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VOLUME XIV

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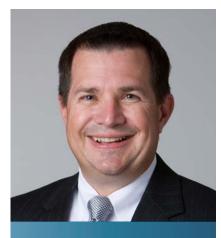
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Foreword

by Brian Christensen and Jonathan Wyatt

Digital Transformation: A Golden Opportunity for Internal Audit

Digital transformation has permeated every industry. Businesses embarking on digitally transforming processes and operations are not just embracing technological advancements. They are also opening the door to more creativity, ingenuity and innovation. They aim to get ahead of the curve and even perhaps find a way to upend their entire industry.

While digital transformation presents businesses with new opportunities, it also creates risks. The most profound risk is innovative disruption — namely, the threat of newer "born digital" companies grabbing current customers and market share thanks to their ability to transform digitally in an agile manner. In many organizations, that risk is compounded by resistance to change that may impede digital transformation initiatives.

Organizations must be wary of their potential inability to respond to digital disruption and drive change in four key areas: improving the quality of customer engagement; digitizing a product or service and thereby disrupting an existing business model; making better, data-driven decisions in near real time; and improving operational performance.

Organizations undergoing digital transformation typically have multiple initiatives cutting across some or all of these areas simultaneously. Their journey is often very complicated, arduous and long, and thus, difficult to manage. Ultimately, only one business function is inherently capable of serving as an objective guide to the board and executive management as they seek to understand, prioritize and manage the risks that stem from digital transformation: internal audit.

BRIAN CHRISTENSEN
*Protiviti Executive Vice President
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The era of digitalization is a golden opportunity for internal auditors. We are poised to assume a more prominent and visible role in helping our organizations implement strategies that align with the rising expectations of digital transformation. For years, many of us in the internal audit profession have been looking to become a value-adding, strategic partner to the business. Now is our moment.

With our enterprisewide perspective, our ability to apply risk management thinking to any challenge, and our talent for proactively seeking out control gaps and designing corrective actions, internal auditors are uniquely suited to help management and the board review and assess digital initiatives and the risks and opportunities they present. Our carte blanche access into all business units and our deep insights around risks and controls enable us to see the big picture of risk for any digital project.

And now, our widening embrace of advanced technology in the internal audit function,

including, but not limited to, data analytics and robotics, is allowing us to become more forward-looking and less reactive in our own work. Technology gives us the ability to look at the business in new ways and at many levels.

By applying our expertise and tools where needed, internal auditors can help our organizations to confirm they have the right controls, processes, technologies, skills, competencies and capabilities in place to facilitate and support the digital transformation they aim to realize. We can also deliver data-driven insights to leadership that can help them make smarter and faster decisions, even in the face of rapid and continuous disruption. Armed with well-placed confidence and relevant knowledge, the organizations we serve will be better equipped to overcome three major obstacles that can derail the digital transformation journey: inertia, fear of change and lack of focus.

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Introduction

The reason why it is so difficult for existing firms to capitalize on disruptive innovations is that their processes and their business model that make them good at the existing business actually make them bad at competing for the disruption.[1]

— Clayton M. Christensen

Professor Christensen is the Kim B. Clark Professor of Business Administration at Harvard Business School. He is regarded as one of the world's top experts on innovation and growth.

[1] "Clayton M. Christensen: An interview by Bob Morris," *Blogging on Business*, June 9, 2011: https://bobmorris.biz/clayton-b-christensen-a-book-review-by-bob-morris.

Digital transformation brings promise — and uncertainty — to organizations. One outcome of the process, though, is irrefutable: change. Businesses around the globe recognize that transformation is necessary to survive. They must disrupt or be disrupted. And if they are disrupted, they must respond and adapt swiftly.

For businesses that were "born digital," moving fast and evolving constantly come naturally. But for more established companies that must face the daunting task of transforming older legacy processes and systems, change is often slow and difficult. Many not only worry that the rapid speed of disruptive innovations and new technologies in their industry will outpace their ability to compete or manage risks appropriately, but also see that possibility as an imminent risk to their business.[2]

As companies commit to and make progress with digital transformation, many are looking squarely at their internal audit team to provide guidance and insight along the journey. That is an encouraging expectation, given that the internal audit function has not always been viewed by the business as either forward-looking or innovative.

However, given internal audit's unique view of, and level of access to, all verticals within the organization — and the function's ability to help drive positive change in every corner of the business — this expectation makes sense. Internal auditors *should* be at management's side as they implement digital initiatives and review and assess their potential risks. In fact, as we noted in our Foreword, digital transformation is presenting internal auditors with the long-awaited "golden opportunity" to finally become a true strategic partner to the business.

In this publication, we take a closer look at internal auditors' challenges and opportunities as they help to support the business through digital transformation. The organizations we feature are all evolving digitally in some respect — but most are transforming on multiple fronts. JPMorgan Chase & Co. is one example. "We are experiencing unprecedented demand for digital interaction and products from a sophisticated and demanding customer base," says Michael Gandara, managing director and chief auditor of technology at the financial services firm. He adds, "Creating successful digital channels and products will be a key factor in our future success."

For other businesses, like canned food products company Conservas La Costeña, digital transformation is only the latest chapter in a long history of innovation. "It is essential for us, as a company, to remain at the cutting edge of technological innovations," says Libertad Castro, chief of information security audit at the company. And at organizations like not-for-profit Parkview Health System, innovation is a core element of the prevailing corporate culture. "Innovation is part of our mission," says Mitch Evans, vice president, internal audit, at Parkview. "It is embedded in our vision of our organization."

We've also learned that digital transformation is starting to occur within many internal audit functions themselves, with auditors embracing new technologies and tools so they can be more productive in their work and proactive about identifying potential risks. Data analytics, in particular, is becoming increasingly important to the everyday work of many teams. We reported on this emerging trend in Volume XII of *Internal Auditing Around the World*® in 2016.[3]

At that time, we noted that internal audit departments were expanding their use of data analytics so that they could bring more efficiency to the audit process. However, progress on this front continues to be slow. The findings from Protiviti's most recent Internal Audit Capabilities and Needs Survey suggest that while the use of data analytics is growing, it is still at a relatively immature state in most organizations.[4]

The internal audit teams at global management consulting and professional services firm Accenture PLC and networking firm Juniper Networks are just two examples of organizations we interviewed that want to add more value to the business through broader and deeper application of data analytics.

Kathy Perrott, Accenture's managing director, internal audit services, says, "Analytics is a huge part of our strategy and our long-term vision. We are embedding analytics in everything we do." And Joe Cooney, Juniper Networks' vice president of global internal audit, says his team is trying to "deliver high-value insights" to the organization. He explains, "Business units have one view of their world. If we can give them a new view that allows them to conduct business more strategically, that's where we see our highest value in internal audit."

Despite all the change digital transformation can bring, several internal audit leaders emphasize the importance of keeping the human element in focus as their companies digitize. In fact, most see digitizing processes and using tools like data analytics as a means to help internal auditors become more connected to the business and its people. Jan Joost Bierhoff, a director of global audit at brewing company HEINEKEN International says, "We can be more personal, interacting and having conversations and actively being there, instead of locking ourselves in a room, poring over data."

The cross-departmental collaboration that most digital initiatives require is also helping internal auditors build stronger relationships with people in the business that endure beyond finite projects. Peter Odman, director of internal audit and chief auditor at bakery-café chain Panera, says, "Even if we're not auditing a specific area, we want people to feel that they can come to us and ask for our perspective. And they are starting to approach us more proactively, which is a good thing."

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[3] *Internal Auditing Around the World*®, *Vol. XII: Perspectives From Women in Audit Leadership Roles — How Technology Is Impacting Internal Audit Functions*, Protiviti, 2016: www.protiviti.com/sites/default/files/ia-around-the-world-v12-protiviti.pdf.

[4] *Analytics in Auditing Is a Game Changer*, Protiviti, 2018: www.protiviti.com/iasurvey.

As C-level executives and internal audit professionals read the profiles in this publication, we expect many will relate to the challenges and risks that the companies featured herein face in their digital transformation journey — whether that journey is well underway or only just beginning. And for those business leaders who have not yet considered internal audit's ability to serve as a steady guide through disruptive change, we suggest they embrace that opportunity as they completely rethink how their business operates. In fact, they may find their internal audit functions have already made significant strides with their own digital transformation efforts — and hence, have invaluable insights to share.

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ACKNOWLEDGEMENTS

Accenture PLC

A Mission to Continuously Rotate to "the New"

Data analytics is a differentiator for internal audit because it extends the reach of the human auditor. It allows us to look across the entire company very quickly and be a more effective audit organization. It's extremely powerful.

