2020 State of the CIO Executive Summary

Expansive business strategy and revenue-generation responsibilities are broadening the CIO portfolio and helping IT leaders gain hard-fought recognition for their leadership role.

CIO

After years of trying to wrangle a seat at the executive table, CIOs are finally being recognized for their leadership chops, joining their C-suite peers in defining core business strategy, cultivating customer and board room relationships, and taking on additional responsibilities as companies prepare for the next chapter in digital business. Many fast-track CIOs have been doing this kind of leadership and management work for years. What's changing is a growing recognition in the executive ranks and among line of business (LOB) colleagues that tech leaders' experience is essential for driving revenue growth and innovation—not just for optimizing enterprise IT infrastructure or promoting new technologies as part of digital transformation.

According to the 2020 State of the CIO, which surveyed 679 IT leaders and 250 line of business (LOB) participants, CIOs continue to devote less time to traditional functional responsibilities like expense management and optimizing IT performance. Although security management is currently a top activity for CIOs (45%), this is down from 51% in 2019 and is expected to decrease to 27% in the next three years. Functional activities such as cost control/expense management also decreased from 2019 (down four percentage points to 29%), while strategic tasks such as identifying opportunities for competitive differentiation jumped four percentage points to 25%.

CIOS CONTINUE TO MOVE TOWARDS A STRATEGIC ROLE AS THEIR TIME SPENT ON FUNCTIONAL ACTIVITIES DECLINES

As part of their increasingly business-directed charter, CIOs are prioritizing efforts to align IT initiatives with business goals (44%), implement new systems and architectures (39%), lead change efforts (34%), drive business innovation (34%), develop and refine business strategy (23%) and develop new go-to-market strategies & technologies (22%).

The shift to these higher-value, business-oriented activities is no temporary blip on the CIO radar screen. Nearly half of survey respondents (46%) self-identify as a transformational CIO, with close to a third (29%) assuming the mantle of business strategist and only a quarter describing their CIO role as primarily functional. CIOs in the manufacturing

and government sectors were more likely to self-identify as transformational (54% and 53% respectively) while high-tech (35%) and the services (39%) industries favored the strategic role. CIOs still married to the old-school functional identity trended higher in the services (34%) and retail (30%) segments.

Regardless of how they define their charter, CIOs are settling into the job and showing long term experience in their role. The average tenure for CIOs is now at 6.45 years, and most stay in the role between one and three years (23%), similar to the 2019 State of the CIO survey. The number of CIOs reporting directly into the CEO grew this year—47% compared to only 43% last year.

AVERAGE CIO TENURE

5 years 8 months (2018)

7 years 2 months (2019)

6 years 6 months (2020)

