A Global Look at IT Audit
Best Practices

Assessing the International Leaders in an Annual
ISACA/Protiviti Survey

ISACA®

Trust in, and value from, information systems

protiviti®

Risk & Business Consulting.
Internal Audit.

EXECUTIVE SUMMARY

For decades, many have observed that the world is becoming smaller, in great part due to the evolution of technology.

But if this is the case (and few would argue otherwise), it also is becoming a bit scarier from a technological standpoint. Cybersecurity issues and risks abound for businesses today, and the IT winds of change tell us they undoubtedly will grow exponentially over the next decade, with the global proliferation of mobile devices and rapidly maturing Internet of Things connecting technologies and people like never before.

And this may just be the beginning – who knows what the next decade holds, let alone the next 20 years.

It is in this dynamic environment that IT audit leaders and functions must operate to help their organizations identify, mitigate and monitor an escalating volume of IT risks. Working in collaboration with executive management, the board of directors, IT, legal, human resources and numerous other departments, IT auditors face the daunting task of helping their organizations undergo business transformation while managing potential IT risks that could cripple the enterprise.

ISACA and Protiviti partnered to conduct the **5th Annual IT Audit Benchmarking Survey** to determine where IT audit functions stand in their capabilities to address these key challenges.

Notable takeaways from this year's study

1. **IT changes and security are top-of-mind –** Respondents most frequently cited emerging technology, transformation, innovation, disruption and cybersecurity as their top technology challenges.

2. **There are significant concerns about finding qualified resources and skills –** Not only was this noted by respondents as one of today's top IT challenges, but numerous results suggest that finding the right people with the right skills for the right job remains a significant challenge.

3. **Many IT audit reporting lines are still off the mark –** Having the IT audit director report to the chief audit executive (CAE) or an equivalent role is ideal, yet many organizations still have other reporting lines in place, bringing into question whether IT audit still falls under the third line of defense as an independent function.

4. **IT audit risk assessments are an absolute must –** There are small but meaningful numbers of companies that are not conducting any type of IT audit risk assessment. For these organizations, this represents a significant risk given the cybersecurity threat environment. Other organizations are adhering to best practices by conducting these risk assessments more frequently.

5. **Get involved early in major IT projects –** The good news: Half of all IT audit departments have a significant or moderate level of involvement in major technology projects for their organizations, and many get involved in the early planning and design stages. Yet many have little to no involvement in such projects.

6. **Know your audience to communicate effectively –** A strong majority of IT audit leaders and professionals rate the ability to explain complex IT issues for a non-technical audience as a critical part of their interpersonal skills.

METHODOLOGY

ISACA and Protiviti partnered to conduct the 5th Annual IT Audit Benchmarking Survey in the third quarter of 2015. This global survey, conducted online, consisted of a series of questions grouped into five categories:

- Today's Top Technology Challenges

- IT Audit in Relation to the Internal Audit Department

- Assessing IT Risks

- Audit Plan

- Skills and Capabilities

More than 1,200 (n = 1,230) executives and professionals, including CAEs as well as IT audit vice presidents and directors, completed our online questionnaire. One in three participants are from organizations with US$5 billion or more in annual revenue, and well over half of all respondents come from organizations with greater than US$1 billion in annual revenue. Additional respondent demographics can be found on pages 41-43.

Since completion of the survey was voluntary, there is some potential for bias if those choosing to respond have significantly different views on matters covered by the survey from those who did not respond. Therefore, our study's results may be limited to the extent that such a possibility exists. In addition, some respondents answered certain questions while not answering others, and a significant percentage of respondents are members of ISACA. There also is a disparity in the number of responses from each geographic region.

Despite these inherent limitations, we believe the survey results provide valuable insights regarding IT audit practices in organizations today.

TODAY'S TOP TECHNOLOGY CHALLENGES

In a verbatim question, we asked our survey participants to name what they view to be the top five technology challenges facing their organizations this year. The top 10 issues they identified are detailed below, as well as comparisons with the previous two years' findings.

2015	YOY Trend*	2014	2013
Emerging technology and infrastructure changes – transformation, innovation, disruption	↑	IT security and privacy/cybersecurity	IT security: data security, cybersecurity and mobile security
IT security and privacy/cybersecurity	↓	Resource/staffing/skills challenges	IT governance
Resource/staffing/skills challenges	↓	Emerging technology and infrastructure changes – transformation, innovation, disruption	Lack of successful ERP implementations, development and knowledge
Infrastructure management	↑	Regulatory compliance	Social media
Cloud computing/virtualization	↑	Budgets and controlling costs	Vendor management
Bridging IT and the business	↑	IT governance and risk management	Cloud computing
Big data and analytics	↔	Big data and analytics	Emerging technology and infrastructure changes
Project management and change management	↑	Vendor, third-party and outsourcing risks	Big data and analytics
Regulatory compliance	↓	Cloud computing/virtualization	PCI compliance
Budgets and controlling costs	↓	Bridging IT and the business	NA

Indicates trend change from 2014 results.

