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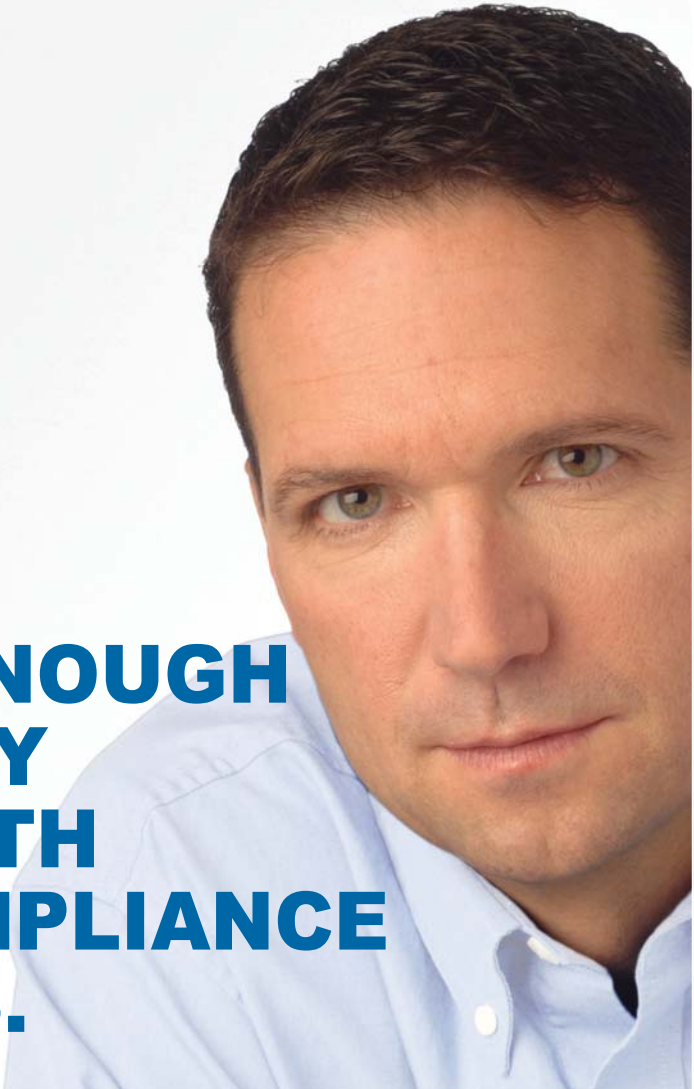
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Searching for a *Magic* Nail in the Tool Box . . .



By Slemo Warigon, Editor



Abraham Maslow said, “*He that is good with a hammer tends to think everything is a nail.*” Similarly, Maslow stated that “*If the only tool you have is a hammer, you tend to see every problem as a nail.*”

These sayings have implications for internal auditing in higher education. We live and work in a dynamic world

that faces myriad problems – some complex and some simple. Management often expects internal auditors to help in identifying pragmatic solutions to such problems. More often than not, internal auditors find solutions to complex institutional problems maddeningly elusive. Reasons for such problem-solving difficulties vary.

Perhaps we lack the requisite experience and expertise. Perhaps we are limited by our lack of creative problem-solving skills. Perhaps we are too stressed out by time constraints and other pressing obligations to think creatively. Perhaps we are hampered by our abiding fear of failure — the fear of disappointing our bosses and audit clients with potentially subpar products. Or, perhaps we encounter those rare organizational problems that truly test the limits of our intellectual capabilities. Whatever the case, we develop a healthy respect for the problems and sometimes struggle to come up with workable solutions for such problems.

In our relentless search for solutions, we often turn to ACUA’s vast information resources. We post inquiries and/or pleas for help on the incomparable ACUA-L discussion listserv. We also search the ACUA library resources for audit programs, internal control questionnaires, audit reports, and other useful materials. We find the information we are looking for most of the time. Having found the necessary information, the tricky part of the equation now becomes: *What do we do with the information?*

We live and work in a dynamic world that faces myriad problems — some complex and some simple. Management often expects internal auditors to help in identifying pragmatic solutions to such problems.

We could use the relevant information to solve complex problems in two different ways. We could change the problems to fit the predetermined solutions without engaging in in-depth analysis or creative thinking. We can accomplish this by blending our past experiences with the now-discovered “tried and true” solutions formulated by others. This can yield a written report with solutions that are good enough, even though they may not address the *root causes* of the problems we now face. The primary objective here, it seems, is to get the proverbial monkeys off our back. Using this approach, we are viewing all problems as *nails* because a *hammer* is the only instrument in our *problem-solving tool box*.

Conversely, we could use the information to ask the right questions, conduct the required assessments, identify the root causes of the problems, offer solutions that attack the root causes of the problems, and continually reassess the effectiveness of such solutions. In essence, we engage in a creative problem-solving process – one that is attuned to Rudyard Kipling’s saying: “*I keep six honest serving men. They taught me all I know. Their names are What, Why, When, How and Who.*” This approach gives us far more professional leverage – allowing us to use more than nails and hammers to more effectively address complex and dynamic institutional problems.

This issue of *College and University Auditor* has a wealth of information that can help internal auditors in higher education seeking to boost their problem-solving effectiveness. The current ACUA president, Betsy Bowers, exhorts us to open the many windows of opportunity for active involvement and make meaningful contributions to the association. Karen Hinen, ACUA executive director, discusses the importance of maximizing educational opportunities to continually enhance our audit effectiveness. Patricia Snopkowski provides the second of her two summa-

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Taking the Innovative Path

By Betsy Bowers, President



With a New Year and spring under way, it is a perfect time to think afresh and build on the skills and knowledge we have developed. Yes, you could say we should do some “spring cleaning,” with our professional association’s needs and values in mind.

