internet of things/sensor data technology will drive the most IT budget at their organization over the next year. Similarly artificial intelligence was cited by 8% of tech leaders, machine learning and cognitive systems by 7%, and virtual reality/augmented reality by only 2%.

The expected investment in IoT does vary by industry – 19% of CIOs in manufacturing report this to be a top priority, which aligns with the ramped up technology roadmap designed to support smart manufacturing and predictive maintenance. Robotics is another emerging technology that sees little investment (4% overall CIOs), however it's investment increases among healthcare (9%), finance (8%) and manufacturing (6%) CIOs.

Investment in data/business analytics (39%), security/risk management (34%), application modernization/legacy system migration (29%), customer experience technologies (21%), and machine learning and cognitive systems (11%) are among the technology spend priorities for companies in the healthcare sector as they continue the work of transforming core business systems to support next-generation digital health initiatives.

A Delicate Balancing Act

With a healthy dose of digital transformation responsibilities on their plate, nearly three quarters (73%) of tech leaders said they find it a challenge to strike the right balance between business innovation and operational excellence. Functional CIOs (80%) were struggling more with the juggling act compared to their transformational CIO (71%) and strategic (68%) peers.

88%
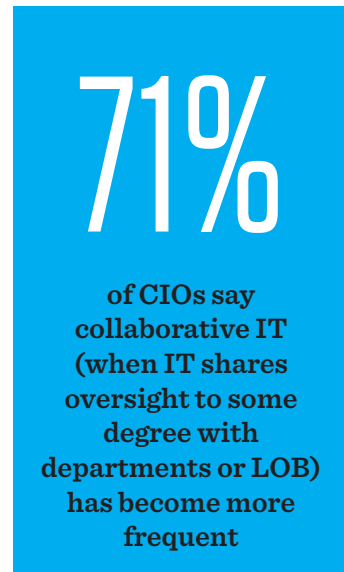of CIOs say their **role** is becoming more **digital** and **innovation** focused

73%
of CIOs say it's **challenging** to find the right balance between business **innovation** & **operation** exellence

The job's strategic requirements ebbed a little this year, lightening the load some-what on CIOs. Fifty-three percent of CIOs reported spending time on strategic functions, down from 62% last year. Driving business innovation (28%), developing and refining business strategy (21%), and identifying opportunities for competitive differentiation (17%) consumed much of CIOs' time in the strategist area.
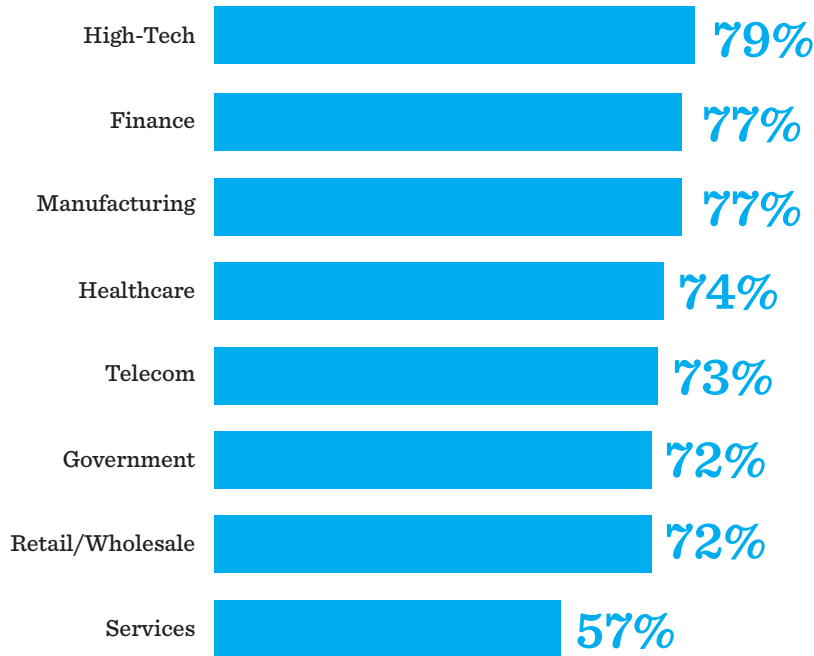
Looking out at the three-year horizon, however, the dynamic changes yet again as CIOs shift back into strategy and planning mode to map their course on the next phase of the digital business journey. CIOs expect to scale back on transformational duties, dropping from 88% to 78%, and functional tasks, from 87% to 61%, while ramping up business strategist activities, from 53% up to 77%. Among strategic duties includes driving business innovation, which is expected to increase to 44% within the next three years, compared to 28% focused on this activity this year.