— Kathy Perrott, Managing Director, Internal Audit Services

Over the past six years, Accenture PLC has been working to accelerate its digital transformation so that it can, in turn, more expertly guide other businesses through this disruptive and challenging process. Senior leadership at the global professional services company emphasizes the need for Accenture to continuously rotate to "the New"— digital, cloud and security — so that it not only can keep pace with change but also drive it, or even get ahead of it. Messaging on

Accenture's website suggests the company is confident it is achieving that goal: *"New isn't on its way. We're applying it right now."*

Accenture uses an "innovation-led" approach to help organizations in 40 industries across 120 countries "imagine and invent" their future. It provides a broad range of services and solutions through five businesses: Accenture Strategy, Accenture Consulting, Accenture Digital, Accenture Technology and

Accenture Operations. It also develops and delivers innovations through its research, ventures, labs, studios and innovation centers. Additionally, over the past three years, the company has invested more than US$3 billion in acquisitions — including many companies in the digital space — to expand its expertise and capabilities.

Kathy Perrott, managing director, internal audit services, at Accenture describes just some of the ways the company has changed during its recent — and ongoing — evolution: "Our bread and butter used to be large-scale systems integration projects and outsourcing. We still do that work, but now much of our growth is coming from what we call 'the New' — digital, cloud and security-related services — including applied intelligence, data analytics, digital marketing and more. We leverage the cloud for development and data management. And, in addition to developing and delivering our own technology, we help our clients customize and implement digital and cloud-based solutions from other providers."

Perrott says, "Accenture is many different things. We combine those things, get strategy in front of it, share a vision of the future with our clients, and then bring in our consulting, digital, technology and operations teams to make it happen."

A GOAL TO LOOK AHEAD, NOT JUST BACK

The internal audit organization at Accenture also rotates to "the New" continuously under Perrott's leadership. The function has 80 internal auditors, including dedicated analytics and IT audit personnel. The team is distributed across seven offices in the United States, India, Singapore, the Philippines, Argentina and Dublin. As of early 2018, Accenture was building an IT audit team in Dublin.

"Accenture's transformation to 'the New' has enabled us to work even smarter and more

efficiently because of some of the tools we are employing," says Perrott. "We've been able to shift roles and add capabilities as needed. Our analytics capability also helps us to broaden our reach across the company."

She adds, "Data analytics is a differentiator for internal audit because it extends the reach of the human auditor. It allows us to look across the entire company very quickly and be a more effective audit organization. It's extremely powerful."

Accenture's transformation to "the New" has enabled us to work even smarter and efficiently ... We've been able to shift roles and add capabilities as needed.

One way that Perrott and her team have become more effective is by digitizing risk models, which used to exist offline in Excel spreadsheets. "We would load our agreed-upon risk factor data and considerations into the spreadsheets and then assess the risks," Perrott explains. "Now, with support from our internal audit analytics team, we can automate the data download into the risk models whenever we choose. We also have risk dashboards that we can drill deep down into to identify audits we should consider, and then determine our preferred scope and make our testing selections."

The internal audit function's work in analytics has had an impact on how other parts of Accenture operate, too. The team began building their internal audit analytics capability about six years ago — long before most other areas within Accenture started using analytics. Many of the analytics programs other business teams at the company use today were initially developed by internal audit.

"We build the script and program, deliver it to the business process owners, and they run it and monitor results," says Perrott, adding that increased awareness about risk through the use of analytics has led to significant control enhancements at Accenture.

The internal audit team is now looking to expand their data analytics capabilities over the next three to five years and implement technology that will allow them to perform advanced tasks like regression analysis and predictive analytics. "Our analytics has been more about looking back, but now we are developing the capabilities to look ahead — and get ahead," Perrott says. "Analytics is a huge part of our strategy and our long-term vision. We are embedding analytics in everything we do."

PROVIDING ASSURANCE: DELIVERING DIGITAL SOLUTIONS

In keeping with Accenture's mission to continuously rotate to "the New," Perrott and her team are always looking for opportunities to automate and innovate within the function.

"Everyone in the company is encouraged to find ways to automate their processes, especially repeatable tasks, and this frees up our people to do higher-value work," she says. "Within internal audit, we are working now to automate the testing of Sarbanes-Oxley (SOX) controls, starting with IT controls. Based on the success of our pilot, we may look to expand it to other types of controls testing. I know our internal controls function, which monitors our SOX program, is very interested in this capability."

As other organizations in Accenture automate and innovate, internal audit is ready to offer input on new ideas and initiatives, according to Perrott. "We try to get plugged into new things early to understand what the organization wants to do," she explains.

"This is not always an audit. Sometimes, we're just part of a group getting an early look at the development process."

Our analytics has been more about looking back, but now we are developing the capabilities to look ahead — and get ahead.

Accenture is digitizing many of its offerings to clients. And through its "Industry X.O" initiative — which stands for the Digital Reinvention of Industry — Accenture is experimenting with different combinations of advanced technologies to help businesses identify the right mix of solutions to help them reach their digital transformation and growth goals.

"Our team members can observe early demos of these and other solutions to see how they work and learn what the expected outcomes are," says Perrott. "We later perform 'service delivery audits' to ensure we are delivering what was promised to our clients and performing against agreed-upon measures. We look at many other things, too, like whether the solution was developed safely and securely, and whether data is protected and flowing the way it should."

The internal audit team at Accenture is also keeping a close eye on the company's progress toward implementing the SAP S/4HANA business suite, Perrott says. "It is the biggest instance of SAP S/4HANA globally — and the biggest technology initiative we've done internally since we brought SAP on board in 2004," she explains.

TRANSFORMING INTERNAL AUDIT

Keeping up with digital change — and with change at Accenture, period — is a never-ending challenge for Perrott and her team. "That's why training is so important to us, and why we are striving to become even more deliberate about it," says Perrott. "We continually assess existing competencies of our staff against future business needs and strategically drive training investments."

Perrott says her team is fortunate in that they have exposure to so many new things at Accenture, as well as access to experts who can speak to everything from the Internet of Things to robotic process automation. "It's challenging to be familiar with everything because there is just so much going on at the company," says Perrott. "But the exposure we get helps us to understand how things are being operationalized so we can focus on assessing risk and control environments."

We must be relevant from both a digital and human standpoint if we are going to be the internal audit group for Accenture.

Other opportunities for learning and training within internal audit include cross-staffing initiatives. "Our auditors can work with other teams within the function," Perrott explains. "For example, we frequently bring our IT audit, financial and operations audit teams together for a project." She adds, "Many of our auditors are also interested in earning certifications in a different area of expertise — for instance, a financial auditor may want to earn an information security credential. We fully support that."

Another ongoing effort for Accenture's internal audit function is ensuring it has the right talent strategy, with the right mix of skills and experience.

"Traditionally, we have looked for people with at least three years of experience in public accounting and external auditing where they would have had exposure to a variety of industries and types of companies," says Perrott. "But now, we are bringing in new hires who have strong core audit, communication and presentation skills, but perhaps only one or two years of work experience out of college. We give them the additional training and on-the-job exposure they need to hone their skills in auditing emerging risks and using new technologies. We want people who enjoy learning — and are up to the challenge of dealing with rapid change."

In everything Perrott does for her internal audit team, whether it's equipping them with new technology tools or hiring with an eye toward the future, her intent is to build and maintain a function that is prepared to support a continuously evolving and increasingly digital business.

"We must be relevant from both a digital and human standpoint if we are going to be the internal audit group for Accenture," she says. "'The New' makes up about 55 percent of what the company does today, and that has happened in just the last two to three years. For our team to add value and be taken seriously, we must evolve at the same pace and be able to assess risk in that environment. We fully embrace that challenge — for us, it's exciting and fun."

Conservas La Costeña

Differentiating a Commodity Business With Supply Chain Automation

In Mexico, we have a service culture that is based on knowing the customer and offering the products and services they desire. Customers are demanding innovation, and we are responding with the help of digital technologies.

— Sergio Elizalde, Internal Audit Manager

In 1923, Don Vicente Lopez Resines opened a shop called La Costeña in Mexico City selling pickled peppers. Resines' pepper preserves were a hot commodity, and over time the little shop grew to become Conservas La Costeña, the world's largest pickled pepper exporter and a global leader in shelf-stable Mexican foods, including fruits and vegetables, beans, sauces, and condiments.

The company, which is still 100 percent family-owned, sells its products in more than 50 countries on five continents.

La Costeña has a long history of innovation. Since it began making its own cans in 1948, the company has embraced automation to help accelerate production, reduce costs, control quality and add consistency to its supply chain. Today, it operates one of the

largest, fully automated, robotic warehouse systems in Latin America, and uses an integrated enterprise resource planning (ERP) system with data analytics tools to manage rapid growth and keep up with evolving customer expectations.

Most of La Costeña's customers are large retailers and food distributors, with sophisticated ordering systems and strict vendor policies. Sergio Elizalde, La Costeña's internal audit manager, says the company has applied digital technology externally to meet those customer expectations and internally to forecast supply and demand more accurately.

"In Mexico, we have a service culture that is based on knowing the customer and offering the products and services they desire," he says. "Customers are demanding innovation, and we are responding with the help of digital technologies."

AUDITING DIGITAL RISK

Elizalde joined La Costeña in 1995. The company's internal audit department includes 19 auditors grouped into five divisions: IT audit, information security, operations, finance and internal control. Elizalde's team includes Libertad Castro, chief of information security audit, and Lourdes Podestá, chief of IT audit. Their colleague, Ana Contreras, is e-commerce executive for the company.