I firmly believe ACUA is, and should be, on an innovative path. Last fall, ACUA unveiled its renewed, revised strategic plan. With it, we challenged ourselves to go in new directions, grow and become more proficient in our skill sets. For ACUA to remain vital, we must be consistently moving forward and avoid complacency. This means sticking our necks out and doing new things. How can we do this as an association? Here are some thoughts:

1. **Remain resourceful.** Read and keep current with trends within internal auditing and higher education. Yes, *CandU Auditor* is one excellent resource.
2. **Talk to those who inspire you.** Pick their brains. Whether it is a mentor, a family member or a colleague, talk with someone who has achieved a lot and you consider successful. Learn his or her tricks and think how you might apply them to ACUA’s operations.
3. **Focus on the big picture.** At the end of the day, instead of seeing just the trees, look at the forest. Focus on how *your* contributions to ACUA can make us a better organization. Where do we need to go from here?
4. **Challenge yourself.** Take a minute or two and think how you can help ACUA. What can *you* do to make a difference in our organization? Have you ever thought of serving on a committee or task force?
5. **Mix it up.** We all have our comfort zones. Yet someone taking a step out of a comfort zone could have a huge effect on our association. For instance, when was the last time you picked up the phone to chat with an ACUA colleague vs. zapping them an email? Mixing up our service delivery approaches can help in keeping ACUA activities fresh and alive for others. Where do we need to venture?
6. **Have fun.** Did you know that laughing or having fun before tackling a problem can increase your brainpower

by three- to five-fold? It can, per creativity guru Doug Hall. So, reflect on those wacky themes we’ve had at Annual and Midyear conferences (Auditors in Black, Be Spotted @ ACUA, etc.) and think of how we can inject more fun into our ACUA activities.

Many people are responsible for ACUA’s sharpened focus and fresh energy. The Board has been persistent in making ACUA’s excellence a priority. Our members share the same vision as the Board. We all work well together and have begun to implement some initiatives, such as the *Risk Dictionary* project, the *Internal Auditing Start-Up Kit*, and a revamped Web page and presence.

Organizations such as ACUA rely on teams to innovate, problem solve and compete at the speed of change. Successful team members do not do the same thing at the same time. On the contrary, they do the right thing at the right time. With this in mind, please allow me to make this impassioned appeal to my fellow ACUAns: The time is NOW for us to do even more of these right things!

You can help. You can serve on one of our various task forces. You can help us communicate the message far and wide that quality education for higher education internal auditors is available at ACUA. Yes, YOU can volunteer. Go to our www.acua.org Web site and learn more about how you can help our thriving association.

More specifically, to attract more members, we need to expand our potential membership pool. Whether you have been an ACUA member for 20+ years or joined yesterday, you have a role in increasing our membership. Please help us identify those who may be unaware of ACUA or who may be implementing an internal auditing function at their institution. We promise them personal attention and a great resource — the kind that produces highly successful leaders and practitioners in our profession. You can count on us to work strenuously to deliver on our promise.

As you see, ACUA offers many windows of opportunity for you to help. Please accept this challenge and become more active in your association.

I look forward to hearing from YOU!

Maximizing Educational Opportunities for Audit Effectiveness

By Karen Hinen, CAE, Executive Director



Over the past several months, ACUA headquarters has had an increasing number of phone calls from consultants, headhunters and government task forces. The common request is to identify members who are recognized as industry leaders.

It is extremely gratifying to know that when diverse people and organizations need audit expertise, they turn to the ACUA membership. One of our vital membership benefits has always been the ability of members to gain greater knowledge and skills by interacting with each other. The increases in attendance at our *Midyear Seminar* and *Annual Conference* are indications that our educational offerings are important to the overall professional development of our members. The ACUA-L listserv is always active and remains an important link to higher education internal auditing information.

Keeping pace with changes in higher education and internal auditing is always a challenge. Fortunately, ACUA is able to keep you abreast of the latest developments in internal auditing due largely to our many dedicated volunteers who help in identifying dynamic educational opportunities and outstanding speakers. In addition, our *Distance Learning Committee* is developing a series of Web-based programs to help internal auditors keep pace with the changes. Programs scheduled for production in 2006 are:

- **May 18** – Campus Risk Assessment
- **August 15** – Data Security
- **November 15** – Conflict of Interest

In order to better serve our members, ACUA also participates in a higher education consortium that collaborates to share information, compare experiences and undertake projects of shared interest. The *Council of Higher Education Management Associations* (CHEMA) is an informal voluntary assembly of thirty-five management-oriented higher education associations in the United States and Canada. CHEMA members collaborate to maximize resources and create substantial benefits for their institutions.

This collaboration enables us to participate in a study of functional leaders focused on higher education's five-year future horizon. We anticipate that this study will yield a summary report targeted for completion in time for electronic dissemination at the *Campus of the Future* conference to be hosted in July by the *Association of Higher Education Facilities Officers* (APFA), *National Association of College and University Business Officers* (NACUBO) and *Society for College and University Planning* (SCUP). The study will employ interviews and surveys to address the following questions:

- Is higher education's near-term future likely to be different from the present in important ways?
- What are the major areas of change that will affect both the institutions and professions represented by CHEMA?
- What are the key drivers of change in the next five years?
- What strategies or capabilities should be invested in now to best prepare higher education for its future?

It is extremely gratifying to know that when diverse people and organizations need audit expertise, they turn to the ACUA membership. One of our vital membership benefits has always been the ability of members to gain greater knowledge and skills by interacting with each other.

The confluence of trends towards increasing demands from technology-savvy students, reduced funding due to budget deficits, lower enrollments of foreign students due to shifts in the Homeland Security requirements and swiftly changing technology suggests a near-term future for higher education that is filled with promises and perils. We will need expert

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2005 GAIN Survey Results — Part II

By Patricia Snopkowski, Director of Internal Audit, Oregon University System



Background

The fall 2005 issue of *College & University Auditor* provided an initial summary of the 2005 Institute of Internal Auditors' Global Auditing Information Network (GAIN) report published in September 2005. The survey participants included 768 internal audit offices

from around the globe in 13 industry groups. A total of 121 ACUA internal audit offices participated in the survey this year, which is approximately 25% of ACUA membership. The ACUA participants included 77 public, 30 private and 14 systems of higher education.