IT/LOB Forge Collaborative Partnership

While organizations have been chasing stronger IT/LOB collaboration for some time, they made good strides to improve the working relationship this year, according to the research. Nearly three-quarters of CIOs (71%) said IT and LOB are engag-ing more frequently in collaborative projects where there is shared oversight. The uptick in IT/LOB col-laboration is more prevalent in finance, manufactur-ing and high-tech companies with 79% of high-tech organizations and 77% of finance and manufactur-ing organizations reporting increased collaboration between IT and LOB. Organizations with strategic CIOs (74%) and transformational CIOs (73%) were also more likely to report a greater number of collaborative IT/LOB projects compared to functional CIOs (66%).
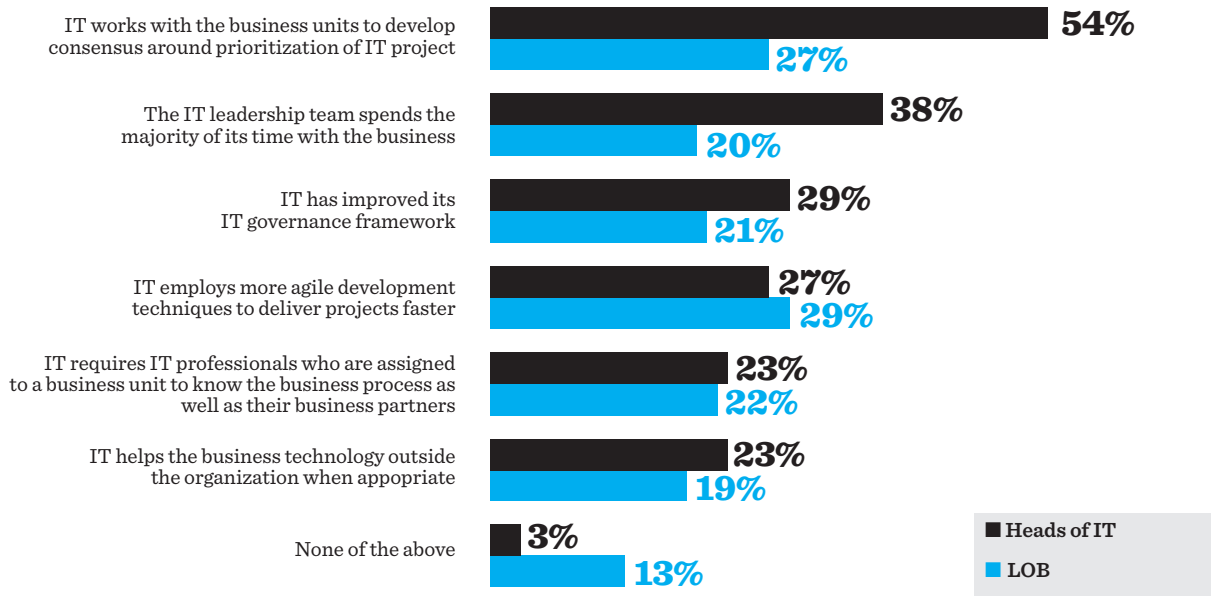
71%

of CIOs say collaborative IT (when IT shares oversight to some degree with departments or LOB) has become more frequent

IT & LOB COLLABORATION INCREASES BY INDUSTRY

Industry	%
High-Tech	79%
Finance	77%
Manufacturing	77%
Healthcare	74%
Telecom	73%
Government	72%
Retail/Wholesale	72%
Services	57%

The improved relationship is the result of a lot of hard work on the part of IT. Almost all tech leaders who participated in the survey (97%) took some kind of measure to improve collaboration with LOB over the last year. More than half (54%) report that IT is working with business units to develop consensus around prioritization of IT projects, a tactic more prevalent in organizations with transformational CIOs (61%).

