As the lines between technology and business blur, CIOs are stepping up their strategy role, taking ownership of new disciplines and serving as a key force behind digital innovation.

BY BETH STACKPOLE

CIOS GET STRATEGIC

SARAH NAQVI spent the greater part of her career at HMSHost International, a purveyor of food and beverage services for travelers, starting out in application development as a programmer analyst and working her way up the ranks to become CIO in 2013. >>

"About two years into our more formalized digital strategy, there was recognition by the business that **technology should be used to its full capacity** — not just for operational support, but as an enabler for business transformation."

–**SARAH NAQVI**
SVP AND CIO, HMSHOST

The early days of Naqvi's CIO tenure was fairly traditional, focused on shoring up infrastructure, implementing enterprise systems, and ensuring operations were up to snuff. As HMSHost, a $3.3 billion company, began to embark on its digital roadmap, however, Naqvi's CIO role took a new turn. Named executive vice president with a direct report to the CEO, Naqvi took ownership of critical business strategy in areas such as digital innovation and customer experience.

"About two years into our more formalized digital strategy, there was recognition by the business that technology should be used to its full capacity — not just for operational support, but as an enabler for business transformation," Naqvi explains. "That's when the focus of my role shifted from making sure operational systems were working efficiently to allowing us to use technology for strategic advantage and for moving the organization forward."

The strategist emerges

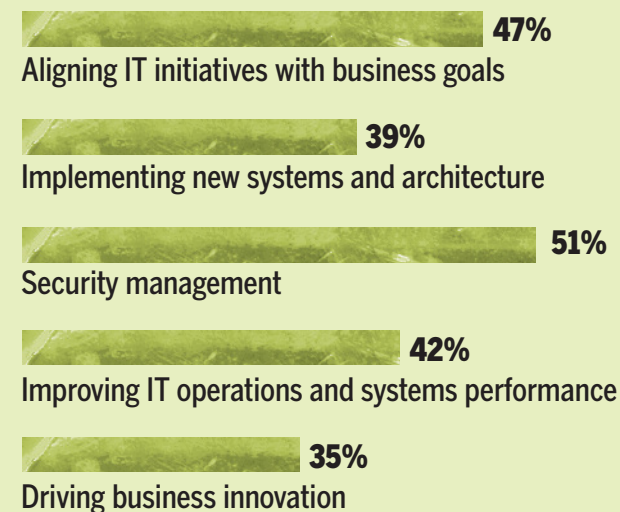Naqvi, like many CIOs on the front lines of digital transformation, is in the throes of a major reinvention, evolving from steward-ing technology as a key enabler of the business to strategizing where and how technology becomes the defining pillar of the business. According to CIO's 2019 State of the CIO research, which surveyed 683 IT leaders, 67 percent of respondents are devoting time to business strategist activities to help drive innovation, create new business models, and grow reve-nue opportunities. In comparison, only 53 percent of IT executives responding to last year's survey spent significant time on business strategy activities, indicating an increased reliance on CIOs as digital business matures into next-phase implementations.

More so than in 2018, today's CIO agenda is consumed by strategic work like driving business
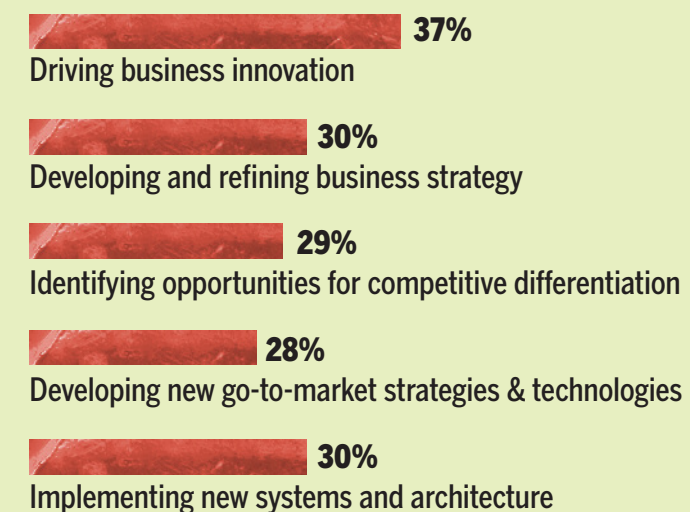
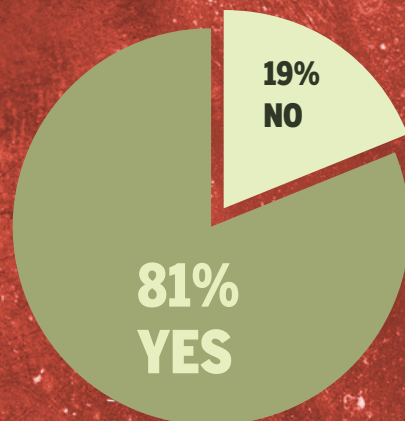## THE EVOLVING CIO ROLE

How do you spend your time currently?

