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Internal Auditing Around the World

*Profiles of Technology-Enabled Internal Audit
Functions at Leading International Companies*

VOLUME VI

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Risk & Business Consulting.
Internal Audit.

Introduction

“INFORMATION TECHNOLOGY AND BUSINESS ARE BECOMING INEXTRICABLY INTERWOVEN. I DON’T THINK ANYBODY CAN TALK MEANINGFULLY ABOUT ONE WITHOUT TALKING ABOUT THE OTHER.”¹

— BILL GATES

Why have we chosen to shine our spotlight on technology-enabled internal audit functions for Volume VI of *Internal Auditing Around the World*? The answer is clear: In today’s increasingly sophisticated organizations, internal audit functions must be technology-enabled to increase the scope and pace of their work, as well as to produce better, more timely and reliable results. This is made further evident by continued uncertainty in the global economy, which is compelling organizations to do more with fewer resources. At the same time, there are greater overall demands and expectations for internal auditors to help their organizations better manage their risks and ensure governance processes and controls are functioning as intended.

The Institute of Internal Auditors (IIA), the leading global authority for the profession, has recognized the increasingly vital role of technology in internal auditing, both in its highly regarded Guide to the Assessment of IT Risk (GAIT) series and in key changes it implemented last year to its *International Standards for the Professional Practice of Internal Auditing*. For example, revised IIA Standard 1220.A2 now states, “In exercising due professional care, internal auditors must consider the use of technology-based audit and other data analysis techniques.” Further, The IIA introduced new Standard 2110.A2, which states, “The internal audit activity must assess whether the information technology governance of the organization sustains and supports the organization’s strategies and objectives.”

These trends, among many others, underscore the importance of ongoing training for internal auditors, who must educate themselves with current data analysis tools, computer-assisted audit techniques (CAATs), and continuous auditing and monitoring methods. As noted in our *2010 Internal Audit Capabilities and Needs Survey*,² “... there continues to be an increasing reliance on technology by most organizations to manage their businesses, as well as by internal audit functions to implement more technology-enabled auditing and monitoring.”

Each of the nine international companies profiled in this resource guide recognizes the value that technology-based audit and data analysis techniques bring to their internal audit functions and is investing in the necessary training. Now – in a way that was not possible until recent years – internal audit has the capability to examine vast amounts of data, identify patterns and potential risks, and make better recommendations to management and the board. Technology-enabled internal auditing provides a new level of visibility into what is happening in the organization and makes it easier to

¹ *Business @ the Speed of Thought: Succeeding in the Digital Economy*; William H. Gates, III; 1999; Page 6; Warner Books, Inc.; New York, NY.

² Available at www.protiviti.com/en-US/Insights/Surveys/

ensure that issues are identified and resolved. This greater accuracy, precision and efficiency, in turn, is freeing up the internal audit function to focus more on strategic, “big picture” activities.

Moreover, many of the profiled internal audit functions have seen how their initial technology-enabled auditing activities can be transferred directly into process areas, which embeds more automated controls closer to the business and the actual transactions. Through these activities, internal audit can take continuous *auditing* to the next level of continuous *monitoring*. Continuous monitoring is also key to fraud detection and prevention, as well as facilitating a more efficient and thorough investigation.

The companies we profile this year offer ideal examples of the benefits they are deriving from technology-enabled auditing activities. At Accenture, a global management consulting, technology services and outsourcing company, technology-based audit and data analysis techniques have made a huge difference in how efficient and effective the internal audit team is. Dentsply, a manufacturer of dental supplies and instruments, also has seen an increase in efficiency and has met other key management objectives.

With every new volume of *Internal Auditing Around the World*, we see how rapidly both organizations and their internal audit functions are changing to address challenges and embrace new leading practices and capabilities. We hope this year’s profiles help boards of directors, CEOs, CFOs, CAEs and internal audit professionals worldwide identify key areas for improvement and untapped opportunities. For some, change will be truly transforming. As Shell’s chief internal auditor Armand Lumens says, “We increasingly operate in a virtual world. More and more, we provide pictures of the reality of our business that are different from what management expects. Technology has given us access to our reality.”

Protiviti Inc.
June 2010

Acknowledgements

Protiviti wishes to thank the interviewees and companies for so generously sharing their technology-based audit and data analysis techniques and other best practices. The Institute of Internal Auditors (IIA) provides inspiring leadership for a global community of internal audit professionals, and we greatly value being an IIA Principal Partner. Special thanks to our dedicated writer, Nancy Hala, who penned these instructive and insightful profiles.

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High performance. Delivered.

Company Headquarters — Not applicable
Number of Countries Operates in — >52
Number of Employees — >181,000 (as of February 28, 2010)
Industry — Professional Services
Annual Revenues — US\$21.6 Billion
Annual IA Operating Costs/Budget — Prefer not to disclose
Number in IA Function — 45
Number of Years IA Function Has Been in Place — 9
IA Director/CAE Reports to — Chief Risk Officer

Except where noted, all of the above information is accurate as of August 31, 2009.

“Technology has enabled faster cycle times, more thorough analyses and remote reviews of the audit work. Planning and fieldwork, as well as reporting and tracking, have been significantly accelerated by the use of technology.”

— Lloyd Johnson

Accenture’s internal auditors keep pace with emerging technologies to enhance global risk coverage

Accenture is a global management consulting, technology services and outsourcing company with offices and operations in over 52 countries. It generated net revenues of more than US\$21 billion in its last fiscal year and serves clients in over 120 countries. Accenture is incorporated in Ireland, but is registered on the New York Stock Exchange and files reports with the U.S. Securities and Exchange Commission.

Accenture’s business is structured around five operating groups: Communications and High Tech, Financial Services, Health and Public Service, Products, and Resources. Together, these operating groups, which are Accenture’s main reporting (profit and loss) segments, comprise 18 industry groups that serve clients in nearly every major industry.

The company’s internal audit function consists of 45 professionals, combined with a co-sourced group of 10 contractors. Accenture’s auditors are located around the globe: in Argentina, India, Ireland and Singapore, and in the U.S. cities of Charlotte, Chicago and Seattle. They report to senior managers who in turn report to Lloyd Johnson, Accenture’s chief audit executive. Johnson reports to Accenture’s audit committee, with an administrative reporting line to the company’s chief risk officer.

“Our primary objective is to ensure we cover the risks of the company on a global basis,” Johnson says. “Our charter outlines four primary objectives: assessing the risk management and governance of the organization; assessing the reliability and integrity of the financial and operating environment; evaluating the effectiveness of internal controls and information systems; and assessing compliance with corporate policies.”

Johnson and his internal audit team are tasked with assessing Accenture’s complete risk coverage on a global basis. The internal audit function makes extensive use of technology to execute this broad and deep coverage of Accenture’s various risks. “We are an efficient and effective audit team,” Johnson says. “Technology has enabled faster cycle times, more thorough analyses and remote reviews of the audit work. Planning and fieldwork, as well as reporting and tracking, have been significantly accelerated by the use of technology. We can cover a lot of ground with a relatively lean audit team.”

Technology: A force multiplier

The team uses several key technologies, including SAP, which is deployed throughout the organization; CCH TeamMate and Microsoft SharePoint to manage the internal audit group; and Audit Command Language (ACL) as an auditing tool. “These technologies have enabled us to analyze complete populations of data rather than samples of data,” Johnson says. “They allow us to analyze a number of areas in the planning phase in great detail.”

He continues, “For example, through our SAP application, we can analyze data from any location around the globe prior to going to the field. If our Chicago team [members have] an audit scheduled in Texas, before going to the field they can analyze all relevant transactions and select items for on-site follow-up – all from the home location. So, they are much better equipped with information in the field and therefore, are more effective. And travel costs are also reduced substantially, making us more efficient.”

With ACL, the internal audit function has built a library of analytical tools and scripts to analyze data extracted from the data warehouses. This also enables auditors to audit large quantities of data, including entire databases, and test for various attributes before starting fieldwork.

TeamMate is used in concert with SharePoint to manage the audit function. Primarily an electronic workpaper tool, TeamMate allows auditors to review workpapers from around the world. “We can easily and quickly review the workpapers of other global teams, so we don’t have to spend additional time reviewing workpapers on-site,” Johnson says. “We also have developed a number of templates that allow us to be more efficient in our reporting process.” Typical templates include audit findings, audit programs, fraud risks and planning tools. SharePoint is used as a storehouse for department procedures, reports, tools and administrative materials.

According to Johnson, Accenture’s internal audit team has been implementing these technical systems for several years. “As new versions are released, we implement the changes as soon as it is feasible,” he says. “Our objective is to stay current. We embody the high-performance culture and strive to always maintain a leading-edge internal audit organization, so it is extremely important to us to stay abreast of emerging technologies. We make sure our staff members are trained and up to speed, and we discuss technology use in our meetings.”

Accenture’s auditors participate in training provided by vendors, such as formal SAP training, ACL training and TeamMate user forums, which helps them to understand the technical capabilities of the software and develop awareness about available vendor resources. Internal training is used to determine and share best practices in deploying the software within Accenture.

Johnson says he believes that using technology is a “force multiplier” of audit skills. “The ability to use technology to analyze large quantities of data and process various automated and semi-automated routines that normally would have been performed manually is very powerful,” he says. “It keeps our auditors on the leading edge of the technology and amplifies their reach, effectiveness and speed of execution. It also forces them to be highly knowledgeable about Accenture’s IT structure and about SAP, our primary enterprise resource planning software. In addition, the training and user forums are key enablers in keeping our auditors’ skills current.”

