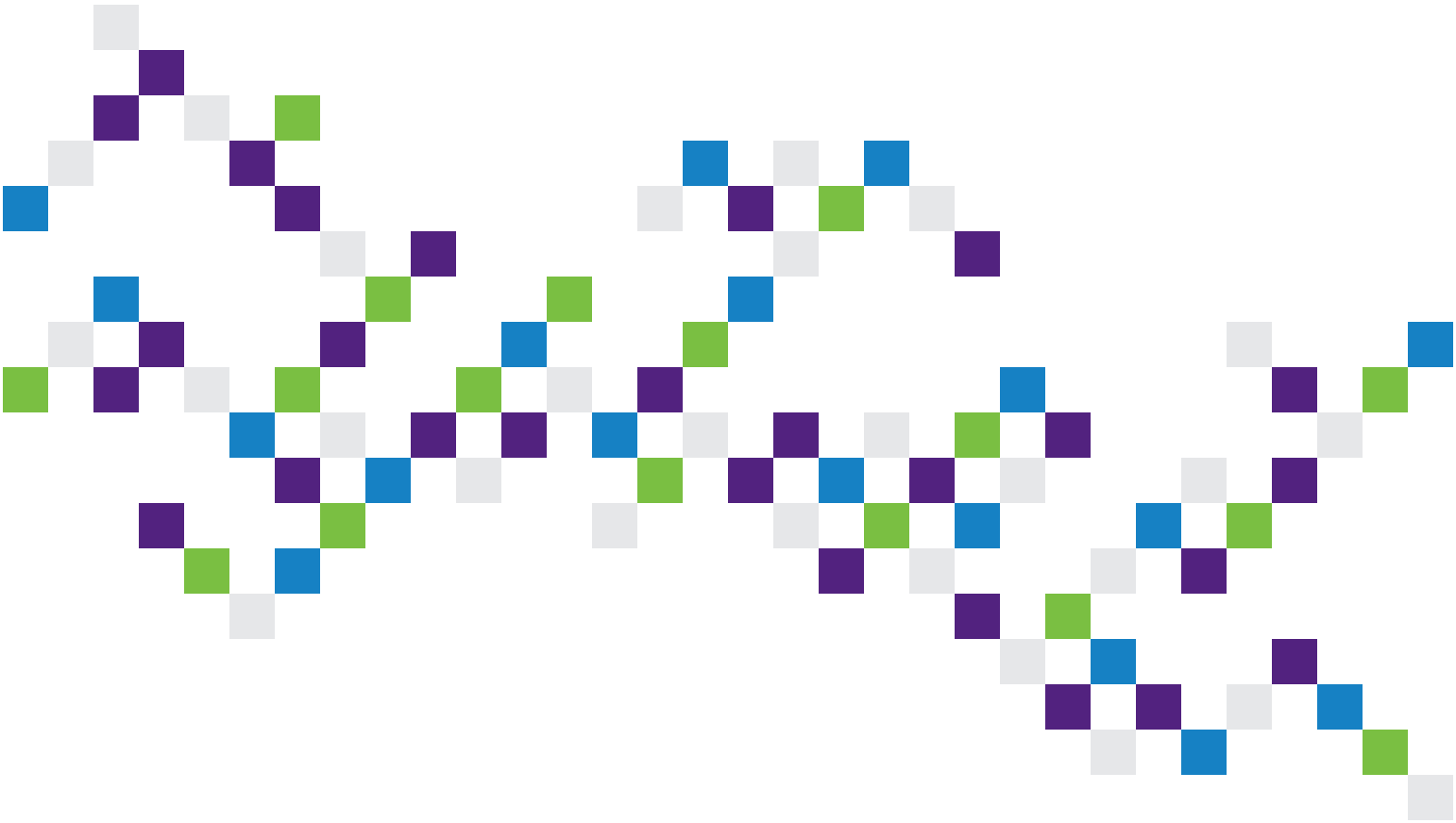
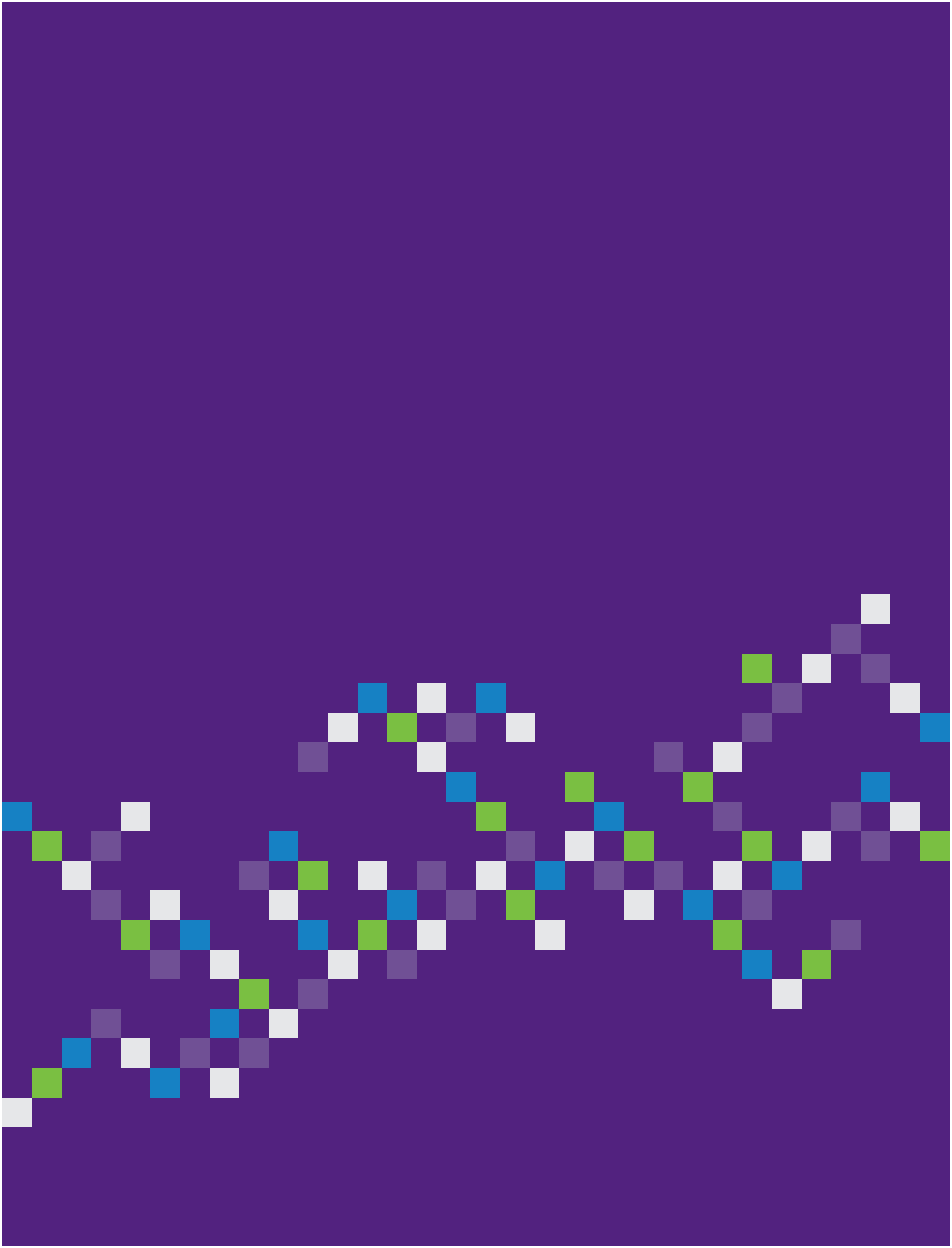
AUDIT TECHNOLOGY INSIGHTS

Conversations with Audit Leaders

2012





BRIDGING THE GAP

Several years ago, IIA research pointed to a significant gap between the importance that audit leaders place on making effective use of technology and how well they think they're doing in pursuit of this goal. Last fall, TeamMate initiated a new global thought leadership program designed to address this gap. Through research, analysis, surveys of our 90,000-strong global user base, and interviews with internal audit leaders, ***such as those showcased in this report***, we are developing new ideas and insights about how to leverage the power of technology to improve internal audit performance.

We launched our new thought leadership effort with the ***2011 TeamMate Internal Audit Technology Survey (IATS)***, which provides a baseline of responses to questions dealing with internal audit trends and directions. With baseline data from the IATS, which we plan to update annually, internal auditors will be able to compare their assessments of how well they are deploying technology against similar perceptions from a wide base of internal audit groups. In December, we issued a report on the survey entitled ***Enhancing Audit Technology Effectiveness:*** *Key Insights from TeamMate's 2011 Technology Survey.*

At The IIA's General Audit Management Conference in March, we unveiled a new ***Technology Maturity Model and Diagnostic*** that we developed in conjunction with Richard J. "Dick" Anderson of DePaul University. The maturity model, which takes a holistic view of technology as a key enabler for internal audit success, represents a milestone in TeamMate's support of the internal audit profession and universities like DePaul that have demonstrated a serious commitment to the field. In addition to supporting educational institutions, we are a ***Partner in Progress*** with The Institute of Internal Auditors as well as an active participant in IIA conferences and seminars.

In TeamMate's ***Audit Technology Insights 2012***, we add yet another dimension to our efforts to provide practical advice of value to all internal audit functions. This report, which we developed with Dick Anderson and J. Christopher Svare of Partners in Communication, showcases key insights from audit leaders on the effective use of technology. More specifically, it demonstrates how leading internal audit organizations, large and small, are utilizing technology to streamline and strengthen their operations.

Audit Technology Insights 2012 presents a wealth of ideas and insights for you to consider. Take a quick run through the Table of Contents to see what we have to offer. And don't be surprised if you find something of value on every page.

We look forward to your feedback.

Mike Gowell
TeamMate Vice President & General Manager

July 2012

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ACCIDENT FUND HOLDINGS

Michael Sekoni, CIA, CFSA, CISA, CFE, CGMA, CPA, AIS
Vice President & General Auditor

Nature of Organization	❱ Insurer based in Lansing, Michigan, that focuses on Workers' Compensation insurance; largest non-governmental specialty writer of workers' compensation insurance in the United States ❱ Subsidiary of Blue Cross Blue Shield of Michigan ❱ Accident Fund Holdings has four subsidiaries: Third Coast Underwriters (IL); United Heartland (WI); CompWest (CA); and Accident Fund Insurance Companies (MI) ❱ Annual Revenue: $700+ million
Internal Audit Department	❱ 6-person staff ❱ Started in 1998
Technologies Employed	❱ TeamMate Audit Management System (TeamMate) ❱ ACL

Small but Agile Team Takes 6-Step Approach to Maximizing Technology Value

Michael Sekoni, VP & General Auditor for Accident Fund Holdings, a Michigan-based insurance company, says his six-person staff is able to provide broad, comprehensive audit coverage by following a straightforward, six-step approach:

- Know Your Data
- Apply Technology to Every Audit
- Partner with IT
- Hire the Right People
- Tap Outside Resources to Expand Your Expertise
- Empower Management to Conduct Continuous Monitoring

Know Your Data

Accident Fund Holdings, the largest non-governmental specialty writer of workers' compensation insurance in the United States, makes extensive use of ACL software to analyze and monitor data. "We do 100% sampling, which enables us to test and analyze an entire data population instead of having to rely on a representative sample," says Sekoni, who has led the company's Internal Audit function since it was established in 1998. "By working with an entire data universe, you really get to know and understand your data," he states, "and you improve your ability to react as well as anticipate. ACL also enables us to run reports between scheduled audits and perform ongoing data monitoring in multiple business units."