Commentary

The top technology challenges reported in this study are consistent with market activity and other studies from ISACA and Protiviti. They also have deep interrelationships with each other. As companies embrace emerging technologies and information changes, does this expose organizations to new IT security risks? How do organizations adopt emerging technology at lightning speed while staying on top of IT security, privacy and cybersecurity challenges if they are also experiencing a shortage of qualified IT resources? How do you upgrade your currently aging technology if you are short on

people with IT skills, implement emerging technologies, prevent security and privacy breakdowns, and still run a profitable business? As technologies continue to expand and mature, including but not limited to developments such as the Internet of Things, this list of questions keeps growing.

On the emerging technology front, rapid change is the norm, and IT organizations must evolve their policies, processes, people and technology accordingly. An agile and flexible IT infrastructure is the order of the day. There are important resource decisions involved with implementing infrastructure changes that need to be assessed more broadly than within the IT function.

According to the results of Protiviti's 2015 IT Priorities Survey, 60 percent of organizations are undergoing a major IT transformation, and for 54 percent of organizations, the duration of IT transformation is expected to be a year or longer.[1] As companies embrace new technologies, IT auditors must strive to understand how new technological developments and trends impact their organizations and how they influence the ongoing effectiveness of the overall IT entity-level controls and IT process-level controls. They also must understand the organization's exposure to cyberthreats, as well as impacts on the viability of the business model. As technologies change, an effective IT audit risk assessment must address the potentially disruptive change for businesses, pushing the subsequent audit plan into uncharted territory.

According to ISACA's 2015 IT Risk/Reward Barometer survey, global IT and cybersecurity professionals describe the Internet of Things (IoT) as one such technology that flies below the radar of many IT organizations – an invisible risk that survey respondents believe is underestimated and undersecured:[2]

- Nearly half believe their IT department is not aware of all of their organization's connected devices (e.g., connected thermostats, TVs, fire alarms, cars).

- 73 percent estimate the likelihood of an organization being hacked through an IoT device is medium or high.

- 63 percent think that the increasing use of IoT devices in the workplace has decreased employee privacy.

But ultimately, organizations should not avoid new technology. The business risk of not embracing the Internet of Things – and falling behind competitors – may well outweigh any potential cost of a cyberattack.

IT security and privacy/cybersecurity is also top-of-mind for IT auditors and businesses alike. As connectivity of business activity increases, it is critical to view information security and privacy as a business issue, because data is an asset that can quickly become a liability if mismanaged either physically or electronically. Security threats, vulnerabilities and privacy exposures challenge every organization, whether they realize it or not, creating risks that must be understood and managed. When organizations do not know the risks they face, serious threats are left unaddressed that could mushroom into enormous exposures.

Protiviti's 2015 Internal Audit Capabilities and Needs Survey reported that auditing IT security is a key area in need of improvement for CAEs and overall respondents, along with the National Institute of Standards and Technology (NIST) Cybersecurity Framework.[3] This study also

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[1] *Today's Enterprise – Cyberthreats Lurk Amid Major Transformation: Assessing the Results of Protiviti's 2015 IT Priorities Survey*, Protiviti, www.protiviti.com/ITpriorities.

[2] *2015 IT Risk/Reward Barometer*, ISACA, www.isaca.org/SiteCollectionDocuments/2015-risk-reward-survey/2015-it-risk-reward-barometer-report.pdf.

[3] *From Cybersecurity to Collaboration: Assessing the Top Priorities for Internal Audit Functions*, Protiviti, 2015, www.protiviti.com/IASurvey.

reported there is a significant need for improvement in cybersecurity risk management, with less than one in three organizations judging themselves to be "very effective" at managing cybersecurity risk to an acceptable level.

Security of company information, brand and reputation damage, regulatory compliance and loss of employees' personal information represent today's greatest cybersecurity risks. Organizations emerging as top performers in this study are ones that proactively address cybersecurity risk in their audit plans and those whose boards of directors are highly engaged with cybersecurity risk.

Protiviti's most recent IT Security and Privacy Survey also reported:[4]

- Having the right policies is the foundation of strong information security.
- Many companies lack critical policies and an understanding of their "crown jewels."
- There aren't high levels of confidence in the ability of the organization to prevent an internal or external cyberattack.