Performance measurement

Internal audit performance is measured based on the comprehensiveness and effectiveness of organizationwide risk coverage. “We are measured on the effectiveness of coverage of our audit universe, and other factors such as the quality of our overall plan, execution and delivery of results, and how well we support audit services requests from corporate management and the audit committee,” Johnson says. “We are also measured on our ability to respond to changes in risks or requests in a timely manner.”

Accenture measures internal audit performance with the following metrics:

- Effectiveness of global risk coverage
- Scope and depth of coverage
- Quality of internal audit reporting to management and the audit committee
- Quality of internal audit staff (leadership, development and qualifications)
- Efficiency of the overall internal audit function
- Efficacy in covering existing and emerging risks and new businesses

The internal audit department also uses a balanced scorecard approach to track key departmental metrics. This approach focuses on four areas, with metrics and targets around each:

- **People** (such as attrition, promotions, certifications, training and evaluation timeliness)
- **Effectiveness, coverage and productivity** (including timeliness of report distribution)
- **Performance to budget** (efficient use of resources)
- **Other** (including follow-up of audit issues, travel and rotation of people into the internal audit function)

Johnson does not measure return on technology investments, since the actual departmental investments in IT are relatively small. “SAP is a corporate investment, so it’s not a direct investment for our group,” he explains. “The internal audit function does invest in keeping ACL and TeamMate current. However, these investments are very small in cost.”

He continues, “We use more of a qualitative measure of technology. For example, we evaluate how effectively the technology helps us meet the needs of the organization. Does it reduce cycle times for our audits? Are we more effective because of our use of the technology? Do auditors actually use it on a daily basis? Our intention is to have 100 percent auditor usage because all of our auditors are well trained and encouraged to make optimal use of the technology every day.”



CommonwealthBank

Company Headquarters — Australia

Number of Countries Operates in — 11

Number of Employees — 44,218

Industry — Financial Services

Annual Revenues — AUS\$39.4 Billion (revenue on statutory basis, excludes interest expense)

Annual IA Operating Costs/Budget — >US\$15 Million

Number in IA Function — 90

Number of Years IA Function Has Been in Place — ~21

IA Director/CAE Reports to — CFO

Note: All of the above information is accurate as of June 30, 2009.

“We measure our audit effectiveness from audit client feedback and an internal post-audit review. From that process, we know our technology enables us to identify problematic areas more quickly, as well as target problems that have previously gone undetected.”

— Rachel Grantham

Commonwealth Bank of Australia: Merging powerful audit insights with technology

Commonwealth Bank, one of the largest listed companies on the Australian Stock Exchange, provides integrated financial services to clients, including retail, business and institutional banking; funds management, superannuation (retirement plans) and insurance; and investment and stockbroking products and services. It has the greatest customer base of any Australian bank and operates the broadest financial services distribution network in the country with the most points of access.

Internationally, Commonwealth Bank has retail banks and life insurance operations in Indonesia and New Zealand; investments in China; branches in Auckland, Ho Chi Minh City, Hong Kong, London, Mumbai, New York, Shanghai, Singapore and Tokyo; and representative offices in Beijing, Hanoi and Shanghai.

Commonwealth Bank's alliances emphasize the application of technology to enhance customer service. The delivery of information technology (IT) services to the organization is managed through the bank's relationship with technology partner EDS Australia. In April 2009, Commonwealth Bank formed a partnership with Australia-based Telstra for its telecommunications requirements.

The bank's shareholder base totals more than 740,000, which includes over 75 percent of the staff in Australia. As of June 2009, Commonwealth Bank reported AU\$487,572 million in assets held and funds under administration. Operating the largest financial services distribution network in Australia, Commonwealth Bank has more than 1,000 branches, 3,500 ATMs and 3,800 Australia Post agencies. Of the organization's 44,218 full-time employees, more than 65 percent are women.

In October 2008, Commonwealth Bank acquired St. Andrew's Pty Ltd. (St. Andrew's), a provider of general property/casualty insurance and wealth management products, and Bank of Western Australia Limited (Bankwest), a full-service bank. Bankwest has more than 900,000 customers who are served through an extensive network of branches, distribution channels, agencies and electronic banking facilities, as well as 24-hour telephone and Internet services.

Rachel Grantham has been the head of Strategy and Operations for Group Audit at Commonwealth Bank since October 2009. The Group Audit function is comprised of more than 80 staff. The Strategy and Operations team plays a central role in supporting core audit operations and reporting, and

delivering continuous improvement initiatives across the department. The team includes experts in audit methodology, IT and data analytics, and project management.

Grantham says a key objective of the team is to act as a strategic enabler for Group Audit by developing and deploying leading-edge audit methodologies and practices. “Our role is to ensure our people have the right audit methodologies, tools and processes to execute high-quality audit reviews and deliver optimum value to the business,” she says.

Data analytics, continuous monitoring and rapid response

Strategy and Operations has a dedicated analytics group of five professionals led by an executive manager. “This analytics group works closely with our auditors to bring technical expertise to the execution of computer-assisted audit techniques (CAATs),” Grantham says. “Our approach is to marry data analytics skills with audit and business knowledge. This leads to a more sophisticated and effective audit approach, helping us achieve more powerful audit insights through the use of technology, and allowing the delivery of a greater level of assurance to our stakeholders.”

According to Grantham, the analytics group has developed its own IT infrastructure to support its work, with dedicated servers and SAS software as its primary analytics tool. “We have a team of experts with a good platform and direct access to the group data warehouse, enabling us to capture the information there ourselves,” Grantham says.

Since the CAATs capability is firmly in place, the analytics team is looking ahead to develop continuous monitoring tools for assessing emerging risks across the organization. “We want to build an early warning indicator to enable a more dynamic audit response,” she says. “Group Audit has developed a ‘rapid response’ capability, an approach that includes ‘parachuting in’ a team to assess specific areas where we have identified potential concerns. This means we can get in and out more quickly and with a sharper focus than a traditional large-scale, full-scope audit allows.”

Grantham adds, “Our rapid response capability positions us to provide earlier assurance to our stakeholders when controls are potentially breaking down. The early warning indicator will help to better inform our rapid response reviews.”

The continuous monitoring concept is currently under development, with Strategy and Operations initially focusing on analytics that traverse Commonwealth Bank’s Retail Branch Network. Grantham says she wants to leverage the data available from the continuous monitoring and management reporting that is already in place across the business to build an audit model of risk indicators to feed into continuous risk assessment and auditing processes. “This is currently in the very early stages,” she explains. “It is still highly conceptual.”

Sophisticated risk assessments to sharpen audit focus

“Gathering data can be a challenge,” Grantham says. “It is important to develop the skills to conduct proper data extraction. The audit teams use CAATs on their rapid response reviews, but the time frames involved can make execution difficult. Access to data and tight lead times are the biggest obstacles to our dynamic response.”

According to Grantham, it is also a challenge to bring together the required skill sets to create effective analytical techniques and approaches that align properly to the objectives of each audit.

“We have dedicated expertise and resources to enable us to execute analytics effectively. We are familiar with the business and its data sources, and we have the right model,” she says. “However, it can be a complex endeavor to educate the broader audit community as to how much we can really use these tools and techniques. They may not always understand the full extent of the potential of these tools.”

Grantham continues, “Sophisticated risk assessments will help identify areas where the teams should focus their efforts, and manual audit testing procedures can be automated to drive efficiency and greater audit coverage, extending to entire populations. The tools have the potential to find anomalies – the needles in the haystack – which often would not be identified by traditional audit sampling procedures.”

Timeline and training

Achieving Group Audit’s vision of a full suite of technology is still a work in progress. “It will evolve over time,” Grantham says. “The team began with the basics of CAATs, and it took more than two years to establish a highly effective model. We are now building more sophisticated tools and models that will require specific skills, robust planning and development. We want to ensure we are truly optimizing the tools and data.”

The feedback Group Audit is receiving from the business stakeholders and the audit community is that there is a large appetite for analytic capabilities. While Grantham notes that their effort is still conceptual in many ways, the feedback suggests that great value is anticipated. “There is significant excitement about this,” she says. “Our rapid response review has been successfully rolled out, and analytics are the next phase in this strategy. It is too early to say how we will implement this.”

Grantham and her team will facilitate all core central training from an audit point of view, including robust training and post-implementation reviews to ensure success. Strategy and Operations will act as the audit “center of excellence,” overseeing the implementation and training for new tools and methodologies.

The Strategy and Operations team has already achieved great successes in the deployment of CAATs, having helped to identify a wide range of audit issues, according to Grantham. However, since continuous monitoring is at the conceptual stage, it is too early for the team to measure performance and return on investment in the technologies.

“We measure our audit effectiveness from audit client feedback and an internal post-audit review,” Grantham says. “From that process, we know our technology enables us to identify problematic areas more quickly, as well as target problems that have previously gone undetected.”



For better dentistry

DENTSPLY
INTERNATIONAL

Company Headquarters — United States

Number of Countries Operates in — >120

Number of Employees — 9,400

Industry — Medical Instruments & Supplies

Annual Revenues — ~US\$2.2 Billion

Annual IA Operating Costs/Budget — <US\$1 Million

Number in IA Function — 5

Number of Years IA Function Has Been in Place — >15

IA Director/CAE Reports to — SVP, CFO and Chair of the
Audit & Finance Committee

“Auditors’ skills are enhanced by technology in that it helps them follow a process to think through the complexities of what they want to learn and determine the answer that the data can or cannot provide.”