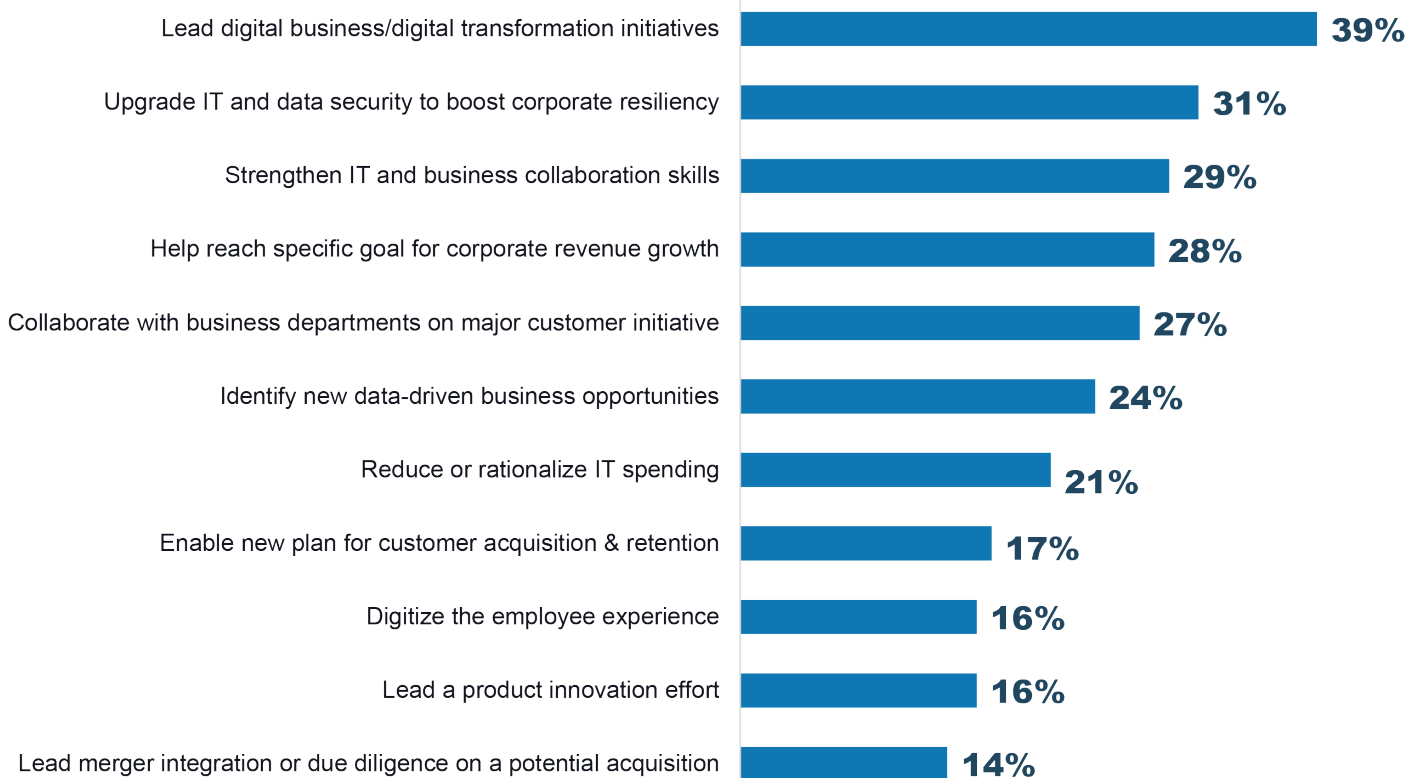| 2018 | 2019 | 2020 |
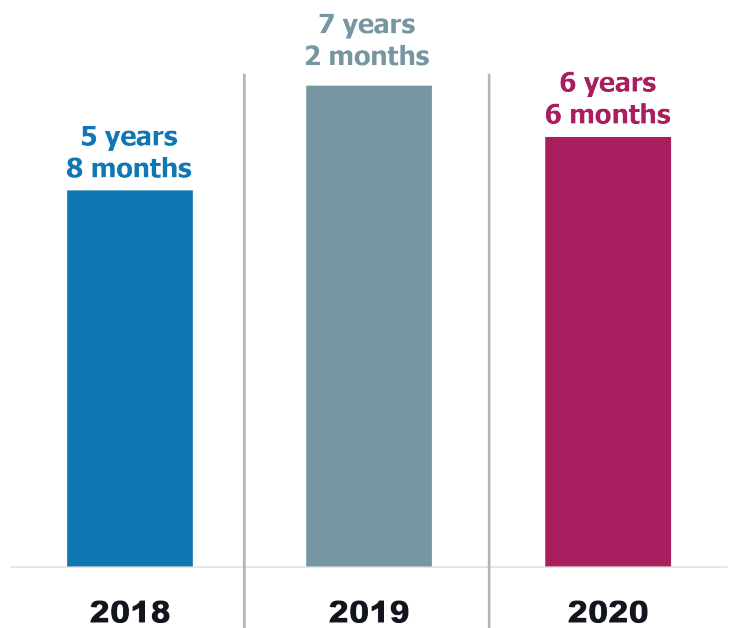
An Expanding Portfolio

What's most telling about CIOs' rising stature is how they're being perceived by LOB. Fifty-nine percent of LOB respondents to the 2020 State of the CIO survey acknowledged the CIOs' role as more digital and innovation focused while 56% said the CIO is more involved in leading digital transformation initiatives compared to their business counterparts—a characterization made by only 47% of LOB respondents in last year's survey. Thirty-two percent of LOB respondents depicted the CIO or top IT executive as a strategic advisor, instrumental in helping identify the business needs and opportunities where technology can provide competitive differentiation—not just as an implementor who spearheads technology recommendations and vendor selection. Fifty-seven percent of IT leaders also view their role as a strategic advisor.