In fact, according to ISACA's 2015 Global Cybersecurity Status Report, 83 percent of respondents say cyberattacks are among the top three threats facing organizations today, and only 38 percent say they are prepared to experience one.[5]

In ISACA's 2015 Privacy Survey, more than half of the respondents reported that consumers should not feel confident that companies are adequately protecting their information. The study also found that only 29 percent of the respondents are very confident in their enterprise's ability to ensure the privacy of its sensitive data.[6]

All this said, we can't forget about people. Organizations today are increasingly dependent on technology. However, it is impossible to run a business without human capital. People are the backbone of the organization. The economy is experiencing unprecedented growth and IT skills are in hot demand. Organizations are also facing new pressures to replace aging baby boomers who are dropping out of the workforce at an increasing pace. The human capital challenge is just as complex as an organization's IT environment. Of note, according to information on the website of the President of the United States, there currently are 500,000 unfilled jobs in the areas of software development, network administration and cybersecurity.[7]

It is important to remember that, while understanding technology is a critical skill for IT auditors, "soft skills" are increasingly important. Auditors must get familiar with all aspects of a company's operations. IT audit provides exposure to various levels of management, and it requires well-developed communication skills as well as critical thinking. Effective auditors also possess process analysis, data collection, interviewing, business writing and project management skills. They are able to conduct effective meetings and can communicate their results, conclusions and recommendations to all levels of management. In short, being an auditor in today's environment means being a well-rounded individual to bridge the gap between business and IT.

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[4] *The Battle Continues – Working to Bridge the Data Security Chasm*, Protiviti, 2015, www.protiviti.com/ITsecuritysurvey.

[5] *2015 Global Cybersecurity Status Report*, ISACA, www.isaca.org/Pages/Cybersecurity-Global-Status-Report. aspx?cid=pr_1105839&appeal=pr.

[6] *Keeping a Lock on Privacy: How Enterprises Are Managing Their Privacy Function*, ISACA, www.isaca.org/Knowledge-Center/ Research/ResearchDeliverables/Pages/keeping-a-lock-on-privacy.aspx?cid=pr_1110108&appeal=pr.

[7] www.whitehouse.gov.

IT AUDIT IN RELATION TO THE INTERNAL AUDIT DEPARTMENT

What may be most notable in this year's results is the lack of significant change over the findings in the prior years of our study. The results are not changing: The question is, "Why?"

Many companies still have established reporting structures for IT audit that are less-than-optimal. Having the IT audit director report to either the CAE or an equivalent position is best practice. Any other reporting line, even to the CEO, varies from the third line of defense best practice (internal audit) that companies are encouraged to employ. Specifically, any other reporting structure likely falls under the second line of defense (management), which is less appropriate for internal audit and IT audit.

GLOBAL LEADER
LATIN/SOUTH AMERICA

58% have an IT audit director or equivalent position.

The financial services industry establishes a better example in that internal audit and, by extension, IT audit are set up to function as independently as possible. This ties back to the "Getting to Strong" approach set down by regulatory authorities.[8]

In our view, it is incumbent upon all organizations to strive for an internal audit reporting line within the third line of defense, whether or not this is a regulatory requirement. This also applies to where the IT audit organization sits within the company.

It is positive to see a general upward trend over the past four years in the percentage of IT audit directors who regularly attend audit committee meetings, particularly among large companies. That said, the findings this year suggest that, in half of all companies, the IT audit director does not attend these meetings. However, someone needs to be in the audit committee meetings who can speak intelligently with regard to technology issues and risks for the organization. For those organizations in which the IT audit director is not in attendance, the question becomes: Is the CAE able to address these areas sufficiently?

Of note, the U.S. Securities and Exchange Commission (SEC) is crafting rules around cybersecurity and required disclosures. Even though the SEC is a U.S. entity, the approach of having the IT audit director regularly attend audit committee meetings certainly applies globally.

Ultimately, organizations need to ask themselves whether their internal audit function, including the IT audit function, is an extension of external audit, or whether the function has a broader mandate to help the organization understand and manage its risks, including cybersecurity and IT risks.

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[8] The term "Getting to Strong" refers explicitly to the U.S. Office of the Comptroller of the Currency's (OCC) method for evaluating the risk management practices of large banks – specifically, the quality of risk management. However, this concept is becoming broader in describing stakeholder expectations. For more information, read Protiviti's white paper, *Getting to Strong – What Banking Organizations Need to Know*, available at www.protiviti.com.

Do you have a designated IT audit director (or equivalent position)?