— Jeff Walters

Note: All of the above information is accurate as of December 31, 2009.

Dentsply’s IAS team leverages technology to meet global financial audit objectives while controlling costs

Dentsply, a manufacturer of dental supplies and instruments, conducts business in more than 120 countries. It has long been active in Canada and the United States, as well as in the European market, particularly in France, Germany, Italy, Switzerland and the United Kingdom. Dentsply also has a significant market presence in Central and South America, the Pacific Rim and South Africa, and established marketing activities in Moscow to serve the countries of the former Soviet Union.

In 2009, the company reported sales of approximately US\$2.2 billion. Dentsply has about 9,400 employees, and its operating divisions and manufacturing facilities span the globe. Internal audit’s role at Dentsply is complex, as it demands familiarity with different cultures, languages and data systems.

Jeff Walters, Dentsply’s audit director, oversees the company’s Internal Audit Services (IAS) department, which is staffed with five full-time employees and 10 to 15 guest auditors. The guest auditors effectively replace two full-time equivalent employees and aid the department on an audit-by-audit basis. Working with Walters are two audit managers and two staff auditors. The entire team is located in York, Pa.

Through its charter, approved by the audit and finance committee of Dentsply’s board of directors, the IAS department is expected to cover 60 to 70 percent of the company’s operating assets. The charter states that IAS must “systematically evaluate evidence to determine the effectiveness of and recommend improvements to the reliability and integrity of financial reporting; safeguarding of assets; financial practices and financial processes; and design and operating of internal controls over the course of time and as reported.” The team must also provide objective assessments relating to opportunities for operational improvement and/or reducing risk exposure.

Integrated audits

As a small team covering the majority of Dentsply’s locations across the Americas, Asia and Europe, IAS exclusively performs financial audits, which they call “integrated audits” because of the dual-purpose testing strategy that includes conducting simultaneous internal control and substantive testing. “For example, we were interested in testing inventory,” Walters explains. “We designed our test to select inventory items and to go back through the transaction history for a particular product, including receipt and shipping history, changes to the cost structure and more.”

Using this test, Dentsply's IAS team can review controls related to changes to the cost structure and the accuracy of the calculations related to variances to standard cost.

The IAS department's primary objectives are to ensure the reliability and integrity of financial statements and internal controls. The department is also expected to help Dentsply achieve its earnings targets and save costs. "Could we do this and leap forward in our service to the company?" Walters asks. "Yes, but technology was the only answer."

The ACL Project

In 2009, Walters and his auditors embarked on a six-month project originally named the Data Extraction Analysis and Follow-Up Project and later shortened to the "ACL Project" (named after the software they used – Audit Command Language). This effort allowed the IAS team to ask the right questions about the data in order to gather critical information. "It enabled us to audit at a very granular level, including, for example, employee mailing address or age verification to combat fraud," says Walters. "We conducted our analysis across a diverse data set. This methodology helped us increase our efficacy and meet the objectives that management was asking us to meet – namely, controlling costs."

He adds, "When it became apparent that our company would not be immune to the global recession, the IAS department began to think about ways to do more with less. We defined 'less' as less travel and fewer expensive audit procedures, while at the same time ensuring that we would meet our coverage audit plan. We needed to, in essence, perform a certain level of auditing and not visit our foreign locations. Technology – specifically, our data extraction and analysis tool – has given us a strong capability to examine approximately 63 percent of Dentsply's cash transactions."

Benefits of technology

The use of this technology has produced two key benefits for Walters and his audit team: The process of data extraction and analysis is now integrated and fundamental to all audits and business support, and all IAS team members now have equal ACL skill level. "Our skill level has risen significantly," says Walters. "However, it is a very steep learning curve. While we all strive to be at the same skill level with regard to ACL, we have no single go-to person. At this time, we have four people who are significantly trained. As we integrate a new audit manager into our department, we will absorb that person into our process."

"Every audit we perform now contains some degree of data extraction and analyses follow-up," he says. "What drove us to this standard was that we knew we had fewer resources but were required to meet our coverage targets. We always knew we could do more, and now the company knows it, too. We have this capability, and we are being asked to perform a greater number of special requests. This is the highest compliment an audit department can receive. Our technology is an integral part of our work today."

A third benefit Walters cites is that he has eliminated at least one full day from the audit process due to improved work planning and a clearer focus on areas in need of direct follow-up.

"We can do the project risk planning, take our samples and give the sample request to our auditee two to three weeks in advance of the audit. This gives the auditee time to prepare and to have all the documentation ready for us when we arrive," he says.

Walters continues, "For example, with regard to changes to standard costs, we used to rely on 25 samples of all products to identify the changes to standard cost and test those to ensure the changes were approved. This constricted the sampling scope. How do you know that those 25 items are representative of the whole population? Using ACL, we can analyze the data and note exactly which inventory items have changes to their standard cost and test only those items for proper approval and other attributes we are interested in at the time. ACL helps us reduce our sample biases. Auditees like it because they can

plan the work they are doing ahead of the audit visit and push it down in the organization, instead of having accountants pull everything for us when we are in their offices.”

By providing auditees with a list of all documentation IAS wants to see ahead of the audit visit, Walters and his team can ensure their time is well spent and only items relevant to the audit are reviewed.

Implementation timelines

The IAS department at Dentsply started planning the ACL project in March 2009 and concluded it at the end of September. Combining the efforts of all individuals involved, the team estimates it invested more than 55 weeks in the multi-phased project.

“We have a small conference room in our audit area, and all the auditors moved in and established a ‘war room,’” Walters recalls. “It was important for us to get out of the normal work area to really focus on the task at hand.”

According to Walters, the project plan was developed without considering the limitations – if any existed – of the analysis tool. “We were free to think in terms of what work we wanted to perform,” he says. “To train the auditors, we started with a two-day intensive boot camp similar to the training we received from Protiviti’s ACL experts. From there, we began to use ACL and called the ACL help desk as needed. We were sometimes on the phone with ACL for two to four hours per day. For the first two to three weeks, the team struggled and needed a fair amount of direct input from me to keep them clearly focused on the overall vision and goal.”

He adds, “After the first month, the ACL project team, which was led by our audit manager, was fully functional and self-motivated to complete this important and challenging project.”

Walters says he and his team have been through a series of discoveries and that embarking on this project was like “peeling the layers of an onion.” He adds that in 2010, instead of being dedicated to ACL training and implementation for six months, the IAS department will perform high-profile tests on a continuous auditing basis that are directly related to Dentsply’s risks.

In terms of enhanced audit skills, Walters says the IAS auditors clearly understand the limitations of what can be expected from electronic information. “They also understand what is needed from the controller or data owners in order to complete their audit work,” he adds. “For example, you can match payroll records in the payroll system to the personnel data in the HR system, but you cannot know if those employees are efficient at their work. There is a difference in what you can learn from the data systems as opposed to talking to employees, reviewing external documents and observing processes. Auditors’ skills are enhanced by technology in that it helps them follow a process to think through the complexities of what they want to learn and determine the answer that the data can or cannot provide.”

Continuous auditing

Walters has long held the vision of implementing a continuous auditing model with a view of teaching key management staff to implement continuous monitoring tools. “This project brings both of those visions to life,” he says. “The project has gained [popularity] within the company, and people are starting to ask IAS if we can conduct certain data analysis projects for them. This is the start of the continuous monitoring phase where we will confirm what we can do, but encourage people to let us teach them to do the same thing for themselves, at any time.”

The ACL project also helps promote the IAS department’s mission at Dentsply, which is to assist management in implementing highly effective controls. “We really have the ability to answer management’s call, teaching people to do this anytime they want to, using the right tools.”

Measuring performance and ROI

Dentsply's IAS team did not embark on this project in 2009 with a return on investment (ROI) expectation, according to Walters. "We presented our plan to the audit and finance committee in May and committed to one year of effort based on education, training and integration with the audit process," he says. "We are dedicated to working with auditees who are asking us to perform work for them, which we will translate into continuous monitoring that they will perform. So, this is not really about ROI."

For performance of the audit department, Walters says he looks at the following metrics:

- Audits are performed according to the annual plan
- Audit reports are issued within 10 days from the last day of fieldwork
- Minimal audit director/manager review notes
- Minimal audit plan risk assessment changes
- Value-added recommendations are written into the report

Each year, the IAS department performs a risk-based assessment with priority ranking given to the audit plan. If there are any changes to it, Walters discusses them with Dentsply's audit and finance committee to ensure that there is an appropriate use of audit resources. "In addition to our role related to compliance, we provide great recommendations that help the company earn more money," Walters says. "There is a strong emphasis on value-added recommendations."



Company Headquarters — Germany
Number of Countries Operates in — 72
Number of Employees — 77,053
Industry — Financial Services
Annual Revenues — US\$40 Billion
Annual IA Operating Costs/Budget — >US\$15 Million
Number in IA Function — 400
Number of Years IA Function Has Been in Place — >50
IA Director/CAE Reports to — Management Board/Group CFO

Note: All of the above information is accurate as of December 31, 2009.

“By consolidating platforms and technologies, we reduced the cost of further development and maintaining the applications. We don’t look at it from a profit perspective. We want to make sure our methodology is well supported by the applications we have designed.”