47%	Aligning IT initiatives with business goals
39%	Implementing new systems and architecture
51%	Security management
42%	Improving IT operations and systems performance
35%	Driving business innovation

(Multiple responses allowed)

What will you spend more time on in the next three years?

37%	Driving business innovation
30%	Developing and refining business strategy
29%	Identifying opportunities for competitive differentiation
28%	Developing new go-to-market strategies & technologies
30%	Implementing new systems and architecture

SOURCE: 2019 STATE OF THE CIO

TAKING ON MORE

Is your role in the organization expanding?

19% NO

81% YES

In what areas are you adding new responsibilities?

- Data analytics **64%**
- Operations **43%**
- Business development **38%**
- Customer service **32%**
- Product development **29%**
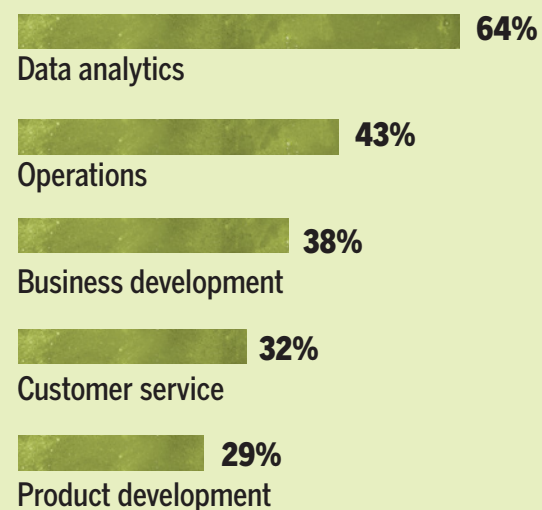
(Multiple responses allowed)
SOURCE: 2019 STATE OF THE CIO

innovation (35% compared with 28% last year) and developing and refining business strategy (23% compared with 21% in 2018). IT leaders are more actively identifying opportunities for competitive differentiation (21%), crafting new go-to-market strategies and technologies (19%), and immersing themselves in market trends and customer requirements to help identify new commercial opportunities (16%). And this move toward business strategist appears to be more than a temporary shift: The 2019 State of the CIO research found that 77 percent of responding IT leaders plan to devote more time to business strategy over the next three years compared with transformational work (74%) such as implementing new systems and architectures or functional responsibilities (58%) like security management or cost control initiatives.

Randy Gaboriault, CIO and senior vice president of innovation and strategic development at Christiana Care Health System, describes the shift as an ongoing evolution of the "CIO-plus" role. CIOs are well positioned to lead strategic transformation in the workplace, Gaboriault contends, as the ingredients to produce a product or service move from analog or physical components to digital elements. Gaboriault is not alone in this thinking — 88 percent of respondents to the 2019 State of the CIO survey agree that CIOs are more involved in leading digital transformation efforts than their business counterparts, and 91 percent agree that the CIO role is becoming more digital- and innovation-focused.

"The role of CIO has changed from strategy participant to strategy enabler — a deep influencer if not strategy shaper," Gaboriault explains. "There's a delta between conceptual strategic thinking and
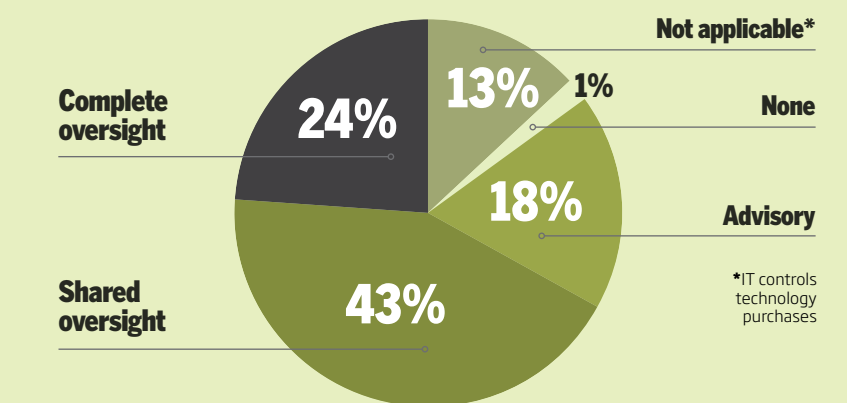
WORKING TOGETHER