Overall Results
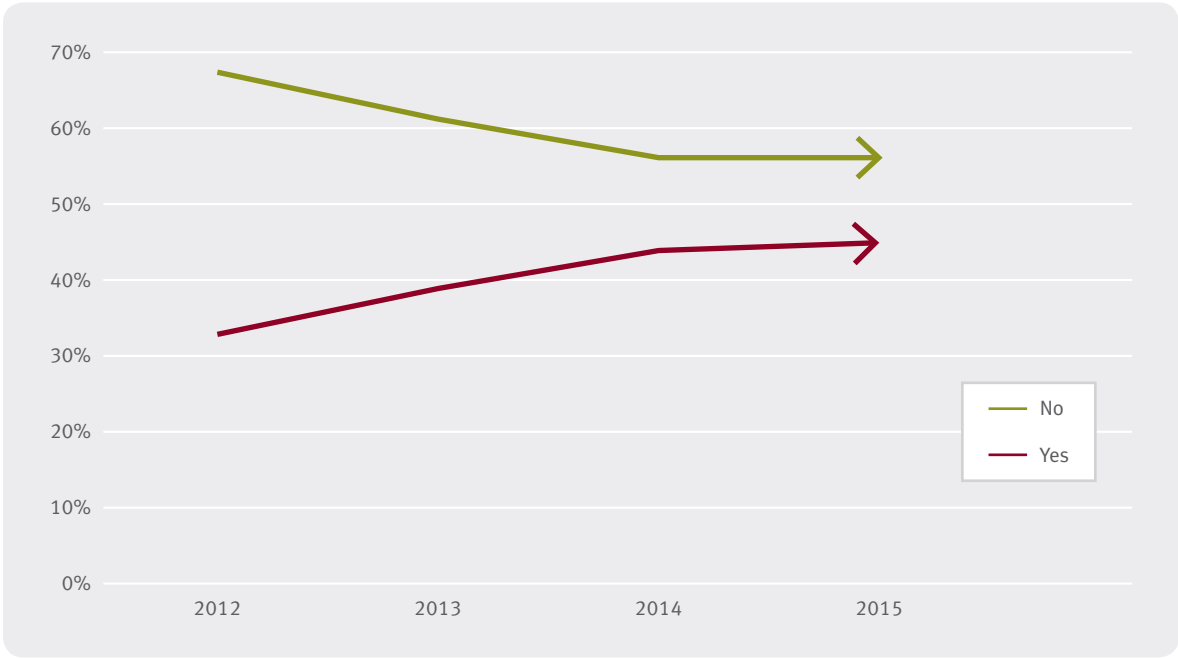
Company Size (Annual Revenue)*

	2015	2014	2013
Greater than US$5 billion	60%	59%	52%
US$1 billion - US$4.99 billion	40%	37%	36%
US$100 million - US$999.99 million	31%	39%	32%
Less than US$100 million	41%	37%	27%

* "Yes" responses shown.

KEY FACT

60

Percentage of large public companies that have an IT audit director or equivalent position.

Do you have a designated IT audit director (or equivalent position)?
Region ("Yes" responses)

NORTH AMERICA
45%

EUROPE
45%

ASIA
44%

AFRICA
35%

OCEANIA
42%

LATIN AMERICA/
SOUTH AMERICA
58%
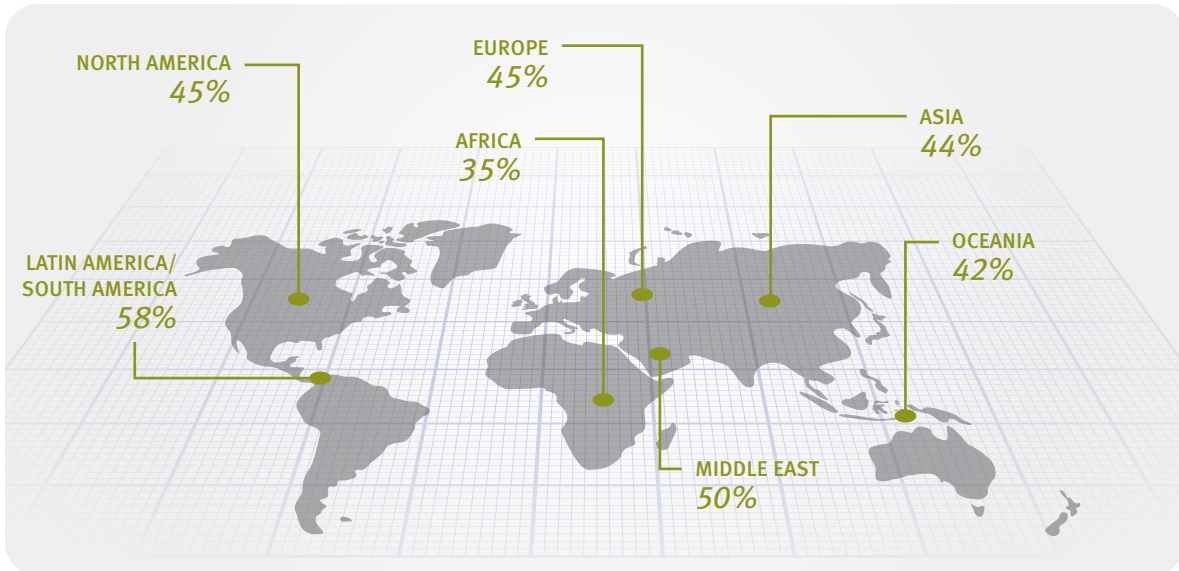
MIDDLE EAST
50%