Moreover, nearly three-quarters of LOB respondents (74%) said their IT department now has an expanded charter with oversight beyond traditional IT areas, including cybersecurity (22%),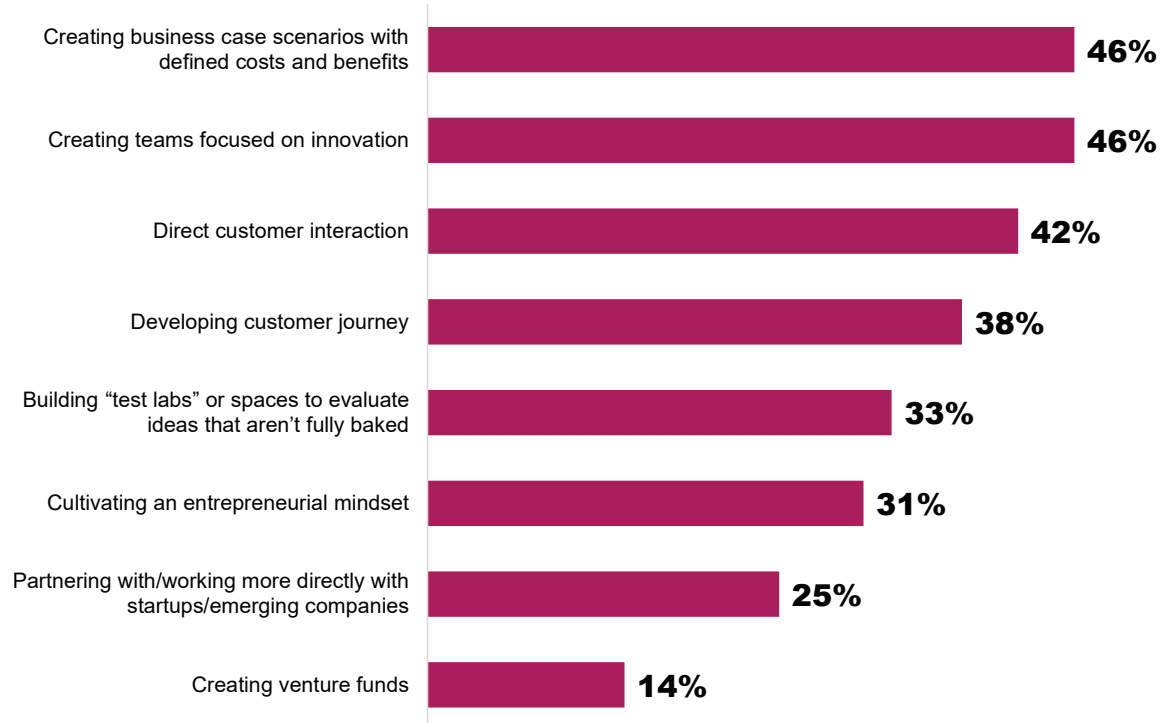 operations (17%), data privacy/compliance (16%), and customer experience (15%). CIOs almost universally acknowledge (95%) their expanded management role; 64% said they now have responsibility for cybersecurity, 49% for data privacy/compliance, and 46% currently have oversight over customer experience. Functional CIOs are most likely to take on additional cybersecurity responsibilities, while transformational CIOs are expanding into oversight of customer experience and strategic CIOs are gravitating towards business development and product development roles.

CIOs' budding leadership stature is also reflected in LOB's take on the CEO's top priorities for tech leaders. Beyond a mandate to upgrade data security to boost corporate resiliency (cited by 24% of LOB respondents), the business ranks say top management expects tech leaders to take the lead on achieving revenue growth goals (22%) and identifying new data-driven business opportunities (22%). CIOs also see revenue generation (28%) and data-driven business opportunities (24%) as central to the CEO mandate. However, they rank those directives behind CEOs' desire for

CEO'S TOP PRIORITIES FOR THE CIO

Priority	
Lead digital business/digital transformation initiatives	39%
Upgrade IT and data security to boost corporate resiliency	31%
Strengthen IT and business collaboration skills	29%
Help reach specific goal for corporate revenue growth	28%
Collaborate with business departments on major customer initiative	27%
Identify new data-driven business opportunities	24%
Reduce or rationalize IT spending	21%
Enable new plan for customer acquisition & retention	17%
Digitize the employee experience	16%
Lead a product innovation effort	16%
Lead merger integration or due diligence on a potential acquisition	14%

INITIATIVES IN PLACE TO BECOME MORE REVENUE-DRIVEN

Creating business case scenarios with defined costs and benefits — **46%**

Creating teams focused on innovation — **46%**

Direct customer interaction — **42%**

Developing customer journey — **38%**

Building "test labs" or spaces to evaluate ideas that aren't fully baked — **33%**

Cultivating an entrepreneurial mindset — **31%**

Partnering with/working more directly with startups/emerging companies — **25%**

Creating venture funds — **14%**

CIO leadership on digital transformation initiatives (39%), security upgrades (31%), and strengthening IT and business collaboration skills (29%).

At the same time, both CIOs and LOB confirmed that technology leaders are taking on additional revenue-generating responsibilities. More than half (57%) of LOB respondents confirmed their top technology leaders managed a team tasked with revenue generation or served as an active member in a revenue-generating group. A substantially higher number of IT executives reported the same, 67% compared to 62% last year. Nevertheless, the emphasis on revenue responsibility is yet another sign of growing acceptance of the CIO as a conventional business leader and a vital member of the enterprise C-suite.