In addition to contributing to more efficient operations, ACL software helps Accident Fund Holdings' internal auditors eliminate duplicate payments and close system control gaps to reduce overpayments. These and related cost-saving measures enabled Sekoni's group to save the company more than $1.2 million in 2006, the year they won ACL's Impact Award for North America.

Apply Technology to Every Audit

The use of technology is a basic expectation in Michael Sekoni's Internal Audit department. "Our goal is to maximize technology value in everything we do – from audit planning and implementation to risk assessments and audit report production," he states. "We expect every member of our team to apply technology to every audit." At the end of each audit, members of Sekoni's staff are required to demonstrate how they leveraged technology, and if they failed to do so, then they need to explain why.

To Sekoni, a small but nimble staff can be a distinct advantage. "We are an ***early adopter*** when it comes to technology – kind of a guinea pig for the parent company," he states. "We've found that smaller teams can pick up new technologies more quickly."

Partner with IT

"We value the importance of maintaining good relationships with IT management and staff to promote open dialogue," says Michael Sekoni. As he knows full well, however, good relationships take work. "In the early years, one of our toughest challenges was getting IT support," he explains. "They saw us as a threat, especially when they started to hear members of management saying things like 'How come IT never created this type of report?' and 'How come IT never showed us that we could do all this?'

"We needed IT to understand that the types of information we were generating with data analytics was not readily available and that we were applying our auditing backgrounds to generate reports to describe specific risks," Sekoni states. "And we needed to convince IT that ACL, our technology of choice, was not a threat, and that ACL was not going to take away their roles and responsibilities."

Over time, Sekoni and his team were able to make their case. "We've built a good rapport with IT and we work hard to keep it that way," Sekoni states.

Hire the Right People

While every member of Michael Sekoni's staff needs to be proficient in the technologies employed by his department, they don't have to start out that way. "We look for people who are curious and capable as well as teachable and not easily intimidated," he states. "If they don't have particular technology skills, we want to know if they have the aptitudes and wherewithal to pick them up." In addition, says Sekoni, he actively promotes the department within the company in hopes of finding suitable candidates for Internal Audit among existing employees. To this end, he says, his department recently hired an IT expert from Accident Fund Holdings' IT Network Security team for his expertise and skills.

Tap Outside Resources to Expand Expertise … with One Caveat

"We use third-party firms to gain needed expertise but it's a conditional commitment," says Accident Fund Holdings' audit chief. "We tell consultants that one of their key roles is to teach us what we need to know to do something ourselves. And we make it clear that we don't plan to approach them for repeat business. Our goal is to learn how to do the work ourselves next time."

Empower Management to Conduct Continuous Monitoring

In the realm of continuous auditing and monitoring, a major challenge facing many internal audit leaders is how to persuade management to take on greater accountability for continuous monitoring activities. At Accident Fund Holdings, the approach being taken by General Auditor Michael Sekoni to shift responsibility for continuous monitoring from internal audit to management may well serve as a model for other organizations to consider.

"During an audit," says Sekoni, "we'll often hear one of our audit clients say, 'How did you get this data or report? We want to be able to do this going forward.'" In response to such comments, Sekoni adds, "you look at the tests you automated for your audit. Then you run some of those tests outside the audit to show the business what they could gain by running the test themselves.

"Let's say we can run 20 separate audit tests," Sekoni continues. "We'll ask key decision-makers which of these 20 specific tests might help you manage your business? They might say, 'Out of those 20, can we have these five?' Management then decides which programs it wants to run itself and the monitoring becomes their responsibility. In turn, we audit to see if the controls are working."

ALLIANCE DATA

Norm Kromberg, IT Audit Director

Nature of Organization	❱ Data-driven holding company based in Plano, Texas
	  ❱ Alliance Data Retail Services does retail credit-card processing
	  ❱ Epsilon provides targeted marketing services
	  ❱ LoyaltyOne runs Air Miles Canada, the largest Canadian reward program
	❱ Employees: Approximately 9,000
	❱ Annual Revenues: $3 billion
	❱ NYSE: ADS

Internal Audit Department	❱ 25-person staff; 7 focus on IT ❱ Centralized in Columbus, Ohio ❱ Norm Kromberg, IT Director, has focused on IT audit, risk, compliance and security governance since 1987
Technologies Employed	❱ TeamMate ❱ ACL for data management ❱ Excel & Access for issues tracking and risk management ❱ Concur for expense reporting ❱ COBIT (IT governance framework and toolset created by ISACA to help bridge the gap between control requirements, technical issues and business risks) ❱ PeopleSoft (across the board)

Break the Data Extraction Paradigm

Auditors are creatures of habit – pulling up and executing checklists, doing what they did last year and adding to it, says Norm Kromberg, director of IT Audit for Alliance Data. "We have to bust that paradigm from the technology side," he states emphatically. "That means figuring out how to compress our audit cycles and use our laptops, tablets, networks, cloud providers, virtual systems and mobiles to improve audit processes and efficiency."

Rather than running scripts on extracted data, for example, Kromberg suggests that internal auditors first seek to leverage the report-writing and monitoring capabilities that are typically part of the configurations for major ERP (enterprise resource planning) systems. He also suggests that CAEs think about the design and system of controls, not just audits.

Shorten Audit Cycles

"Our internal audit group needs to be much quicker, faster, and more efficient when it comes to communicating about issues and risks," says Norm Kromberg. "Right now we are on a three-year audit cycle with our general computing controls. We need to get that time frame down to a year, if not a quarter, and apply the same time frame to our audits of financial and operational units."

Use Continuous Auditing to Spur Continuous Monitoring

Norm Kromberg figures that if internal auditors could do a better job of persuading their managements to monitor their organizations, then they ought to be able to audit key controls on a regular basis. "Management monitors and we audit; that should be the norm," he reasons. "Doesn't management own the controls?

Shouldn't they monitor what they do?"

Alliance Data's IT audit expert also suggests that internal auditors pursue continuous links into management's monitoring activities to strengthen the link between continuous auditing and continuous monitoring. The benefits, he believes, would be obvious. "If continuous monitoring is working, no one should be surprised by audit results," he states, "and if we're finding surprises in our auditing, then there's something wrong on the monitoring side."

10 Tips for Optimizing Technology

To gain more from technology, consider Norm Kromberg's 10-step approach:

1. View technology as a key strategic enabler
2. Link technology planning to corporate and line-of-business objectives
3. Think about the design and system of controls, not just audits
4. Shorten audit cycles
5. Increase audit efficiency
6. Expedite issues tracking
7. Persuade management to monitor controls more extensively
8. Pursue a continuous link into management's monitoring activities
9. Leverage the report-writing and monitoring capabilities of ERP (enterprise resource planning) systems
10. Use co-sourcing to augment your staff

BALLY TECHNOLOGIES

Christopher "Chris" DiLorenzo, CPA, CIA, CFE, CRMA
Senior Director, Internal Audit

Nature of Organization	❱ Las Vegas-based Bally Technologies designs, manufactures, operates and distributes advanced gaming devices, systems and technology solutions worldwide ❱ Annual Revenue: $900 + million ❱ NYSE: BYI
Internal Audit Department	❱ Staff of 12 includes 3 dedicated IT auditors, all with strong ACL skills
Technologies Employed	❱ TeamMate ❱ ACL and Audit Exchange ❱ Excel Macros ❱ Cognos ❱ Concur expense reporting ❱ Developed proprietary ERM software in-house

Leverage the Power of ACL

Although a relative newcomer to ACL, the Internal Audit group of Bally Technologies is fully committed to the potential of the data analytics software to strengthen its audit operations. "Until recently, we lacked the expertise to make the most of what ACL could do for us," says Chris DiLorenzo, Senior Director of Internal Audit for the gaming technology manufacturer. "With the addition of three full-time IT auditors, who collectively have specialties in ACL, MIS and accounting, we can now take full advantage of what audit analytics has to offer," he states.

Bally's Internal Audit department entered the data analytics arena by bringing in an ACL consultant to help them create boilerplate test scripts and deliver several days of script training, says DiLorenzo. "That gave us the jump-start we needed to get comfortable developing our own scripts," he states.

Long term, DiLorenzo's goal is to incorporate ACL into every audit. To date, his team has begun to leverage ACL's data-analytic capabilities and now can provide Bally executives with individualized quarterly summaries highlighting exceptions to company policy. These exceptions can be addressed more effectively by management now that management has relevant data in hand, says Bally's internal audit chief.

To maximize the department's technological capabilities, Bally's Internal Audit team is looking to streamline every possible procedure. "We're asking, 'How can we automate this test step? How can we add value to the organization using our technology?'" says DiLorenzo. Next up for the company's internal auditors: Create an ACL audit universe where these questions can be vetted and documented. "From there, we implement, automate and monitor continuously," says DiLorenzo.

To maximize the department's technological capabilities, Bally's Internal Audit team is looking to streamline every possible procedure.

Develop ERM Technology In-House

"Given that we're a technology company, we often try to develop our own technology solutions," says Chris DiLorenzo. A case in point: Bally's enterprise risk management (ERM) system, which was built by the company's Internal Systems Development team with input from Internal Audit. "We identified a need and helped the company come up with goals and objectives," says DiLorenzo. "Our Internal Systems Development team did the rest." The result is an ERM tool that has been customized to the company's specific needs. During the introductory period for Bally's new ERM capabilities, Internal Audit has been responsible for the day-to-day administration of this system but will transfer this administrative role back to management in the near future.

The primary focus of Bally's new ERM system is monitoring. "If anyone adds or modifies a risk, the system immediately alerts me as well as all of the risk owners that a change has occurred," DiLorenzo states. "Being able to get that sort of real-time information really puts me in the catbird seat."

With the input they receive from Bally's internally developed ERM system, DiLorenzo's Internal Audit staff produces quarterly risk summaries for the company's Board of Directors. "In addition to providing directors with an important tool for risk-management oversight," says DiLorenzo, "the system alerts give us real-time insight into the changing risk landscape as seen by company executives. Accordingly, we take this information into account each quarter when revisiting our annual risk assessment and audit plan."

"If anyone adds or modifies a risk, the system immediately alerts me as well as all of the risk owners that a change has occurred," DiLorenzo states.

CALPINE

Kevin McMahon
Senior Vice President & Chief Compliance Officer

Nature of Organization	❱ $10-billion electricity wholesaler based in Houston ❱ Business Focus: Geothermal power production in Northern California and natural-gas-fired plants across the U.S. ❱ Customer Base: Focused on only 10 customers ❱ Significant trading operations ❱ NYSE: CPN
Internal Audit Department	❱ 16 people ❱ IA is responsible for Sarbanes-Oxley compliance ❱ Separate regulatory compliance group has 9 people
Technologies Employed	❱ TeamMate ❱ TrinTech Unity Suite for Sarbanes-Oxley compliance ❱ PeopleSoft

Want to Add Value? Ask Good Questions, Promote Data Analytics

Being counter-intuitive can pay big dividends, according to Kevin McMahon, SVP & Chief Compliance Officer for Calpine Corp., a major Houston-based energy company. "We try to ask questions that the business is not asking," says McMahon, who heads up a group of 25 focusing on internal audit and compliance issues. To increase the likelihood that he and his staff will ask thought-provoking questions of key corporate decision-makers, he likes to include junior staff in important business meetings. "People who don't understand the business too well often ask the most critical questions," says McMahon. "When people are relatively new, they tend to think of things that those of us who are deeply embedded in the business tend to overlook."

McMahon and his staff are also encouraging the business to adopt better analytics and to apply data mining techniques in order to mine transactional data. By doing so, McMahon reasons, the business will gain a stronger analytical foundation for key business decisions.