To whom within the organization does your IT audit director report?*
Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
CAE	63%	72%	59%	67%	66%	72%	73%
A director under CAE	0%	14%	11%	12%	13%	7%	18%
CEO	0%	7%	11%	15%	7%	7%	9%
CIO	0%	0%	5%	0%	7%	3%	0%
Report through some other compliance function	33%	7%	10%	3%	7%	10%	0%
NA	4%	0%	4%	3%	0%	1%	0%

* Respondents are those organizations that have a designated IT audit director (or equivalent position).

GLOBAL LEADER

OCEANIA

91% have an ideal reporting structure for the IT audit director.

Does the IT audit director (or equivalent position) regularly attend audit committee meetings?

Overall

Region ("Yes" responses)

NORTH AMERICA
41%

EUROPE
45%

AFRICA
58%

ASIA
55%

LATIN AMERICA/
SOUTH AMERICA
67%

OCEANIA
55%

MIDDLE EAST
27%
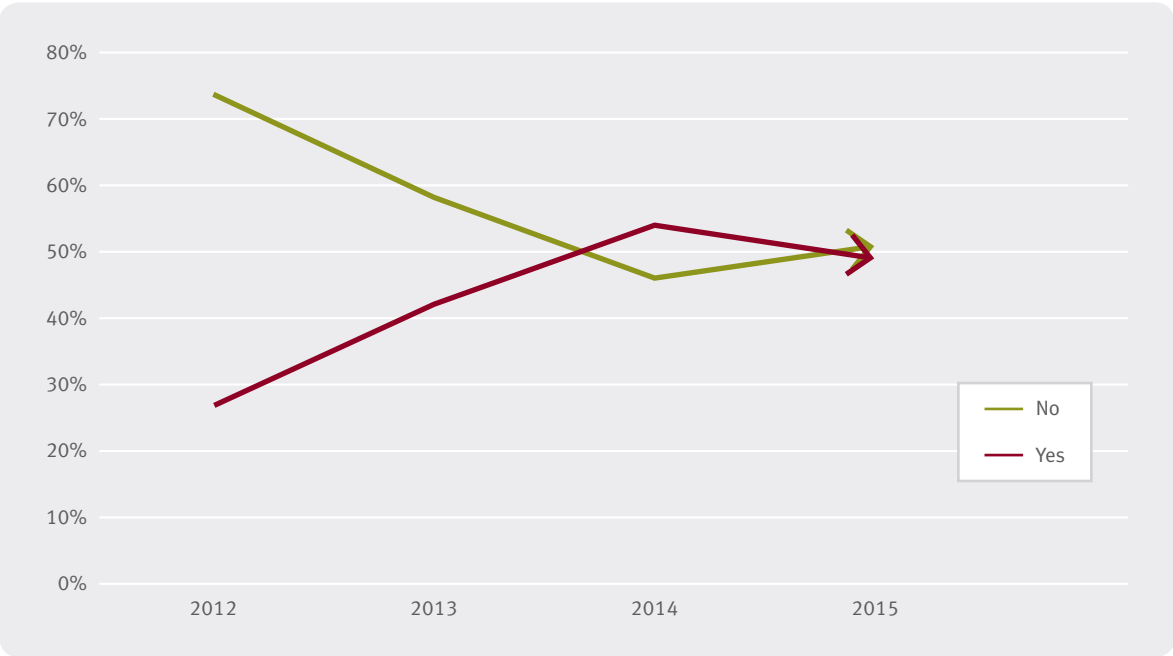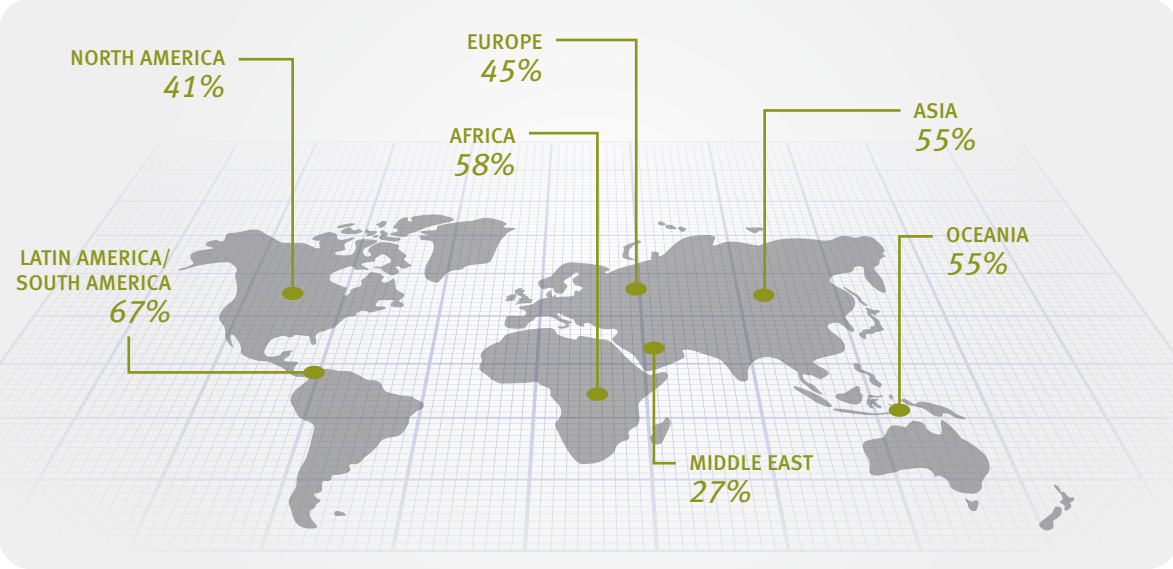
If "No": Does the CAE have sufficient knowledge to hold a discussion about IT audit matters with the audit committee?