67% OF CIOS SAY THAT THE CREATION OF NEW REVENUE-GENERATING INITIATIVES IS AMONG THEIR JOB RESPONSIBILITIES

To promote its new revenue focus, IT organizations are taking a number of steps to support the creation of new products and services. For one thing, CIOs are coming at their role with a fresh customer-centric focus, expanding their definition of customer to the external community. With that in mind, CIOs are spending much more time on direct customer interaction (42%) and doing their part to help develop the customer journey (38%). CIOs are also embracing a customer-centric mentality for product development. More than half (57%) of respondents are using a design thinking approach to building customer- and employee-facing technologies and applications, whether practiced by internal product design resources or outside consultants.

At the same time, IT organizations are establishing innovation teams (46%) and creating business case scenarios with defined costs and benefits (46%) as part of their effort to expand revenue streams and launch novel products and services to market.

In addition to spending more time with customers, CIOs are also communicating regularly with the board of directors.

CIO & LOB ALIGNMENT ON BUSINESS INITIATIVES

	Heads of IT	LOB
Increase operational efficiency	① 37%	① 37%
Improve customer experience	② 35%	② 25%
Increase cybersecurity protections	③ 33%	④ 21%
Transform existing business processes	④ 30%	18%
Improving profitability	⑤ 24%	③ 23%
Improve employee productivity	21%	④ 21%

This year, 78% of IT executive respondents said they had more contact with the board than ever before, which is similar to last year. Strategic CIOs had an even higher propensity to meet with the board of directors (83%) while functional CIOs were less likely than the average, at 72%.

78% OF HEADS OF IT SAY THAT THEY ARE COMMUNICATING WITH THE BOARD OF DIRECTORS MORE THAN EVER BEFORE

What's On Tap for 2020?

Heading into 2020, increasing operational efficiency registers as the most prominent business initiative, cited by 37% of both IT executives and LOB. Improving customer experience (35%) and increasing cybersecurity protections (33%) are the next two priorities for IT, with customer experience taking the lead over cybersecurity initiatives this year compared to 2019. Companies in the manufacturing (42%) and retail (49%) sectors were more invested in initiatives keyed to boosting efficiency while customer experience took precedence for companies in the government/non-profit/education and retail industries, cited by 45% and 44% respectively. Increasing cybersecurity protections ranked much higher on the year's investment portfolio for manufacturing (43%) companies while appearing to be far less of a priority for retail companies (19%).

On the technology front, data/business analytics was the No. 1 initiative, cited by 37% of IT leaders and 20% of their LOB counterparts. CIOs were also gearing up for investments in security/risk management platforms, cited by 34%, and customer experience technologies (28%), including chatbots and mobile apps. The emphasis on customer experience took a huge leap this year compared to last year when it was cited by only 19% of responding IT leaders and ranked fifth overall in top IT investment priorities.

TECH INITIATIVES DRIVING IT INVESTMENT IN 2020

	Heads of IT	LOB
Data/Business Analytics	① 37%	① 20%
Security/Risk Management	② 34%	① 20%
Customer Experience Technologies (chatbots, mobile apps, etc.)	③ 28%	14%
Machine Learning / Artificial Intelligence (AI) / Robotic Process Automation (RPA)	④ 24%	12%
Application / Legacy Systems Modernization	⑤ 23%	7%
Collaboration Tools & Platforms	21%	10%
Cloud (non-SaaS)	20%	④ 16%
SaaS Migrations	19%	6%
Infrastructure Consolidation/Virtualization	18%	④ 16%
Business Process Management	18%	③ 17%

Beyond data analytics, LOB respondents are seeking to drive investment towards security/risk management technologies (20%) along with business process management (17%) and non-SaaS cloud technologies (16%). Customer experience technologies ranked much further down the list of LOB priorities, cited by only 14% of respondents, and it's also not a primary focus for companies in the manufacturing space, cited by only 20% of respondents.

Against the backdrop of a lot of industry hype, interest in machine learning, artificial intelligence, and robotic process automation (RPA) took a step forward this year. While only

about 14% of firms indicated they were allocating budget to AI technologies last year, almost a quarter of heads of IT (24%) are planning to invest in AI and machine learning, significantly more so among the largest firms (with 10,000-plus employees), at 31%. In contrast, manufacturers were the least apt to plan AI/ML investments, at 18%.