Castro says that La Costeña's auditors work with IT to identify critical information and infrastructure that support business-critical processes. They also develop cybersecurity strategies for protecting the company's "crown jewels" and prioritize them according to the company's risk appetite, strategic goals and threat level. "It is essential for us, as a company, to remain at the cutting edge of technological innovations," says Castro.

The internal audit function advises other departments on best practices for

maintaining data integrity and security, according to Castro. The team also helps to evaluate new technology purchases to ensure they are planned and implemented within an appropriate risk context, and that any new technology investments are consistent with La Costeña's risk appetite and enterprise risk management objectives.

AUTOMATION DRIVES GLOBAL GROWTH

As a company that sells basic commodities, La Costeña has had to find ways to differentiate itself in the marketplace. The differentiator, according to Castro, is technology. "Our technological transformation is reflected in the automation of our entire supply chain," she says. "Production, reception, storage, dispatch and distribution have all been automated."

La Costeña's cybersecurity and digital strategy is aimed at increasing the volume of production as well as the profitability of the company in accordance with business objectives.

The company's two primary automatic warehouses in Mexico are modern marvels, populated almost entirely by robots — cranes, conveyors, lifts and laser-guided autonomous vehicles — that package, wrap, store, retrieve, convey and stack orders for loading onto trucks.

"La Costeña's cybersecurity and digital strategy is aimed at increasing the volume of production as well as the profitability of the company in accordance with business objectives," Castro says. "That plan approaches technology projects from an enterprise risk perspective, considering business processes, infrastructure and also, information, which is one of our most important assets."

RECIPE FOR CHANGE

Elizalde says that the vision for digital transformation at La Costeña begins at the top, but the strategy is carried out at the department level, through projects and business objectives aligned with the vision, and supported by middle and upper management. "Every department is finding uses for technology," Elizalde says. "The efficiency of our operation and the transformation of our business model evolves."

Castro says the company's "open door" policy allows collaborators to work together, across departments, on ideas to keep La Costeña ahead of the technology curve. Some of the ideas currently under development include the use of big data to improve forecasting of supply and demand, the use of social media to promote the La Costeña brand, and e-commerce initiatives to drive in-store purchases and accommodate the growing demand for online grocery shopping.

Continuous monitoring and the ability to analyze entire populations of data associated with operational business processes have enriched the quality and credibility of audit findings.

Contreras, who is leading the company's e-commerce initiative, describes recent efforts to increase sales with the social media promotion of Mexican food recipes timed to seasonal in-store "micro space" displays at self-service stores. "To generate traffic toward our micro space, we have different advertising spaces inside the web and customer apps where we publish different sales offers," she says. "Depending on the campaign, we may also promote these strategies in a newsletter we publish to communicate all the sales to be offered on the sales floor this season."

In addition to the campaigns aimed at retailers, Contreras says La Costeña is developing a new consumer-focused digital shopping experience in which the consumer receives consistent and coordinated marketing and advertising messages across all digital media, optimized to keywords and trends.

"Our 360-degree strategy attempts to influence consumer purchasing decisions by putting the consumer in the center of a circle surrounded by all of our media and communication tools so that they receive a consistent message from different fronts," she says.

NEW TOOLS FOR GREATER AUDIT INSIGHTS

In addition to the enterprise applications already discussed, Elizalde says the internal audit team is applying digital technology to help them work faster and provide strategic insights to managers at all levels of the company. Digital auditing tools include a unified database of risks detected at all levels of the company, and automatic reports drawn directly from entire data populations instead of select samples.

Castro elaborated, "We currently have tools that allow us to plan and manage the auditing functions, such as tools for business intelligence and data mining, cybersecurity, and the continuous monitoring of processes."

Podestá's IT audit group doubles as an internal training resource for other auditors to help the entire department make the most of available resources. "Every auditor is responsible for using new technologies that help reach the department's goals, with specific support provided by the IT auditing department," she says. "We have become a more efficient team, and more accurate, with improved risk-based planning and better control of where we focus our time and resources."

These benefits have already been incorporated into the internal audit department's goals, which include monitoring business processes to ensure they operate within established risk margins and advising the audit committee on emerging risks.

At La Costeña, digitalization has not only improved manufacturing and distribution systems but also helped add value to the internal audit function. According to Elizalde, continuous monitoring and the ability to analyze entire populations of data associated with operational business processes have enriched the quality and credibility of audit findings. By focusing on data analytics and root cause analysis, auditors have been able to reduce conflict, manage risks more effectively and move the discussion more quickly toward remediation, thus delivering on the team's core principle of service orientation.

HEINEKEN International

Tapping a Long History of Innovation to Build a Digital Future

By enriching people with the use of technology, we are making jobs more inspiring and exciting so that people can do their work with more joy and feel proud. That's really the intent of HEINEKEN's digital agenda: to inspire and engage our employees, our customers and consumers, and help them to experience our company and products in new and exciting ways.

— Jan Joost Bierhoff, Director of Global Audit

The Heineken family entered the beer business in Amsterdam in 1864, and in the more than 150 years since, have built and expanded the HEINEKEN brand and company throughout the world. Today, HEINEKEN International, still headquartered in Amsterdam, is the number-one brewer in

Europe, and the second largest globally by revenue. It is also the single largest exporter of beer in the world.

In addition to its flagship brand, HEINEKEN's beverage portfolio includes more than 300 international and regional beer brands like Amstel, Birra Moretti, Desperados, Fosters,

Red Stripe, Sol, Tecate and Tiger Beer, ciders such as Strongbow, and craft beers like Lagunitas IPA. HEINEKEN's products are sold in more than 190 markets around the globe. The company has about 85,000 employees, and brewery operations in the Netherlands and more than 70 other countries, including Brazil, China, Mexico, Russia, South Africa and Vietnam.

HEINEKEN's growth and success stems from the company's long history of innovation. Look back to 1869, when founder Gerard Adriaan Heineken made a bold move to embrace the Bavarian method of "bottom fermentation" to produce a clearer, purer beer that keeps longer. Not long after that, in the early 1880s, the company made a major investment in new technology by installing cooling systems in its breweries — thus ending its dependence on ice. And those are just two examples.

Today, innovation is still very much at the heart of HEINEKEN's business and important to its future success. So much so, in fact, that the company is working toward "an ambitious 6 percent innovation rate for the coming years — meaning that 6 percent of [its] sales will come from new innovations."[1]

IT-SAVVY AUDIT RESOURCES ON DEMAND

HEINEKEN's plan to achieve its innovation and related sales goals hinges, in large part, on everyone in the organization adhering to "one clear global innovation process" — a framework that is "based on tried and tested best practices."[2] Helping to ensure that happens is the company's global internal audit function. The team of 55 auditors represent 20 different nationalities, speak 19 different languages and are positioned in four hubs in key markets for HEINEKEN throughout the globe.

"Our team is very diverse, just like our company," says Jan Joost Bierhoff, one of five directors of Global Audit at HEINEKEN who report to the chief audit executive, who in turn reports to the company's CEO and chairman of the audit committee. Four directors are focused on regional internal audit activities for HEINEKEN's operations in Europe, Africa, the Middle East and Eastern Europe, the Asia-Pacific region, and the Americas. As for Jan Joost Bierhoff, he has a separate and unique role — one focused on technology.

We integrate technology through our whole audit plan. All of our work, no matter what it is, has a technology element.

"If it relates to technology at HEINEKEN, it hits my domain," says Jan Joost Bierhoff, who has worked at HEINEKEN for more than a decade in both audit and technology-related roles. "We integrate technology through our whole audit plan. All of our work, no matter what it is, has a technology element."

Jan Joost Bierhoff was first hired by HEINEKEN as a senior auditor based at the Zoeterwoude brewery in South Holland. Just four years later, he became manager of Global Audit for HEINEKEN. Not long after that, Jan Joost Bierhoff — looking for a new challenge — asked to take on an IT-related role focused on SAP authorizations and security, including SAP GRC (governance, risk and compliance). He later served as HEINEKEN's process and control improvement (P&CI) technology manager. Jan Joost Bierhoff helped transform the audit functions at the company's operating companies into P&CI departments and

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[1] "Innovation," Heineken website: www.theheinekencompany.com/brands/innovation.

[2] Ibid.

contributed to the setup of the centrally managed Global Audit department that exists today.

Along the way, Jan Joost Bierhoff also earned several IT credentials, including the Certified Ethical Hacker (CEH) designation from EC-Council, and the Certified in Risk and Information Systems Control (CRISC) and Certified Information Systems Auditor (CISA) credentials from ISACA.

In his current role, Jan Joost Bierhoff, together with the other directors, oversees a team of 40 "IT-savvy" auditors. Eleven team members are IT auditors, who are based mainly in and around Amsterdam, as is HEINEKEN's Global Information Services department, with whom they work closely. In addition to working on their IT audit projects, the IT auditors support other audit colleagues at HEINEKEN when they need resources with IT skills and knowledge to assist with audit pre-work or fieldwork.