Yes	65%
No	28%
NA	7%

In 67% of organizations, the IT audit director regularly attends audit committee meetings.

Does the CAE or IT audit director attend any of the following meetings to help construct the IT audit plan?

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Regularly scheduled meetings with CIO	38%	35%	56%	54%	47%	57%	64%
Large-scale IT audit project meetings	39%	36%	29%	48%	47%	44%	50%
IT strategy meetings	43%	32%	28%	37%	47%	35%	25%
IT department staff meetings	22%	18%	27%	39%	30%	26%	32%
IT portfolio management meetings	16%	17%	16%	33%	13%	19%	18%

KEY FACT

Percentage of large companies in which the IT audit director regularly attends audit committee meetings.

42 — 2015

22 — 2012
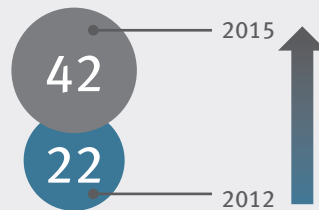
"IT RISK IS ONE OF OUR 17 STRATEGIC RISKS ... RISK MAP UPDATES, MITIGATION ACTIVITIES AND REPORTING TO EXECUTIVES AND THE BOARD OCCUR TWICE PER YEAR."

– Chief audit executive, large manufacturing/engineering company, North America

IT AUDIT RESOURCES

How are IT audit resources organized within your organization?

Company Size (Annual Revenue)

	Greater than US$5 billion			US$1 billion - US$4.99 billion			US$100 million - US$999.99 million			Less than US$100 million		
	2015	2014	2013	2015	2014	2013	2015	2014	2013	2015	2014	2013
Part of the internal audit department, not a separate function	56%	55%	53%	56%	59%	63%	63%	59%	62%	44%	36%	34%
Part of the internal audit department, but considered to be a separate function	35%	35%	37%	31%	27%	21%	22%	23%	13%	17%	23%	22%
Embedded in the organization as a separate audit function, e.g., line of business teams, process teams, etc.	7%	8%	5%	7%	8%	3%	9%	12%	3%	27%	30%	6%
No IT audit resources are available within the organization	2%	2%	5%	6%	6%	13%	6%	6%	22%	12%	11%	38%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Part of the internal audit department, not a separate function	52%	49%	53%	54%	39%	61%	57%
Part of the internal audit department, but considered to be a separate function	36%	32%	29%	36%	43%	24%	29%
Embedded in the organization as a separate audit function, e.g., line of business teams, process teams, etc.	9%	13%	14%	9%	12%	8%	7%
No IT audit resources are available within the organization	3%	6%	4%	1%	6%	7%	7%

**Do you use outside resources to augment/provide your IT audit skill set?
(Multiple responses permitted)**

Company Size (Annual Revenue)