At the same time, 38% of responding IT leaders said the IT leadership team is spending the bulk of its time with the business to improve relations, 29% have bolstered the IT governance framework process to secure alignment, and 27% are employing agile development techniques, which ensure faster delivery of projects and as a result, a more satisfied LOB. IT and LOB collaboration to build consensus for prioritization of projects is much more widespread in the manufacturing industry (65%) while IT leadership is much more apt to spend time in the business in manufacturing (46%) and retail (60%) companies.

IT HELPING TO PRIORITIZE TECH PROJECTS
IMPROVES IT/BUSINESS RELATIONSHIP

IT works with the business units to develop consensus around prioritization of IT project
54%
27%

The IT leadership team spends the majority of its time with the business
38%
20%

IT has improved its IT governance framework
29%
21%

IT employs more agile development techniques to deliver projects faster
27%
29%

IT requires IT professionals who are assigned to a business unit to know the business process as well as their business partners
23%
22%

IT helps the business technology outside the organization when appropriate
23%
19%

None of the above
3%
13%

■ **Heads of IT**
■ **LOB**

When IT and LOB get together to collaborate on a new initiative, IT typically plays a multi-faceted role. Recommending technology solutions is an obvious and substantial role, cited by 73% of IT respondents. IT is also a partner in building a business case for new technology initiatives (61%), helps develop technical requirements (61%), and negotiates supplier contracts (54%). Functional CIOs are far less likely to partake in building a business case (47%), provide project management support (44%), or recommend ways for business processes to run more efficiently (43%).
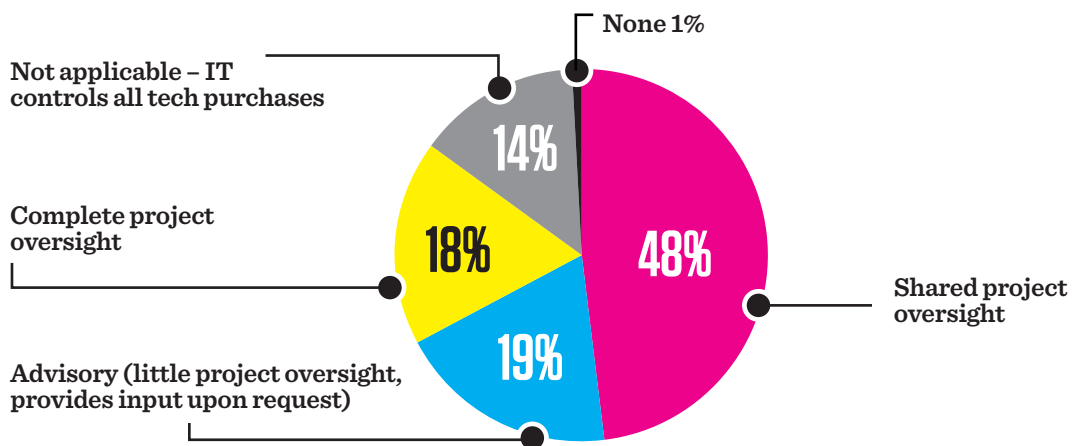
Most often, IT leadership is viewed as a strategic advisor, helping to proactively identify business needs and opportunities and making recommendations about technology and vendors — a role cited by more than half (52%) of tech leaders. Clearly, strategic CIOs are generally viewed more in this capacity (65%) compared to transformational (51%) and functional (45%) IT leaders. Moreover, the responses do not vary much when asked to LOB – 49% agree that IT leadership is seen as strategic advisors and 31% as consultants.

86%

of CIOs said various functional groups had their own technology budgets

Even as LOB functions gain a portion of the technology budget, IT remains involved, another sign of active collaboration. Eighty-six percent of CIOs said various functional groups had their own technology budgets, most prevalent in marketing (42%) and operations (35%) areas. Regardless of that dynamic, one quarter of CIOs said the IT department retains control of 71% to 90% of the total IT budget.