The survey presents over 400 dimensions of benchmarking comparisons in a 125-page report. For the purpose of summary presentation, this article breaks the information contained in the report into seven main areas:

1. Staffing size and cost benchmarks
2. External audit
3. Audit committee
4. Staffing analysis
5. Trends in the areas of audit planning, fieldwork and reporting
6. Quality assurance tools and trends
7. Information technology audits and trends

The first article in this series explored topics one through four. In this article, we will explore some additional topics contained in areas one through four. However, the main focus of this article is to explore areas five through seven: audit planning, fieldwork and reporting; quality assurance; and information technology trends.

However, the main focus of this article is to explore areas five through seven: audit planning, fieldwork and reporting; quality assurance; and information technology trends.

Internal Audit Costing and CAE Reporting

The level of decentralization, size of the organization, and level of risk tolerance will all play into the equation of determining the acceptable level of *internal audit funding*. The GAIN survey demonstrated that the overall cost of internal audit does fluctuate depending upon the size of the organization, with economies of scale being realized for larger organizations.

Table 1 – Internal Audit Costs as a % of Revenue and Assets

Benchmark	GAIN Universe % of Revenue	GAIN Universe % of Assets
< 1 billion	.1129%	.0799%
1 to < 2 billion	.0737%	.0469%
2 to < 3 billion	.0577%	.0434%
3 to < 4 billion	.0475%	.0312%
4 to < 5 billion	.0452%	.0352%

The placement of the *chief audit executive* (CAE) within an organization also impacts the effectiveness of an audit organization. Another area of interest ACUA members wanted to hear about was CAE trends in titles and reporting relationships as compared to industry. **Table 2** notes a difference in the title structure in higher education, showing that the survey universe uses the title of *Vice President* more frequently than ACUA participants.

Table 2 – CAE Titles

Industry Group	Vice President	Director	Chief Auditor	Manager	Other
Universe	27.4	40.4	15.9	10.1	5.9
Educational Institutions	2.5	75.3	16.8	5.1	0

Table 3 shows commonality in CAE functional reporting to the board while the administrative reporting varied greatly among the population.

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Most respondents to the GAIN survey noted that their audit planning process utilizes a defined survey universe, considers a cycle approach, applies judgment to the process, obtains management requests and input, and uses an audit risk assessment model.

Table 3 – CAE Reporting Relationships

Reporting	Audit Committee	President/CEO	CFO/Controller	Other
Functional	78%	13%	5%	4%
Administrative	7%	34%	42%	16%

Trends in the Areas of Audit Planning, Fieldwork and Reporting

Audit planning is critical to any internal audit operation to ensure the effective and efficient use of resources. Most respondents to the GAIN survey noted that their audit planning process utilizes a defined survey universe, considers a cycle approach, applies judgment to the process, obtains management requests and input, and uses an audit risk assessment model. Common risk factors used as part of the model included:

- Degree of manual intervention and automation
- Confidence in management
- Extent of change (processes or turnover)
- Sensitivity of area (image, public relations, political)
- Financial factors (revenue, expenses, assets)
- Overall risk of loss

The annual audit hour distribution and the distribution of time within an audit for the three ACUA participant groups (system, public and private) is similar to the survey universe. A breakdown of audit hours is provided in **Table 4** and **Chart 1**.

Table 4 – Annual Internal Audit Hour Distribution

Audit Activity	% of Effort
Admin/Absences/Training	23%
General Audits (operational & financial)	45%
IT Audits	10%
Fraud	4%
Management Requests & Other	18%
Total	100%

Chart 1 – Distribution of Time Within Audits

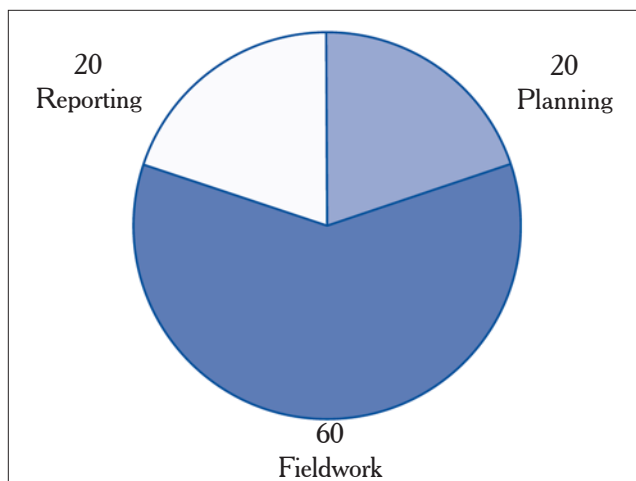


Table 5 provides a summary of the number of days it took the GAIN survey universe to complete an audit from planning to final report issuance. ACUA respondents noted that they spend more time than the survey universe in audit planning and reviewing audit files and reports. The average days for educational institutions to complete an audit ranged from 80 to 98 as a result of the additional emphasis on planning and quality control.

Table 5 – Average Life Cycle Timing

Audit Stage	Universe Average Days
Planning to End of Fieldwork	41.2
End of Fieldwork to Issuance of Draft	15.6
Issuance of Draft to Final Report	17.7
Total Time in Days to Complete Audit	74.4

Audit reporting trends noted in the GAIN survey showed the average number of pages for audit reports ranged from 9 to 11 for educational institutions and 11 for the overall universe. The vast majority of the survey universe, including ACUA respondents, stated their audit reports contain both manage-

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The results of the survey do need to be carefully applied to your particular situation given the varied organizational structures and needs of the respondents.

ment responses and an executive summary. When it came to audit ratings, the survey universe used ratings far more than the ACUA respondents as demonstrated in **Table 6** below.