TECHNOLOGY TO ENRICH, NOT REPLACE

Digital transformation initiatives like automation are part of HEINEKEN's broader innovation strategy, but so too are other types of business process improvements, as well as new product development. Jan Joost Bierhoff says the company is always looking to reduce waste and increase efficiency in all aspects of its business, and over the years has moved swiftly to adopt technology solutions that help it to "reduce wasteful activities without wasting precious entrepreneurship and brainpower."

While HEINEKEN "fully embraces that the world is changing rapidly," Jan Joost Bierhoff says the company's general view toward technology is that it should be an enabler — and not a replacement — for people who are adding value to the company. In short, by supporting its operations with the appropriate technology, whether it is robotics or data science, HEINEKEN's employees can use their time, energy and passion more effectively.

Jan Joost Bierhoff shares this example: "Our truck drivers and sales reps used to take orders for products when they visited the outlets, bars and restaurants that we serve. It was a labor-intensive process. Now, B2B platforms do that work for them. That technology is enriching the work of both our truck drivers and sales reps who are our invaluable 'eyes and ears' in our markets. While doing that, they can now have more meaningful and value-added conversations with our customers and better understand their needs and challenges."

Digital transformation initiatives like automation are part of HEINEKEN's broader innovation strategy, but so too are other types of business process improvements, as well as new product development.

During audits, Jan Joost Bierhoff's team also keeps *their* eyes and ears open for opportunities to improve processes and enhance employees' work at HEINEKEN with digital solutions. "If we come across a skills or resource gap, or an issue technology might help to solve, we share our observations," Jan Joost Bierhoff says.

He emphasizes that the goal is to "build upon technology and processes we already have." He explains, "What's needed is often already in place somewhere in the HEINEKEN company. It's just not being applied properly or implemented to the full extent. We also help to connect business owners with specialists in the company who can provide more guidance."

An even greater priority for Jan Joost Bierhoff's team is ensuring that the company's innovation strategy is being fulfilled. However, because messages about innovation — and digital transformation — are being clearly and consistently passed from the top down and throughout the global company, Jan Joost Bierhoff says they find that most employees already "feel, know and understand what needs to be done for the company to meet its goals, and are doing their part."

Our team needs to be ready for a continuously adapting environment both inside and outside of HEINEKEN. That includes applying new ways of auditing.

HANDS-ON LEARNING AND EXPERIENCE

As HEINEKEN innovates and pursues digital transformation — and technology continues to rapidly evolve — Jan Joost Bierhoff and his team face an ongoing challenge: keeping pace with change.

"Our team needs to be ready for a continuously adapting environment both inside and outside of HEINEKEN. That includes applying new ways of auditing," says Jan Joost Bierhoff. "Our auditors engage in a lot of hands-on learning, whether it's actively working with data analytics, or working with robotics in our operational processes to understand what that experience is like. If we are going to advise the business on technology issues, we need to know what we are talking about. We need to be able to tell people we've walked in their shoes — that we truly understand their business and their challenges."

When hiring resources for his current team, Jan Joost Bierhoff says he looks for auditors who are knowledgeable about IT and business systems, including HEINEKEN's enterprise resource planning (ERP) system and reporting systems. Jan Joost Bierhoff also recruits auditors who can "make good use of data analytics." If auditors have the core technical skills and digital mindset to work in an IT-focused internal audit function, from there, they can be further enriched with more training and knowledge on the job, he says.

"I currently have four audits underway and 17 auditors working on them," Jan Joost Bierhoff says. "Three are IT auditors. Three are data analytics people. The rest are IT-savvy auditors who are not IT auditors but know how to find their way around SAP or Microsoft systems. And if you throw data at them, they are willing to crunch it."

"BLOWN AWAY" BY DATA INSIGHTS

Jan Joost Bierhoff's department includes a dedicated audit and analytics team who he says are "actively working to get insights through data process mining to prepare for audits or to help achieve better findings during audits." Over time, Jan Joost Bierhoff says he wants to expand the use of data analytics in the internal audit function itself.

"One of our key goals as a function is to focus less on manual activities, like going through big sets of data line by line manually. With help from data analytics, we can focus more on thinking — and make our work much more exciting," he says. "And when we are working in the field, we can spend time talking to people and observing environments. We can be more personal, interacting and having conversations and actively being there, instead of locking ourselves in a room, poring over data."

Becoming more data-driven is a way for all internal audit departments to become better partners to the business, says Jan Joost Bierhoff. It can also help business owners to adopt a digital mindset by seeing the value of data analytics firsthand.

"When we are talking to senior management or operating company management, we often find that we are blowing them away with data insights," Jan Joost Bierhoff says. "They could be generating insights for their business, too, if they used the same technology and took time to look at data sets or operations from a different angle."

He adds, "By enriching people with the use of technology, we are making jobs more inspiring and exciting so that people can do their work with more joy and feel proud. That's really the intent of HEINEKEN's digital agenda: to inspire and engage our employees, our customers and consumers, and help them to experience our company and products in new and exciting ways."

Becoming more data-driven is a way for all internal audit departments to become better partners to the business.

IKEA Group

Using Key Values to Design a Digital Future

We are trying to be a strategic partner. We are continuously supporting learning and getting fit for the future and providing our management with insights. Through our digitalization and multichannel audits, but also all other audits, we are helping to support the business in reaching the next step forward.

— Ronald Jansen, Chief Audit Executive

IKEA Group's (INGKA Holding B.V. and its controlled entities) iconic blue-and-yellow, warehouse-style stores are massive — about 320,000 square feet on average — but also welcoming in both their outward appearance and inside atmosphere. The company's modern home furnishings are approachable, too, true to the spirit of late founder Ingvar Kamprad's vision to "create a better everyday life for the many people" by offering simple

but thoughtfully designed, eco-friendly and affordable products.

Today, there are more than 400 IKEA stores worldwide in 46 countries — and almost all are franchised by the IKEA Group, based in the Netherlands. INGKA Holding B.V. (and its controlled entities) is one of 11 companies and groups of companies that own and operate IKEA sales channels under franchise agreements with Inter IKEA Systems B.V.,

which owns the IKEA brand and concept. As of early 2018, IKEA Group operates 361 IKEA stores in 29 countries.

BUILDING ON THE "SMÅLAND LEGACY"

IKEA was founded by Kamprad in Sweden in 1943 as a mail-order sales business that sold small items like pencils and postcards. Later, Kamprad added locally made furniture to his inventory, and by 1958, had opened his first home furnishings store in Älmhult, Småland, in Sweden.

Kamprad was born in Småland, and his childhood experience in the region's rugged landscape shaped the "Småland legacy" that IKEA's values and culture are built on. As explained on the Inter IKEA Systems website, "Smålanders have a reputation for being thrifty and innovative, with a straightforward, no-nonsense approach — to problem-solving in general, and to business challenges in particular."[1]

No matter how much IKEA has grown and changed over the past 75 years, Kamprad's values remain at the heart of every part of the business today. Recently, the franchisor introduced an updated version of those key values. They are: Togetherness. Caring for people and planet. Cost-consciousness. Simplicity. Renew and improve. Different with a meaning. Give and take responsibility. Lead by example.[2]

RAMPING UP THE NEW INTERNAL AUDIT FUNCTION

Given that simplicity and cost-consciousness are key values for IKEA, it is perhaps no surprise to find that the IKEA Group operates a lean group internal audit department. Following the hire of Ronald Jansen as chief audit executive in November 2016,

IKEA Group re-established its internal audit function after a 20-year hiatus; the department had previously operated from the 1970s through the 1990s.

Jansen heads a team of three group internal audit leaders, including Fleur Groen, who joined IKEA Group a few years before Jansen's arrival. Jansen says that during the ramp-up phase for the newly re-established internal audit department, the audit leads are regularly tapping co-sourcing partners to help support and lend specialized expertise to audit engagements when needed.

The world is changing, and now we must reach our customers online ... Building an e-commerce site is one thing, but we also have to adapt our IT systems and finance systems.

EVOLVING TO A NEW BUSINESS MODEL

IKEA Group is currently in the process of expanding beyond its traditional business model to become a multichannel retailer. "Today's connected consumers shop regardless of geography, time of day or personal location," says Jansen. "We want to bring the physical and digital experience together so that customers can experience IKEA through many different channels. Of course, this has an impact on the organization. Our cash-and-carry IT systems and processes are still running fairly efficiently, but now, they must all change to support the new multichannel model."

"People used to study the IKEA catalog, make a list of what they wanted, take their list to our store and make their purchases,"

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[1] "Our Heritage," Inter IKEA Systems: http://inter.ikea.com/en/about-us/heritage/.

[2] "A Modern 'Makeover' for the IKEA Values," by Jaspreet Kang, LinkedIn Pulse, February 18, 2017: www.linkedin.com/pulse/modern-makeover-ikea-values-jaspreet-kang/.

says Groen, who performed some of the first audits related to the company's digital transformation program and multichannel initiatives. "But the world is changing, and now we must reach our customers online, too. Building an e-commerce site is one thing, but we also have to adapt our IT systems and finance systems."