Automate to Cut Controls

When Kevin McMahon joined Calpine Corp. in 2006, the company had more than 1,300 controls. Today that figure stands at 71, a highly streamlined number that McMahon figures puts the company in the top 1% of the E&Y and PwC benchmarks for such measures.

How were McMahon and his team able to eliminate more than 1,200 controls in a six-year time frame? By combining automation and rationalization, he says, and following a six-step approach:

1. **Document your control process using people who understand it well**
2. **Create a parking lot of opportunities for automation**
3. **Build staff understanding of your applications**
4. **Write custom scripts that the business will ask to run themselves**
5. **Search for technology resources within the company that you can leverage**
6. **Utilize reporting capabilities already available in existing applications, such as PeopleSoft, where you can get support in the business for continuous monitoring**

The drive to automate can have one major downside, however, McMahon cautions: "If you push for total automation, you can get what I call 'data fuzziness' – people looking at data without understanding the business behind it," he states. "It's something to guard against," he adds.

Leverage Continuous Monitoring to Reduce Sampling

"With a comprehensive continuous monitoring program, we don't have to sample and we've largely eliminated the need for planned regular audits," says Calpine's Kevin McMahon, adding that his internal auditors devote about 20% of their time to continuous monitoring in order to achieve broader coverage of risk areas. Much of this monitoring effort is devoted to the development of scripts focusing on significant business issues as well as risks associated with Calpine's extensive trading activities, says McMahon. "By continuously monitoring key factors such as settlement balancing, risk factors in deals, and space utilization, we virtually eliminate the need to sample," he states. What's more, McMahon adds, the business will want more of the same if they like the way Internal Audit is handling its monitoring efforts.

Since scripts generally target specific challenges, they tend to have a limited shelf life, says McMahon. "We generally don't run a continuous audit script for more than 18 months," he notes. "In most cases, we either turn it over to the business or the issue goes away. If the issue continues," he adds, "it's an indication that we're not doing the right thing to address the business issue originally discovered from the script." To help ensure that Calpine's internal auditors address their continuous monitoring goals effectively, McMahon keeps close tabs on the number of tests borne by the business after development by Internal Audit, which he considers to be a key metric of their effectiveness.

In addition to continuous monitoring, Calpine's Internal Audit staff finds other ways to contribute to the company. "We also get invited in whenever business leaders are struggling with a transaction or a process change," says McMahon. "This kind of involvement keeps us directly connected to the business and the value-added component of Internal Audit."

To Build a Great IA Team, Strive for Balance, Hire "Surgically," and Beware the "Purple Squirrel" Fallacy

Kevin McMahon believes in hiring good people and teaming up with them to achieve your goals. He also believes that today's talent shortages in key areas are forcing organizations to refine their hiring strategies. "When I started the department in 2006," he recalls, "we hired three key people to build and frame out the audit program and control infrastructure and then we fleshed out the staff with various levels of experience. What we found is that people who are just tuned in to data analytics and don't understand the business too often miss the really big risks to the company. If you just focus on the data and don't really understand the business, you'll miss all the big risks."

To address these issues, Calpine's Internal Audit leaders hire "surgically" to achieve a balanced set of capabilities. "Not everyone needs to have both business and technology experience," says McMahon. "What I really need are a few subject-matter experts who really understand the business and then staff people who are willing to learn." He also addresses capability gaps with outside, third-party support to address specific needs including the development of QA scripts.

For internal audit leaders searching for talent (and who isn't), Calpine's CCO has this simple advice: Beware of the "purple squirrel" fallacy, which he describes as the idea that it's possible to find a single candidate who is the perfect fit and will meet all your needs. "Most people look for the candidate who has it all," he states. "That's simply not realistic."

Sharpen Focus on Training

Given ongoing talent shortages, Kevin McMahon places a high priority on training to enhance staff capabilities. In addition to training conducted within the corporation, he allocates about $5,000 per staff member for outside technology and business training – and that's over and above the cost of travel and lodging. He also budgets $7,500 per manager and $10,000 per director for training.

GENWORTH FINANCIAL

Ninette Caruso, Chief Audit Executive

Derek Venable, Director, IT Audit

Nature of Organization	❱ Leading Fortune 500 insurance holding company headquartered in Richmond, Virginia ❱ Leading provider of life insurance, long-term care insurance, financial protection coverages, independent advisor-based wealth management, and mortgage insurance ❱ Operations in more than 25 countries ❱ More than $110 billion in assets (as of March 31, 2012) ❱ Approximately 6,400 employees ❱ NYSE: GNW
Internal Audit Department	❱ Staff size: 30 ❱ Supports operations in U.S., Canada, Europe, Asia and South America
Technologies Employed	❱ TeamMate ❱ ACL ❱ Microsoft Office ❱ Corporate Social Media Tool ❱ Currently implementing GRC

Develop Solid Technology Strategy

Internal audit priorities have expanded in recent years to include risk management and governance in addition to controls. Yet the need for internal auditors to provide tangible value in all three areas as opposed to controls alone may not be sufficiently appreciated, suggests Ninette Caruso, Chief Audit Executive at Genworth Financial, a leading provider of products and services that assist consumers in protecting themselves, investing for the future, and planning for retirement.

"Your entire team needs to understand where your core values are coming from so that you can target your technology resources on the right areas," states Caruso. When it comes to describing what drives internal audit value, she says, "Make it clear and make it focused. Start your technology strategy with the end game in mind and don't get sidetracked by shiny objects or cool tools."

When embarking on new technology projects, internal auditors need a strong understanding of their core business process as well as their core value proposition, according to Derek Venable, Genworth's Director of IT Audit. "In addition to knowing ***what*** they need to do, such as managing work papers centrally, internal auditors need to know ***how*** they need to do it in terms of performance considerations and quality," he states.

Some additional tips for developing and implementing technology strategies from Ninette Caruso and Derek Venable:

- ***Don't Underestimate the Cost of an Ad Hoc Implementation*** — Take into account the costs to maintain ad hoc tools developed and maintained by your audit staff.
- ***Clearly Differentiate between 'Must Have' Requirements*** (ones that will truly move the bar) ***and 'Nice-To-Have' Features*** — Build your technology plan around your "must have" business priorities; if you organize your technology rollout in phases, put your "must haves" in your first phase and your "nice-to-have" features in a later phase.

- ***Assess Your Technology Capabilities*** — Understand where you have gaps in your current technology capabilities relative to your objectives.
- ***Develop a Strategic Technology Roadmap*** — Identify what technology solution you're going to apply and when you're planning to execute it as well as your key success metrics and how they'll be measured.
- ***Use What Is Already Out There under Your Nose*** — Check to see whether your company has an ERP system or other type of technology that could benefit internal audit; explore opportunities to leverage corporate investments to provide common capabilities in areas ranging from document management to corporate social media.

Partner with IT to Create Value

With the commoditizing of IT services, many corporate IT departments are striving to bolster their value propositions to their organizations, says Derek Venable, Director of IT Audit for Genworth Financial. He believes internal audit functions can capitalize on this trend by seeking support from their IT counterparts in the development of a strategic technology roadmap for internal audit.

"Leverage your internal IT partners to support your critical audit technology solutions," Venable advises. "By doing so, you will optimize the alignment between your skillsets and tasks and, ultimately, strengthen the value propositions for both your internal IT function and your audit team," he states.

Communicate Effectively to Strengthen Performance

Communications can be a key driver of audit efficiency but takes planning, follow-through and tailoring to specific audiences in order to be effective, says Ninette Caruso, Chief Audit Executive for Genworth Financial.

In the area of communications, Genworth has three primary objectives, says Caruso: First, to ***Share Information*** and ensure that it is disseminated in a timely manner; second, to ***Collaborate Effectively***, taking steps to ensure that team members add their suggestions and take accountability for their input and participation; and third, to ***Build Teams*** by sharing information and creating the foundation to build a true sense of community.

"Within the company, we typically share information via email, meetings, and shared drives," says Caruso. "However, one of the lessons we've learned is that the only way to share information effectively is to communicate using methods favored by the consumers of the information. In our case, the staff is definitely still Gen Y, otherwise known as the Millennials. They're tech-savvy and prefer to communicate through e-mail and text messaging. They're comfortable learning through webinars and on-line training. And they like to be connected – with friends, family and co-workers – so they're major proponents of social media. For us to communicate effectively with our Gen Y employees, we need to understand them."

Gen Y-types also tend to be team-oriented, says Caruso, a factor she took into account when establishing the need to ***Collaborate Effectively*** and ***Build Teams*** as two of her top three communications priorities. To pursue those objectives, she and her staff are active users of the company's collaboration suite.

In addition to communicating effectively within departments, internal audit groups need to communicate effectively with their stakeholders in order to strengthen audit efficiency, says Caruso. "As part of an audit, communications with the client are critical in terms of understanding risks, gathering evidence, tracking issues, and final reporting. Such communications tend to be highly varied and translating from one toolset to another can be a challenge," she states, noting that her staff uses TeamMate to identify findings but MS Office technology such as Word and PowerPoint to communicate formally with their clients and key stakeholders.

GEORGIA INSTITUTE OF TECHNOLOGY (AKA "GEORGIA TECH")

Terry Nolan, Associate Director for Information Systems Assessments
Department of Internal Auditing

Nature of Organization	❱ Major public research institution ❱ Roughly 20,000 students and 6,000 employees
Internal Audit Department	❱ Staff of 13: CAE, 3 Associate Directors, 7 auditors, 1 office manager, 1 admin assistant ❱ Dual reporting structure: CAE reports functionally to President and CAO of the Board of Regents and administratively to VP-Legal Affairs and Risk Management
Technologies Employed	❱ TeamMate ❱ Idea ❱ PeopleSoft ❱ dbDataFinder ❱ dtSearch ❱ Bank of America Works

Mandate Use of Technology

"Technology is vital to our business interests," says Terry Nolan, Associate Director of Internal Audit for the Georgia Institute of Technology, better known as Georgia Tech. "It's vital in security, it's vital in efficiency, and it's vital in the way we communicate." Reflecting the importance of technology to his department, Nolan said Georgia Tech auditors are expected to maximize the use of their audit management system on all audits. "TeamMate increases our security and our ability to review documentation," he states, adding, "If we have to go to court or provide evidence based on our audit, we have a standard, documented way to do it."

In addition to utilizing the full suite of TeamMate modules, the internal audit staff at Georgia Tech is building a "risk dashboard" to add a more real-time dimension to the university's risk profile and to pick up issues that surface outside of normal internal audit reporting channels. "The dashboard insights, when combined with internal audit risk assessments and information from other departments, enable us to provide senior-management with a more robust, real-time picture of the risk issues facing the organization," says Nolan.

The Internal Audit group is also emphasizing the use of mobile assets to address work-from-home issues. "Our goal is to have auditors working off a mobile device such as an iPad or an Android tablet, using VPN (virtual private network) technology to communicate with their workstations so they can operate securely and in the standard environment provided by their desktop," Nolan states.

Adopt Comprehensive Rolling Audit

The Chief Audit Officer for the University System of Georgia, which oversees 35 colleges and universities in the state, has made a system-wide commitment to rolling audits, according to Nolan. "The state is seeking the ability to update and change its audit plan quarterly and to capture risk on a quarterly or semi-annual basis," says Nolan, who adds that the state is looking to make ongoing modifications to address new risk insights and highlight management issues and trends as they arise.

The internal auditors of Georgia Tech are doing their part to strengthen the University System of Georgia's rolling audit abilities. In particular, they are using TeamRisk self-assessment tools together with a controls self-assessment survey to capture risk trends in a manner that will directly support the Chief Audit Officer's commitment to a current risk-based rolling audit plan.