Table 6 – Use of Audit Ratings

Survey Group	Percentage Using Ratings
Universe	44.5
Educational Institutions	16.0
ACUA Public	13.0
ACUA Private	20.0
ACUA Systems	27.3

Many audit committees view the rating system applied to internal audits as an essential tool that assists the board and executive management in evaluating the relative risks associated with the audit findings.

The next sections of this article explore methods internal audit offices use to ensure the quality of their work.

Quality Assurance Tools and Trends

Quality assurance standards were clarified in 2001 when the IIA updated the professional auditing standards. The *International Standards for the Professional Practice of Internal Auditing – Standard 1300 – Quality Assurance and Improvement Program* states, “The chief audit executive should develop and maintain a quality assurance and improvement program that covers all aspects of the internal audit activity and continuously monitors its effectiveness. This program includes periodic internal and external quality assessments and ongoing internal monitoring.” *Standard 1312 – External Assessments* states, “External assessments, such as quality assurance reviews, should be conducted at least once every five years by a qualified, independent reviewer or review team from outside the organization.”

The GAIN Survey noted that only 24% of respondents have conducted a peer review in the past 3 years. As a result of the change in standards, many ACUA members will be embarking upon their first peer review in 2006. The ACUA Web site provides resources to assist members in preparing for the review as well as a listing of members willing to participate as reviewers.

In order to assess the perceived quality of internal audit work, more than 50% of the ACUA GAIN survey participants used customer satisfaction surveys to identify areas for continual improvement. Some of the most common areas surveyed included:

- Timeliness of the audit
- Knowledge of the audit staff
- Adequacy of communication throughout the audit process
- Relevance of the audit findings

- Overall usefulness
- Ability to be flexible and courteous

Conducting audit follow-ups is another element of quality control in measuring the effectiveness of the audit function. Over 80% of the ACUA participants and the survey universe complete audit follow-ups.

The final four pages of the GAIN survey provide a summary of additional successful practices used by internal audit offices to improve the quality of audit operations. Some of the most popular methods include using risk-based resource deployment, ensuring regular communication with audit clients, establishing departmental and employee performance standards, requiring staff training and development, and providing operating manuals and the latest computer tools.

Information Technology (IT) Audits and Trends

The strategic use of information technology plays a key role in the success of the daily operations for a college or university. Information technology audits encompass approximately 10% to 17% of the survey respondents’ audit hours. Nearly 60% of the GAIN survey universe had dedicated IT audit staff with an average number of four IT auditors, whereas only 39% of the educational institutions’ respondents had dedicated staff with an average staff size of one. The top three IT audit areas noted by educational institution respondents include information security, application reviews of current systems, and development reviews of new applications.

The most popular network and internet security features deployed by the survey universe include the use of features such as virtual private networks, application level encryption, vulnerability assessment tools, and private/public key encryption. The survey noted that higher education institutions were more likely to use these security features. However, when it came to the use of a formal written security policy, the survey universe used and updated their policies more frequently than the educational institutions surveyed.

Conclusion

As stated in the GAIN Survey Results Part I article, the GAIN survey provides almost 400 different dimensions of information in dozens of categories; the list of articles could be endless. The results of the survey do need to be carefully applied to your particular situation given the varied organizational structures and needs of the respondents. With these limitations in mind, ACUA members can use the data to identify opportunities for continual improvement.

About the Author

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Identifying Strategic Goals and Related Metrics for Internal Auditing

By Carolann G. Lazarus, CISA, Information Systems Auditor, the University at Buffalo, State University of New York



Introduction

This article discusses various steps involved in identifying strategic goals and related metrics for an internal audit department. The article draws from the recent experience of the University at Buffalo's internal audit function.

As part of the University's strategic planning process, our Internal Audit Office was instructed to establish strategic goals that should "be in as specific and measurable terms as possible." In response to this request, I worked as a member of the internal auditing team and led the process for identifying existing resources. Rather than re-inventing the wheel, I decided to take an existing wheel and add the specialty spokes and high-performance tread in the identification process.

Overview

In initial discussions, our team agreed that metrics for an internal audit function could be problematic. Hard targets such as "the number of reports produced" and "the number of recommendations agreed to" can cause negative reactions, such as lowering audit standards to produce more reports, and deliberately not reporting findings that auditors believe will not be corrected. This dilemma raised two important questions:

1. What metrics should our Internal Audit Office use?
2. Who else had already struggled with this question, and where could we get more information to help us with our strategic planning process?

Our first step was to identify the sources available. After looking at what we had done in the past, and other available sources, such as The Institute of Internal Auditors' Global

Auditing Information Network (GAIN) report, online sources appeared to offer the greatest potential. For instance, we tapped the following online sources:

- ABACUS (Analytical Benchmarking for Auditors in the College and University Sector) information available to ACUA members at www.acua.org.
- Searching the ACUA-L archives using various terms, the most helpful being "performance indicators," "performance targets" and "auditor evaluations." These produced some additional resources, including useful attachments and links.
- Web browsing using Google, which produced a number of good links, including many from other higher education sources. I used the search strings "internal audit strategic plan," "internal audit strategic goals," "internal audit performance measures" and other variations.
- Soliciting input on the ACUA-L listserv.

Using the information obtained from the online sources, we developed an extensive list of possible strategic goals/objectives and related measurements. We made a conscious attempt to stay away from number-based indicators, although a few such indicators that appeared especially useful were included. The initial list of goals and measurements was grouped into five logical strategic areas that can be used as a starting point for any internal auditing department.

Sharing the results of our research and analysis allows us to help others who might face the challenging task of formulating a valuable and useful strategic plan for the internal audit function.

As part of the University's strategic planning process, our Internal Audit Office was instructed to establish strategic goals that should "be in as specific and measurable terms as possible."