— Martin Esters

Deutsche Bank’s Group Audit function develops AWARE system in-house to improve workflow and track performance

Deutsche Bank (DB), headquartered in Germany, is a global investment bank with a strong private clients’ franchise. A leader in Germany and throughout Europe, DB provides financial services throughout the world, and continues to grow its business in Asia, North America and key emerging markets. The bank has more than 77,000 employees in 72 countries and is comprised of three business divisions: Corporate and Investment Banking (CIB), Private Clients and Asset Management (PCAM), and Corporate Investments (CI).

Kristian Snellman has been the chief operating officer of DB’s Group Audit function for the past three years. Martin Esters, who reports to Snellman, is Group Audit’s chief information officer, a position he has held for five years. Group Audit operates under the authority provided by DB’s management board and reports organizationally to the chief financial officer. There are approximately 400 professionals on the Group Audit team; members are located in 31 countries to ensure an audit presence in all regions.

Group Audit’s structure is closely aligned with the bank’s matrix organization and business divisions. There are three business partners aligned to the divisional areas reporting to the global head of Group Audit. Each business partner has chief auditors responsible for specific business functions within the division. The eight chief auditors are responsible for preparing and completing the division’s audit plan.

Group Audit’s strategic objectives include the following services:

- Provide stakeholders – such as the supervisory audit committee, management board, business heads throughout the bank and regulators – with the independent and transparent assurance they need.
- Deliver value-added service to stakeholders. This entails going beyond auditing to provide due diligence work and advisory activities.
- Help DB accomplish its objectives, such as effective risk management, control and governance.
- Use resources effectively.

The last item on that list of strategic objectives prompted DB's Global Audit team to explore how technology could be leveraged more effectively to increase efficiency and enhance the auditing process. "In 2007, we started an initiative to reconfigure our methodology," Esters says. "The goal of this initiative was to provide a more dynamic and risk-based audit planning approach. We developed this methodology – called MAPS (Methodology and Process Strategic Programme) – and then took the next step to see that our audit applications would support it. Our vision was to integrate all audit applications into one, which would allow us to view the entire life cycle of an audit."

Audit Workflow and Risk Assessment Engine (AWARE)

The technology developed to support this initiative and cover all audit functionality – the Audit Workflow and Risk Assessment Engine (AWARE) – was developed in-house. This system includes components for risk assessment, annual planning, fieldwork, report issuance and issue tracking. Group Audit has completed the first phase of the project, which focused primarily on audit fieldwork, and replaced and consolidated the team's previous Lotus Notes-based system. The next steps, which include integrating audit planning, audit report generation and issue tracking, are scheduled to be rolled out in 2010.

"AWARE allows us to share real-time information globally," Snellman explains. "All of our data is stored in one database, so everyone can view it at any time. Even with our current audit issue tracking system, our audit clients are able to access their issues on a real-time basis and enter closure requests online."

Workflows also have improved, with tighter controls stemming from review and approvals that are captured online. AWARE guides users through the audit process and results in better management of information that is all stored in one central database.

"AWARE has been very much embraced by DB," Esters says. "The fact that we are consolidating our applications is a major improvement. Currently, our auditors have to go into three different applications – planning, fieldwork and tracking. Going forward, everything is bundled into one system. This is a key benefit for users."

He adds, "The AWARE portal provides single sign-on functionality and controls user access. The management information portal is used by management to view real-time key indicator reports online, as well as to drill down to the underlying details."

While the benefits are significant, challenges have emerged during the implementation, the most critical one being the time constraint involved in implementation. "The audit fieldwork functionality had to be implemented at the start of 2009," Esters says. "This was a real constraint. We had to ensure we allocated sufficient time to develop our training materials. Our process is to train the trainers, with the help of course materials, so that they thoroughly understand the system and can conduct training in specific offices. Our goal is to have experts in each location, so if questions arise, we have a clearly defined contact person."

AWARE provides a framework for DB's auditors so they can focus on audit work rather than audit procedures. One aspect of AWARE is the risk control library, a repository of risks and expected controls for all potential activities. When an audit is performed in a specific area, the auditor can pull the guidance material from the risk control library, which helps to ensure consistency of the audit work.

In 2010, DB's Group Audit team will be focused on integrating planning and tracking into AWARE. Planning will provide linkage and transparency between the level of work outlined in the audit plan and actual work conducted in the field. Tracking will help automate the audit report generation, distribution and approval process, along with workflow support for the closure and validation of issues. Other key components to implement include:

- *My Queue* – an online queue of all the actions, approvals and notifications for auditors; it is designed to improve the audit workflow process.
- *My Dashboard* – a customizable dashboard to help users focus on key risk indicators, monitor them at a high level and drill down, as needed.

Performance and return on investment (ROI)

Group Audit measures its performance through a balanced scorecard approach aligned to DB's strategic objectives. The four key performance indicator (KPI) categories are people, processes, financials and service.

"We wanted something easy to measure and simple to operate," says Snellman. "With a balanced scorecard, we can measure behavior across Group Audit to meet the objectives we have set for ourselves." Group Audit reports to the management board and audit committee with regard to audit plan progress, as well as on the key control deficiencies described in Group Audit's reporting.

ROI measurement is based on costs. "By consolidating platforms and technologies, we reduced the cost of further development and maintaining the applications," Esters says. "We don't look at it from a profit perspective. We want to make sure our methodology is well supported by the applications we have designed."



PHILIPS

Company Headquarters — The Netherlands
Number of Countries Operates in — >60
Number of Employees — 116,000
Industry — Consumer Electronics
Annual Revenues — €23 Billion
Annual IA Operating Costs/Budget — Prefer not to disclose
Number in IA Function — 75
Number of Years IA Function Has Been in Place — >70
IA Director/CAE Reports to — CEO & President

Note: All of the above information is accurate as of December 31, 2009.

“ETR [Enterprise Transaction Repository] will help us understand the extent to which we can standardize and harmonize certain business processes. The underlying technology will highlight differences as to how certain business processes are represented in our ERP environments.”

– Ingo Bank

Philips is implementing an Enterprise Transaction Repository to allocate internal audit resources more strategically and reduce external auditing costs

Royal Philips Electronics (Philips) is a Netherlands-based global leader in three business sectors: healthcare, lifestyle and lighting. Philips employs approximately 116,000 employees in more than 60 countries. With sales of €23 billion in 2009, the company leads the market in cardiac care, acute care and home healthcare; energy-efficient lighting solutions and new lighting applications; and lifestyle products for personal well-being and pleasure, such as flat-panel TVs, portable entertainment, male shaving and grooming products, and oral healthcare.

Ingo Bank has been the chief audit executive for Philips since January 2010, overseeing 75 internal audit professionals. The internal audit structure at Philips mirrors the company's organizational structure: Some auditors are focused on the healthcare, lighting and consumer lifestyle lines of business, while others concentrate on information technology, fraud detection and prevention, and insider trading and management remuneration oversight. Thirteen individuals report directly to Bank and the remainder report to his direct reports. Bank reports to the chief executive officer of Philips.

The internal audit team is preparing to roll out new technology in 2010 – the Enterprise Transaction Repository (ETR). This technology is an SAP platform that stores data from business transactions across the entire company. It includes query functionalities to produce certain key performance indicators (KPIs), such as accounts receivable overdues, long-outstanding purchase orders and manual accounting entries at cutoff dates, which can all be continuously monitored at principally every point in time.

Increasing focus on the strategic risk profile

Philips' internal audit team's 2010 strategic goals include further broadening its scope with business and risk management advisory, in addition to its traditional compliance and assurance role. “We are looking at broader risks in the company, as opposed to focusing solely on financial statements and reporting risks,” says Bank. “We want to determine how to further improve the embedding of risk management into our auditing processes, for example, by extending the audit coverage to include risks related to achieving the strategic, longer-term objectives of Philips.”

By implementing the ETR, Bank and his team intend to increase the efficiency of the financial auditing process by better preparing for audits in advance, and monitoring KPIs related to financial statements on a continuous basis to flag irregularities and unusual transactions. “The technology we are developing right now is in the user acceptance testing stage,” Bank says. “We anticipate implementing it for audit purposes in the second half of 2010.”

The benefits of this technology for Philips’ internal audit team are varied. They include, for example:

- Improving audit preparation
- Ensuring financial statement risks are covered throughout the year as they evolve, and allocating resources accordingly
- Saving costs related to external auditing; by implementing the ETR, much of the work associated with financial statements can be better focused, with an almost automatic audit trail

“ETR technology will simplify the way we plan the scope for financial resources in the organization,” Bank explains. “It will help us become more focused and guided. It also will ensure we can perform at least some of our work remotely, and in doing so, make time and resources available for other higher, added-value activities. The ETR positions us to focus more on the strategic risk profile of Philips. It will also bring down the cost of running financial audits.”

Finding ways to standardize and harmonize business processes

“There are always a number of challenges to contend with when implementing a new technology,” Bank says. “We have to make sure our data is clean, complete, reliable and useful. We also have to ensure we make this information available to the entire company so it becomes an effective monitoring tool that allows the businesses to truly mitigate risk. Over time, we must reduce the need for auditing and enable the business units to assess and mitigate their own risks.”

He continues, “ETR will also help us understand the extent to which we can standardize and harmonize certain business processes. The underlying technology will highlight differences as to how certain business processes are represented in our ERP environments. This is a challenge for a large company such as Philips. We will start by distilling certain financial statement risks based purely on statistics and numerical data.”

Bank and his team began development of the ETR last year and will roll out the technology during the summer of 2010. “During the current acceptance testing phase, we have asked a small group of professionals to use and test the technology so we can gather their feedback on whether it is useful, easy to use and fulfills all requirements,” says Bank. “We are testing it from a number of angles to ensure it is flexible and robust. All auditors will eventually be trained on the ETR.”