Encourage Business-Unit Ownership of Controls & Monitoring

Georgia Tech's Internal Audit group is in the process of identifying what needs to be continuously audited, what needs to be monitored continuously, and what tools will be used to achieve the organization's continuous monitoring objectives. At this point, about 10% of the group's time is devoted to the continuous auditing process, an effort that includes developing scripts to identify trends and issues to be highlighted for management. "Although we want continuous auditing and monitoring to be effective and efficient, we don't want to devote more than 20% of our time to these activities," says Terry Nolan.

When it comes to continuous monitoring, the internal audit group is doing all it can to encourage business-unit ownership of controls and monitoring activities. That includes helping business units write scripts to use in their own monitoring activities. "We really want the managers responsible for operational and control issues to take responsibility for them instead of coming to internal audit and saying, 'You are responsible for controls.' No, internal auditing is not responsible for controls," Nolan states.

Develop "Integrated Auditors" to Encourage IT Self-Reliance

One of Nolan's key goals is to enhance the IT knowledge of Georgia Tech's regular audit staff so they can address IT risks more effectively. "We are trying to get everybody up to a minimal level of IT speed so we can all be more self-reliant on IT issues," says Nolan. Primary responsibility for turning the department's audit generalists into what Nolan calls "integrated auditors" rests with two dedicated IT auditors, who provide in-depth training to the generalists on IT as well as ongoing support on an as-needed basis.

HCA (HOSPITAL CORPORATION OF AMERICA)

Chase Whitaker, Director of Information Technology Internal Audit Services

Nature of Organization	❱ World's largest private provider of health-care services ❱ HQ: Nashville, Tennessee ❱ 160 hospitals across 24 states & London, England ❱ Annual revenues: $30 billion + ❱ NYSE: HCA
Internal Audit Department	❱ Staff of 140 ❱ 10 IT-centric developers
Technologies Employed	❱ TeamMate ❱ ACL ❱ SQL ❱ Microsoft Office ❱ Current-state laptops & tablets

Creating Uncompromising Value for Business Units

Chase Whitaker is a Director of Information Technology Internal Audit Services for HCA (Hospital Corporation of America), the world's largest private provider of health-care services. He collaborates with a group of 10 IT-centric developers who provide ongoing data analysis and support to their 130 internal audit colleagues within the company. But they also leverage their expertise in data analytics to provide extensive support to HCA's 160-hospital network.

"We're able to create value without compromising our independence or objectivity," says Whitaker, "and we do so without losing our focus on the micro risks to the company."

Some time ago, HCA's Internal Audit leaders determined that the data analytics they employ to strengthen their audits could have potential value to the company's lines of business, as well. To this end, they created the ***Continuous Audit Notification System (CANS)*** – a website hosted by Internal Audit on ***Atlas***, the company's intranet, that enables HCA hospitals to gain direct, self-service access to IA-generated information that the hospitals might find useful. Hospitals submit their report requests on the IA Self-Monitoring System (SMS), which delivers reports in Excel format within about two hours. Internal Audit's IT group tracks and trends report requests monthly, by hospital and by report category.

What types of subjects addressed by IA-generated data analytics also have potential value to HCA's hospitals? For starters, payroll information, says Chase Whitaker, who cites high overtime levels as a case in point. "Let's say a particular hospital employee has been averaging 50 percent overtime for more than six months," he hypothesizes. "Although traditional payroll reports are based on a calendar-year, W-2 cycle, Internal Audit can examine a 12-month period irrespective of calendar year-end. We could look for abnormally low vacation, holiday, and paid-time-off levels for a specific person in the September 1 – April 30 time frame, for instance. Such information can be particularly important when you're focusing on individuals in a fiduciary position who might be handling cash or staff in procurement positions where they might be handling contracts. There is the potential for fraud in both types of situations."

At the same time, notes Whitaker, high overtime levels

can raise other types of red flags. "If someone in a patient-care situation is never taking a vacation, that person might be tired, exhausted, or overworked," he suggests, adding that such factors could impact the quality of clinical care. In addition, he advises, hospitals have to be aware of false positives when looking at potential overtime situations involving nurses. "With their four days on, four days off schedules," he states, "nurses almost have built-in mini-vacations in their regular work schedules."

Procurement & Contracting is another area where hospitals can find value in the types of data analytics work performed by Internal Audit for its own purposes, says Whitaker. "We have a large group purchasing organization (GPO) that negotiates a wide range of products and supplies," he states. "Some price points are based on volume while others can be affected by the nature of clinical cases and specific contract stipulations relating to those cases. What's more, complex clinical cases can have different pricing tiers with different triggering points as to when specific pricing levels kick in. It's one thing to change the price going forward, but you still have to pay on the runout on the old price," he notes. "In such cases, you need to take into account what has occurred so that you neither overpay nor underpay a vendor."

Continuous Monitoring: Seek Meeting of the Minds with Business Leaders

"I'm a strong advocate of continuous auditing and monitoring and am heavily involved in these areas," says Chase Whitaker, director of Internal Audit Technology Services for HCA. "We're continually asking, 'What can we automate?' and 'What can the business automate?'"

Echoing similar comments from other internal audit leaders, Whitaker says it's challenging to get HCA businesses to assume full monitoring responsibility. "At some point Internal Audit needs to have a meeting of the minds with business leaders about this issue," he states. "We need to say, 'This is truly something that belongs to you; it needs to come off our plate and you need to absorb it."

Attracting IT Talent: Think Small & Opportunities to Add Value

When HCA's Chase Whitaker looks for IT talent, he looks first within his corporation. As the world's largest private provider of health-care services, Hospital Corporation of America has a lot of employees, including 3,000 or so in the corporate IT group. In approaching HCA IT professionals about what Internal Audit has to offer, he focuses on department size in addition to the opportunities for customer contact and to add value.

"If you were in corporate IT, you would be one in a group of 3,000 as opposed to a key contributor within Internal Audit Technology Services, a closely integrated group of 10," Whitaker explains. "You would have front-line engagement with the customer, which in our case is the audit base," he states. "You would have the opportunity to interface directly with hospital CFOs and business analysts. And you would have the opportunity to create value for the entire company as well as for Internal Audit.

"Opportunities like that rarely occur in IT," he concludes.

Partner with Business & IT to Access Data

"More often than not, we have had good luck working with the business to give us access to data in one of two ways," says HCA's Chase Whitaker: "We either get direct access to where we can download it ourselves, or, if the business doesn't want us to do that, we will write a query so they can control the program. Since we're often prevented from gaining direct access to production, this is one area where we are willing to compromise. A lot of the time, such data gets extracted and mirrored, anyway, so we don't have anybody accusing us of bringing down production."

THE HOME DEPOT

Kelly Barrett, Vice President-Internal Audit and Corporate Compliance

Nature of Organization	❱ $70-billion Atlanta-based home-improvement retailer ❱ 2,200 + retail stores ❱ NYSE: HD
Internal Audit Department	❱ Staff Size: 54 ❱ 25% CPAs, 25% MBAs, 50% other ❱ Data Strategy: Create "data team" accessible to other members of department during office hours
Technologies Employed	❱ ACL for auditing, especially repeatable procedures ❱ Microsoft Office

Apply Data Analytics to Strengthen Business Processes

"We're not a traditional compliance shop," says Kelly Barrett, vice president-Internal Audit and Corporate Compliance for The Home Depot. "Only 30%-40% of our work is compliance-based while 60%-70% is dedicated to business process improvement."

According to Barrett, data analysis at The Home Depot focuses on process improvement rather than audit testing. "We need to know what is going on in the business," she states, "so we pull a lot of data and do a lot of data analytics to support our process improvement work."

A major challenge: Finding and gaining access to data. "We need to pull data from a number of different software systems across the business," Barrett explains. "To do so, we expect everyone in our department to have at least a basic knowledge of data analytics. Although we train everyone on pulling out data, some are naturally better than others," she states.

To strengthen the ability of The Home Depot's internal auditors and process-improvement specialists to leverage data analytics, Barrett created a "data team" comprised of staff members with particular expertise who are accessible to other members of the department during office hours. The team includes a senior manager with a master black belt in Six Sigma training. "He's very good at data analytics," says Barrett, "but that's not his only job."

One focus of the data team is to help improve the staff's ACL capabilities, says Barrett. "We use ACL for auditing, especially repeatable procedures dealing with operational risk, where we have the greatest exposure," she states, "and although we've been pleased with ACL, we need to learn how to use it more effectively."

Align Effectively with Stakeholder Needs

One of the reasons Kelly Barrett is considered a global leader in the field of internal auditing is that the function she manages maintains a strong alignment with the primary needs of its chief stakeholders. "We support the company's strategic initiatives," says Barrett, "which requires staying relevant and current with the business. One of our goals is to develop analytical tools that we can pass on to the business. If we're successful, we get called in to address business problems; if we're not successful, we don't get called in, and you're only as good as your last project. That's why we place such high importance on continual improvement. We need to maintain a constant focus on adding value, on getting smarter about the use of technology, and on reducing time spent on activities that don't matter."

Hire Smart, Diverse Staff to Deliver Strong Value

"Hire smart people and you can get to a lot of risky areas very quickly."

This maxim drives hiring within The Home Depot's Assurance and Advisory Management Program, which includes both internal audit and business process improvement specialists. "Developing a reputation for hiring smart people has elevated the status of internal audit internally," says Kelly Barrett, adding that this is "vitally important given that The Home Depot has a Rotational Training Model where 50% of the internal audit staff is placed elsewhere within the company every year."

"We need to maintain a constant focus on adding value, on getting smarter about the use of technology, and on reducing time spent on activities that don't matter."

Trying to retain core business knowledge when you lose half your people every year is a major challenge, says Barrett, who stresses the need for members of her staff to understand the data that drives the business and know how to use this data effectively.

"Developing a reputation for hiring smart people has elevated the status of internal audit internally."

What types of people does Barrett hire? "Only 25% of my team are CPAs," she states, "and another 25% will have an MBA or some other type of finance background. The other 50% come from all walks of life. We hire a lot of engineers, for example, because they tend to be smart, critical thinkers with good business acumen, much like finance professionals."

For internal audit directors, Barrett looks for a combination of business experience and subject-matter expertise. Interpersonal skills are also critical, she adds, because each director provides direct support to a corporate executive vice president.

AuditNet's Jim Kaplan: TECH INSIGHTS & OBSERVATIONS

Jim Kaplan, founder and CEO of AuditNet®, an electronic information network for auditors, is the 2007 recipient of The IIA's Bradford Cadmus Memorial Award for outstanding contributions to the global internal audit profession. AuditNet® (www.auditnet.org), launched in 1995, is considered the premier online community for auditors around the world. Here are some of Kaplan's top-of-mind suggestions for optimizing the use of audit technology along with key considerations for the global internal audit community.

Mandate Use of Technology in Audits

Internal audit organizations that require the use of data analytics and audit scripts on every audit in addition to technology-enabled anti-fraud measures provide a good role model for other internal audit functions to follow, regardless of size or location, says Kaplan. To facilitate the use of scripts, in particular, a number of technology providers and internal audit organizations are taking steps to share their automated audit scripts with the internal audit community at large. Kaplan's AuditNet® information network, for example, provides downloadable technology-enabled audit templates from ACL, IDEA and other sources in a clearinghouse of audit programs.

Explore Data Mining Options

Data mining is being widely used throughout both the public and private sectors to extract useful information from large volumes of data, says Kaplan. The Department of Homeland Security (DHS), for instance, uses data mining to help detect and prevent terrorist threats, Kaplan states, adding that the Government Accounting Office (GAO) has been using data analytics for years to check, for example, whether government payments are being made to deceased individuals. If you're in the market for a data-mining solution, first check to see if you have an ERP system. If so, says Kaplan, there's a good chance that it will have strong, built-in data-mining capabilities.