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Audit Strategic Focus Area

Our process identified these five strategic focus areas:

- **Audit Services** – Financial, Operational, Compliance, Investigative, Consultative
- **Audit Resources/Infrastructure**
- **Audit Standards and Requirements**
- **Partnerships, Collaborations and Strategic Alliances**
- **Communication**

Strategic objectives and related metrics for each of these focus areas are discussed below.

Audit Services – Financial, Operational, Compliance, Investigative, Consultative

Goals/Objectives:

1. Maintain an effective *audit planning process* to best deliver meaningful and responsive internal auditing services to the institution.
2. Provide *quality audit reports* that are objective, with constructive appraisals that can be relied upon, and that add value by improving processes, enhancing the system of internal control and/or achieving significant cost savings.
3. Contribute value through *advisory services* that prevent potential problems through a proactive auditing approach, and leverage audit coverage given limited resources. Effective performance of this advisory role helps (a) communicate management's philosophy, vision and objectives on internal control throughout the institution, and (b) convey internal auditors' presence on campus.
4. Participate in *investigations* of allegations of fraud and employee misconduct to help reduce potential liability to the institution.

Measurements: Goal 1 – Audit Planning

- The audit plan is based on a formal risk assessment process that is conducted annually, reassessed and updated throughout the year. Scheduled high risk areas are completed as planned. Possible metrics include percentage of audit plan candidates that originated from the risk assessment, number of frauds detected, and percentage of audit plan completed.
- The risk assessment and resulting audit plan are aligned with the institution's strategic goals and objectives. The internal audit function should continually identify opportunities to further align audit activity with institutional objectives.
- The audit plan meets the needs of major stakeholders/senior management. Input from stakeholders is obtained through interviews, risk surveys, and other feedback mechanisms. Participation of management in setting au-

dit scope provides an opportunity for internal auditors to educate management personnel on their internal control responsibilities. A survey can measure management's perception of how well audit plans are aligned with their needs.

- The audit plan includes new systems, significant business projects, consulting activities, investigations and special requests. These should be tracked annually for completion and changes in coverage.
- The areas covered in the audit plan should provide coverage across the institution (maintains an audit presence in every college, school and major administrative area). Reviews of the audit universe and risk assessment should be performed to identify neglected areas.
- Flexibility should be built into the audit plan. A sufficient number of hours should be reserved for special requests and audit assistance so that no audits covering high risks need to be postponed. A common *metric* here is one that ensures all high risk areas are completed as scheduled.

Measurements: Goal 2 – Audit Reporting

- Audits result in more efficient and effective campus operations; recommendations are useful and helpful. Some useful metrics are:
 - Number of reports issued
 - Percentage of recommendations accepted by audit clients
 - Number of process improvements implemented
 - Cost savings realized
 - Revenue opportunities identified
 - Number of findings by significance
- Audits provide fresh insights and are perceived as valuable. To determine the perceived value, a post-audit survey can be used to obtain ratings of the report and contents.
- Audit reports are timely — less than *n* days from end of fieldwork to draft report, less than *n* days from draft report to final report.
- Continually review report design by exploring the use of condensed reporting or other formats to increase functionality and value of audit reporting. This entails the use of surveys and other feedback mechanisms to determine success and need for further changes.
- Follow-up activities are conducted to determine implementation of recommendations. Determine, for example, what percentage of recommendations was implemented within *n* months.

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Measurements: Goal 3 – Advisory Services

- Auditors are asked to participate in campus committees and task forces where controls are discussed. Metrics include the number of such invitations per year.
- There are opportunities for early involvement in strategic efforts where controls and quality processes are deliberated. Auditors lend their expertise in the planning stages of projects or systems to help in mitigating risks before the projects or systems become operational. Success can be measured by an increase in opportunities for involvement.
- Auditors receive regular requests for assistance. Number of requests can be tracked.
- The internal audit function provides both formal and informal education and awareness training on various control topics, through emails, memoranda, reports, and formal presentations.
- Using various media (e.g., Web site, newsletter, and ad-hoc flyer), the internal audit function communicates systemic/campus-wide problems and fixes along with associated best practices. These communications can be tracked, and surveys used to determine value.
- Establish a self-assessment program for the institution. This extends audit coverage, while educating the campus community on policies, procedures, regulations and internal control responsibilities. Explore the use of the internal audit Web site to track the number of downloads, then follow-up with surveys to determine usefulness.

Measurements: Goal 4 – Investigations

- Participate in fraud investigations. Audit office is listed on appropriate official documents as a point of contact.
- Measure the quality or value of involvement in fraud investigations. Auditors assist in documenting any wrongdoing, and can co-source if necessary due to limited in-house expertise. Potential criminal violations are turned over to proper authorities.
- Develop a fraud minimization strategy for the institution to decrease the potential frauds. Assess process improvements related to preventing malfeasance.

Audit Resources / Infrastructure

Goals/Objectives:

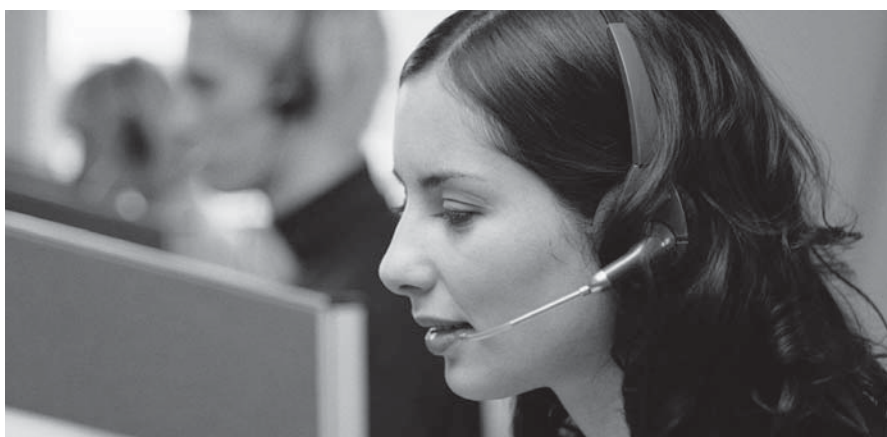
1. Provide a quality internal audit office for delivery of audit and advisory services by professional, skilled, knowledgeable, experienced, and reliable audit personnel.
2. Establish an effective work environment by identifying opportunities to improve productivity, quality, and efficiency through technology and facilities.