When business units do go off and purchase technology products or services on their own, IT still retains some sort of role, noted by 99% of IT leaders surveyed. Almost half (48%) report some level of shared project oversight with the IT organizations — a more common scenario for transformational CIOs (53%) compared to functional CIOs (43%). Nineteen percent say IT plays an advisory role, 18% state they have complete project oversight, while only 1% saw no role for IT whatsoever. Additionally, 14% of CIOs say IT controls all tech purchases.

IT OVERSIGHT ON LOB TECHNOLOGY PURCHASES

None 1%

Not applicable – IT controls all tech purchases

14%

Complete project oversight

18%

19%

48%

Advisory (little project oversight, provides input upon request)

Shared project oversight

LOB shares a similar view of IT's involvement in their technology purchases – 39% say there is a level of shared project oversight, 15% see an advisory role, 25% complete oversight, 6% say IT has no role when it comes to technology spending, and 15% say IT controls all tech purchases.

Security Takes Center Stage

As more business processes and revenue models become digitized and amidst a spate of high-profile data breaches, cybersecurity has become a much bigger deal for companies across all industries and of all sizes. The number one CEO priority for CIOs in 2018 is to upgrade IT and data security to avoid cyber attacks, cited by 36% and up from 32% in last year's survey. CEOs in the financial sector (51%) and government (43%) are far more likely to push security as the top CEO priority, but the directive was nearly the same for companies of all sizes — 36% for SMB firms (under 1,000 employees) and 37% for enterprises (more than 1,000 employees.)

82%
of CIOs expect
their IT and
security strategy
to be tightly
integrate
in the
next 3 years

In addition, IT security strategy and IT strategy continue to be closely intertwined. **Fifty-four percent of responding CIOs state that security strategy is an integral part of overall IT strategy and roadmaps**, up slightly from last year's 51%, and expected to climb to 82% over the next three years. This scenario varies slightly with functional CIOs at only 47% in 2018 and 77% three years from now. Thirty-five percent of overall CIOs state IT and security strategy are currently somewhat integrated and loosely incorporated into overall IT strategy, which drops down to 16% three years from now. Tech leaders within financial service companies are far more likely to have tightly integrated security and IT roadmaps currently, cited by 63% of CIOs.

Security spending is also up over last year. IT security spending represents about 13% of an organization's total IT budget, according to the survey, and 44% of IT leaders state that spending on security-related technologies and services accounts for 10% or more of the total IT budget, up from 38% last year. This budget allocation slightly varies by industry – 16% high tech/telecommunications, 15% finance and 14% healthcare. However, spending is pretty consistent across size of companies, hovering in the vicinity of 13% for SMB and enterprise organizations, the research found. Security and risk management technologies are also some of the top drivers of IT investments (28%).

51%

of IT leaders confirm their organizations now have either a CSO, CISO or other top