When other departments use their budgets for technology purchases, what role does IT play in those projects?

- Complete oversight **24%**
- Not applicable* **13%**
- None **1%**
- Advisory **18%**
- Shared oversight **43%**

*IT controls technology purchases

(Due to rounding, numbers may not add up to 100%)

SOURCE: 2019 STATE OF THE CIO

strategic planning as a process, and today, there is a recognition of my role having accountability for both."

The strategist agenda

As part of their strategist agenda, CIOs are playing a central role in creating revenue-generating initiatives, including new products and services — a reality cited by 62 percent of survey respondents. Those CIOs

> "**Technology has always been in the DNA of our business** – there isn't a problem or service we offer where it isn't the backbone."
>
> – **CAROL JUEL**, CIO, SYNCHRONY FINANCIAL

either managing or participating in such ventures are stretching their wings by immersing themselves in understanding customer needs (55%), creating teams focused on innovation (47%), and creating business-case scenarios with defined costs and benefits (40%), the 2019 State of the CIO survey found.

A smaller number of CIOs are going so far as to build test labs or spaces to evaluate ideas that haven't fully come together (33%) and cultivating an entrepreneurial spirit (32%). Carol Juel, CIO of Synchrony Financial, is one of those leaders investing time and resources in the test labs approach. After being spun out of GE in 2014,

the consumer financial services and private-label credit company rebuilt its technology foundation from the ground up to support its digital transformation journey — including everything from cloud to security infrastructure. At the same time, it established an innovation framework to help the company and its partners bring new products and services to market faster.
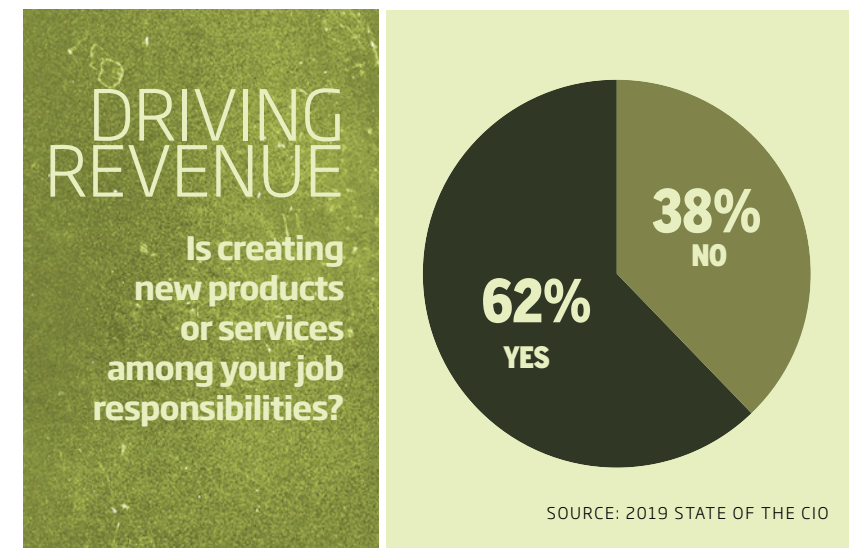
Beyond the bounds

Along with her most active collaboration partner, Synchrony's chief strategy officer, Juel spends a good part of her time mapping out opportunities to harness the robust technology platform to drive innovation and create new revenue streams. A key piece of Synchrony's framework is a network of four innovation labs in the United States and India, which, in collaboration with Synchrony's retail and merchant partners, ideate new products and experiences using agile processes and put advanced technologies such as chatbots and predictive modeling to work in solving real-world customer problems. "Technology has always been in the DNA of our business — there isn't a problem or service we offer where it isn't the backbone," Juel says.