Given the CEO mandate to boost corporate resiliency, cybersecurity initiatives and related technology investments will continue to dominate the IT roadmap into 2020. In addition to CIOs taking responsibility for the enterprise cybersecurity charter (cited by 64% of respondents), IT security represents a significant portion of the overall IT budget—on average about 16%, according to the research. More than half of respondents (54%) have a top security leader—31% have a CISO (Chief Information Security Officer), 16% have a CSO (Chief Security Officer), and 13% have a top security executive other than these titles. CISOs (41%) and top security executives (44%) are more likely to report into the corporate CIO while CSOs tend to have a direct line to the CEO, at 48%.

ON AVERAGE, IT SECURITY REPRESENTS 16% OF THE OVERALL IT BUDGET

IT Holds the Purse Strings

Despite the rise of BYOD (Bring Your Own Device) and shadow IT, the IT department, under the jurisdiction of the CIO, still controls more than half (52%) of the enterprise technology budget, which holds consistent with last year's results. IT continues to consolidate control over tech dollars — on average, IT executives expect IT to maintain oversight of 57% of the technology budget in the next three years.
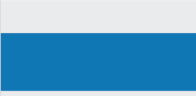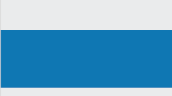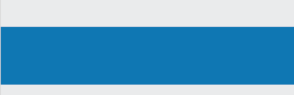
While IT lords over a significant chunk of the enterprise IT budget, the majority (91%) of functional areas outside of IT are earmarking some of their LOB budgets towards technology products and services. Administrative planning, budgeting, and organizing; engineering; and risk compliance are most likely to cede technology budget responsibility to IT. For their part, financial, marketing, operations, sales, and supply chain are likely to share ownership of technology budgets with IT. Human resources is more likely to maintain ownership of its own technology budgets, cited by 37% of respondents.

Even digital business initiatives are likely to be funded out of IT. According to LOB respondents, 45% say that the budget for their digital initiatives is part of the existing IT budget and 16% say it is a separate budget that is still integrated with IT. Only 14% said they have a separate budget for digital business projects that lives outside of the IT department. On the whole, less than half (46%) of LOB respondents currently have budgets specifically earmarked for investments in technology products and services with the number declining slightly over the next three years to 43%.

Data Analytics Remains on Center Stage

With the heightened focus on increasing operational efficiency, improving customer centricity, and increasing cyber security protections, it makes perfect sense that data/business analytics is once again the No. 1 technology initiative for the upcoming year, cited by 37% of respondents. In the 2019 State of the CIO, data/business analytics was also the most-cited technology priority, but it was cited by a smaller number of respondents (30%). Companies in the manufacturing (40%) and retail (49%) sectors were most invested in

DIGITAL BUSINESS BUDGETS HANDLED WITHIN IT

		Enterprise	SMB
Part of existing IT budget	45%	49%	42%
Separate budget, part of IT	16%	19%	13%
Separate budget that lives outside of IT	14%	15%	12%
Don't know	24%	17%	33%

Key 1 2 3	Determine/ Define Business Needs	Research Vendors/ Products	Approve Vendors/ Products	Purchase/ Provide Budgetary Funds	Data Collection	Data Analysis	Data Use (Analysis to Action)
IT	64%	75%	73%	61%	69%	60%	46%
Operations	46%	23%	28%	29%	28%	31%	47%
Marketing	37%	26%	16%	18%	26%	30%	37%
Administration	34%	14%	25%	33%	16%	21%	32%
Data/Analytics Team (standalone)	21%	19%	13%	11%	33%	36%	27%
Other	6%	2%	2%	3%	2%	2%	4%

pursuing data analytics initiatives this year while players in the high-tech space (22%) were the least committed to the technology.

IT is definitely in the driver's seat when it comes to spearheading data analytics initiatives. Sixty-four percent of CIOs said IT takes the lead on determining and defining business needs to advance projects, far more so than functional areas like operations (46%) or marketing (37%), and even beyond input from a dedicated data/analytics team (21%).

IT is also clearly in charge of most of the other stages in a data analytics initiative, including researching vendors and products, cited by 75% of respondents; approval of vendors and products (73%); purchase and budgetary discretion (61%); and data collection (69%). Sixty percent of respondents confirmed that IT is in charge of data analysis, nearly double that of dedicated data and analytics teams, at 36%. The only area where IT isn't the dominant player in data analytics initiatives is turning data analysis into potential action. There, operations is taking the lead, cited by 47% of respondents, although IT comes in a close second, at 46%.

Even LOB specific respondents ceded responsibility for data analytics initiatives to IT's domain. LOB respondents reported that IT handles most data analytics-related functions, including determining and defining business needs; researching vendors and products; data collection; and data analytics. The two exceptions LOB had for IT leading the way were in purchasing and budgetary funds, handled by |administrative functions (33%), and turning data analysis into action (29%), spearhead by operations and similar to what was reported by responding IT executives.