Address Barriers to Data Acquisition

Getting the data is one of the biggest barriers for people using data analytics, says Kaplan, echoing comments from a number of audit leaders interviewed for this report. To address this challenge, auditors need to develop an efficient and effective process to gain data access, he suggests, and they need to partner with IT in a mutually supportive relationship characterized by effective two-way communications.

Leverage Technology Champions & Plan for their Succession

In Kaplan's estimation, only 10%-15% of internal auditors have the mindset of a technology "champion" who takes personal responsibility for mastering a given technology system or application. Technology champions are a key success factor for many internal audit organizations, says Kaplan, who is a strong believer in the technology champion concept. Too often, however, organizations fail to develop back-ups (a succession plan) for their champions and find themselves at a loss when they need to replace a champion for one reason or another. Plan ahead for such vacancies, he advises.

Step Up Technology Integration

Software vendors are coming to realize they need to improve the integration of their technology offerings with those of other technology providers, says Kaplan. Data analytics, for example, needs to be more closely integrated with audit management software as well as risk-based management, he suggests. By grouping technology tools and systems under one umbrella (an audit software suite), he adds, internal auditors would not need to use multiple software vendors using separate tools to manage the audit process.

Think User-Friendly Desktop Training

"Some vendors are willing to train but still want to do it in a classroom environment," says Kaplan. "They need to think in terms of using technology to deliver training

from the desktop through webinars and other user-friendly environments," he advises. Training without travel is a strategy that auditors need to embrace in combination with live training.

Address Barriers to Streamlined Audit Reporting

Despite advances in audit automation, many internal audit organizations find it hard to move beyond their long-held orientations to paper documentation in order to make appreciable cuts in audit-report preparation time, says Kaplan. When he asks internal auditors whether the technology to produce electronic work papers has helped them reduce audit report prep time, many say not much, citing managerial preferences for paper copies to review. Such thinking needs to be challenged by internal audit leaders and their chief overseers in order to achieve any significant streamlining of audit reporting, says Kaplan.

KELLOGG COMPANY

Mike Pesesky, Associate Director, IT Audit

Nature of Organization	❱ Global consumer food company based in Battle Creek, Michigan ❱ 30,000 + employees ❱ Annual Revenues: $13 billion + ❱ NYSE: K
Internal Audit Department	❱ Staff of 20 including CAE; responsibilities include fraud auditing, general auditing and IT auditing ❱ IA offices in U.S., Mexico and U.K.
Technologies Employed	❱ TeamMate ❱ Mike Pesesky, Associate Director, IT Audit, is responsible for TeamMate across all modules ❱ Company is re-implementing SAP enterprise-wide; IA uses a number of technology tools to audit the SAP environment; company also reports expenses through SAP

Maximize Efficiency through Risk-Based Auditing

The Internal Audit Department at Kellogg Company (NYSE:K), the world's leading producer of cereal and a leading producer of snacks and frozen foods, was seeking to strengthen its risk-based approach to auditing. "We had three key goals," says Mike Pesesky, Associate Director of IT Audit: "First, we wanted to achieve a consistent risk assessment. Second, we wanted to increase the frequency of our risk assessments. And third, we were looking to increase our overall audit efficiency."

To pursue these goals effectively the Internal Audit team needed the right technology. After exploring their options, the Internal Audit Department determined the TeamMate suite would best suit their needs. "With TeamMate, we could facilitate a robust risk assessment, achieve a dramatic increase in efficiency in our audit execution, and centralize our audit documentation – all in one place," said Pesesky.

Before adopting TeamMate, the Kellogg Internal Audit staff lacked any risk assessment software. "Everything was Excel-based," says Pesesky. "Each auditable entity had its own risk evaluation spreadsheet. We were highly decentralized. Everything was interlinked with multiple macros. And we had no automated central tracking, which meant that tracking and reporting were difficult and complicated, at best."

Since adopting TeamMate in 2010, the internal auditors at Kellogg are evaluating about 350 auditable entities a year using TeamRisk, says Pesesky. "With the TeamRisk web tool, we can assign specific entities to each auditor, which means the entire Internal Audit team gets involved in the risk assessment process. We feed data into TeamRisk and all we need to do is click a button and we've created our risk-based audit plan." TeamMate also enables Kellogg internal auditors to import and capture data in one place, says Pesesky. "The more we can keep our fingers on the pulse of what's happening around the globe, the better we can plan," he states.

After working with TeamMate for more than two years, Kellogg auditors took a series of steps to assess the impact of their software decision. "We did a return on

investment analysis on TeamMate where we looked at the time it takes to do a risk assessment, complete audits and complete our issue-tracking process which is our methodology for monitoring remediation efforts by management. We also asked our field auditors to give us their feedback about the amount of time it takes to document items with TeamMate as opposed to the situation previously with our legacy systems. We found not only that documentation and posting of supporting documents was simpler but review time was cut by at least a third since concurring reviewers had immediate access to work-paper files from anywhere in the world. Now that we're operating in a TeamMate environment, we can document a large number of key success factors and provide instant access to all interested parties," says Pesesky.

These key success factors include improved linkage from risk assessment to individual audit planning, access to standard audit programs in TeamStore, and dramatic improvements in the review cycle times. The TeamRisk module is also playing a major role in helping the Internal Audit group achieve a more consistent risk assessment. "Each year, as part of our annual risk assessment, we survey more than 400 Kellogg executives from around the world – starting with directors and going up to and including our CEO," says Pesesky. "We also conduct face-to-face interviews with about 100 key players focusing on key risks and objectives."

The fact that TeamRisk is web-based contributes significantly to the effectiveness and consistency of Kellogg's risk assessments, says Pesesky. TeamRisk also provides the flexibility and accessibility needed to move from an annual to either semiannual or quarterly risk assessments, both of which, he adds, are under active consideration.

For other organizations looking to automate all or portions of their risk assessment process, Mike Pesesky offers the following under the heading of lessons learned:

- **Be Proactive** – No audit universe is going to stay the same year after year
- **Anticipate Change** – Before you start your audits, check out what has changed in the region or area of the company under examination and update your risk profiles
- **Be Patient** – It takes about three years to become totally comfortable using TeamMate across a broad corporate environment

LIFEWAY CHRISTIAN RESOURCES

Kimberly Phegley, CPA, CIA
Internal Audit Director

Nature of Organization	❱ Nashville-based non-profit publishing and retail company ❱ LifeWay Christian Resources of the Southern Baptist Convention is one of the world's largest providers of Christian products and services, including Bibles, church literature, books, music, audio and video recordings, church supplies and Internet services through LifeWay.com. The company also owns and operates 165 LifeWay Christian Stores across the nation, as well as two of the largest Christian conference centers in the country. ❱ Employees: Approximately 2,000 full-time; total of 7,500 including seasonal retail workers
Internal Audit Department	❱ Staff of 5 ❱ Focus: corporate audits, IT audits, and retail store audits
Technologies Employed	❱ TeamMate ❱ Microsoft Office

Leverage Integrated Automated Management System

When Kimberly Phegley joined Lifeway Christian Resources in 2004 as the director of internal audit, she had four initial goals:

- Build consistency across the practice
- Assess how the internal audit function stacks up against The IIA Standards
- Standardize documentation
- Enhance report writing and generation

Given her years of consulting for a Big Four firm, the solution to her was obvious: Automation.

"It was clear that we needed an integrated automated management system," says Phegley. "With TeamMate, we've been able to standardize our documentation procedures, strengthen the consistency of our work, increase departmental compliance with IIA Standards, and improve report generation." She and her staff draw upon three TeamMate modules, in particular, in their day-to-day activities: TeamMate EWP (Electronic Work Papers); TeamMate TEC, a web-based tool for capturing and reporting audit-related time and expense information; and the TeamStore database.

"The TeamMate EWP audit documentation system provides us with better, more efficient report generation centering on report templates," says Phegley. "You simply click on the report you want and run it." TeamMate TEC, which Lifeway Internal Audit has been using since 2011 for time keeping and expense information, has simplified data input for the department, she adds. And the TeamStore database provides Lifeway's internal auditors with an electronic home for a host of documentation – ranging from work programs and procedures as well as workpaper templates to standard wordings of audit findings and issues in addition to details pertaining to the company's risk and control library. "TeamStore is ideal for saving repeatable issues," says Phegley. "Since we have a lot of standardized work programs associated with our stores, we are able to enter these programs and related issues in TeamStore. Doing so enables us to reduce the time spent generating reports because we can just click on issues that have already been written and avoid having to re-enter information."

Strengthen Technology Tools & Skill Sets to Address Key Stakeholder Priorities

In recent years, Lifeway Christian Resources has become much more technology-focused, says Kimberly Phegley. "Senior management, the audit committee and the board of trustees are all looking at how technology is impacting the publishing industry, and Internal Audit needs to keep up with changes in the company and the industry," she states. "We need to bridge the gap between where we are now and where we want to be in terms of tools and skill sets."

To strengthen her department, Phegley has been adding new tools and technology and looking to address specific gaps in her talent mix. "My top goal is to find people with deeper, more intense data analysis experience that we can leverage," she says. "In the interim, we're utilizing third-party resources to expand our technological capabilities."

In addition to addressing her staffing issues, Phegley and her team are making some significant strides in the technology arena. "LifeWay is developing an enterprise data warehouse," she states, "and Internal Audit is performing regression analysis to search for anomalies in utilities for our 165 company stores. We hope to expand the use of regression analysis to our sample selection for stores in the future."

Lifeway's internal auditors are also using Microsoft Excel & Microsoft Access Database to track store audit risk attributes and calculate risk weightings. "We weigh different criteria – such as size, inventory churn, change in managers, past issues, and the results of the last audit – and then calculate numeric scores," says Lifeway's audit chief. The scores help Phegley and her staff determine which stores to audit, and when.

"The frequency of our store audits varies," says Phegley. "Some stores are audited every year or two while others might go seven to eight years between audits. We average about a third of our stores each year. But with our risk weightings, we have a good idea which stores need attention."

"My top goal is to find people with deeper, more intense data analysis experience that we can leverage."

MGM RESORTS

Robert W. Rudloff, Jr., Vice President/Internal Audit

Nature of Organization	❱ Las Vegas-based gaming and hospitality company ❱ 45,000 + employees ❱ Annual Revenues: Approximately $6 billion
Internal Audit Department	❱ Staff Size: 80 + ❱ Data manager focuses solely on pulling data out of systems
Technologies Employed	❱ TeamMate ❱ ACL ❱ IBM Cognos ❱ Monarch ❱ Microsoft Office

Set the Right Tone at the Top to Leverage Technology Benefits

When Bob Rudloff joined MGM Resorts as chief audit officer in 2003, one of his first priorities was to increase technology support for internal audit. "We started down the technology path with selection of a working-paper management tool," Rudloff recalls. "After successfully implementing that tool and getting it up and running smoothly, we began to look for tools to support data management and data analysis. Initially, we took a very tactical approach with both our working-paper and data analysis tools because we had to pull down so many repetitive types of data to do our audits. As we moved up the technology maturity curve, however, our utilization of technology became more strategic."

One of Rudloff's early successes in pursuit of technology-enabled audit support centered on the automation of routine data collection and analysis. "We were able to show members of our audit staff who were skeptical about our ability to mine system data that we could make their jobs easier as well as more effective," Rudloff says. "After a relatively short break-in period, we started developing a wide range of standardized data collection and analysis reports that continue to serve us well today—six years later."