Along with its focus on revenue generation, the CIO role is expanding to include new areas of responsibility, a trend cited by 81 percent of State of the CIO respondents. Today's CIO strategists are build-

ing out their portfolios to include oversight of new domains such as data analytics (64%), operations (43%), business development (38%), and customer service (32%), the research found.

Carhartt CIO John Hill says his organization now plays a role in demand planning all the way

DRIVING REVENUE

Is creating new products or services among your job responsibilities?

62% YES

38% NO

SOURCE: 2019 STATE OF THE CIO

through supply chain planning in addition to a traditional oversight role over IT and technology initiatives. For example, as part of the company's ERP migration, Hill now oversees all the various line-of-business functions involved

in the initiative, and this year, he's been given responsibility for [overhauling processes associated with improving customer service levels](#) even though it's outside the bounds of his direct jurisdiction.

"My first role is to be a member of the senior leadership team and my second functional responsibility is for technology and planning," says Hill, who is also senior vice president of business planning at Carhartt. "More CIOs are being asked to take the lead on initiatives that really aren't specific to technology because more and more, people don't make a distinction between business and IT."

Driving business value

Gaboriault, who joined Christiana Care Health System in 2010, cemented his strategy role after spending years shaping debate focused not only on technology issues like moving to the cloud or when to upgrade a CRM system, but also on corporate soul searching about market disruption in the health care space. Gaboriault says he made it a mission to always ask the tough questions, whether about competitive market position or pushing the organization to pursue breakthrough objectives, rather than resorting to business as usual.

Gaboriault also advocates for gaining a deeper understanding of the customer by using tools like [journey mapping](#). In that way, he says, IT can understand what it's like to live life as a diabetic, for example, which is instrumental for coming up with new digital care pathways that can help patients meet wellness goals. "In the past, a lot of that would be driven from a clinical perspective and IT would have been pulled along on strategy," he explains. "IT can now serve as the analog process interrupter on behalf of the customer, introducing technology to get it done."

For Shannon Gath, vice president and head of technology at AMAG Pharmaceuticals, centralizing the technology budget and establishing a formal governance process and cross-functional committee has been instrumental to increasing IT's business strategist clout. The centralized budget structure gives the entire organization transparency into where IT spend is allocated, while a formalized governance process means every request is evaluated using the same set of criteria.

Rather than make this process overly complex, Gath has boiled down this piece of governance to something she equates to a one-page PowerPoint slide. Project sponsors are asked about the problem they are trying to solve, the direct value to the organization, the major risks

FORGING NEW INITIATIVES
What is your organization doing to become more revenue-driven?

Learning about customer needs	**55%**
Creating teams focused on **innovation**	**47%**
Creating **business-case** scenarios with defined costs and benefits	**40%**
Building **test labs** or spaces to evaluate ideas that aren't fully baked	**33%**
Cultivating an entrepreneurial spirit	**32%**
Providing space and time to cultivate **creativity**	**25%**
Developing customer **personas**	**25%**

(Multiple responses allowed)

SOURCE: 2019 STATE OF THE CIO

"**More CIOs are being asked to take the lead on initiatives that really aren't specific to technology** because more and more, people don't make a distinction between business and IT."

–**JOHN HILL**,
CIO AND SVP, BUSINESS PLANNING, CARHARTT

associated with not getting funding, and the actual cost. "It's really forced every investment to be an apples-to-apples comparison ... and created a value-centric conversation so IT isn't the bad guy anymore," Gath explains. "It helps everyone get on the same page with how their investments rank against others, how we make tradeoff decisions, and how we execute on that discipline."

That might be so, but Gath and AMAG Pharmaceuticals are in the minority when it comes to centralizing technology budgets. Based on this year's State of the CIO research, only 11 percent of responding IT organizations hold

100 percent of the technology purse strings; on average, IT controls about 51 percent of the total technology investment today, and this is expected to continue to inch up to 55 percent over the next three years. Marketing remains the most prominent functional area in command of its own IT budget (42%), followed by operations (37%), and finance and accounting (35%).

Nevertheless, Gath says the governance process for allocating centralized IT budget dollars has been very effective. The process, coupled with a just-released multiyear enterprise strategy that integrates a business and technology road-

map, has done a lot to highlight the IT organization's strategist chops. "Because the technology organization works across the entire organization, we see everything and know where there is opportunity that would benefit everyone," Gath explains. "We end up forcing the business strategy to be better defined and force a lot of leaders in the organization to think more strategically."