95% OF CIOS SAY THAT THEIR ROLE IS EXPANDING BEYOND TRADITIONAL IT RESPONSIBILITIES
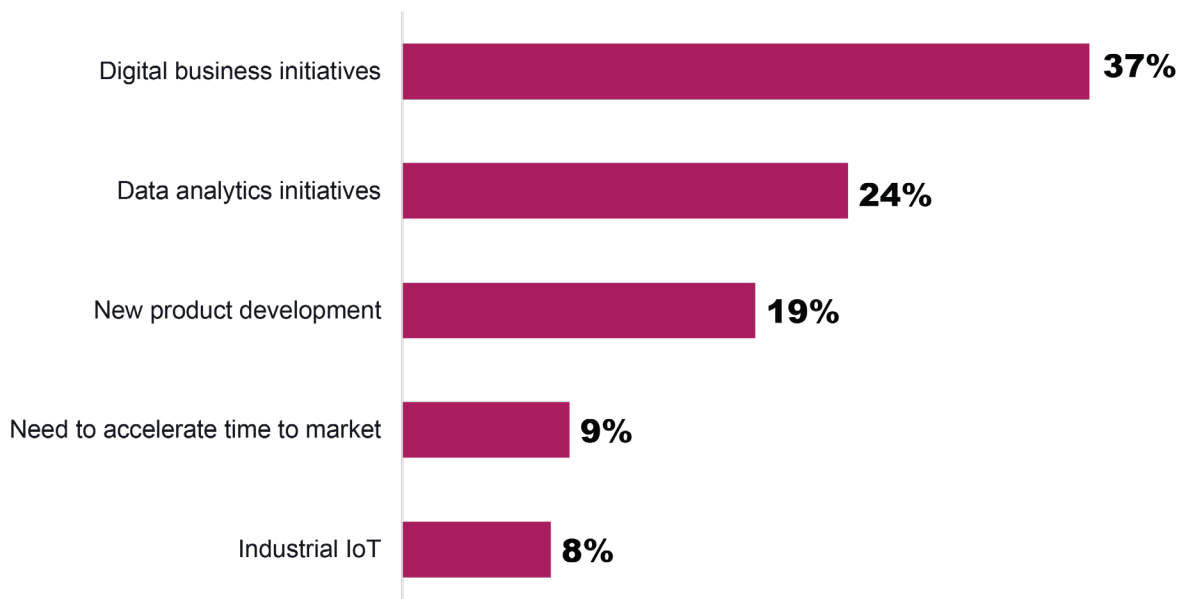
IT/OT Convergence Gets Real

As digital business initiatives heat up and spread across all areas of the business, there's an increasing need for more integration and a higher degree of collaboration between Information Technology (IT) and Operational Technology (OT). Historically, core enterprise and operational systems were procured, deployed, and managed separately, by different organizations that have historically not collaborated consistently, if at all, with little data sharing between platforms.