IT organizations aren't just bringing in new technologies and services to improve their cybersecurity safeguards — they are also reorganizing and appointing new staff positions as part of their stepped up efforts. More than half (51%) of IT leaders confirm their organizations now have either a CSO, CISO, or other top security executives, yet the appointments vary significantly by company size — 68% of enterprises have a security leader compared to only 34% of SMBs. The type of CIO in place also makes a difference — 53% of organizations with transformational and strategic CIOs have brought on cybersecurity executives compared to only 44% of organizations with functional CIOs.
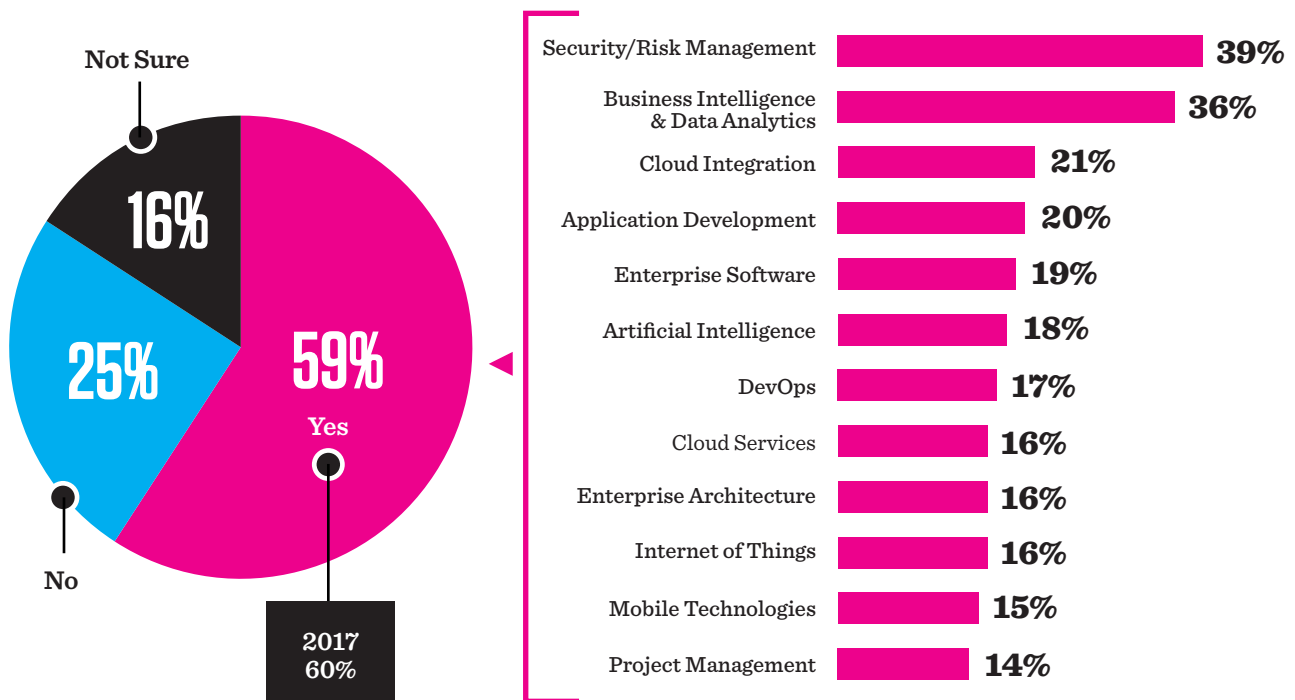
A quarter of CIOs surveyed have appointed a dedicated CISO and 11% have named a CSO, however this trend is more common among enterprise firms compared to SMBs. Thirty-seven percent of enterprises have a CISO and 20% have a CSO, while only 14% of SMBs have a CISO and 2% a CSO. Financial firms are far more likely to have invested in a top security executive overall (75%) – which includes a CISO position (41%) – while only 38% of retail organizations and 34% manufacturing organizations have appointed a top security executive. Forty percent of CSOs are reporting into the CEO while 28% report to the corporate CIO; the CEO direct report structure is much more likely in enterprise companies (with 1,000+ employees) at 42%, while at SMB companies (under 1,000 employees), half of the CSOs report into the CIO. Overall, CISOs are more likely to report into the CIO (52%).

Even as companies bring on additional dedicated security professionals, CIOs are still spending more than half of their time on security management tasks (54%), the research found. In addition, 85% of IT leaders surveyed state they are involved in security initiatives to a greater degree than in the past.

Skills Crunch Remains

With such a broad agenda, it's no wonder IT organizations are still struggling to find skilled talent to cover all their bases. Fifty-nine percent of IT leaders expect their firms to experience critical IT skills shortages over the next 12 months, the same as last year. Security and risk management skills are still the most difficult to find for 39% of tech leaders with business intelligence and data analytics coming in a close second, at 36%.

STRUGGLE FOR IT TALENT - ESPECIALLY IN DATA & SECURITY

Not Sure

16%

25%

59%

Yes

No

2017
60%

Skill	Percent
Security/Risk Management	39%
Business Intelligence & Data Analytics	36%
Cloud Integration	21%
Application Development	20%
Enterprise Software	19%
Artificial Intelligence	18%
DevOps	17%
Cloud Services	16%
Enterprise Architecture	16%
Internet of Things	16%
Mobile Technologies	15%
Project Management	14%

Government (43%) organizations are more likely to struggle to find skilled business intelligence and data analytics talent while high-tech and telecommunications firms are in most need of cloud integration expertise (26%). Manufacturing companies are scrambling to get their hands on enterprise software (29%) skills while financial organizations are concerned about application development skills (33%).