Performance-enhancing technology

According to Bank, the ETR will help the internal audit team at Philips to achieve its performance objectives primarily by increasing work efficiency, issue visibility, and process standardization.

“We have an audit plan we must deliver that contains a number of issues,” Bank says. “We measure the audit scope around financial reviews, business audits and strategic risk audits and link our work to an assessment of overall risks in Philips. We measure our performance on a continuous basis – reporting to the company’s supervisory board audit committee on our progress.”

He adds, “This new technology will help to highlight existing and emerging risks and challenges around financial statements and reporting, bringing those issues to the surface and helping me to better allocate audit resources to ensure greater impact and better results for Philips.”



Company Headquarters — Germany

Number of Countries Operates in — 50 (SAP) 120 (Customers)

Number of Employees — 47,578

Industry — Computer Software

Annual Revenues — €10.7 Billion

Annual IA Operating Costs/Budget — US\$1 Million - US\$5 Million

Number in IA Function — 34

Number of Years IA Function Has Been in Place — 14

IA Director/CAE Reports to — CEO

“The technology we use helps auditors better identify control weaknesses. It guides and leads them along the fieldwork process, providing the framework they need to reach the end result – the audit report.”

– Manfred Wolf

Note: All of the above information is accurate as of December 31, 2009.

SAP's Global Internal Audit Services group implements highly customized audit management system to improve speed and precision of planning

As one of the leading international providers of business software, SAP delivers products and services that help accelerate business innovation for its customers. Organizations in more than 120 countries run SAP applications – from distinct solutions addressing the needs of small businesses and midsize companies to suite offerings for global enterprises.

Founded in 1972, SAP today employs more than 47,500 employees, approximately 13,000 of whom are located in the company's headquarters in Walldorf, Germany. SAP currently has sales and development locations in more than 50 countries worldwide and is listed on several exchanges, including the Frankfurt Stock Exchange and the New York Stock Exchange.

Manfred Wolf has been SAP's chief audit executive since July 2001. He reports to the company's chief executive officer and indirectly reports to the audit committee of SAP's supervisory board. Since March 2002, Markus A. Falk has held various roles within the company's Global Internal Audit Services (GIAS) group. He currently heads the central internal audit function for technology and global audits, as well as the GIAS operational office.

GIAS

GIAS at SAP is a decentralized group with 34 full-time professionals who report to audit managers. Five audit managers worldwide, including Falk, report to Wolf. GIAS provides independent analysis of SAP's business activities and consulting services, helping to monitor the company's global operational, risk management and internal control environments. The goals of GIAS are to:

- Develop a reputation as internal audit and consulting specialists and partners in the company
- Become faster and more agile to respond to audit requests and SAP's changing business environments
- Respond to increased awareness of the importance of risk management and internal controls, and to the demands of key stakeholders

- Develop deeper knowledge of auditable areas such as accounting, fraud prevention and technology
- Increase the effectiveness and efficiency of control processes and ensure compliance with audit and operational objectives

Audit management system

To meet these objectives, and enhance overall efficiency, the GIAS group is using an audit management system that took 18 months to implement. The system, which went live in January 2009, facilitates audit execution, automates documentation and supports reporting. It is based on an SAP standard application built on the SAP NetWeaver technology platform.

The audit management system allows the GIAS team to create working papers easily, review and approve documents, and perform administrative functions online. In addition, the system generates the reporting based on entered data. Key benefits of the system include automatic generation of documents, including recommendations and risks; a user-friendly interface that guides auditors through the audit process steps; practical search capabilities, which can be filtered by region, audit type and company code; and audit monitoring. In addition, the audit management system delivers key performance indicators (KPIs) to SAP's management.

While the audit management system has been customized according to GIAS requirements, the audit department plans to enhance it even further so it embeds or links to other key technologies in the future, including, for example:

1. IDEA, a computer-assisted audit system
2. An audit information system embedded in the SAP application
3. Governance, risk and compliance components
4. Compliance user provisioning designed to control and manage all aspects of the system
5. SAP applications that focus on specific business functions such as finance and accounting

The audit management system in place at SAP is based on the GIAS “audit road map,” a methodology that covers five phases: audit planning, preparation, execution, reporting and follow-up, with subcategories within each phase.

“Our goal was better data security and a higher degree of transparency and centralized documentation,” explains Falk. “We have achieved more flexibility by using one central system and are better positioned to tackle data integrity this way. We find we are much more effective when reading, recording, analyzing and interpreting our data using the audit management system.”

Before implementing this new system, GIAS underwent a quality assessment through The Institute of Internal Auditors (The IIA) and received the mark of “generally conforms” – The IIA’s acknowledgment for quality assessments to express GIAS compliance with the “IIA standards or elements of the code of ethics in all material aspects.” SAP was the first German company to be directly assessed by The IIA. The quality-assessed audit road map forms the basis for the audit management system’s functionality.

One important example of the benefits of automation is the way audit reports are now produced. “The findings and recommendations we identify in the field are fed into the system and the report is automatically generated,” Falk says. “Manager approvals and objections are also documented in the system, so there is a clear audit trail. This gives us data integrity and transparency, as well as tighter data security.”

The audit management system at SAP also reduces occurrences of lost data, since all information is “locked” into one central system and protected by an authorization code that allows access to only a limited number of people.

“The challenge for us is that we have to develop a business case for everything we do to defend the resources we use and the costs we incur when implementing new systems and tools,” Falk says. “Once the system was developed and tested, we had to write the training material, conduct training and produce the relevant handbook. All of this represented change management within the department.”

He continues, “Auditors had to get used to the new system and accept it. Our job was to convince colleagues of the value of the audit management system and adhering to the audit road map approach. We also spent time creating a help desk function to help everyone [adjust to the change] and understand the system’s functionality.”

There also were requirements from data protection laws and local German employment laws to consider. When a new system is implemented in Europe, it is critical to ensure no personal employee information is captured. In addition, employee performance cannot be measured using the system to record any over- or underachievement.

Technology training

GIAS has used various methods to train its audit staff effectively on the technology. “We conduct remote training, conference calls and online systems sessions,” Falk says. “We also conduct decentralized regional classroom training, including a classroom session for our IDEA tool. We always give ourselves time for pilots and testing. The training manuals we have developed help users all over the world every day. We also train regional power users as well, who are given authorization rights to our system.”

The technology the GIAS group has implemented at SAP helps auditors execute their audit fieldwork steps more precisely and analytically. “We deliver results-oriented audits,” Wolf says. “The technology we use helps auditors better identify control weaknesses. It guides and leads them along the fieldwork process, providing the framework they need to reach the end result – the audit report.”

Over the past 12 months, SAP has initiated a major system upgrade of its audit management system, releasing version 2.0. Ultimately, this new version will link to a resource planning system, which will enhance the team’s risk-based planning approach. Falk and Wolf say they currently have a good overview of the planning approach, but the new planning system will improve speed and precision.

Performance measurement and departmental goals

The audit management system is a key basis for GIAS performance. “The data we pull from our system includes travel costs and costs per engagement,” Falk says. “We also display audit results for geographical regions, as well as audit survey results. We are working on a top results list, which will include the audited areas that involved the most effort. Additionally, we have developed an automated dashboard that brings KPIs to life for our board members and audit committee.”

The GIAS group at SAP also has a standardized structure of comprehensive departmental goals:

- Review audit services in terms of quantity and quality
- Develop conceptual approaches, such as continuous auditing
- Identify audit focus areas – for example, forensic auditing

“This is how we visualize our success,” Wolf says. “We always endeavor for improved output.”



Company Headquarters — The Netherlands
Number of Countries Operates in — >100
Number of Employees — 101,000
Industry — Energy
Annual Revenues — US\$278 Billion
Annual IA Operating Costs/Budget — >US\$90 Million
Number in IA Function — 250
Number of Years IA Function Has Been in Place — >50
IA Director/CAE Reports to — Chair of Audit Committee

Note: All of the above information is accurate as of December 31, 2009.

“We have a unique opportunity to see things the way others do not through our risk management and internal control work. And with technology, we help business leaders look at their operations through a different lens.”

— Armand Lumens

Shell: Data analytics tools allow internal audit to monitor strength of access controls and increase audit quality and accuracy

Shell is a global group of energy and petrochemical companies with headquarters in the Netherlands. Its parent company, Royal Dutch Shell plc, is incorporated in England and Wales. In 2008, Shell reported US\$458.4 billion in revenue and invested more than US\$1.2 billion in research and development – more than any other major oil company. And over the past five years, it has spent US\$1.7 billion on renewable energy technologies.

As a recognized leader in the energy industry, Shell was ranked number one by FORTUNE® magazine based on the company's 2009 turnover. It employs more than 100,000 people with an expanded workforce, including contractors, of well over 500,000. Shell is present in more than 100 countries, with 45,000 petrol stations worldwide.

In February 2010, Jean-Baptiste Juery stepped down as Shell's chief internal auditor. He says of Shell's internal audit department: “One of the challenges we face as an audit function is being able to provide audit coverage without being disproportionately big ourselves. In terms of an organizational structure, we have upstream and downstream activities supported by global functions, such as audit, finance, IT and human resources. Upstream, Shell is exploring the world to find oil and gas. Downstream, we are refining the product and bringing it to market.”