Agents of change

Much like Gath, Brian LeClaire, senior vice president and CIO at Humana, also sees his charter as a change agent who must advocate for technology investments that will drive value for the business. LeClaire, who's been at this helm for the past several years, says there are key signs that an organization is ready to embrace the CIO as a business strategist, starting with the big one: a direct report into the

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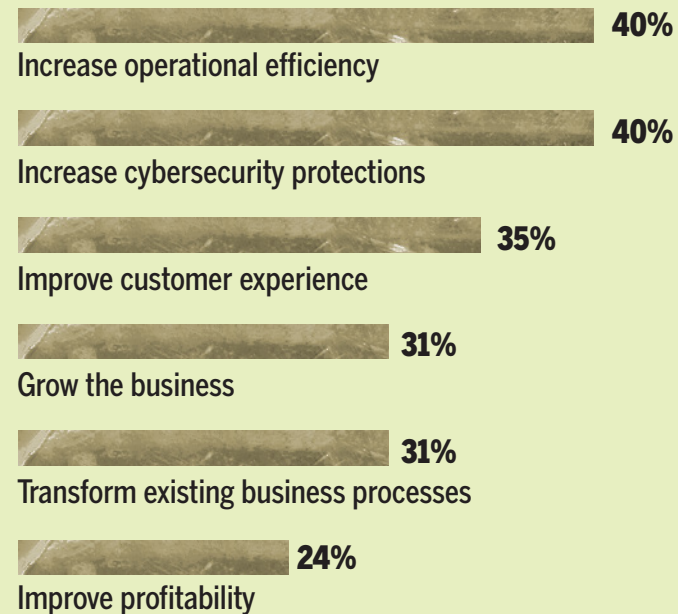
– **SHANNON GATH**
VP AND HEAD OF TECHNOLOGY,
AMAG PHARMACEUTICALS

CEO. Still, fewer than half (43%) of responding IT leaders to the 2019 State of the CIO survey said they report directly into the CEO.

To navigate the CIO evolution, current IT leaders need to take stock of where they are. If their focus is on cost and transactional activity, they remain in the era of operational efficiency where they will most likely be viewed by lines of business as an order taker,
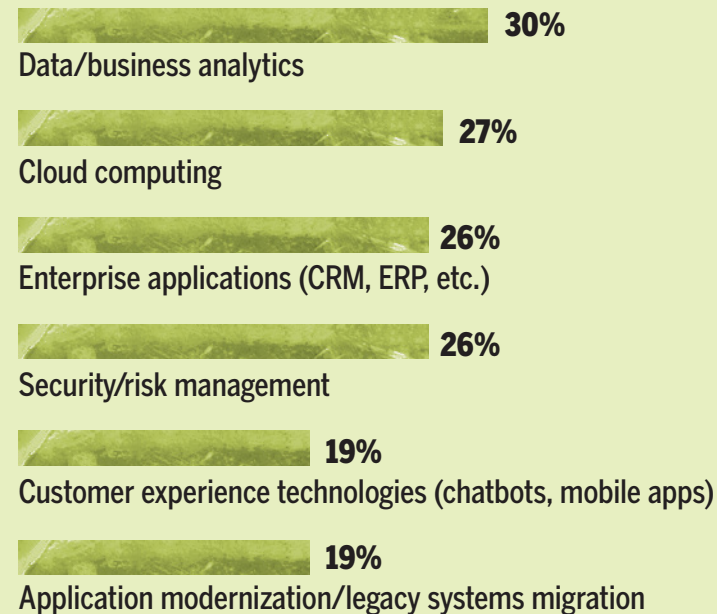
WHAT IS DRIVING IT INVESTMENTS?

Top business initiatives

Increase operational efficiency **40%**

Increase cybersecurity protections **40%**

Improve customer experience **35%**

Grow the business **31%**

Transform existing business processes **31%**

Improve profitability **24%**

(Multiple responses allowed)

Top technology initiatives

Data/business analytics **30%**

Cloud computing **27%**

Enterprise applications (CRM, ERP, etc.) **26%**

Security/risk management **26%**

Customer experience technologies (chatbots, mobile apps) **19%**

Application modernization/legacy systems migration **19%**

SOURCE: 2019 STATE OF THE CIO

LeClaire says. He describes the next level up as a solutions focus with an emphasis on impactful investments intended to grow the business in the context of 24- to 36-month strategic cycles. The sweet spot, LeClaire contends, is the era of business value where technology becomes the product or service, establishing the CIO as a predominant business leader.