Groen says the company is adding new systems, tools and processes to help make the IKEA online presence complementary to that of the IKEA store, and create a seamless experience for customers across all touch points. New logistics and distribution solutions are helping to make the multichannel model possible, says Groen, but making IKEA's products more accessible also presents challenges.

"Having one flow of goods to stores was straightforward," she explains. "Now, goods need to flow in various directions, including directly to customers."

FOCUSING ON THE CUSTOMER EXPERIENCE

Jansen says the group internal audit function was "already well-adapted" for change because the new department was set up when IKEA Group was just embarking on its digital transformation program and focusing more on new developments and innovations. "We didn't have the burden of a legacy," says Jansen. "Basically, we jumped right in and started our work where we wanted to start."

Staffing to meet technology-specific audit demands is not a challenge for the internal audit team at IKEA Group because of their reliance on co-sourcing arrangements, according to Jansen. "Co-sourcing is a no-brainer for us. For one, it helps us to keep learning and stay on top of best practices," he explains. "We have access to all the latest tools, including data analytics, and the expertise that we need for all our audit engagements."

According to Jansen, IKEA Group's internal team recently took part in a benchmarking exercise and found that, compared to other global non-food retailers, they would need to assemble a team of 50 to 120 insourced internal auditors to handle the work managed through co-sourcing. Jansen says the group internal audit team performs their internal audit activities efficiently "by focusing on key risks only."

We definitely face different risks as a multichannel company than we did when we were just a traditional cash-and-carry retailer.

One area the group internal audit team recently reviewed is the "click and collect" solution that has been implemented in various countries. The process entails a customer ordering a product online from IKEA and then picking it up in-store. A key focus of that audit was the customer experience, says Groen: "We try to do that in all our audits, not just those related to digitalization or multichannel. We keep the customers and their journey in mind. In the end, that's what it's all about."

The internal auditors also try to identify potential risks to IKEA Group as it transforms into a multichannel retailer. "We definitely face different risks as a multichannel company than we did when we were just a traditional cash-and-carry retailer," Groen says. "Our challenge is figuring out what the risks are, which ones we need to cover, and how to mitigate them most efficiently."

GETTING FIT FOR THE FUTURE

Jansen and his team look for ways to add value to every audit they perform. "We are trying to be a strategic partner," he explains.

"We are continuously supporting learning and getting fit for the future and providing our management with insights. Through our digitalization and multichannel audits, but also all other audits, we are helping to support the business in reaching the next step forward."

Jansen says it helps that everyone at IKEA Group "has understood that the evolving competitive landscape across most industries puts new demands on meeting the customer and requires us to adapt."

That doesn't mean changing the culture at IKEA, however. In fact, Jansen, Groen and the other audit leaders at IKEA Group keep a close eye on how any change — digital or otherwise — could potentially impact IKEA's culture and values, and how this culture also helps to strengthen the company's internal control environment.

"Everything we do is values-based, according to the values IKEA's founding father first introduced in 1976.[3] Forty years on, those key values still serve us very well," Jansen says. "And our internal audit theme and mission statement — our whole approach to auditing — is based on those values."

Auditing soft controls is one way the internal audit team helps ensure IKEA Group is

upholding IKEA's key values and mission. "Our founder Ingvar Kamprad said, 'People can copy our products, but no one can copy our culture.' So far, he is right," says Groen. "So, we are always looking at culture, and the people element, in our audits. With every assessment, we ask, 'What behavior or soft control is the root cause of our finding?'"

Everyone in the organization must be part of the digital transformation journey. We need to do this together — and togetherness is one of the most important values at IKEA.

Jansen emphasizes that it is very important for the company to maintain its unique culture and values as it transforms into a multichannel retailer, as those values will continue to differentiate the IKEA brand in the marketplace and keep the company competitive in the future. He says, "To achieve that, everyone in the organization must be part of the digital transformation journey. We need to do this together — and togetherness is one of the most important values at IKEA."

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[3] Kamprad outlined his key values and product range and price philosophy for IKEA in *The Testament of Furniture Dealer,* published in 1976 and available online at: www.ikea.com/ms/en_US/pdf/reports-downloads/the-testament-of-a-furniture-dealer.pdf.

JPMorgan Chase & Co.

The Drive to Digital

In a sense, every audit is now a technology audit. I can recall talking about controls and businesses that were tech-enabled in years past — but I think technology is now so deeply embedded in business that they are one and the same.

— Michael Gandara, Managing Director and Chief Auditor of Technology

JPMorgan Chase & Co. (JPMC), with assets of US$2.5 trillion, is a global leader in investment banking, financial services for consumers and small businesses, commercial banking, financial transaction processing, and asset management. JPMC operates in more than 60 countries and has four major business lines: Corporate & Investment Bank, Consumer & Community Banking, Commercial Banking, and Asset & Wealth Management.

The internal audit department at JPMC is a global function with more than 1,000 employees and the combined focus of business auditors, technology auditors and professional practices colleagues. The department's strategic goals are to deliver high-quality, timely and valued assurance across JPMC.

A WAVE OF TRANSFORMATION

Michael Gandara is managing director and chief auditor of technology at JPMC. He's held that role since July 2016 and, in the past several months, says he has seen a wave of transformation at JPMC propelled by an increased focus on digital strategies and new and emerging technologies. "The internal audit department has the advantage of coverage across the firm," Gandara says. "We use this to bring insights and themes to the attention of senior management."

One of the primary goals of implementing digital transformation in the internal audit function at JPMC is to improve efficiency across the department. "To do this, we look at our function with a commercial lens and try to manage it as though it's a business in its own right," Gandara says. "We are introducing different ways of working, embedding automation, increasing collaboration and, more and more, applying a services mindset to the work we do to improve our effectiveness."

The team is also building real-time assurance mechanisms that use data analytics, machine learning and robotics to increase the internal audit function's value to the firm. "The business lines at JPMC look at the customer journey to provide the best products, services and technology to their customers, and our team is exploring stakeholder and auditor journeys to improve the audit model," Gandara says.

ON A DIGITAL MISSION

According to Gandara, JPMC has always been and continues to be a data-driven and data-enabled organization, both in terms of serving customers and in its operating models. Data functions within each business line exist to drive the respective business strategies. Gandara says technology, cybersecurity and controls organizations

play a significant role in providing a secure infrastructure for these efforts.

But now, JPMC is on a mission to digitize even more widely, and internal audit is part of that push. The firm has embarked on the widespread simplification and digitization of more processes that are key to providing seamless customer experiences and sustaining long-term competitive advantage.

This new, elevated focus has prompted advancements across JPMC's businesses, from digital customer engagement to new product offerings. With the advent of new customer channels and emerging technologies such as robotics, machine learning or blockchain, the internal audit team at JPMC must operate in real time to audit these areas effectively.

JPMC is on a mission to digitize even more widely, and internal audit is part of that push.

"As a firm, we are experiencing unprecedented demand for digital interaction and products from a sophisticated and demanding customer base," Gandara says. "We are facing ever-increasing regulatory expectations combined with an increase in technology pace and business agility. Creating successful digital channels and products will be a key factor in our future success. That approach extends to our department, too."

Gandara meets regularly with JPMC's general auditor, internal audit chief administrative officer and the head of professional practices to discuss their collective approach to using technology in audit, with the goals of being more effective and driving efficiencies so that resources are reallocated toward strategic priorities. "For us, it's about being customer-obsessed," Gandara says. "Making customer experiences simpler, more personal and more

clearly in line with their needs are all features of the drive to digital."

"All the leaders across JPMC recognize the importance and significance of digital," he adds. "We have an incredible senior chief information officer who is also a member of the firm's operating committee. Also, each business and function in our organization has digital at the core of its strategy, as well as dedicated leads for the execution of that strategy."

As for internal audit, Gandara says he coaches his team to think like business owners. "I ask them, 'If you owned the process or the company, would you run things the same way as they are being executed now?' That mindset has paved the way for digital innovation and transformation from the perspective of simplification and operational efficiency," he says.

A CULTURE OF CHANGE

An oft-repeated business maxim is that change culture requires everyone to be comfortable with being uncomfortable. Gandara says he thinks it's important to create the space and freedom for people to challenge the status quo: "In our department, we talk a lot about 'disruptive thinking' to empower employees to ask why and think creatively — especially around things that have become routine."

He adds, "When you look at companies that have successful digital strategies, they have created seamless experiences between traditional and digital, and use both channels to create value. Given the global span of JPMC and breadth of our product offerings, each business has strategies that allow digital and traditional to complement each other seamlessly."

The mindset and culture at JPMC are clearly embracing change and disruptive thinking wrapped in audit discipline. "We've seen an uptick in excitement, interest and energy,"

Gandara says. "We have started using Agile practices in our audits, and the early results are very promising. I manage the technology audit agenda similarly, and it's great to have colleagues stop by my office and ask about my Sprint board and sticky notes. We have the approval to build dedicated collaboration space just for the internal audit department, with a view toward doing Scrums, standups, retrospectives and other new methods for working together successfully."