Early on during his tenure with MGM Resorts, Rudloff discovered how important it is for internal auditors to build strong relationships with systems people. "So much of our work involves data management," he states. "You need to build relationships with both data owners and IT in order to figure out the technical side of technology-related decisions." In addition, he notes that MGM auditors, in particular, also need to develop a solid understanding of the technologies supporting the gaming industry. Developing such an understanding, he adds, is one the chief challenges facing his staff.

In seeking to build an effective, tech-savvy internal audit team, one of Rudloff's first moves was to hire a data manager with a twofold objective: first, help the staff gain access to data and learn how to pull it out of company systems; and second, figure out what kind of technology support company auditors needed for routine audits. With this heightened focus on data as their foundation, Rudloff and his team began to develop a series of data-related programs on topics ranging from the identification of potentially suspicious currency activity to pulling transactional data from point-of-sale systems. They also examined a variety of combined data files covering areas such as vendors and human resources to look for unexpected

relationships that could point to problems.

Under the heading of lessons learned in seeking to wring more value from technology, MGM Resorts' audit chief offers three pieces of advice: 1) be patient: it takes time to develop technology skills; 2) you are only constrained by the limits of your creativity; and 3) be inquisitive because we don't necessarily understand all of our system capabilities.

Create Value by Developing Data Analytics Tools for Management

Soon after the internal auditors of MGM Resorts began to practice technology-enabled auditing, they started to hear questions from key operations managers along the lines of "How did you do that?" and "How did you get that information?" In turn, Bob Rudloff and his senior management team decided that they wanted to develop embedded audit routines that the company's management could use on a regular basis.

"We surveyed all of our properties and identified challenges associated with the daily audit process and whether auditors have daily, weekly, or monthly routines they have to follow," says Rudloff. "In a few cases, our Data Analysis Manager also teamed up with other members of the department in the search for routines that management could adopt within their environment. We also worked with our system vendors on a selective basis to develop technology tools that would benefit both internal audit and management."

This expanded team approach to product development soon bore fruit. "We hit a home run with the analysis of suspicious currency activity," says Rudloff. "We drew information from different systems to create a model of potentially suspicious patterns of activity that the company is required to report to the federal government. We were able to identify patterns of activity ranging from 1-14 days, a capability that was quickly picked up by the business."

MICROSOFT

Greg Testa, Director of Internal Audit

Mike Lange, IT Audit Manager

Nature of Organization	❱ Global computing giant headquartered in Redmond, Washington ❱ 90,000 employees ❱ Annual Revenues: $65 Billion + ❱ NASDAQ: MSFT
Internal Audit Department	❱ Staff of 73 (55 internal audit; 18 fraud) ❱ Co-Sourcing: 10% of Budget ❱ Technology-Enabled Continuous Audit Team: 2 employees; 1 vendor
Technologies Employed	❱ TeamMate ❱ Microsoft Sharepoint for knowledge management ❱ SQL & Microsoft Access for data analytics ❱ Microsoft Office Suite ❱ Issue Manager Tool (proprietary)

Using Technology-Enabled Continuous Auditing to Drive Greater Efficiency

At Microsoft, internal auditors are harnessing the power of data- and technology-driven auditing to leverage their audit coverage. They are doing so by creating repeatable, Technology-Enabled Continuous Auditing (TECA) data scripts to focus on specific issues and by applying data analytics to audit entire populations as opposed to conducting narrow samples. "We are able to extend our audit coverage with the same amount of resources because we have TECA scripts that we can rerun and tools that allow us to analyze entire data populations in assessing risk and then target certain locations for auditing," says Greg Testa, Director of Internal Audit.

Microsoft's internal audit leaders launched their Technology-Enabled Continuous Auditing program in 2008 to create tools and infrastructure for its audit and fraud teams, says Testa. "We were seeking to develop tools for auditors to leverage repeatable procedures," he explains. "Our focus was on repeatable scripts that can be re-run throughout the year to provide a kind of heat map or red flag warning system on an ongoing basis."

The Internal Audit Department was also looking to extend data-analytic capabilities across the entire internal audit group. "We wanted to encourage members of our audit and fraud teams to think about their procedures in a more technology-enabled way, such as by testing entire data populations as opposed to sampling the data universe," says Testa. The department was also seeking to develop a training curriculum that would allow staff members to utilize analytical tools during planning and fieldwork execution.

Analyzing Global T&E Expenses

In the summer of 2011, Microsoft Internal Audit conducted a large data-centric audit analyzing individual T&E (travel & expense) spending company-wide. The focus of the audits was twofold, says Testa: ***spending over rate cap*** and ***making unauthorized charges on corporate cards***. "Our TECA specialists figured out where the data was and which systems to pull it from," he said. Based on the TECA analysis of T&E spending, Microsoft auditors now have scripts they can rerun throughout the year when examining T&E expense reports to produce heat maps of potential trouble zones.

Although access to data and multiple data sets are common challenges facing organizations trying to kick-start a project like the Technology-Enabled Continuous Auditing program, Microsoft's challenges were largely geographical. "In terms of data access, we have a strong, built-in advantage because the vast majority of us around the world work on the Microsoft data platform," says Testa. Employee location can, however, present additional complexity. "In the United States, we pull our T&E data from American Express; if you use your American Express card, most of the data is there," says Testa. "AmEx even tells us how employees have coded late fees." For Microsoft employees who are not based in the U.S., it's not so easy. "There is less detail in T&E reports outside the U.S.," Testa notes. "Employees fill out a template with what they spent out-of-pocket and submit it. Our information is much more limited."

Conducting FCPA-Related Audits of Remote Locations

In December 2011, Microsoft conducted a separate, TECA-related series of audits of sales locations in Europe, the Middle East, Africa and Asia. The audits, which affected 30 Microsoft subsidiaries, dealt with spending and anticorruption issues as well as financial reporting. "We focused on compliance with Microsoft policies, control of operating expenses, and fraudulent transactions," said Greg Testa. "We utilized new TECA queries around business-class travel expenses, third-party payments, and expense reimbursement for non-permissible items," he said. "Although it was relatively easy to obtain data, we still had to rely on locally based sales personnel to clarify information related to exceptions. And since the audits were conducted around the holidays," he added, "we did experience some delays."

Shift in TECA Focus from Support to Enablement

After focusing their TECA efforts initially on T&E and procurement issues, Microsoft's internal audit leaders expanded their TECA scope. "We met with Microsoft's shared-service centers to say that Internal Audit could help them monitor more effectively with TECA," Greg Testa recalls.

"Some of our earlier wins were about awakening the business to our continuous monitoring capabilities and the fact that we were in the process of refining a data-analytics framework that we could share," states Microsoft's Director of Internal Audit. "We gradually shifted from a support role focused on writing scripts for members of the internal audit and fraud teams to an enabling role centered on teaching internal auditors and fraud investigators how to write their own scripts. We laid the foundation to use data analysis to create technology-driven auditing plans. Now the TECA program manager is working closely with the senior audit managers who are conducting risk assessments and scoping out audit activities."

To help facilitate the next phase of Technology-Enabled Continuous Auditing at Microsoft, the company's internal audit leaders have created separate functions for TECA program management and execution. While the execution side focuses on audits, the program management function will focus on risk assessments, annual planning and stakeholder relationships, according to Testa. "Program managers drive what gets put on the audit plan," he states. "They create the audit programs that get executed." Of note, he added, the program management community is now half its former size.

Internal Audit Staffing at Microsoft

The Internal Audit Department at Microsoft currently has two full-time employees dedicated to data analytics plus the full-time services of a third-party specialist with deep SQL skills, says Testa.

From an overall staffing standpoint, Microsoft's Director of Internal Audit would like to see an equal blend of audit methodology and Microsoft employees from outside the internal audit field. "We like abstract thinkers who do well in ambiguous situations," says Testa. "We also like results-oriented people with strong data and financial skills. If you're coming from outside the company, you need the audit methodology. If you're coming from within Microsoft, you've got the company culture and we'll teach you the methodology. That's how we hire."

SAIA

Mark Speck, Director of Internal Audit

Nature of Organization	❱ Regional less-than-truckload (LTL) transportation company serving 35 states ❱ Headquartered in Johns Creek, Georgia ❱ 147 truck terminals spread across 35-state distribution network ❱ Annual Revenues: $900 million + ❱ 8,000 + employees (primarily truck drivers and dock workers) ❱ NASDAQ: SAIA
Internal Audit Department	❱ Staff of 3 ❱ Audit focus: auditing terminals, Sarbanes-Oxley compliance, fraud detection, IT audits; no outsourcing ❱ Company has separate ERM function
Technologies Employed	❱ TeamMate ❱ IBM ShowCase data extraction software, a program used by Saia's accounting staff ❱ Sage Best FAS (fixed-asset software) ❱ Sage Best FAS – Crystal Reports software to pull data for key risk indicators and for audit testing ❱ Microsoft Access ❱ IBM AS/400 query system ❱ Document scanners (employed company-wide)

3-Person Staff Leverages Technology to Cover Broad Audit Universe

Mark Speck, Director of Internal Audit for Saia, Inc., a Georgia-based trucking company, needs to cover a lot of ground with a small staff. He and his two long-time associates do so by stretching their technology resources. More specifically, they use:

- TeamMate to assess risk, produce work papers and audit reports, capture time and expenses, track audit findings yet to be corrected, comply with Sarbanes-Oxley requirements, and store data and documents
- IBM ShowCase data extraction software, a program used by Saia's accounting staff, to pull data for testing (i.e. test a sample of a data universe) and monitor key risk indicators
- Sage Best FAS for fixed-asset analysis
- Sage Best FAS – Crystal Reports software to pull data for key risk indicators and for audit testing
- Microsoft Access for large database needs
- An IBM AS/400 query system to monitor key risk indicators and detect fraud

Assessing Truck Terminal Risk

The top priority for Speck, Wendy Phillips, auditor, and Brad Green, the department's IT manager – ***all of whom worked together at a manufacturing company in the Southeast before joining Saia (pronounced sigh-ah)*** – is to assess risks associated with the company's 147 truck terminals, each of which has a business function.

"We have to leverage technology effectively because we can only conduct an average of seven on-site and four follow-up audits of major terminals each year," says Speck. He adds that the board of directors, to which he reports, believes there is significant risk associated with these 147 terminals, which are spread over 35 states. The board's mandate to internal audit: Figure out which of the terminals pose the greatest risks and determine how to audit them effectively.

To address their risk-assessment challenge, Speck, Phillips, and Green developed a risk matrix for the terminal network. "If we have a problem, we have to find out where the problem is," says Speck. "We take it as far as we can remotely and do on-site visits where needed." In the area of fixed risks, they use their technology tools to look at terminal size, the number of inbound freight bills processed, and whether or not a terminal has a maintenance shop. Under the heading of variable risks, they scrutinize cash items, in particular, to determine if they have been reported correctly and whether cash-on-delivery notes (CODs), for example, have been received and recorded. "If a driver reports something as a clear, we look to see if there is a claim against it," says Speck, "and if there is, we check to see if there is something wrong with it."

Company-wide Imaging & Scanning Facilitates Effective Data Management

A major factor contributing to the ability of Saia's internal audit function to cover so much ground with such a lean staff is a company-wide commitment to imaging and scanning all documents, including freight bills, and the presence of at least one scanner/copier in each of the company's 147 terminals. With ready access to corporate databases, Internal Audit uses its IBM Showcase data extraction software to pull up image documents to create work papers and reports, says Mark Speck.

Brad Green, the IT manager, who combines excellent query skills with strong proficiency in Access, also uses IBM Showcase to sift through huge amounts of data and monitor risk indicators for internal audit risk assessments and fraud. "Brad runs eight specific checks each quarter and matches the results with our established risk categories," says Speck. In addition to suggesting which terminals to audit, the spot-checking process also helps to ferret out fictitious employees and other types of fraud as well as conflicts of interest. In one instance, for example, spot-checks revealed that one of the company's regional maintenance managers had set up an outside company and was billing the company for work that he commissioned from other parties.