Measurements: Goal 1 – Audit Office

- Strategic planning is performed to foster continuous improvement. Metrics, benchmarking and quality reviews are used. The plan is updated at least annually.
- Qualifications are established and included in job descriptions, such as the number of years of internal auditing experience, education, skills, training and certification.
- Identify the need for and develop subject matter experts, such as in construction, fraud, information technology (IT), human resources (HR), contracts, and other specialized areas. Maintain a record of training provided to such experts, including subjects and hours.

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Identifying Strategic Goals and Related Metrics for Internal Auditing

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- Professional development is encouraged by insuring at least 40 hours a year for full-time auditors (IT and other experts with specialized skills may need more).
- Staff growth opportunities are considered in the areas of administration and supervision.
- Regular staff meetings are held to discuss audit issues and new developments. Meetings are scheduled at least quarterly.
- Career planning allows qualified audit staff to advance to other functions at the institution. Staff promotions are tracked.
- Certification of audit staff is supported by providing incentives and financial support. Track the (a) number or percentage of certified staff members, (b) amounts spent on supporting certifications and (c) amounts allocated for certification bonuses.
- Membership and participation in professional organizations is promoted. Encourage auditors to attend *n* local meetings annually, perform presentations, join listservs and attend sponsored conferences.
- Use outside experts as needed. Complete cost projection for the use of outside specialist(s) prior to obtaining approval.
- Provide positive feedback to staff through recognition and rewards.
- Recruit experienced internal auditors from diverse backgrounds. A recruitment plan is in place.
- Explore instituting an intern program to augment the staff and promote positive relations with colleges, schools, departments, and other institutions.
- The budget for the department is adequate.
- A staff satisfaction survey is performed annually with changes made as needed.

Measurements: Goal 2 – Work Environment

- Provide staff members with current technology tools. A list of current IT audit tools is maintained.
- Educate staff in the use of available IT resources.
- Explore automating audit workpapers and scanning supporting documents. Review available automated options.
- Investigate the use of on-line or Web-based self-assessments with links to policies and procedures.
- Increase use of CAATs (computer assisted audit techniques) through ACL, or other software.
- Automate the audit risk assessment and the audit universe so that they are more easily updated and revised.

- Maintain an electronic library of audit programs, audit reports, workpapers, reference materials, permanent files and similar documents.
- Evaluate office space and equipment needs for staff growth.

Audit Standards and Requirements

Goals/Objectives:

1. To comply with standards, requirements, policies, rules impacting internal audit as promulgated by relevant governmental, institutional or other professional bodies.

Measurements: Goal 1 – Compliance

- Maintain an internal audit charter that addresses internal audit's role and mandate. The charter should be reviewed and authorized by the Audit Committee annually.
- Maintain the internal audit manual of policies and procedures. The manual should be reviewed and updated regularly to reflect changes in practices or requirements.
- Have a quality assurance or peer review performed every 5 years.
- Develop quality assurance techniques to ensure compliance.

Partnerships, Collaborations and Strategic Alliances

Goals/Objectives:

1. Cultivate relationships and understanding of the services internal audit can provide and potential partnering roles within the institution.
2. Work with internal and external sources to expand and coordinate audit coverage.

Measurements: Goal 1 – Partnerships

- Develop a *marketing strategy* for the internal audit function.
- Clearly define the *roles* of internal auditors to assist campus management in various consultative activities.
- Join relevant groups or areas to develop *education/training opportunities* on topics such as fraud prevention, compliance, risk management, internal controls, regulatory environment, etc. This might include collaboration between the internal audit and HR management functions in delivering value-added management training offerings to the campus community.

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Measurements: Goal 2 – Internal and External

- Seek opportunities to coordinate activities with internal or external audit/compliance organizations or functions to maximize audit coverage, and minimize duplication of efforts.
- Work collaboratively with the external auditors to coordinate annual reviews and acquire additional knowledge and skills from such engagements.

Communication

Goals/Objectives:

1. Facilitate effective communication within the internal auditing department and with peers to maintain a high level of professional knowledge.
2. Ensure effective communication with management, clients, and other constituencies to improve working relations and increase awareness of the audit function.
3. Maintain a functional relationship with members of the Audit Committee.

Measurements: Goal 1 – Communication with Staff and Peers

- Regular staff meetings are held to discuss audit issues and new developments.
- Encourage participation in professional listservs.
- Professional audit organizations are supported through regular attendance at local meetings and national conferences.

Measurements: Goal 2 – Communication with Constituents

- Internal audit personnel regularly attend the *Internal Control Advisory Group* meetings.
- The progress of audits is communicated to the audit clients to keep them abreast of issues needing their attention.
- Internal audit's strategic plan is communicated to appropriate management personnel and clients to improve relations.
- A working relationship with external auditors is maintained. Audit is automatically apprised of and involved, to the extent appropriate, in all external audit activities.

Strategic planning is primarily concerned with developing a departmental or institutional mission, identifying an organization's strengths, weaknesses, opportunities and threats, establishing strategic objectives and generating relevant performance metrics.

- A Web site is used to facilitate two-way communication, including the use of a Web-based survey form to obtain feedback from clients on the quality of internal audit activities.
- An audit brochure or pamphlet is used to answer general questions about internal audit at the institution.
- Regular communications are established with audit clients to identify needs, potential audit issues and changes to risks, as well as to obtain feedback. Audit management and staff hold regular meetings with constituents.