Each business and function in our organization has digital at the core of its strategy, as well as dedicated leads for the execution of that strategy.

INTERNAL AUDIT'S ROLE IN JPMC'S FUTURE

In addition to the specific, specialized audit coverage Gandara and his team perform for business processes, product offerings and customer channels, they are also developing next-generation change audit processes to give the audit function a stronger voice in digital implementations and strategic pilots. That helps ensure that emerging technologies are understood and implemented with the right controls from the start.

"Over the past two years, we've seen a major increase in demand for tech audit and data analytics services," Gandara says. "As business processes become digitized, there is a clear shift away from business stand-alone audits. We are starting to look at this with two lenses: The first is business integrated audits, which represent the traditional view of business controls enabled by technology, such as reconciliations. The second is a new technology-empowered, integrated approach for business initiatives and processes that are on a digital, automated backbone."

In terms of future audit disruption, Gandara and his team have taken some early steps to pivot and scale as needed. For example, over the past 18 months, they have made a significant investment in new technologies to create a platform that supports next-generation audit capabilities. That effort includes development of a strategic audit tool, the creation of a secured big data environment and the use of automation platforms.

Everyone in our department is responsible for understanding digital strategies across the firm.

Newer technologies demand a different type of audit and auditor. "Externally, we spend time with our peers sharing what we are doing to deal with new technology and digital," Gandara says. "We have developed training with a mix of in-house expertise and external resources, and we have created specialized teams focused on auditing newer technology. For example, we have a dedicated cloud computing audit team to complement the broader technology auditors focused on cyber and infrastructure."

But digital is not limited to technology or technology audits, according to Gandara. "Everyone in our department is responsible for understanding digital strategies across the firm," he says. "We do have mechanisms in place to monitor the effects of digitization on businesses, processes and the control environment. Most digitization, emerging technology and transformation impact existing risks in our risk assessment and planning process. Our auditors are focused on understanding how the current execution — traditional, digital or both — changes the overall risk profile."

Gandara says, "In a sense, every audit is now a technology audit. I can recall talking about controls and businesses that were tech-enabled in years past — but I think technology is now so deeply embedded in business that they are one and the same."

Juniper Networks, Inc.

Audit Team Builds Guardrails, Not Roadblocks

People's eyes quickly glaze over when you tell them you think they may have a million-dollar problem based on a statistical extrapolation from a sample of 25. When you can say you've examined all their data for the past year and show them the million-dollar problem, you've got their attention.

— Joe Cooney, Vice President, Global Internal Audit

In 1995, Pradeep Sindhu had an idea for a new high-speed router that would connect networks 100 times faster than the prevailing technology. The company Sindhu founded, Juniper Networks Inc., shipped its first M40 core router in 1998 — two weeks before Google began to index the internet — touching off an explosion in cross-network traffic. Within a year, Juniper had more than US$100 million in orders.

Today, Juniper's routers, switches and security products provide scalable, reliable, secure and cost-effective networks to global service providers, cloud providers, governments and research organizations in more than 100 countries. Born digital, the company's biggest digital challenge today is staying ahead of the disruptive wave it set in motion more than 20 years ago.

Joe Cooney, vice president of global internal audit, joined Sunnyvale, Calif.-based Juniper Networks through the acquisition of NetScreen Technologies in 2004. He became an internal auditor for the first time in 2005 — the first year under Sarbanes-Oxley — when he formed Juniper's internal audit function.

Cooney was previously NetScreen's corporate controller and brought 20 years of public accounting and finance experience to his role at Juniper. Over the past 14 years, he has grown his internal audit staff to 18, supplementing with outside subject-matter experts as needed. Cooney says his audit team's goal is to provide effective, objective assurance and strategic advice without impeding the pace of progress at Juniper.

THE INNOVATOR'S DILEMMA

Building a successful company is a very different challenge from building a successful router. Sindhu has said in interviews that he recognized early on that his time was best spent on science and product development. He brought in an outside chief executive within the first year of founding the company to allow him to remain focused on innovation. After serving as Juniper's chief technology officer for more than 20 years, Sindhu transitioned to the role of chief scientist for the company in 2017.

Juniper's focus on "innovation as product" has been central to Juniper's success, Cooney says. Network technology has evolved, and Juniper has had to evolve along with it, expanding its product line and acquiring new technologies to meet emerging risks and opportunities.

As internet traffic increased and the nature of that traffic changed from browser page loads and email to voice over IP (VoIP) and video streaming, the cost of maintaining on-premises data centers capable of

managing that traffic soared. As a result, many of Juniper's largest clients moved their data centers to the cloud.

"Today, most of our products and services are available in the cloud as virtual software," Cooney says. "That has been our transformation."

We've been on a journey with all our internal infrastructure, asking, "Why not cloud?" … We're looking to solve all the problems necessary to make this company a cloud-based operation.

CLOUD BOUND

The ability to reliably and securely store, retrieve and exchange data from remote locations led to the creation of massive web service providers that democratized information technology by removing the cost of building, scaling and maintaining an on-premises data center. Cooney says it was only natural for Juniper Networks, as one of the key enablers of that trend, to work toward moving its own data center and business processes to the cloud.

"We've been on a journey with all our internal infrastructure, asking, 'Why not cloud?'" he says, listing lower costs, scalability, and more agility, reliability and security among the benefits of such a move. "Unless there is some technological reason, we're looking to solve all the problems necessary to make this company a cloud-based operation."

Cooney says the transition has been underway for three years and is expected to be completed in 2018. "We're almost to the point of getting rid of our own data centers," he says.

VIRTUAL NETWORKS, REAL RISKS

Cooney says he fully embraces the move to the cloud, which he sees as consistent with the company's strategy and risk appetite. From an internal audit perspective, however, he is concerned about the changing nature of risk. Senior management, he says, has a strong grasp of these changes. But Cooney and his internal audit team want to help ensure that new risks are considered at all levels of the organization.

"Our risk profile is changing because our assets are being digitized," he explains. "When your data is managed in-house, it is easier to apply old governance models around rule-based access, authentication, change management, backup and disaster recovery. That's all possible in the cloud, but it is often accomplished through third parties."

We can't look at a marketing process today without looking at the lead registration database, the social media outreach, and the campaigns running on the website or through internet-based marketing.

The biggest risks, Cooney says, are not the cloud providers themselves, which generally have well-documented data governance processes, but rather the tendency for employees and departments, in the absence of a strong IT presence, to fall into sloppy and risky habits. Regardless of cloud solutions or those on-premises, users downloading unauthorized software and tools to their networked devices and workstations can create security gaps for malicious hackers and malware to leverage.

That risk is particularly strong, he says, at a company full of innovators, who tend

to perceive controls as impediments to be worked around. To ensure his team is up to the task of monitoring cyber risks, Cooney is encouraging auditors not only to complete ISACA's Certified Information System Auditor (CISA) training but also obtain advanced CISM, CISSP and ethical hacker certifications.

GUARDRAILS, NOT ROADBLOCKS

Cooney says internal audit has been working with risk management and operations to identify risks associated with Juniper's new operating model and change data governance and controls to align with this new risk profile. The challenge, he notes, is providing that assurance without throwing up roadblocks that impede the company's need for speed.

"The analogy I like to use is that there is this Juniper bus riding down the highway, and we want to make sure we have the right guardrails in place so that the bus can go faster to achieve our strategic objectives — without going off the highway," Cooney says.

Specific guardrails adopted to date include data loss prevention (DLP) tools, and a cloud access security broker or CASB (Netskope) that monitors websites accessed from the corporate network. DLP is especially important, Cooney says, for monitoring the company's data "crown jewels" for unauthorized access or exfiltration to an external site.

Integrated audits serve as a type of guardrail as well, analyzing processes end-to-end for risks, opportunities and potential improvements. "For example, we can't look at a marketing process today without looking at the lead registration database, the social media outreach, and the campaigns running on the website or through internet-based marketing," Cooney says. "That all becomes part of a normal process audit now."

To facilitate integrated audits on a global scale, Cooney says Juniper Networks worked with vendor Wolters Kluwer to develop a cloud-based deployment of its popular TeamMate audit management tool for the global consolidation of work papers and timekeeping. For the past five years, data analysis has been performed by applying cloud-based analytic tools to entire populations of data pulled directly from Juniper's databases, instead of representative samples, according to Cooney.

He says population-based analysis adds value to internal audit reports by allowing auditors to pinpoint specific remediation needs.

Automated tools and technology help [Juniper's auditors] produce better work faster and at a higher volume. What's even more important ... is how the team is using those tools to create value for the company.

"People's eyes quickly glaze over when you tell them you think they may have a million-dollar problem based on a statistical extrapolation from a sample of 25. When you can say you've examined all their data for the past year and show them the million-dollar problem, you've got their attention," Cooney says.