The company's internal audit team reports independently to the audit committee of the board. Armand Lumens, Shell's new chief internal auditor, reports to the chair of the audit committee and has direct access to the CEO, CFO and members of the executive committee. He also regularly reports to the audit committee. Shell's internal audit function consists of 230 auditors, with an additional 20 who are specialized business integrity investigators. All report to Lumens and are regionally resourced due to Shell's large geographical footprint. “We operate as an integrated function,” Lumens says.

Audit objectives

Shell's internal audit objectives are based on a traditional definition of the role of an audit function – to provide independent assurance to the executives of the board and deliver risk management and internal controls assurance across the company.

Shell's audit scope is broad. The internal audit team reviews risk management in its entirety, covering every aspect of the business. While the auditors primarily provide independent assurance to the board through audit reports, they use their access to offer as many insights as possible. "We have a unique opportunity to see things the way others do not through our risk management and internal control work," Lumens explains. "And with technology, we help business leaders look at their operations through a different lens."

A vision based on technology

The foundation for internal audit's accomplishments was expressed in the team's vision for 2010, which it developed almost three years ago. It pledged to deliver audit results in a much stronger measure and determined that technology would play a major role in achieving that vision. The team recognized that every control framework throughout Shell depends heavily on technology. "Nearly every business transaction the company makes is supported by IT, and an increasing number of controls are embedded in IT mechanisms," Lumens says.

The first step toward reaching this vision was to build a competent team with the right skills. "We invested in people to make sure we would have the capacity to test our systems and access data representative of the company's worldwide transactions and business processes," says Lumens.

The second step was to invest in the right technology, which would help the internal audit team assess data without limits. "Our assumption was that if we could accurately read the data, it would tell us exactly how our systems were working," recalls Juery. "We implemented various information systems with the goal of extracting and analyzing data [and using it] to assess how our business transactions, programs or processes were operating. For example, when a large sample of data is analyzed and reveals a strange pattern, or when a majority of transactions are found in a certain category, we wanted a way to achieve a precise reading."

The internal audit team also wanted large servers that would provide proprietary access, data analytics tools that could be easily configured and analytics queries that could be applied to data sets. The technology tested the reality of Shell's control framework.

"Now, the internal audit team no longer samples a few documents or just scratches the surface by looking at a few transactions," Juery explains. "They assess the entirety of their transactions; for example, they can test a full year of turnover. Their analysis is complete, so it strengthens their understanding of the control framework and the importance of their findings. They have strengthened the assurance they provide."

The data analytics technology also delivers insight. Shell's internal audit team can see things that aren't otherwise visible, analyze process characteristics that do not fall under traditional analysis, and apply criteria not embedded in the software. "We increasingly operate in a virtual world," Lumens says. "More and more, we provide pictures of the reality of our business that are different from what management expects. Technology has given us access to our reality."

According to both Juery and Lumens, the internal audit team at Shell can now track how the company operates in a standardized way. The auditors use the technology to check the "tightness" of access controls by asking the system to determine levels of security or types of access. "Before the technology, the answers internal audit received were correct but not complete," Juery says. "Now, [team members are] unearthing 'shadow areas' where they have been making the wrong assumptions."

He adds, "[I recall] one day when we met with the chairman of an operating company and commented on the operating effectiveness of his business. We gave him information on how many credit notes were being issued for each invoice in his department. With this insight, he suddenly realized how inefficient his business had been in this area, and although it was not a key performance indicator for him, what it revealed was huge. Because of the power of this analysis, he could see the real operational

effectiveness and the logistics of his department in a way that had never been brought to his attention before. He nearly fell off his chair.”

The data analysis technology invites Shell’s auditors to enhance their skills, sharpen their skepticism, explore further options and ask more questions. It guides the auditors as they prepare audits.

Technology challenges

With any technological implementation, obstacles emerge. Following are some challenges that Shell’s internal audit team encountered:

- Ensuring access to data
- Gathering complete data to avoid misinterpretations of observations
- Ensuring data is clean to avoid false positives or “noise”
- Becoming equipped and experienced enough to handle any data imperfections

“One of the biggest challenges we faced was addressing the learning curve to using this technology effectively,” Lumens says. “We did not simply present it to the team. It takes time for auditors to understand what they can get out of the technology and to practice using it so they can become proficient. It takes time, training and coaching.”

Implementing the technology took the internal audit team approximately one year to establish the framework and a second year to embed it into the organization. However, there is still much to do to make sure users have the confidence to use the technology to its fullest advantage.

With regard to training, both Juery and his successor, Lumens, decided not to make every member of Shell’s internal audit team a specialist in data extraction, since not everyone has the requisite technical skills.

“Auditors must understand what the technology can deliver and how to ask the right questions,” Juery says. “We decided to train those who we felt were more inclined to learn quickly, as well as those already working on sites where the technology would have the most value, such as finance, logistical or human resources processes. We separated technology skills from utilization skills and then focused on those individuals who [we thought] would pick up the technology quickly.”

Future plans

According to Juery, Shell’s internal audit team is planning on continuous expansion of the data analysis technology and will use it with business colleagues who will then leverage it for control purposes. Internal audit also intends to increase the audit scope and ensure the technology is aligned with Shell’s strategic business approaches.

“Although the internal audit function remains fully independent, it provides support to the business,” Juery says. “Internal audit’s focus is always on the business. The future for this technology is that internal audit can expand its own audit scope and let it reach beyond its audit activity.”

Shell’s internal audit team measures how many audits demand the use of the technology. It also tracks progress from action implementation with line management in addition to measuring cost. The technology has allowed the internal audit team to use fewer resources to cover Shell’s many business areas.

“Sometimes, there is a misconception of what technology costs. It takes more energy and commitment than dollars,” Juery says. “But there is a great benefit if you have the appropriate technology. It allows internal audit to focus on subjects that may have been ignored otherwise. So, the overall quality of audits is increased. Internal audit’s use of technology has enabled [the team] to cast the net wider.”



Company Headquarters — France
Number of Countries Operates in — 11
Number of Employees — 822
Industry — Financial Services
Annual Revenues — €117.7 Billion
Annual IA Operating Costs/Budget — <US\$1 Million
Number in IA Function — 3
Number of Years IA Function Has Been in Place — 2
IA Director/CAE Reports to — CEO

Note: All of the above information is accurate as of December 31, 2008.

"We are a very small team, so we have to leverage technology to see results."

— Christelle Legrix

SPB's investments in internal audit-specific technology allow small audit team to cover more ground and focus on value-adding activities

SPB has been an affinity insurance specialist since 1965. Historically focused on the banking sector, it now develops not only insurance linked to banking products, such as payment instruments and cards insurance, but also consumer goods insurance for mobile telephones and technological products; travel and sports equipment; and life events, including marriage, retirement and death.

Paris-based SPB currently partners with 50 leading brands – including banks and financial institutions, telecommunications operators, major distributors, utilities companies and more – in France and throughout Europe. The company employs more than 800 professionals and operates in Belgium, France, Germany, Italy, Luxembourg, Poland, Portugal, Romania, Spain, Switzerland and Tunisia.

Christelle Legrix is SPB's director of internal audit. She embarked on her role in late 2007 when the company's internal audit function was created. In 2008, SPB's first year of audit activity, internal audit's objectives were to develop and execute the audit plan and help the company and its board of directors understand how internal audit could improve SPB's business processes and risk supervision.

This effort was successful, and in 2009, Legrix and her team were dedicated to improving the insurance company's performance through the deployment of internal audit-specific tools. The objective for 2010 is to enlarge the mission of SPB's internal audit division by implementing internal control and improving quality management throughout the organization.

"We use two main tools," Legrix says. "The first is the Protiviti Governance Portal (PGP), a tool to organize and store audit papers and documents. PGP allows us to follow all audit activity. With this tool, we are able to plan different engagements – assigning auditors, storing documents and designing specific components of the engagement. It also allows us to track the recommendations that the audit team produces at the end of the audit mission. We are very satisfied with PGP's functionality. It has delivered significant value to us."

SPB's internal audit team also uses Audit Command Language (ACL) software from ACL Services Ltd., according to Legrix. The technology allows SPB's auditors to make wider data analysis on large databases, produce global reports and merge different databases. "This is a tool we use in specific engagements," she says. "We acquired ACL in July 2008 and PGP in January 2009."

Building an audit team using effective tools

At the beginning of 2007, SPB did not have any formal audit structure. By the end of that year, Legrix was asked to create this division, and she began the process of building an audit team and structure for the company. She currently works on an internal audit team comprised of two auditors and one assistant.

“We are a very small team, so we have to leverage technology to see results,” Legrix explains. “SPB has an external growth program and buys subsidiaries. In 2008, we purchased four, and this year we plan to continue developing our external growth strategy. This means we have a great deal of business activity to audit. Not only do we audit our core business, but also our subsidiaries.”

SPB’s leadership team expects the internal audit function to identify weaknesses and initiate improvement actions following the audits so they are brought to successful conclusions. “As a result, we needed to have the means to track audit recommendations,” explains Legrix. “We decided to invest in PGP to help us meet this objective. PGP offers the functionality that has finally allowed us to plan our activities, document audits and follow recommendations.”

Additionally, since Legrix and her group regularly analyze the content of huge databases, they invested in ACL; the technology helps them conduct exhaustive analysis instead of sampling, leading to more accurate and detailed conclusions.

Benefits and results

According to Legrix, PGP has helped SPB’s auditors develop improved documentation and better storage of workpapers. “We can organize the details,” she says. “For example, when we write an engagement letter, we will store it in the engagement section of the tool. Every time a workpaper is stored, it goes in the right place. We appreciate this highly structured environment. We can easily find all documentation.”