TeamMate, in particular, is also helping Saia's Internal Audit group strengthen the company's bottom line. In addition to using TeamMate to produce work papers, the IA team has been doing all of its Sarbanes-Oxley control testing and reporting in TeamMate since 2008. What's more, says Speck, "the company's external auditors have gone paperless; they're pulling down what we have online in TeamMate, which provides the company with major cost savings."

UNITED AIRLINES

Steve Goepfert, Vice President – Internal Audit (Chief Auditor)

Nature of Organization	❱ Global airline headquartered in Chicago, Illinois ❱ 87,000 employees ❱ Annual revenues: $37 billion ❱ NYSE: UAL
Internal Audit Department	❱ Staff of 38
Technologies Employed	❱ TeamMate ❱ ACL ❱ Accounts Payable Software (Technology Insight)

Drive Change & Motivation with Technology Champions

If you want to roll out new technology successfully, build software champions.

"The champion model is one of our key success factors," says Steve Goepfert, Chief Auditor of United Airlines. "Building champions and getting people to be enthusiastic about a new technology solution helps make it work. With TeamMate and ACL, we had champions who really knew the programs and made them hum."

People readily adapt to technology because of something akin to peer pressure, says Goepfert. "You don't want to be the only one on the street who doesn't have what everyone seems to want," he states. "The same thing is true in an audit department.

"If so & so is the champion of Product X, and seems to be able to do things on audits that I can't do, and I think I'm just as good as so and so, then I'm going to step up and use Product X," says Goepfert. "In this sense, the champion approach can be a good motivator."

Where are internal audit leaders most likely to find technology champions? "Our champions came from our corporate staff – people actually performing audits who understand how the software is supposed to work," says Goepfert. What's more, he adds, "champions are usually your brightest people – the ones who take the next challenge and run with it."

Target Risk Factors with Audit Analytics & Risk-Factors Database

United's internal auditors apply ACL audit analytics to mine data from the corporation's major information systems. "ACL allows you to attack a very large database of information and synthesize your risk and exposures in a particular area," says Steve Goepfert, United's chief audit executive. United's Internal Audit department maintains a Field Risk-Factors Database that allows the internal audit staff to track key metrics relating to their field operations. According to Goepfert, the database updates information with feeds from key accounting and operations systems to create a rolling 12-month data repository of key risk factors ranging from the timeliness of deposits and accuracy of local disbursements to the timeliness of sales reporting. The database enables United auditors to track a wide array of risks in real time with systems that note changes in risk factors by location. "With such extensive monitoring capabilities," says Goepfert, "we can quickly put auditors into a location and stop problems from occurring."

In years past, internal auditors for United and other major airlines tended to focus their activities on annual audits of major hubs and locations. Today,

United takes a risk-based approach to auditing that reflects its extensive technological capabilities. "Our Field Risk-Factors Database provides a more empirical way of discerning what and where we should audit," says Goepfert. United's risk factors, which cover a broad scope, range from the timeliness of bank deposits and the inappropriate distribution of airline tickets to compensation practices and the way local disbursements are handled, Goepfert states. They also cover so-called ***unreported sales***. "We can tell if someone has flown a flight but the sale has not been reported to our accounting system," says United's chief audit officer. "It's an issue because we suspect money has disappeared."

The size and location of potential problems also figure prominently in United's risk management considerations. "Sometimes it's the smaller locations that need the most attention," says Goepfert. "They don't have the same levels of administrative support, personnel and leadership common to major hubs and larger offices but, over time, something can go seriously wrong in smaller locations and create a significant loss. At the same time, even small problems in big locations can quickly add up to significant losses."

Internal Audit has also used its risk database to build partnerships with other company departments. "Cash accounting was sending notes to field locations on potential missing deposits with limited results," says Goepfert. "But when our department started leveraging data to go after locations that were failing to turn in deposits on a timely basis, and our accountants saw how much value we were getting from the risk-factors data, they helped us automate data feeds from their systems so we could receive data on a regular basis." What's more, says United's audit chief, "Our field operations people were beginning to note that we were identifying problems in the field more quickly than they were and they wanted to know how we did it. In response, we gave our field operations people access to our Risk-Factors Database so they can see the data themselves and address issues more quickly. It's so much better when somebody is using the data that we mine day in and day out."

"Sometimes it's the smaller locations that need the most attention."

Look "Outside the Box" for Potential Software Solutions

The Internal Audit staff of United Airlines is finding new applications for a software tool purchased by the company's Accounts Payable group to search for basic items such as duplicate payments and amounts being paid to vendors in multiple markets.

Internal Audit will take that same tool and look for other anomalies ranging from zip codes to the physical locations of specific vendors, says Steve Goepfert, United Airlines' chief audit executive. "If you're a vendor who manufactures heavy parts but your address indicates that you're operating out of a residential area or in the parking lot of a major shopping mall, that would give us pause," he states.

Goepfert advises other audit organizations to see whether they, too, might find new applications within internal audit for data-mining tools being used in the payroll / payables / purchasing areas of their organizations.

UNIVERSITY of TEXAS at SAN ANTONIO

J. Richard Dawson, Executive Director

Office of Audit, Compliance & Risk Services

Nature of Organization	❱ Major public research university located in San Antonio, Texas ❱ 32,000 students; 5,400 staff ❱ One of 15 institutions of higher learning in The University of Texas System
Internal Audit & Compliance Departments	❱ 13 people – 6 in audit, 7 in compliance ❱ No outsourcing
Technologies Employed	❱ TeamMate ❱ Microsoft Office Suite ❱ Resolver Ballot voting technology (departmental risk assessments)

Develop Heat Map to Convey Risk Profile to Top Management

A picture may not say a thousand words but it can certainly go a long way toward explaining a difficult concept. That's the experience of Richard Dawson, Executive Director of the Office of Audit, Compliance & Risk Services at The University of Texas at San Antonio (UTSA).

Dawson, who said the concept of enterprise risk management can be foreign to some academic leaders, developed a heat map for the UTSA president that portrayed the major risks facing the institution. The map reflected the results of his department's annual risk assessment, which asked key decision-makers across the university to assess various categories of risk in terms of their potential to impair the ability of the university to achieve its objectives. The categories ranged from student financial aid to NCAA athletics.

"The President was comfortable that these are UTSA's areas of greatest concern and that these areas should be monitored more closely and receive attention by either Audit or Compliance," said Dawson.

Tapping ACUA Risk Dictionary to Create Construction-Related Audit Plan

The University of Texas at San Antonio (UTSA) had been experiencing an upsurge in construction activity linked to significant growth in enrollment and research. Thus it was not surprising that UTSA's Office of Auditing & Consulting Services targeted construction-related risks in its annual risk assessment and included such risks in its audit plan.

Faced with the need to audit an area where they lacked in-depth experience, UTSA's Office of Auditing & Consulting Services turned to the online Risk Dictionary developed by the Association of College & University Auditors (ACUA). The Risk Dictionary is a massive database of more than 900 risks and 2,100 associated controls created with input from 12 ACUA member institutions, including The University of Texas at San Antonio. The Risk Dictionary database allows ACUA members to search and filter risk areas specific to higher education. The database is divided into 15 risk categories ranging from ***Plant Operations and Maintenance*** to ***Information Technology***, with each risk category divided into risk areas such as ***Building Maintenance*** and ***Custodial Services***.

"We found the ACUA Risk Dictionary to be an excellent resource to learn about risks and controls in construction auditing," said Laura Buchhorn, CIA, CFE, an Audit Manager who has worked in the UTSA's Office of Auditing & Consulting Services since August 2005. "The Risk Dictionary, which is free to all ACUA members, provided us with a significant starting point for development of a construction audit plan as well as a framework for issues in an area that had not been familiar to us. We were easily able to drill down and see controls that covered multiple risks."

Once inside the Risk Dictionary's software, UTSA's internal audit group decided to restrict its search to one major risk category, ***Plant Operations and Maintenance***, and used the Risk Dictionary's filter to identify seven risk areas under the ***Plant Operations and Maintenance*** heading: Building Maintenance, Custodial Services, Landscape and Grounds, Major Repairs and Maintenance, Motor Pool, Physical Plant Administration, and Utilities.

"The Risk Dictionary enables you to view the risk areas within a major risk category as well as drill down to see specific controls for that risk area," Buchhorn stated. With these capabilities, a user can quickly view risks and related controls and focus on the most relevant risks for a particular audit, she added.

After exporting the Risk Dictionary report into Microsoft Excel, Buchhorn evaluated all the risks and controls under the ***Plant Operations and Maintenance*** risk category and determined that one risk area in particular, ***Major Repairs and Renovations***, contained risks most relevant to UTSA's construction audit project. She and her team subsequently tailored the Risk Dictionary's control definitions to their situation at UTSA.

"The Risk Dictionary enables you to view the risk areas within a major risk category as well as drill down to see specific controls for that risk area."

WESTERN UNION

Tara Rexroth, Internal Audit Director

Nature of Organization	❱ The Western Union Company (WU), a leader in global payment services, offers Western Union, Vigo and Orlandi Valuta branded services through a combined network of some 500,000 agent locations in 200 countries and territories. From its roots in the telegram business, the company has expanded its services to include money order, money transfer, payment and prepaid services. ❱ HQ in Englewood, Colorado, outside of Denver ❱ Approximately 8,000 employees worldwide ❱ Annual revenues: $5.5 Billion (2011) ❱ NYSE: WU
Internal Audit Department	❱ Global staff of 45 covers Internal Audit, Sarbanes-Oxley compliance & Enterprise Risk Management (ERM) ❱ Staff is dispersed: core team in Colorado; IT auditors in New Jersey; audit teams in Dublin, London and Vienna
Technologies Employed	❱ TeamMate ❱ ACL Network 9.2; SQL ❱ Paisley Enterprise GRC (record-retention only) ❱ OpenPages for Sarbanes-Oxley compliance

Taking a 5-Step Approach to Leveraging Power of Data Analytics

Western Union, a global leader in payment services whose roots date from the telegraph, is taking a 5-step approach to strengthening its internal audit operations through data analytics:

Step 1: View Technology as Strategic Enabler

Western Union's senior management and audit committee view technology as a major strategic enabler for internal audit, says Tara Rexroth, a Denver-based director within the company's Internal Audit department who focuses on shared services, regional operating centers and the company's professional services group. Department leaders are taking a multiphased approach to harnessing the potential of data analytics, she states.

Step 2: Create a Dedicated Data Analytics Team

Three years ago, Western Union's Internal Audit group hired a data analytics specialist with a background in internal audit with the idea that he would be devoted full-time to data analytics. Demand for his capabilities was so strong, says Rexroth, that the company soon hired a second specialist, one with a background in both audit and data analytics. A third professional was added to the data analytics team in April 2012.

Step 3: Strive to Include Data Analytics in Every Audit

During the planning stage for every Western Union audit, internal auditors are required to meet with their colleagues in data analysis to review audit objectives and brainstorm how data analytics could help achieve

audit objectives. Such collaboration can pay big dividends, says Rexroth, citing an example of how the addition of data analytics strengthened internal audit support for a major project involving the analysis of millions of financial transactions in short periods of time. WU is also using data analytics to identify trends and anomalies in expense testing for a more focused audit scope as well as identifying areas that have been historically tested manually, such as Sarbanes-Oxley approvals, that could potentially be tested more efficiently with the use of data analytics.