"You have to be thinking about the products and services that will make the business successful in the marketplace," LeClaire says. "The warning sign that you're not there yet is when you're thinking about the product and services and then the technology that's required. There's a difference."

While IT leaders are fairly confident they can measure up to these new benchmarks, particularly when it comes to digital transformation and innovating business strategy, many of their line of business (LOB) counterparts are not fully convinced. According to the 2019 State of the CIO survey, 32 percent of IT leaders said IT is essential for helping the various functions identify which parts of the business could be transformed through the use of digital technologies while only 14 percent of LOB respondents said the same. Twenty-six percent of IT leaders view the IT organization's primary contribution as providing technology guidance for accelerating digital business compared with 19 percent of LOB.

LeClaire underscores that it's the partnership between IT and LOB that ultimately dictates a successful technology-driven strategy in service of specific business outcomes. "I'm not being tapped to talk about low-cost delivery of a solution. I'm being tapped to envision collaboratively with the business a set of strategic technology capabilities that will allow us to achieve our bold vision," he says.

Top initiatives taking shape

Much like Humana has, companies continue to make progress on IT and LOB collaboration: Sixty-seven percent of IT leaders report that IT and LOB more frequently share oversight on projects, although that is down slightly from 71 percent in 2018.

Even when LOB and departments fund technology product or service purchases from their

64% of IT leaders say security strategy is tightly integrated as part of the overall IT roadmap, and **82%** expect the same three years from now.

own budgets, IT continues to play a critical role. In this year's State of the CIO survey, 43 percent of IT leaders said shared oversight between LOB and IT is the norm at their organizations while 24 percent said IT retains complete project oversight. Just 18 percent said IT plays an advisory role, only providing input upon request.

When it comes to technology guidance, more than half of IT leaders (59%) characterize themselves as a strategic adviser, proactively identifying business needs and making specific provider recommendations. Twenty-three percent view themselves as a consultant, advising on both business need and technology choices. IT's long-standing heritage as the department of "no" is slowly abating — only 4 per-

cent of IT leaders view themselves as the cautious voice of reason, although among LOB respondents, that number is still much higher (18%), the survey found.

For 38 percent of IT leaders, leading digital transformation and digital business efforts is among the top three priorities their CEOs have set out for them this year — up from 35 percent in 2018. Also topping the list of CEO priorities for tech leaders is upgrading IT and data security (32%) and identifying new data-driven business opportunities (30%). CEOs are also all-in on the need for increasing IT/LOB collaboration, cited as a top priority by 28 percent of respondents, and IT leadership's active involvement in hitting goals for corporate revenue growth (25%).

Stepping up security

As with last year, organizations are attacking the security problem by eliminating silos and elevating the security role. Sixty-four percent of IT leaders said security strategy is tightly integrated as part of the overall IT roadmap and 82 percent expect the same three years from now, the survey found. Organizations are also bringing in the big management guns: Thirty-one percent of IT leaders said their organizations now have a CISO and 13 percent have appointed a CSO. Most CSOs (73%) and CISOs (65%) report to the CEO or corporate CIO.

At Humana, the CISO reports directly to the CIO to ensure cybersecurity is fully infused into IT

strategy, but the integration needs to go even further than that, contends LeClaire. Four years ago, the team took stock of the company's cybersecurity capabilities and came up with a plan to evolve its maturity level to ensure there is accountability across the entire organization — not just in IT. "Security has to be embraced by everyone in the organization, right from the beginning of envisioning processes, products and services … so it's not bolted on as an afterthought," he explains. "Security has to make the experience secure while taking security out of the experience. You shouldn't even know security is there."

At the same time, Humana has stepped up its training and communications efforts around cyber-

security so all employees have familiarity with its importance as well as associated processes. "Cybersecurity has to begin with each and every one of our associates — they're our first line of defense," LeClaire says.

Investing in technology

While security/risk management was cited by 26 percent of IT leaders in the 2019 State of CIO survey as an important IT initiative driving technology investment, it took a back seat this year to other areas. Thirty percent of IT leaders said data analytics would drive the most IT investment, above cloud computing (27%) and enterprise applications like ERP or CRM (26%). Increasing operational efficiency tied with cybersecurity protections as the top business initiatives driving IT investment, cited by 40 percent of IT leaders, with the desire to bol-

ster customer experience (35%) and grow the business (31%) also impacting IT expenditures.