The disconnect led to a spread of siloed systems and data repositories that must come together to meet the needs of new digital initiatives—another area where IT appears to be leading the charge. In fact, 37% of heads of IT confirmed that the growth of digital business initiatives is driving the need for IT/OT convergence. Other factors prompting a need to replace the existing silo approach with a converged IT/OT strategy are data analytics initiatives (24%), new product development (19%), and the need to accelerate time to market (9%). The emerging world of the Industrial Internet of Things (IIoT) was a factor for 8% of respondents, primarily those in the manufacturing (16%) and government/non-profit/education (10%) sectors.
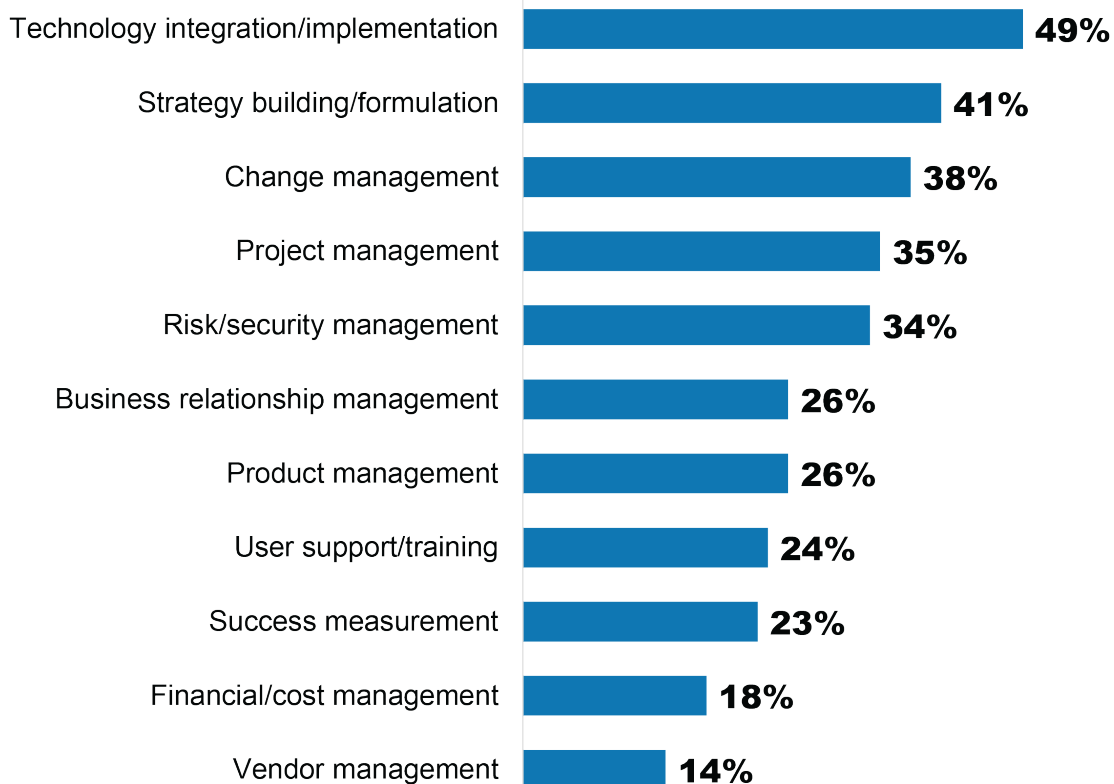
88% OF CIOS SAY THEY ARE INVOLVED IN HELPING TO FOSTER THE RELATIONSHIP BETWEEN IT AND OT DUE TO IT/OT CONVERGENCE

The momentum behind digital business initiatives is already having an impact on building synergies between the IT and the operational functions. Eighty-nine percent of IT leaders responding to the survey reported increased collaboration between IT and operational technology groups; only 11% reported little collaboration or none at all. CIOs, in particular, are helping to foster the new relationship: Eighty-eight percent of respondents confirmed the CIO is involved in building a relationship between the IT and operations groups as part of an IT/OT convergence strategy. Once again, CIOs in manufacturing sector were much more likely to be at the center of IT/OT convergence efforts, cited by 92%.

DRIVERS BEHIND IT/OT CONVERGENCE

Driver	Percentage
Digital business initiatives	37%
Data analytics initiatives	24%
New product development	19%
Need to accelerate time to market	9%
Industrial IoT	8%

SKILLS NEEDED TO SUPPORT DIGITAL BUSINESS INITIATIVES

Skill	Percentage
Technology integration/implementation	49%
Strategy building/formulation	41%
Change management	38%
Project management	35%
Risk/security management	34%
Business relationship management	26%
Product management	26%
User support/training	24%
Success measurement	23%
Financial/cost management	18%
Vendor management	14%

The Same Old Challenges Remain

While 2019 was definitely a good year for CIOs and the 2020 horizon looks bright, many longstanding issues continue to present challenges. Security remains an on-going problem given the complexity and frenetic pace of a changing landscape, not to mention, the high-stakes risk to brand stature, customer satisfaction, and the bottom line if companies don't get it right. With more CIOs taking ownership of cybersecurity and other functional and revenue-generating areas as part of their expanding charter, the balancing act—which has been a perennial issue for CIOs for years—continues unabated. In fact, 77% of responding IT heads said it was challenging or somewhat challenging to strike the right balance between business innovation and operational excellence, with functional CIOs struggling the most, at 83%.

With the heightened emphasis on digital business initiatives and the new technologies that go along with it, finding talent with the right skills in areas like artificial intelligence, cloud, analytics, and cyber security continues to be a pressing hurdle for IT organizations. According to heads of IT respondents, cyber security skills are the most elusive, cited by 39%, followed by data science/analytics (35%), AI/machine learning/RPA (31%). High-tech (37%) and services (42%) companies had the most pressing need for intelligence capabilities while manufacturers (23%) and government/non-profit/education sectors (27%) were more likely to anticipate trouble finding cloud services/integration skills. Of all industry segments, manufacturers were hungry for talent versed in IoT skills like connected devices and sensors.

To support on-going digital business initiatives, technology integration and implementation skills were the most sought after, cited by almost half of respondents (49%). Also wanted were soft skills in areas like strategy building (including mapping out a digital business plan), cited by 41% of respondents, change management (38%), and project management (35%).