Measurements: Goal 3 – Audit Committee Communication

- The chief audit executive (CAE) attends all Audit Committee meetings.
- The Audit Committee reviews and approves the annual audit plan.
- The CAE meets privately with the Chair of the Audit Committee to build trust and provide context, informally, about the audit function and its relationships with the institutional management.
- The CAE reports current risks, major activities, key findings and issues to the Audit Committee during its periodic meetings.
- The CAE is granted unrestricted access to the chair of the Audit Committee.

Conclusion

Strategic planning is primarily concerned with developing a departmental or institutional mission, identifying an organization's strengths, weaknesses, opportunities and threats, establishing strategic objectives and generating relevant performance metrics. The strategic planning process addressed in this article can play a key role in assisting your department in identifying its strategic goals and related performance metrics. This will in turn help your department in motivating audit personnel and allocating limited audit resources so that formulated strategic objectives can be effectively executed and measured.

About the Author

Carolann G. Lazarus, CISA, is the Information Systems Auditor at the University at Buffalo, State University of New York. She has about 20 years' experience as an information systems auditor in both higher education and banking. She is a current board member and past president of ISACA's Western New York Chapter. She is also a current board member and past Board Chair of the University at Buffalo Child Care Center. She can be reached at clazarus@business.buffalo.edu.

IT Audit Risks in Higher Education — A View from the 2005 Advanced IT Roundtable

By Camille R. Rigney, CISA



Introduction

Information technology (IT) systems are critical to institutions of higher education seeking to enhance their operational efficiency, worker productivity, and governance process. This article presents issues relevant to the IT audit risks in higher education as identified by participants of the recent ACUA IT audit roundtables.

Overview – Inside the Annual ACUA IT Roundtable Sessions

I've been leading the "IT Auditors and Directors Advanced Roundtable" at the ACUA Annual Conference for nearly a decade, and year after year, I've been impressed by both the depth of information-sharing that occurs at these roundtable sessions and the gratitude expressed by the participants for the wealth of information that they receive. Early last fall, as I collated the discussion topics and survey questions that had been pre-submitted by the registrants for the impending 2005 IT roundtables in Portland, Oregon, it occurred to me that ACUA members who are unable to attend these sessions might benefit from a high-level summary of what was discussed at the roundtables. I called on one of the registrants, **Carolann Lazarus** from the University at Buffalo, to serve as scribe for the 2005 IT roundtables, and our collaborative summary follows.

To give you a little background on the 22 auditors who participated in the 2005 IT roundtables, most came from audit shops with 3 or fewer IT auditors. Their experience levels spanned a wide range — some were new to higher education, some were new to IT audit, some were new to higher education IT audit, and some had decades of higher education IT audit experience. Despite differences in their experience levels, most of the registrants did engage in and contribute to the discussions. This summary of the 2005 IT roundtables is by no means a complete, conclusive, or "carved in stone" approach to IT auditing — it is simply a compilation of thoughts, suggestions, best practices, and action plans from a group of your ACUA colleagues who are addressing the challenges of IT audit in higher education.

IT Audit Risks

The following IT risks identification and management issues in higher education were discussed during the 2005 IT roundtable:

Defining your audit universe

- Start with a general controls review—as external auditors do—to develop a good background on the institution's control environment.
- If you have Y2K system inventories, consider using them as a starting point for identifying your key IT audit entities.
- Create a schematic of systems—networked, mainframe, stand-alone, and shadow.

Risk assessment

- Develop a risk assessment in-house, using a Microsoft Excel application.
- Refer to *Stanford's Risk Assessment* using CobiT, which was published in the ACUA journal a few years ago; this valuable resource can be revised to fit your current needs.

Audit ratings

- Rank findings *High* (fix immediately)/*Medium* (fix in 3-6 months)/*Low* (fix in 6-12 months, or have appropriate compensating controls for the findings).
- Rank findings by *Principal Observations/Detailed Observations*.
- Use process improvement on reports instead of rankings to avoid having items not resolved or given any priority if they were not ranked as high.
- Give the findings an internal ranking in the executive summary section.
- Base rankings on the action plan in the executive summary section.
- Use color rankings, and rank findings high/medium/low for follow-up procedures.

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Finding qualified IT audit applicants at a price you can afford

- Try hiring IT audit personnel internally from the campus IT staff.
- Co-source the IT audit function, if necessary.
- Bring in recent IT graduates with prior business experience. A candidate with a newly minted degree enables you to secure a qualified individual at a reasonable salary. Requiring new graduates to have prior business experience insures a knowledge and appreciation of the control environment.

Making the most of limited IT audit resources

- Collaborate with IT Security on network vulnerability scans.
- Audit at a lower technical level, providing more high-level reviews.
- Align audit schedules with the institution’s IT mission statement.
- Focus on risks cited by key IT managers and directors, to add value to your deliverables.
- Develop an outreach program—get out and make sure that your auditees know who you are and what services you provide.
- Use IT-specific control self-assessments.
- If your preliminary review indicates a weak control environment, issue an audit “advisory” recommending specific IT control improvements by specific dates and reschedule the audit for a few months later.

ERP (enterprise-wide resource planning) information systems caveats

- Complete all *fit/gap analyses* of functional areas before buying into a “vanilla” (no customization) implementation.
- Realize that modifications to close functional gaps are often necessary, but limit customization where possible.
- Make every effort to understand and then communicate the “real” costs of an ERP (e.g., the need for more staff, not less).

How to address the issue/risks of researchers running their own systems

- Researchers should follow an institution’s guidelines and policies (e.g., equipment inventory, secure standards, etc).
- NIH grants *may* be looking for compliance with IT security standards going forward.

- Implementation of SPAM filtering at one school helped to discover rogue systems and potential problem servers.
- A handful of schools are requiring that researchers register their equipment and comply with specific security standards before allowing them to join the network.

Survey questions

1. *What are the current technologies that you are working on/with?*
 - IT security governance
 - UNIX and Linux systems
 - Wireless networks
 - Oracle databases
 - ERP implementations
 - Authentication
 - E-commerce
2. *Does your internal audit department have servers supported by its IT audit staff?*

The cost of resources to support your own server can be prohibitive. Many participants in the roundtable use networked servers that are supported by their central IT shops.