For Bayer Crop Science, which acquired Monsanto earlier this year, the digital business strategy is rooted in data analytics and data science. Jim Swanson, senior vice president, CIO, and head of digital transformation for the integrated crop solution division, is spearheading the drive, which includes efforts to democratize data and make it available across integrated enterprise platforms as well as

embedding analytics-driven decision models into every process in an effort to turn data into actionable insights. Under Swanson's direction, Bayer Corp Science researchers, business users and scientists will have digital tools that predict outcomes, from how and when to plant crops to how to increase yields. "We are re-educating the organization holistically around data and digital," Swanson explains.

Just consider the new world of data science applied to the develop-

ment of seeds. Bayer Crop Science plants over 750 million seeds in its research, each with GPS coordinates that track everything from water absorption to root structure. Through embedded models and machine learning, the team can now run billions of simulations to home in on the best combination before ever planting a single seed in the ground, he says. Other areas where machine learning-empowered data analytics are helping Bayer Crop Science blaze new ground include

DUTY CALLS

What are the CEO's top priorities for you in the coming year?

- **38%** Lead digital business/digital transformation initiatives
- **32%** Upgrade IT and data security to boost corporate resiliency
- **30%** Identify new data-driven business opportunities
- **28%** Collaborate with business leaders on major customer initiatives
- **25%** Help reach specific goals for corporate revenue growth

(Multiple responses allowed)   SOURCE: 2019 STATE OF THE CIO

"You have to be thinking about the products and services that will make the business successful in the marketplace."

—BRIAN LECLAIRE
SVP AND CIO, HUMANA

figuring out the right safety stock for particular offerings, which customers are likely to churn, and how to reduce its carbon footprint and costs via streamlined logistics.

The talent challenge

The biggest challenge to realizing its data analytics-driven vision is not the technology, Swanson says — it's attracting the right talent. It's a problem many 2019 State of the CIO respondents are having. Forty-two percent of responding IT leaders report they anticipate having difficulty attracting data science and analytics talent, while 33 percent expect to have a hard time finding security and risk management expertise and 31 percent say they will struggle to find AI and machine learning professionals.

As Bayer Crop Science retools as a data-driven enterprise, it's looking for talent in places where that talent congregates, including the open source and data science communities, Swanson says. The company is also investing in training, including establishing a curriculum for data science as well as publishing a ladder of required skills so interested employees in other areas like product management know what it takes to advance themselves into the role.

Finding and retaining the right talent to execute on the digital business strategy is what keeps Michael Mathias up at night, says the CIO and executive vice president of customer experience at Blue Shield of California Life & Health Insurance. While the company is headquartered in the heart of Silicon Valley with easy access to a fertile pool of machine learning and data interoperability experts, it faces stiff competition from the big-name tech giants. Just recently, for example, the company's HR department ran a search for a data architect at the same time 27 other companies in the local area were looking for similar talent, Mathias says.

"In the end, technology is not what I want my legacy to be – **I want my legacy to be helping develop the next-generation of business leaders,** not technology leaders."

–**MICHAEL MATHIAS**,
CIO AND EVP OF CUSTOMER EXPERIENCE,
BLUE SHIELD OF CALIFORNIA LIFE & HEALTH INSURANCE

"The technology, we can figure out — it's not overly complicated — but finding the right people for digital is hard," Mathias says. "We're competing with some monster companies here, and we've lost good engineers in network infrastructure to others."

To fill in the gaps, Blue Shield of California Life & Health Insurance is aligning with external partners while debating about setting up sites in other areas to promote geographic diversity. At the same time, it is putting a considerable amount of time and money into retraining its existing talent in the areas it's most lacking.

For Mathias, helping up-and-coming technologists recalibrate their skills is one of the more heartening aspects of the evolution of the CIO role. "The ability to give more people the opportunity to grow beyond the technology ranks is most rewarding," says Mathias, who says he's seen former staffers go off into a business role. "In the end, technology is not what I want my legacy to be — I want my legacy to be helping develop the next-generation of business leaders, not technology leaders." ♦

Beth Stackpole is a regular contributor to CIO.com.