Skilled expertise in newer areas like artificial intelligence and agile technologies is also proving to be elusive. Eighteen percent of CIOs anticipate difficulty finding AI talent, while 17% cite DevOps and 16% state IoT, enterprise architecture, and cloud services as key areas where they expect to have some trouble recruiting the appropriate talent.
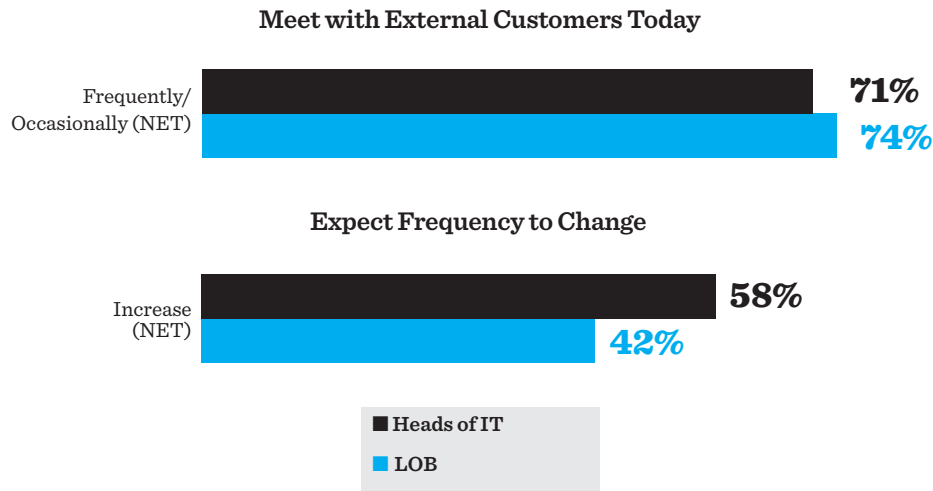
71%
of IT leaders surveyed currently meet directly with external customers

CIOs Step Up

Despite the challenges of balancing innovation demands with the need to maintain oversight of traditional IT operations, CIOs are enjoying increased visibility and the benefits of taking a more important role in charting the company's future. Nearly half of IT leaders surveyed (47%) report into the CEO, up a point from last year. Sixty-seven percent of IT leaders are communicating with the board of directors more than ever before.

CIOs' heightened visibility isn't just with internal management: Seventy-one percent of IT leaders surveyed currently meet directly with external customers, and that spans both enterprise (73%) and SMB companies (69%). Moreover, CIOs and their direct reports are meeting with customers almost as often as LOB, at 74%. Most IT leaders surveyed expect the customer face-time to continue over the next 12 months with 58% reporting they expect to significantly increase or somewhat increase customer interactions.

CIOs EXPECT CUSTOMER MEETINGS TO INCREASE BY A GREATER DEGREE THAN LOB

Meet with External Customers Today

Frequently/
Occasionally (NET)

71%
74%

Expect Frequency to Change

Increase
(NET)

58%
42%

■ Heads of IT
■ LOB

Moving forward, 52% of IT leaders see their future role as primarily managing contractors, cloud, and other IT services providers. However the CIO role morphs, nearly three-quarters (70%) believe the changes will be dictated by company culture. Most CIOs (75%) believe they will continue to be under extreme pressure to defend technology investments and prove ROI — a requirement far more prevalent in the high-tech and telecommunications industry (86%). As far as collaborative working relationships with LOB or other top executives, 87% of CIOs fully expect that the role will increasingly rely on trusted advisors to help navigate technologies, processes, and methodologies as companies move ahead with digital transformation.

As CIOs shift digital business initiatives into high gear, the pressure is mounting to pursue innovation while keeping a hand on traditional operations. Yet for forward-thinking CIOs, the challenges present an unprecedented opportunity to pilot the company's future as opposed to just being along for the ride.