Formalization of workpaper and audit conclusion reviews helps Legrix and her team view all related documents and data in an organized and methodical way. It also allows internal audit to validate the time when the review was made and note any comments by the reviewer.

“We have been able to achieve more efficient and regular follow-up of our audit findings, thanks to the reporting function,” she says. “We just have to click on a button in the software and a report is produced. No time is lost. Our time is spent taking action.”

The reports that SPB’s internal audit team produces are shared with auditees. Each month, internal audit can send auditees a report section concerning only their particular entity. “We give them some comments,” says Legrix. “And every month, we can also comment on the global report, which is presented to the board of directors.” She adds, “PGP is a great tool for sharing information. It allows me to see and present different levels of detail, depending on the audience I am addressing.”

With regard to ACL, Legrix says the technology delivers improved efficiency in data analysis and in the value of audit conclusions. “We can go further in our analysis,” she says. “We can do more than just sample. With ACL, we have a global view across different data sets.”

Technology challenges

When adopting PGP, the internal audit team had to look back to the beginning of SPB’s audit activity and place the audit history into the system. The team only had one year of history, since PGP implementation began in 2009, but it was still a significant amount of work, according to Legrix. “I wanted to input all the history to be able to follow all the recommendations we produced in 2008,” she says. “This consumed a significant amount of time and energy, but it finally allowed us to have exhaustive analysis of our audit activity.”

She continues, “The creation of custom reports was also time-consuming, but now I appreciate having automated reports every month. They give me the capacity to analyze our audit activity regularly. It was a onetime-only challenge. Now we have a global view of all audit activity.”

For ACL, the challenges were more technical in nature. The SPB auditors had to learn about the various analysis functions available. They also needed to improve their knowledge of the content in their own databases to conduct appropriate and relevant analyses. There are many functions in ACL; to be efficient with the technology, it is necessary to learn which function to use to carry out specific actions.

Implementation and training

Legrix and her team took two months to plan and complete the PGP installation. After three days of auditor training, internal audit was able to use the tool’s basic functions. And after four months, auditors were fluent with many of PGP’s more advanced functions, such as searches and reports.

With PGP, auditors are free to spend more time on value-adding tasks, and have reduced time spent on administrative duties inherent to audit activities. “PGP makes our work more interesting,” Legrix says. “We spend more time on audit engagements and thus can spend time developing broader analysis by using audit tools like ACL.” ACL gives auditors the opportunity to conduct wider and deeper analysis.

Technology supports vision and mission

The technology that Legrix and her team installed at SPB has allowed the internal audit function to align with the board’s expectations of having careful and consistent follow-up of audit recommendations for improvement. It also allows Legrix to broaden the scope of her audit direction. She now takes quality management and internal control issues into consideration.

“We can follow the recommendations more efficiently and regularly,” she says. “This is critical to ensuring recommendations are not set aside and forgotten. The people we audit know our report is also presented to the board.”

In the next two years, Legrix says she will begin to examine existing issues in SPB’s internal control management, since the audit scope has been widened to include this area. “In 2010, I want to analyze the types of tools on the market that address internal controls,” she says. “We also plan to invest in the appropriate technology in 2011.”

Performance management and ROI

The internal audit function measures its performance by evaluating how satisfied SPB’s board is with the team’s audit work and findings, as well as measuring the satisfaction of auditees after each audit engagement. The auditors also examine the financial benefits SPB achieves through the implementation of audit recommendations. The company measures internal audit performance with a global analysis of what audit has brought to the organization in terms of cost reduction and risk management improvement.

The return on investment (ROI) SPB expects to experience from its recent investment in PGP and ACL technology was estimated prior to purchasing decisions, but has not been formally measured since the implementation. “Nevertheless, there is no doubt these two investments have [produced] a very good ROI for the company,” says Legrix. “Purchase and implementation costs were moderate and the benefits we obtained immediately after implementation were significant. There is no doubt to me it has brought us excellent ROI. We achieved benefits very quickly.”

Company Headquarters — United States

Number of Countries Operates in — 3

Number of Employees — 4,800

Industry — Pharmaceuticals

Annual Revenues — US\$1.5 Billion

Annual IA Operating Costs/Budget — US\$1 Million - US\$5 Million

Number in IA Function — 3 Internal and 3 - 4 FTE Co-sourced

Number of Years IA Function Has Been in Place — 3

IA Director/CAE Reports to — Chair of Audit Committee,
dotted-line report to CFO

Note: All of the above information is accurate as of December 31, 2009.

"I am a big believer that you can do more with data mining than interviewing. You need both, but establishing an effective internal audit department with a meaningful value proposition goes beyond the surface of what controls are implied or what people want them to be."

— Mary Ann Tourney

Continuous controls monitoring at Talecris Biotherapeutics

Talecris Biotherapeutics can be aptly described as a US\$1 billion startup company. When it separated from Bayer Healthcare Pharmaceuticals in 2005, it simply represented a product line with no real infrastructure as an organization. "As a business, it was a clean sheet of paper," says Mary Ann Tourney, the company's senior director of internal audit.

Today, Talecris is a global biotherapeutic and biotechnology company that discovers, develops and produces critical care treatments for people with life-threatening disorders in a variety of therapeutic areas. The company, based in Research Triangle Park, N.C., also has two headquarters located outside the United States – in Toronto, Canada (Talecris Canada) and Frankfurt, Germany (Talecris Europe).

In addition, the company has a wholly owned subsidiary, Talecris Plasma Resources, which operates 69 plasma centers throughout the United States. People who give plasma at the centers are paid cash for their donations.

"We have two main operating lines of business at Talecris," Tourney explains. "One is a biotherapeutic manufacturing business, which is driven by high-technology individuals. The other is our plasma collection business, which is more grassroots and basic in its control structure. Essentially, we are one company with two entirely different business models."

As the director of the internal audit team, Tourney reports to the chair of the audit committee, the chief financial officer (CFO) and senior management. Currently, the internal audit department at Talecris is comprised of a manager and two senior auditors, but will expand to four members by 2011. Tourney uses a co-sourcing approach that adds three to four full-time equivalents, depending on the project.

Introducing internal auditing to Talecris

Internal auditing was introduced to Talecris as a new function – and an important business process – just a few years ago. While the company was familiar with auditing from the standpoint of compliance with regulatory bodies such as the U.S. Food and Drug Administration, there was no oversight capacity with financial and operational focus before Tourney joined the team in September 2006.

"Our goal from the very beginning was to be a world-class organization with a small but highly effective audit function," she explains. As soon as Tourney started work at Talecris, she began to prepare the internal audit function for public company readiness. From a grassroots perspective, she also

began to evaluate how to run risk assessments and audits, targeting standards set forth by The Institute of Internal Auditors (The IIA).

Continuous Controls Monitoring (CCM)

Tourney set about implementing an audit department while Talecris began to explode with growth. “During the first year, I was just staffing, getting the internal audit function in place,” she recalls.

Later, as Talecris prepared to go public in October 2009, the internal audit team – under Tourney’s direction – embarked on a 12-month project to evaluate internal controls systemically. This project achieved such significant results that the company was the focus of a 2008 Rutgers University study that examined the organization’s use of Audit Command Language (ACL) technology.

Tourney says, “I am a big believer that you can do more with data mining than interviewing. You need both, but establishing an effective internal audit department with a meaningful value proposition goes beyond the surface of what controls are implied or what people want them to be. The question is what the controls really are. I wanted a clear snapshot of what our current state looked like so that I could draw a line to the optimal future state.”

Throughout her career, Tourney has used ACL for data analysis and data mining. Therefore, her first technology request at Talecris was to have ACL on every desktop in the internal audit function. ACL’s Continuous Controls Monitoring (CCM) allows Tourney and her team to run 189 audit tests on a daily, weekly and monthly basis. “We look at our dashboard to see what has passed and what has not,” she says.

Today, the internal audit function at Talecris uses CCM for six key business modules:

- Purchase to payment
- General ledger
- Payroll
- Order to cash
- Purchasing card
- Travel and entertainment

“In our second year, we established two modules, and in the third year established three more,” says Tourney. “During the course of this project, the team realized there was a module missing. We needed to quickly get our arms around how cash was being used and managed in our plasma centers. So, with Protiviti’s help, we developed a module related to cash for plasma centers.”

CCM is automated and links directly to SAP and credit card companies. Tourney has set an acceptance threshold, as well as a partnership with management that they monitor certain analyses on their own. “Instead of looking for a needle in a haystack, you just get out a metal detector,” she says. “Same objectives, different tool.”

Continuous monitoring versus continuous auditing

Continuous monitoring is different from continuous auditing. Tourney says, “Auditors perform continuous auditing. We run the continuous monitoring tool; however, from a control standpoint, monitoring is a management role.”

This is a subtle distinction because the tool itself can be used for both purposes. Tourney explains, “The tools get management engaged and help them understand what an auditor looks for and why. It also helps outline the objectives. The more eyes on the controls, the faster the objectives can be defined.”

Challenges and results

According to Tourney, the challenge in using the technology is ensuring business process owners understand their own data. “You need to make sure they know what they know,” she says.

Assumptions are often made with regard to data, especially when it is inherited from a predecessor company. “For example, the purchasing function was not necessarily sure what every field meant or was used for,” she says. “When the first module was set up, we assumed all data owners understood their data. However, this was not the case, and it resulted in false positives in some areas, like vendor qualification.”