Step 4: Test Entire Data Populations, Not Samples Alone

As Western Union's internal auditors were gaining more experience with data analytics, they realized the value of being able to test an entire data universe as opposed to just a narrow sample. "Why test a sample as opposed to a full population?", they reasoned. Now, testing a complete population is the norm rather than the exception, says Rexroth, who adds that the move is strongly backed by the CAE and executive management.

Step 5: Use Flow-Charting to Enhance Business Knowledge

A number of years ago, Internal Audit leaders at Western Union concluded that members of the IA staff could use a stronger grasp of what they were auditing, and why. Their solution: Have internal auditors create flow charts of their work – walking through the processes involved, laying out the risks to the company, and describing the controls in place to address these risks. "Flow charting led to development of our Risk & Control matrix and is now an integral part of our audit planning process," says Rexroth. "It has achieved its objectives."

CONSOLIDATION PRESSURES DRIVE DATA CENTER VIRTUALIZATION AT IRS

The Federal Data Center Consolidation Initiative (FDCCI), an Executive branch mandate for federal agencies to reduce the energy and real estate footprints of their data centers, is spurring widespread efforts to reduce costs, increase IT security, and improve efficiency. It is also prompting auditors for the U.S. Treasury Department and Internal Revenue Service to become familiar with what it takes to virtualize the Internal Revenue Service's data center environment.

One of the FDCCI's key goals is to shift information technology investments to more efficient computing platforms and technologies. To address this goal, the Internal Revenue Service developed a Data Center Consolidation Plan that focuses on using consolidation and centralization to reduce the IRS's total number of required physical servers and server locations. Server virtualization – ***which simplifies server deployment and administration by allowing a number of virtual servers (which are not physical machines) to run on a single physical host*** – helps improve hardware utilization, cut electrical costs, and reduce server replacement costs.

The IRS's Server Consolidation and Virtualization Project focuses on establishing a virtual server infrastructure and moving approximately 2,500 physical Wintel servers at 13 data center locations to the virtual environment. On September 30, 2011, the close of the federal government's 2011 fiscal year, the IRS had some 1,800 virtual servers operating on 234 physical host servers.

As part of the IRS's FY 2012 audit plan, the Treasury Inspector General for Tax Administration (TIGTA) evaluated the effectiveness and efficiency of IRS efforts to consolidate and virtualize its physical servers. TIGTA's conclusion: The IRS had indeed successfully implemented server virtualization technology to improve server efficiency and reduce taxpayer expense. Of note, the IRS's remaining 1,500 or so Wintel servers are expected to be virtualized by September 30, 2012, the end of the federal government's 2012 fiscal year.

For the IRS, server consolidation and virtualization is part of a broader, multiyear, multibillion-dollar Business Systems Modernization Program designed to modernize the agency's information technology systems and related business processes. The program involves integrating thousands of hardware and software components while replacing outdated technology and maintaining the current tax system.

INFORMATION-SHARING: ALIVE & WELL IN GOVERNMENT

As demonstrated by inter-agency cooperation in response to the Federal Data Center Consolidation Initiative (FDCCI), there is a healthy amount of collaboration occurring among audit professionals working for the federal government. At the Internal Revenue Service, for example, the Data Center Consolidation Plan prepared in response to the FDCCI specifically addresses the need to pursue opportunities for collaboration across the department and with other governmental agencies. The Plan also talks about leveraging IT applications and services used commonly across the federal government and private sector and teaming with the outside contractor, Hewlett-Packard, to produce a document of ***lessons learned***, including recommendations and approaches suitable for similar projects involving infrastructure deployment.

A high-ranking official with a major federal agency said he engages in monthly conference calls with his peers from other agencies to discuss new technology products and explore ways to leverage tools and turn them into better assets. A senior-level auditor with a separate agency of government said he finds it useful to compare notes with other members of the TeamMate Federal User Group (FUG), an autonomous, user-driven organization. Internally, within his own branch of government, internal auditors use Microsoft Sharepoint as a central repository for report distribution, to consolidate calendar information, and to streamline work flows.

For more information or to request additional copies, call **1-888-830-5559** or visit **TeamMateSolutions.com**

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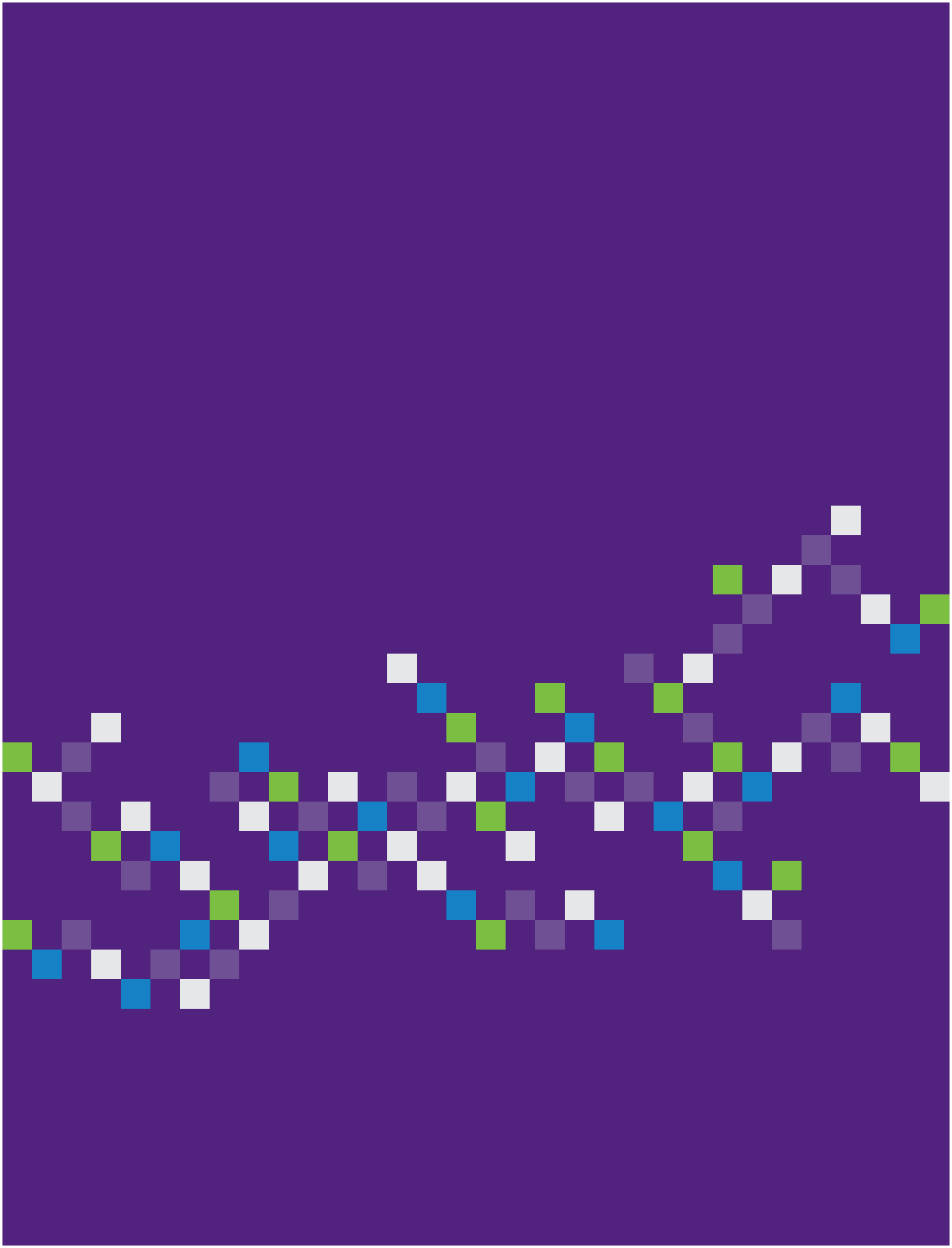

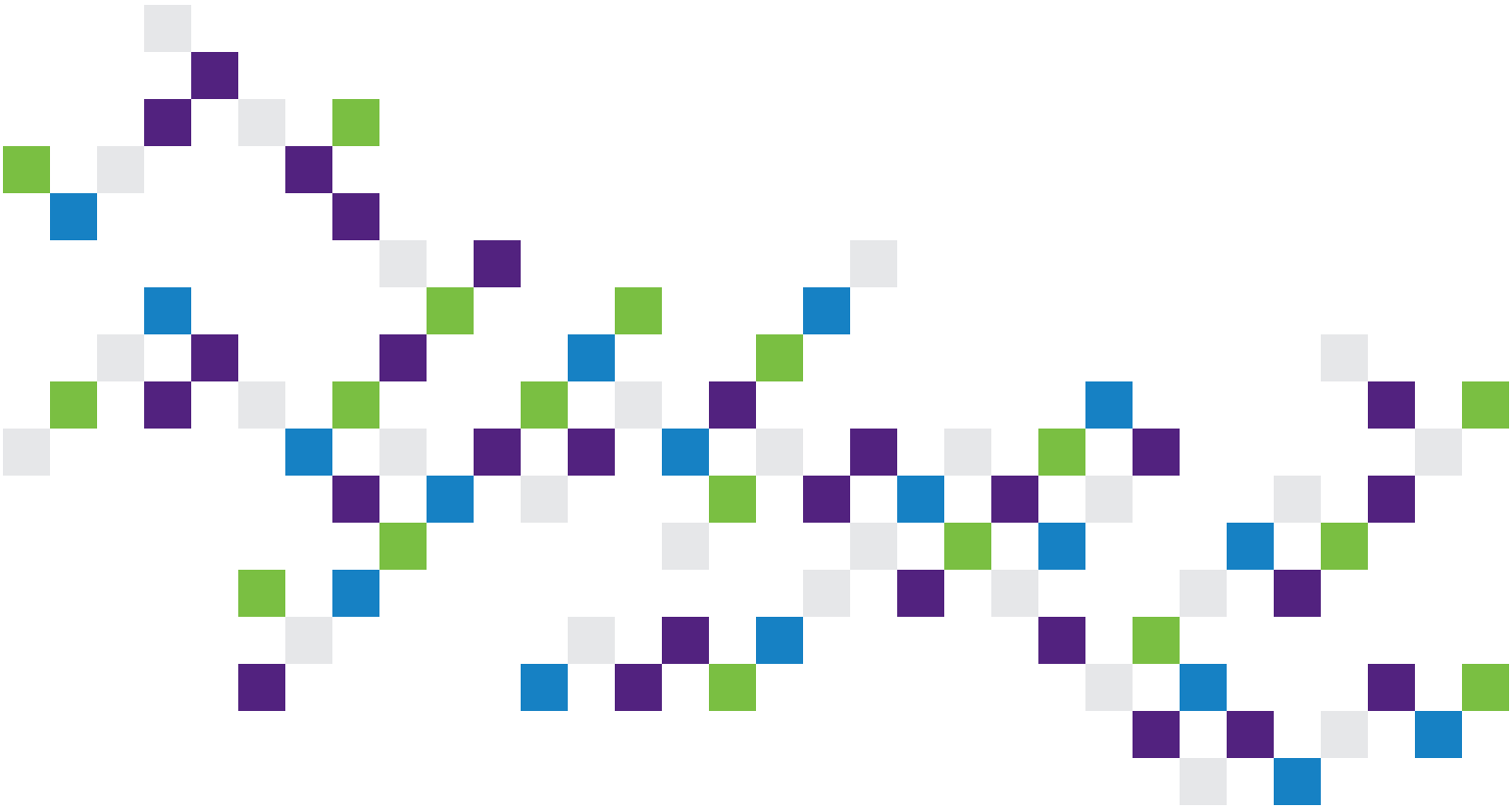

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