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3. What IT security positions exist in your organization?

There was an even split between schools that have *Chief Information Security Officers* (CISOs) and those that do not staff the function. Some schools have a central *information security function*, but not an *information security officer*. Some decentralized environments have distributed security functions out. One school noted that it had centralized all IT functions due to budget cuts. It was generally agreed that the CISO should not be under central IT, but that in reality this is what occurs; this model is viewed as the fox guarding the hen house and brings up conflict of interest issues.

4. How involved is your internal audit function in the PCIDSS (Payment Card Industry Data Security Standards) self-assessments?

One institution hired a consultant (\$15,000) to identify applicable entities (106 identified, 6 of which were high level), after which the internal auditors helped the merchants complete their self-assessment, precertifying them by internal scanning (200 hours). Several internal auditing departments are assuming an *advisory role*, as there was consensus that PCIDSS responsibility lies with the Chief Financial Officer (who signs the certifying letter), with involvement of the CISO. One of the more difficult issues is identifying all the areas at the school that take credit cards. One suggestion was to use “Google” to search on the words “credit card” and/or “visa” along with “your institution’s name” to facilitate finding such areas.

5. Is anyone using a firewall between business databases and front-end Web application servers and the rest of the campus?

Institutions are using a firewall in these instances. Intrusion detection and prevention software was raised as a possible control, but there wasn’t much awareness within the group on this software.

Miscellaneous suggestions and comments

- Audit your network perimeter; you will be surprised at what you find.
- Google your school’s checking account number to identify Web sites that have information on them that shouldn’t be available to the public (i.e., hackers).
- Family Educational Rights and Privacy Act (FERPA) compliance has been overlooked in some surprising places. One school found that they had FERPA-protected data in their scholarship database.
- Google related words to find sensitive information such as grades, social security numbers, credit card sites, etc.

- It was noted that not one of the institutions represented at the roundtable had the compliance function centralized.
- Regarding two-level or higher authentication, only a few institutions are using secure cards or a two-step login.

Conclusion

Institutions of higher education — like all other organizations — are dependent on their IT infrastructure for virtually all aspects of their operations. Internal auditors play a critical role in the effective identification and management of IT risks. We hope your institution finds the issues addressed in this article helpful in strengthening controls over its mission-critical IT resources.

References

Payment Card Industry Data Security Standards http://usa.visa.com/download/business/accepting_visa/ops_risk_management/cisp_PCI_Data_Security_Standard.pdf

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About the Author

Camille R. Rigney, CISA, is the Director of Information Systems Audit Services at Brown University. She has a liberal arts degree from Boston State College/UMass Boston and a Certificate in Computer Science from the Community College of Rhode Island. Her prior employment includes information technology auditing and business systems analysis in the banking and insurance industries.

She is a recipient of the ACUA Member Excellence Award and has been an active ACUA volunteer since 1988, having served as At-Large Board Member; Midyear Seminar chair and workshop presenter; Annual Conference proctor, IT Track Coordinator and IT roundtable leader; and Web Committee chair. She is Past President of the New England Chapter of the Information Audit and Control Association (ISACA-NE), where she has served in similar leadership and professional organization coordination roles for over 20 years. She can be reached at camille_rigney@brown.edu.

Institutions of higher education — like all other organizations — are dependent on their IT infrastructure for virtually all aspects of their operations. Internal auditors play a critical role in the effective identification and management of IT risks.

From the Editor

Continued from page 2

We continue to be exceedingly grateful to these and past authors who took time out of their busy schedules to submit articles with practical solutions that are both timely and relevant to our dynamic profession.

ries on The Institute of Internal Auditors' *Global Auditing Information Network* (GAIN) report – focusing on key benchmarking results of interest to ACUA members. Another feature article by Carolann Lazarus provides detailed guidance on identifying strategic objectives and related performance metrics for the internal audit function. Finally, Camille Rigney's feature article presents issues relevant to the identification and management of IT audit risks. We continue to be exceedingly grateful to these and past authors who took time out of their busy schedules to submit articles with practical solutions that are both timely and relevant to our dynamic profession.

Future issues of the *College and University Auditor* will include a new section – Letters to the Editor – addressing readers' comments and insights on the recent articles in the magazine. We, therefore, encourage you to submit such letters to slemo.warigon@gallaudet.edu. Please feel free to include in your letters any ideas you might have about increasing the value of this publication.

With this editorial piece out of the way, I'd better start stuffing my audit tool box with all the valuable and informative feature articles found in this issue so that I can help my institution in solving its myriad problems with more *creativity* than the classic *nail-and-hammer* approach!

Report from Headquarters

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navigation to make it safely through choppy and fast-moving waters of change.

ACUA members have the pleasure, challenge and opportunity of working in higher education in the *Information Age* where *intellectual property* has surpassed land, labor and financial capital as both the dominant factor of production and the source of society's wealth and achievement. We live in an age where new information technology (IT) resources linked by networks are radically reshaping every aspect of how we live, learn and work. High performance computers, ultra fast networks, learning technologies and digital libraries are dramatically changing the nature, intensity and effectiveness of teaching, learning, research and service in higher education. Many so-called *Net Generation* students are demonstrating higher expectations for IT and demanding different learning environments, campus services and even pedagogy.

As your institutions shift resources and focus to take a central role in the Information Age economies, your responsibilities as auditors are also shifting. Internal auditors must match resources and skills step by step in order to more effectively manage the audit process.

Our expectation is to overlay clearly defined trends in higher education reflected in the *CHEMA study* and the *ACUA Strategic Plan* in order to develop a robust continuing professional development program for our members. ACUA continues to hold firm to the belief that internal auditing must play an active role in the campus of the future. For this reason, the association plans to work with you every step of the way so that we can be better prepared to meet the future head-on.

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