	Yes, we use guest auditors			Yes, we outsource the IT audit function			Yes, we use co-source providers			Do not use outside resources		
	2015	2014	2013	2015	2014	2013	2015	2014	2013	2015	2014	2013
Greater than US$5 billion	24%	21%	23%	5%	4%	7%	40%	35%	46%	41%	40%	37%
US$1 billion - US$4.99 billion	17%	17%	15%	9%	5%	12%	34%	34%	44%	48%	44%	36%
US$100 million - US$999.99 million	21%	21%	23%	10%	7%	20%	32%	25%	35%	47%	47%	31%
Less than US$100 million	28%	18%	19%	11%	10%	22%	20%	17%	19%	49%	55%	47%

Region ("Yes" responses)

NORTH AMERICA
69%

EUROPE
61%

ASIA
57%

AFRICA
49%

OCEANIA
100%

LATIN AMERICA/
SOUTH AMERICA
40%

MIDDLE EAST
47%
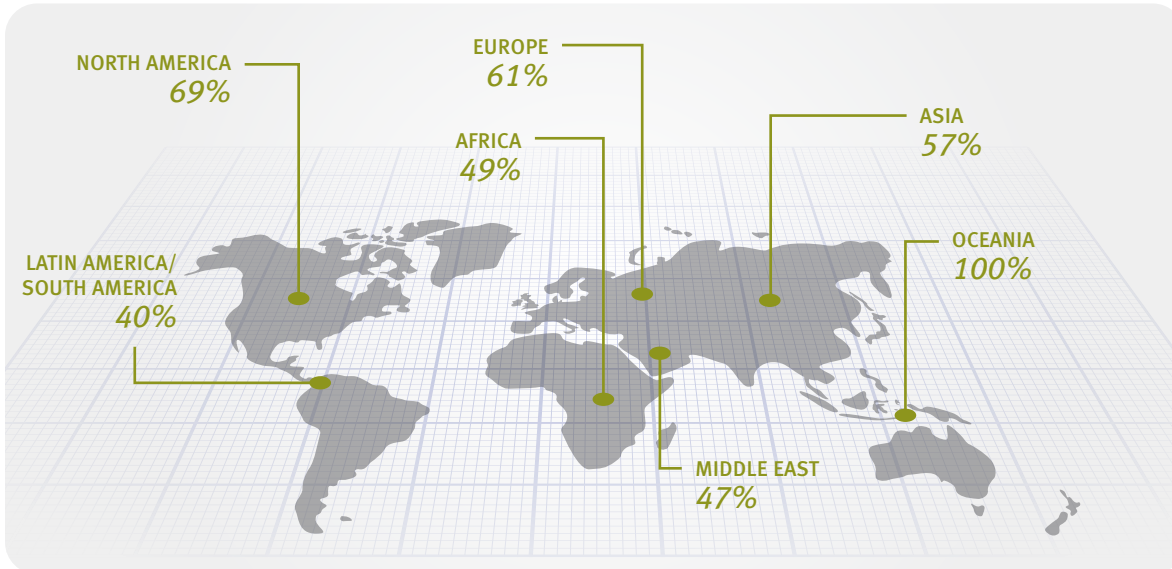
"WE UTILIZE A CO-SOURCE PROVIDER TO ACCOMPLISH THE IT AUDITS AND IT GENERAL CONTROLS WORK FOR SOX. WE HAVE AN IN-HOUSE AUDIT SENIOR THAT ASSISTS WITH SOME OF THE IT WORK AT THE DIRECTION OF THE CO-SOURCE PROVIDER."

– Chief audit executive, midsize energy company, North America

What is the percentage of outside IT audit resource hours used compared to total IT audit hours?

| | Greater than 75% | 50-75% | 20-49% | 10-19% | Less than 10% | None/Don't know |

Greater than US$5 billion
- 2015: 4% | 2% | 10% | 18% | 29% | 37%
- 2014: 7% | 5% | 15% | 19% | 47% | 7%
- 2013: 1% | 2% | 17% | 17% | 31% | 32%

US$1 billion - US$4.99 billion
- 2015: 4% | 8% | 9% | 13% | 23% | 43%
- 2014: 12% | 11% | 10% | 26% | 33% | 8%
- 2013: 3% | 4% | 9% | 21% | 28% | 35%

US$100 million - US$999.99 million
- 2015: 7% | 8% | 9% | 16% | 18% | 42%
- 2014: 7% | 10% | 17% | 20% | 35% | 11%
- 2013: 5% | 3% | 16% | 21% | 24% | 31%

Less than US$100 million
- 2015: 8% | 4% | 10% | 10% | 19% | 49%
- 2014: 8% | 11% | 14% | 29% | 27% | 11%
- 2013: 18% | 3% | 13% | 16% | 50%

Percentage of Respondents

" [WE HAVE] A LEAN STRUCTURE; HOWEVER, KNOWLEDGE IS BEING INCORPORATED WITHIN NORMAL INTERNAL AUDITORS."