77% OF HEADS OF IT SAY IT IS CHALLENGING TO FIND THE RIGHT BALANCE BETWEEN BUSINESS INNOVATION AND OPERATIONAL EXCELLENCE

Aside from bringing in the right talent, CIOs can be looking for help in other ways. The majority of IT leaders canvassed (89%) believe the CIO increasingly needs to rely on trusted advisors to help navigate emerging technologies, processes and methodologies. In addition, more than half (52%) said they look to strategic vendors, peers (42%), channel partners (33%), and consultants (32%) for assistance evaluating tools and solutions during the technology purchase process.

Even against a backdrop of mounting complexity, CIOs are heading into 2020 well positioned to drive business strategy and take the lead on innovation. With technology at the heart of most new initiatives and the key to operational excellence, CIOs are no longer fighting for a place at the executive table—they are actively being recognized for leadership that is essential for success in the modern digital era.

89% OF HEADS OF IT SAY THEY INCREASINGLY NEED TO RELY ON TRUSTED ADVISORS TO HELP NAVIGATE NEW TECHNOLOGIES, PROCESSES, AND METHODOLOGIES

ABOUT THE 2020 STATE OF THE CIO

CIO's 19th annual State of the CIO survey was conducted with the objective of understanding how the role of the CIO continues to evolve in today's business climate and to help define the CIO agenda for 2020. This definitive benchmarking survey measures the role of the CIO in the organization, budgetary responsibilities, business and leadership challenges, and the key skills needed for the job today. The survey was fielded via email invitations to IDG B2B brand visitors (CIO, Computerworld, CSO, InfoWorld and Network World). The survey has 679 heads of IT respondents – 53% of which are from enterprise organizations (1,000+ employees). The top represented industries are government/non-profit (15%), manufacturing (14%), technology (13%), financial services (11%), healthcare (10%), services (legal, consulting, real estates) (9%), and retail, wholesale & distribution (6%). Key job titles we see are - CIO (31%), director/managing director (20%), CIO and EVP/SVP/VP (17%). We also survey 250 line of business respondents to make sure we obtain the opinions of CIOs business counterparts whose main functions are operations (23%), admin/corporate management (22%), marketing (16%), finance/accounting (16%), sales (11%), human resources (6%), and engineering/R&D (5%).

EXAMINING THE **MARKETPLACE**

Research is an invaluable way for marketers to better understand customers and prospects, with the goal of building quality connections. At IDG this is one way we are focused on building bridges between tech buyers and sellers. Our 1st party relationships with the most important tech buyers and influencers around the world, allows us to apply value across our customers marketing stack. Our research portfolio explores our audiences' perspectives and challenges around specific technologies – from analytics and cloud, to IoT and security – and examines the changing roles within the IT purchase process, arming tech marketers with the information they need to identify opportunities.

To see what research is available, visit idg.com/tools-for-marketers. For a presentation of full results from any of these studies, contact your IDG sales executive or go to idg.com/contact-us.

BUYING PROCESS

Each year we take a deep dive into the enterprise IT purchase process to learn more about who is involved and who influences decision-making, what sources purchasers rely on to keep up to date with technology — and throughout the purchase process — and how they want to engage with the vendors they are working with.

- **Role & Influence of the Technology Decision-Maker**
  This survey is conducted to gain insight into the evolving role and influence of IT decision-makers in today's corporations. The research identifies key decision-makers and examines their involvement during each stage of the tech purchase process and the primary influences and information sources they rely.

- **Customer Engagement**
  This survey examines the role content consumption plays in the purchase process for major technology products and services, and provides insights for tech marketers to map their engagement touch-points to customers' information needs. The survey looks at how a wide variety of content types are consumed, discussed and shared throughout the stages of the tech purchase process and how that maps to marketing and sales alignment.

TECHNOLOGY INSIGHTS

Each year we explore the technologies that are top of mind among our audiences to understand the business challenges, drivers, and adoption within the enterprise. These research studies are designed to help IT marketers understand what their customers are focused on and where the market is moving.

- **Role & Priority Studies**
  CIO Tech Poll: Economic Outlook
  CIO Tech Poll: Tech Priorities
  Cyber Security Watch Survey
  Global Information Security Survey
  State of the CIO
  Role of the Developer
  State of the Network

- **Technology Specific Studies**
  Big Data & Analytics
  Cloud Computing
  Digital Business
  Security Priorities

CUSTOMER JOURNEY POSTER

Want to know about what content drives IT decision-makers and fuels their engagement during the IT purchase process? IDG's Customer Journey poster and vertical white papers serve as your content marketing guide to strategically reach your target customers. **Find it all on www.idg.com**.

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