EYES ON THE HORIZON

Cooney says auditors at Juniper Networks are focused on identifying risks and opportunities aligned with the company's strategic objectives and risk appetite. Automated tools and technology help them to produce better work faster and at a higher volume. What's even more important, though, is how the team is using those tools to create value for the company, says Cooney.

As an example, Juniper's internal audit team recently assisted in a payroll investigation, combining badge swipe data from facilities around the world with network login data and email traffic to identify employees who were not showing up for work — or who were fictitious employees. The team used a similar analysis to assist with a seat-utilization study in India to determine the optimal space requirement for a new facility.

"What we're trying to do is deliver high-value insights through data analytics," Cooney says. "Business units have one view of their world. If we can give them a new view that allows them to conduct business more strategically, that's where we see our highest value in internal audit."

With Juniper Networks on track to complete its cloud deployment in 2018, the company, and by extension the internal audit function, is looking ahead and planning for what's next. For Juniper, that's building the infrastructure for the Internet of Things (IoT), which Cooney says is going to require massive amounts of data storage and analytic bandwidth expansion over the next two to five years. Beyond that, he says, is anybody's guess.

Panera Bread

Digital Transformation Keeps Rising at Panera

Competition is really ramping up in our industry from a digital perspective. ... So, it's essential that we keep transforming and innovating — and find new ways to enhance the experience our customers have with our brand and company, both in-store and off-premises.

— Peter Odman, Director of Internal Audit and Chief Auditor

"Continuous transformation" aptly describes Panera Bread's journey as a company over the past 35 years. In fact, Panera cites its "ability to transform our business whenever necessary and pivot as appropriate" as the secret to its success.[1]

The bakery-café chain, known for its freshly baked bread and pastries and hearty soups and sandwiches, began as a 400-square-foot cookie store in Boston. Today, Panera has more than 2,000 bakery-cafés in 46 U.S. states and Canada. About 55 percent of those locations are franchised. The company

1   "Our History," Panera website: www.panerabread.com/en-us/company/about-panera/our-history.html.

also operates 22 fresh dough facilities and manufactures and sells refrigerated soups, salad dressings, and other branded products through its consumer packaged goods business.

Panera's first major transformation phase — it counts five in its history so far — began when founder Ron Shaich merged his cookie store with bakery Au Bon Pain Co. Not long after the company went public in 1991, it purchased the 19-unit St. Louis Bread Company. Shaich and his business partner, the late Louis Kane, recognized a growing demand from consumers for fast and fresh options on the go. They renamed the St. Louis Bread Company as Panera (essentially, "bread basket" in Latin) — creating the food service niche known today as "fast casual." That was Transformation #2.

Transformation #3 in the late 1990s involved Shaich selling Au Bon Pain Co. to focus solely on the rapidly growing and renamed Panera LLC. And Transformation #4 in the early 2000s was about investing deeply in the customer experience and turning Panera into a gathering place where people want to linger. Technology played a role in that mission: Panera was an early mover in the food service space in terms of offering free Wi-Fi to its customers.

TECHNOLOGY AS A BUSINESS DIFFERENTIATOR

Transformation #5, underway since 2010, involves several initiatives for Panera. Those efforts include committing to achieve 100 percent "clean food on its U.S. food menu,"[2] refining its popular MyPanera® loyalty program, and providing customers with multiple ways to access its products, such as through its Rapid Pick-Up and Panera Delivery services. Customers are also now able to place online and mobile orders while in-store.

At the heart of these initiatives is an ongoing commitment by Panera's senior executive team to use technology as a business differentiator, says Peter Odman, director of internal audit and chief auditor for the company. "Our innovation and culture at Panera, as they relate to digital transformation, involve many groups in the company, but they are driven largely by senior management," he explains.

As Panera's digital strategy continues to evolve, its internal audit function is on hand to offer perspectives on new initiatives and assess potential risks.

Odman adds, "Digital transformation is very important to Panera. In fact, digitalization has been a key initiative at our company over the past six or seven years as we've been developing and rolling out e-commerce solutions and back-office systems, and introducing digital experiences in our cafés, like our kiosk ordering system."

As Panera's digital strategy continues to evolve, its internal audit function is on hand to offer perspectives on new initiatives and assess potential risks. The team, based at Panera's St. Louis, Mo., headquarters, is lean — just Odman (director), a senior manager and a staff auditor. They engage outside resources for extra support on audits, particularly technical audits, as needed.

Odman reports to Panera's chief legal officer. That helps to keep things "more independent," Odman says, since many of his team's audits relate to accounting and finance matters.

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[2] "What Does Clean Food Mean to Panera?", Panera website: www.panerabread.com/en-us/our-beliefs/our-food-policy/clean-ingredients.html.

DEVELOPMENT OF PANERA 2.0

Odman says that Panera's use of digital solutions to improve the customer experience began with Shaich, who stepped down as CEO in 2017 but still serves as chairman. "He was visiting our cafés at lunchtime, our busiest period, and seeing lines out the door. People were getting frustrated and leaving," says Odman. "He wanted to find a way to reduce the friction and wait time."

Shaich knew technology like in-store digital kiosks and online ordering could help greatly, but he didn't want "clunky, off-the-shelf solutions," according to Odman. He wanted to create a digital experience that would be distinctly "Panera-like." So, he brought in consultant Blaine Hurst — who is now Panera's CEO — to help him execute the "Panera 2.0" initiative (i.e., Transformation #5).

The need for specialized support is one way that digital transformation makes our work more complicated, especially on the front end.

"Shaich and Hurst worked very closely together to make Panera 2.0 happen," says Odman. "During the design and concept phases, they were involved in every aspect of this transformation process, right down to reviewing mockups of the ordering screens for kiosks. I have never seen senior leaders that engaged with something. They took ownership and ran with it."

The Panera 2.0 initiative was officially unveiled in 2014. The company is already seeing significant returns from its investment in carefully designed digital ordering and payment processing solutions. According to

Odman, approximately 30 percent of Panera's company sales were digital at the end of 2017. Panera finished 2017 with US$1.25 billion in system-wide digital sales; the company reported annual system-wide sales of more than $5 billion in 2017.

SCOPING PRESSURES FOR INTERNAL AUDIT

The internal audit function at Panera is often called on to conduct pre-implementation reviews of digital projects. The first time that happened was in 2012 when the company was starting to develop its e-commerce solutions. "Now, I would say that almost every year we have audits related to digital initiatives — e-commerce, online ordering, back-of-the-house systems, and so on," says Odman. "We'll perform a pre-implementation review and maybe a year later, an implementation review, if it's a big project. We'll likely do that for the new point-of-sale system we're developing internally, for example."

The internal audit team at Panera also performs IT security reviews, according to Odman. These and other types of technical audits often call for outside resources. "The need for specialized support is one way that digital transformation makes our work more complicated, especially on the front end," says Odman. "Before starting any project, we really have to think about the scope and ask ourselves, 'Do we need to bring in any specialists?' We then ensure we have the funding in our budget to cover the costs."

He continues, "For example, I might need to bring in two auditors to help with IT controls testing for a month. Then, I might need to engage some IT consultants for a couple of weeks to help with a next-generation firewall review. The size of our core team remains constant; however, we supplement it with IT audit resources, as needed."

Odman says his team, which does not use data analytics extensively in its everyday work, also relies on third-party resources when needed to bring specialized audit technology to audit engagements.

THE LOYALTY EDGE

Panera relies heavily on its MyPanera® loyalty program to deliver a competitive advantage. There are more than 31 million active members of MyPanera®. They represented 52 percent of the company's transactions in 2017. MyPanera® provides Panera with a wealth of data enabling it to better serve its most engaged customers.

"We have an in-house data analytics team, and most of their work relates to our loyalty program," says Odman. "The insights we get help us to structure our loyalty plan. We are constantly adjusting the program so that we can make it a highly customized experience for every member."

Effective collaboration across teams on digital projects helps the business to avoid making missteps that could turn into costly setbacks.

Panera receives reporting from an outside firm that helped to build the MyPanera® loyalty program and platform. However, according to Odman, Panera is looking to expand its internal data analytics team over time, and lean more on its IT department, so that the company can take the lead on more reporting and analytics projects, especially for "repeatable tasks." But Odman says it's valuable for the outside firm to continue assisting with analytics, as well, because they can provide an objective eye on the data.

Panera also looks at data from its bakery-café operations to track in-store performance,

such as the speed of service. Another group in the company, the Asset Protection Team, is also using data mining tools to review transactional data and identify potential instances of fraud and theft.

THE NEED FOR COLLABORATION

A long-term goal for Odman and his team is for internal audit to be viewed as a business partner that can help Panera meet its objectives while improving efficiency and mitigating risk. Contributing their perspectives to digital projects is helping the function make progress toward its goal of adding more value. As they collaborate with other departments, from IT to marketing to digital design, to help Panera achieve its digital vision, they are forging stronger relationships with people in the business.

That's something Odman and his team are working hard to build on. "Even if we're not auditing a specific area, we want people to feel that they can come to us and ask for our perspective. And they are starting to approach us more proactively, which is a good thing."