Particularly in an organization with such a high rate of growth as Talecris, it is important to understand data. In 2006, the company had 1,700 employees; today, there are 4,800. This means that at the same time a large number of new employees were acclimating to the company, the internal audit team was trying to establish monitoring to help them with their jobs. “In the end, that dialogue increased everyone’s understanding,” says Tourney.

Data tools and technology do not come without challenges in fast-moving environments. Some challenges are driven from business, not from the technology. “The technology we used was actually our anchor in the storm,” she says. “We understood what the technology was supposed to do. When it wasn’t doing what it was supposed to do, we knew it was the process, not the tool.”

The tools Tourney and her team implemented drove significant results. “The most important benefit we realized from the use of the tool is our partnership with management,” she says. “We were laying the foundation and establishing controls from the beginning. We wanted to engage management right up front and establish a partnering relationship rather than an adversarial one. We have been successful in engaging them in dialogue related to controls.” Tourney also points out that the challenge in such a partnership is that she must be vigilant in ensuring independence.

Another benefit: Since Tourney does not have many resources to devote to risk and control management, the technology allows her to “zero in” on key exposures. The internal audit team uses co-sourcing for specific skills and subject-matter expertise; however, Tourney says the department will depend less on co-sourcing as the function and the company continue to grow. For now, the co-sourced staff delivers value in forensics, technical auditing and emerging issues.

Finally, Tourney says that the technology has increased the overall credibility of the internal audit function at Talecris. “We don’t speak from conjecture,” she explains. “We speak from fact. We can point to factual details to verify what we say. It is very important in a startup environment to establish credibility from the onset,” she says.

According to Tourney, ACL is intuitive and requires minimal training. “We have an IT auditor on staff. She is not only trained but certified on ACL, and also can do the programming,” Tourney says. “My entire staff has been trained on ACL – and we train others.” ACL helps auditors to not just see the data, but also really use it, through in-depth mining and analysis, according to Tourney. She says Talecris has permanently moved away from mere sampling.

The future expansion of the ACL tool at Talecris will be internally focused to help the internal audit team more closely align with The IIA Standards. The team will use automated workpapers, automated risk assessment and databases to track audit issues.

Performance measurement

“The true test of a good audit function is accessibility,” Tourney says. “Do people know whom to turn to and will they pick up the phone if they have an issue? [This is something that] is hard to measure, other than if my phone is ringing.”

According to Tourney, internal audit measures its own performance in traditional ways, making sure it is on target with budgets, productivity and quality. Talecris tracks its internal audit team's performance by evaluating whether they are accomplishing the audit plan from an investigation standpoint and if they are resolving issues as they emerge. The company also looks to see if internal audit recommendations are accepted by management. "They are measuring the organizational tone of accepting internal controls," Tourney explains.

In terms of return on investment (ROI), Tourney says she is not sure how to measure that. "From a cost recovery standpoint, we have recovered our investment in the system, but that was not our target," she says. "This is an interactive technology we use with management. We monitor each other. It is difficult to put an ROI on a technology that is a joint effort. If we look at it from an internal audit standpoint, then we have reduced costs, recovered costs and helped manage costs. That is our payback."

In addition to supporting internal audit's vision, mission and charter by helping the function become a world-class audit environment, Tourney says the company's CFO is pleased. "He appreciates our business perspectives," she says. "He sees that we are not sampling and writing 'blue sky' recommendations. We are getting concrete and real."

About Protiviti

Protiviti (www.protiviti.com) is a global business consulting and internal audit firm composed of experts specializing in risk, advisory and transaction services. We help solve problems in finance and transactions, operations, technology, litigation, governance, risk, and compliance. Our highly trained, results-oriented professionals provide a unique perspective on a wide range of critical business issues for our clients in the Americas, Asia-Pacific, Europe and the Middle East.

Protiviti is proud to be a Principal Partner of The IIA. More than 700 Protiviti professionals are members of The IIA and are actively involved with local, national and international IIA leaders to provide thought leadership, speakers, best practices, training and other resources that develop and promote the internal audit profession.



Protiviti has more than 60 locations worldwide and is a wholly owned subsidiary of Robert Half International Inc. (NYSE symbol: RHI). Founded in 1948, Robert Half International is a member of the S&P 500 index.

Internal Audit and Financial Controls Solutions

We work with audit executives, management and audit committees at companies of virtually any size, public or private, to assist them with their internal audit activities. This can include starting and running the activity for them on a fully outsourced basis or working with an existing internal audit function to supplement their team when they lack adequate staff or skills. Protiviti professionals have assisted hundreds of companies in establishing first-year Sarbanes-Oxley compliance programs, as well as ongoing compliance. We help organizations transition to a process-based approach for financial control compliance, identifying effective ways to appropriately reduce effort through better risk assessment, scoping and use of technology, thus reducing the cost of compliance. Reporting directly to the board, audit committee or management, as desired, we have completed hundreds of discrete, focused financial and internal control reviews and control investigations, either as part of a formal internal audit activity or apart from it.

One of Protiviti's key features is that we are not an audit/accounting firm; thus, there is never an independence issue in the work we do for clients. Protiviti is able to use all of our consultants to work on internal audit projects – this allows us at any time to bring in our best experts in various functional and process areas. In addition, Protiviti can conduct an independent review of a company's internal audit function – such a review is called for every five years under standards from The Institute of Internal Auditors.

Among the services we provide are:

- Internal Audit Outsourcing and Co-Sourcing
- Financial Control and Sarbanes-Oxley Compliance
- Internal Audit Quality Assurance Reviews and Transformation
- Audit Committee Advisory

IT Internal Audit Services

Protiviti's IT internal audit services help organizations understand their key technology risks and how well they are mitigating and controlling those risks. We also provide insight into the threats inherent in today's highly complex technologies. Protiviti offers a wide range of services for IT internal audit outsourcing and co-sourcing. The Protiviti methodology, which is both COSO- and CobIT-based, facilitates an overall IT internal audit management team (either Protiviti-led, client-led, or in combination) with execution of individual projects by subject-matter experts in each IT audit area.

Technology-Enabled Auditing

Protiviti works directly with organizations to assess their enterprise resource planning (ERP) and other systems and identify existing or third-party technologies to help create more effective and efficient technology-enabled audit activities. This includes both the enhanced management of the internal audit function through technology and the use of computer-assisted audit techniques (CAATs), data extracts, data analytics, and other tools to provide better, broader, more efficient and higher-quality audit results.

Protiviti holds a number of data analytics tool licenses and has its own proprietary technology-enabled products that can be provided directly on engagements. In addition, we assist in the transfer of continuous auditing activity to continuous monitoring within an organization and its operating units, departments, functions and processes.

For more information about Protiviti's Internal Audit and Financial Controls solutions, please contact:

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Protiviti's Governance Portal for Internal Audit

Protiviti's Internal Audit Portal is a web-based audit management system designed to improve the efficiency and effectiveness of your audit department. The Internal Audit Portal is an electronic work paper package that facilitates the audit process from risk assessment through issue tracking. Our advanced reporting engine will provide transparency, real-time status updates and a streamlined audit reporting experience.

Our clients are able to configure the solution to fit their approach and methodology, positioning both small and large internal audit functions to meet their objectives. When combined with our professionals and content, Protiviti will help you create a personalized response to your audit tool needs.

The Internal Audit Portal is an integrated module within the Protiviti Governance Portal that can be used independently or in conjunction with other modules to create a true governance, risk and compliance (GRC) platform. This enterprise solution allows you to leverage frameworks and build a common language and repository that brings internal audit information into a GRC context. Additional modules of the Governance Portal include:

Controls Management – A framework that supports control documentation (e.g., Sarbanes-Oxley), evaluation, documentation and testing.

Risk Management – A framework for assessing inherent, tolerable, and residual risk across defined enterprise categories.

Assessment Management – An integrated survey engine that supports a sustainable self-assessment process across multiple GRC programs and modules of the Governance Portal.

Incident Management – A system that captures actual, near-miss and potential events that can result in operational and financial losses.

For more information about Protiviti's Governance Portal for Internal Audit, please contact:

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KnowledgeLeaderSM provided by protiviti[®]

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

- **Audit Programs** – A wide variety of sample internal audit and IT function audit work programs are available on KnowledgeLeader. These work programs, along with the other tools listed below, are all provided in downloadable versions so they can be repurposed for use in your organization.
- **Checklists, Guides and Other Tools** – More than 600 checklists, guides and other tools are available on KnowledgeLeader. They include questionnaires, best practices, templates, charters and more for managing risk, conducting internal audits and leading an internal audit department.
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- **Articles and Other Publications** – Informative articles, survey reports, newsletters and booklets produced by Protiviti and other parties (including Compliance Week and Auerbach) about business and technology risks, internal audit and finance.
- **Performer Profiles** – Interviews with internal audit executives who share their tips, techniques and best practices for managing risk and running the internal audit function.

Key topics covered by KnowledgeLeader:

- Business Continuity Management
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- Security Risk
- Technology Risk

KnowledgeLeader also has an expanding library of methodologies and models – including the robust Protiviti Risk ModelSM, a process-oriented version of the Capability Maturity Model, the Six Elements of Infrastructure Model, and the Sarbanes-Oxley 404 Service Delivery Model.

Furthermore, with a KnowledgeLeader membership, you will have access to AuditNet Premium Content; discounted certification exam preparation material from ExamMatrix; discounted MicroMash CPE Courses to maintain professional certification requirements; audit, accounting and technology standards and organizations; and certification and training organizations, among other information.

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