He adds that effective collaboration across teams on digital projects helps the business to avoid making missteps that could turn into costly setbacks. "If you're not communicating, you can't see how even a small change could have a big impact on operations," he says. "If you're introducing something like a new back-of-the-house system, you need to think about how it might affect labor scheduling and inventory management or create a need for more management training and resources."

Collaboration and communication across teams are becoming only more important for Panera as its competitors step up their own digital initiatives to increase their store traffic, grow sales and deepen customer loyalty.

"Competition is really ramping up in our industry from a digital perspective," says Odman. "It seems that everyone now is looking at mobile apps and mobile payment systems, for example. So, it's essential that we keep transforming and innovating — and find new ways to enhance the experience our customers have with our brand and company, both in-store and off-premises."

Contributing their perspectives to digital projects is helping the [internal audit] function make progress toward its goal of adding more value.

Interestingly, one way that Panera will be reaching more customers in more places in the future is by re-embracing an important part of its past. In 2017, the company acquired Au Bon Pain Holding Co. Inc., the parent company of Au Bon Pain. The Boston-based bakery-café chain will be part of Panera's initiative to intensify growth in new real estate channels, including hospitals, universities and urban locations.

Parkview Health System

Mining Integrated Data for Insights

Innovation can't happen without people. We've even created an annual 'Shark Tank' event, where coworkers come up with innovations. We're constantly trying to think of the next step.

— Mitch Evans, Vice President, Internal Audit

Innovators look for opportunity in adversity. Parkview Health System found its opportunity in an electronic health records mandate. The 140-year-old, not-for-profit health system in Fort Wayne, Ind., used the mandate as an opportunity to consolidate 50 data systems into one integrated enterprise database.

Parkview now ranks as one of the most wired health systems in the United States[1] and one of the best for patient care.[2]

Mitch Evans joined Parkview as vice president, internal audit, in February 2016, bringing more than two decades of experience in finance and auditing. A chartered accountant, Evans has

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[1] "HealthCare's Most Wired 2017," *Hospitals & Health Networks Magazine*, 2017: www.hhnmag.com/mostwired.

[2] "Watson Health 100 Top Hospitals," IBM Watson Health, 2017: http://truvenhealth.com/products/100-top/program-info/15-top-health-systems.

worked for a variety of organizations in more than 75 countries.

A MANDATE FOR CHANGE

When the American Recovery and Reinvestment Act of 2009, an economic recovery package intended to help lift the U.S. economy out of the Great Recession, offered US$19.2 billion for health information technology (IT), Parkview was ready to seize the opportunity. It used the assistance to implement electronic medical records (EMR). With the support of its leadership team, including health system chief information officer, Ron Double, Evans says Parkview was primed to leap forward and develop an information technology infrastructure designed to better meet the needs of its patients and staff.

Parkview selected Epic Systems, a leading healthcare data solutions provider, as its EMR vendor in 2011 and completed the rollout of the technology in 2014. That same year, the company created a data analytics team. Since then, Parkview has been working to mine that data for clinical, operational and risk management insights, according to Evans.

In 2016, the company moved the internal audit function out of the finance department and elevated the role of chief audit executive (CAE) from a managerial role to vice president. Evans says the change was initiated by the chairman of the board and CEO in response to a decade of growth, during which Parkview doubled in size. The organization had made a significant investment in clinicians and infrastructure, including building new hospitals. According to Evans, leadership felt it was time for the internal audit function to take on a more robust enterprise risk management (ERM) focus, covering risk from a financial, operational, compliance, IT, clinical and strategic perspective.

A FIVE-YEAR JOURNEY

Evans, who has a track record of building internal audit teams, says he was recruited to the newly elevated CAE position and tasked with transforming Parkview's internal audit function from "accounting police" to a more complex and consultative role as strategic risk adviser. Evans had an opportunity to build this new team from scratch because there wasn't much of a department when he joined. He had a clear playing field, essentially, to add the players he wanted.

Evans' first objective was to assemble a team with diverse experience aligned with Parkview's business units: clinical, pharmacy and behavioral health. That team has been deployed throughout the organization to build relationships and glean insights into the company's controls and procedures.

We want to be a trusted business partner. We've made rapid progress toward that goal, but we've only been at this for two years — and it's a three-to-five-year journey.

"We're building a multiskilled platform that will give us a well-rounded perspective of risk and allow us to collaborate with all corners of the organization," Evans explains. "If we have a team with different experience and different ways of thinking, the sum of the parts is going to be greater than just a bunch of accountants."

With the right talent in place, Evans says his internal audit development plan has entered the next phase. That plan includes using Parkview's growing arsenal of data analytics tools to analyze whole populations of data across the enterprise to identify anomalies and develop strategically valuable recommendations for revenue enhancements and cost-efficiencies.

"We want to be a trusted business partner," Evans says. "We've made rapid progress toward that goal, but we've only been at this for two years — and it's a three-to-five-year journey."

ENABLING INNOVATION

Digitalization is driving change in the entire healthcare system, and Parkview is on the leading edge, as Evans explains: "We're really trying to understand what patients want, and how to empower them for the future. Our goal is to provide the right healthcare, delivered at the right location at the right time and with the right utilization."

Working with the data analytics team, we've collaborated with parts of the business where internal audit never collaborated before.

Parkview has created an Innovation Center and Innovation Council and enlisted the help of all employees to think of ways to apply new technology to improve patient care and business processes.

"Innovation can't happen without people," Evans says. "We've even created an annual 'Shark Tank' event, where coworkers come up with innovations. We're constantly trying to think of the next step."

Employee-generated innovations implemented to date have ranged from operational changes to patient nutrition, according to Evans. "Innovation is part of our mission at Parkview," he says. "It is embedded in our vision of our organization."

That all-in attitude toward innovation not only engages employees in the change process but also serves to break down resistance to change by vesting them in the outcome. In Parkview's EMR conversion, for example, a major implementation challenge was getting buy-in from the primary care physicians in its referral network, many of whom initially complained of lost productivity and increased stress due to the new electronic documentation requirements.[3]

Mark Pierce, M.D., Parkview's Chief Medical Informatics Officer, led the health system's response team. He spoke about the challenge at the American Medical Informatics Association's Annual Symposium in 2015. According to a research paper co-authored by Dr. Pierce and Parkview information research scientist Tammy Toscos, Parkview was able to help physicians get better results by adding two short (five-minute) user orientation videos and productivity tools, including speech-to-text software for capturing and transcribing patient histories and notes. These simple changes — enabled through feedback and timely response — dramatically increased utilization and played a significant role in securing physician buy-in.[4]

PUTTING THE IT IN AUDIT

Digital innovation is also driving changes in the internal audit function at Parkview. With full populations of data accessible from the data warehouse, Evans says his audit team has a better picture of Parkview's enterprise risk than ever before. Last year, he says, his team began to explore digital risks and opportunities.

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[3] "Just One More Patient: Optimizing EMR Documentation in Ambulatory Care," American Medical Informatics Association, Annual Symposium Proceedings, 2015: www.ncbi.nlm.nih.gov/pmc/articles/PMC4765619/.

[4] Ibid.

"Working with the data analytics team, we've collaborated with parts of the business where internal audit never collaborated before," Evans says. "We've built up our knowledge of how both data and work flow within Parkview and how the revenue cycle and supply chain work."

Evans also says analytics has become the first step in every audit: "We're performing data analytics on all our projects. We do that in advance of audits to identify the outliers we want to focus on. It helps us to minimize our fieldwork time."

Digital audits account for about 25 to 30 percent of our auditing budget. But that is continuing to grow.

Parkview's internal auditors are also now performing root-cause analysis — which Evans says is a first for the team. Also, on an annual basis, they take deep dives into the digital aspects of every part of the Parkview operation. That process began with examining the security of the network's 35,000 connected medical devices. Most recently, the auditors reviewed the distribution of controlled substances and potential early warning indicators of drug diversion.

"From a percentage perspective, digital audits account for about 25 to 30 percent of our auditing budget," Evans says. "But that is continuing to grow."

PUTTING DIGITAL RISK IN PERSPECTIVE

Even though digitalization is top of mind at Parkview — and for the healthcare industry, generally — Evans says his audit team remains focused on full ERM, not just the digital aspects.

"We support the board by looking at risk across the entire spectrum," he says. "We're looking for cost savings, revenue enhancements and efficiency improvements."

Evans' long-term goal for the internal audit function at Parkview is to become involved in the early stages of all the organization's critical business decisions. That will take time, he says, as business units become accustomed to internal audit in its new role and begin to perceive its value as a strategic partner.

"I would say it's a journey," says Evans. "And the next step for our team is to prove the value we are adding."

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KnowledgeLeader® is a subscription-based website that provides information, tools, templates and resources to help internal auditors, risk managers and compliance professionals save time, stay up-to-date and manage business risk more effectively. The content is focused on business risk, technology risk and internal audit. The tools and resources available on KnowledgeLeader include:

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