– Chief audit executive, large manufacturing/engineering company, Europe

Please indicate the primary reason your company uses outside resources to augment IT audit skills (multiple responses permitted).

Company Size (Annual Revenue)

	Greater than US$5 billion	US$1 billion - US$4.99 billion	US$100 million - US$999.99 million	Less than US$100 million
In-house internal audit department lacks IT audit-specific skill sets	25%	19%	27%	20%
Variable resource modeling	19%	15%	13%	12%
Different/outside perspectives	26%	20%	21%	16%
Lack of resources	30%	36%	31%	24%
Provides the opportunity for people to learn from the experiences of outside resources (e.g., knowledge transfer, etc.)	31%	18%	22%	20%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
In-house internal audit department lacks IT audit-specific skill sets	20%	25%	23%	16%	10%	24%	29%
Variable resource modeling	14%	13%	14%	6%	13%	16%	39%
Different/outside perspectives	20%	22%	19%	22%	17%	23%	29%
Lack of resources	16%	20%	30%	20%	13%	37%	32%
Provides the opportunity for people to learn from the experiences of outside resources (e.g., knowledge transfer, etc.)	27%	22%	22%	26%	27%	25%	21%

"HIRING FOR IT AUDITORS, AND RETAINING THEM, HAS PROVEN DIFFICULT IN THE PAST YEAR OR TWO. FINDING PEOPLE WITH THE COMBINATION OF TECHNICAL AND COMMUNICATION SKILLS REQUIRED IS DIFFICULT."

– IT audit manager, large financial services company, North America

Please indicate the number of IT audit reports issued as a percentage of the total reports issued by the internal audit department.

Legend:
- Greater than 20% of internal audit reports that focus on IT audit
- Less than 5% of internal audit reports that focus on IT audit

Region

NORTH AMERICA
50%
7%

LATIN AMERICA/
SOUTH AMERICA
60%
0%

EUROPE
43%
8%

AFRICA
43%
11%

MIDDLE EAST
53%
7%

ASIA
40%
16%

OCEANIA
39%
7%

Legend:
- Greater than 15% of internal audit reports that focus on IT audit
- Less than 5% of internal audit reports that focus on IT audit
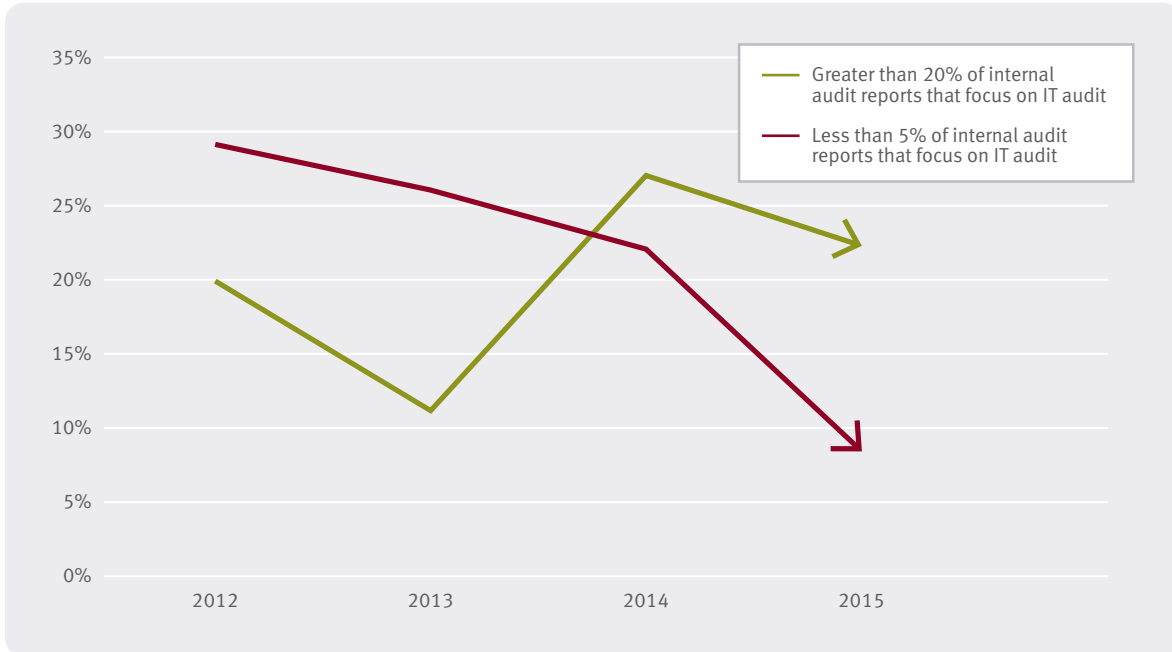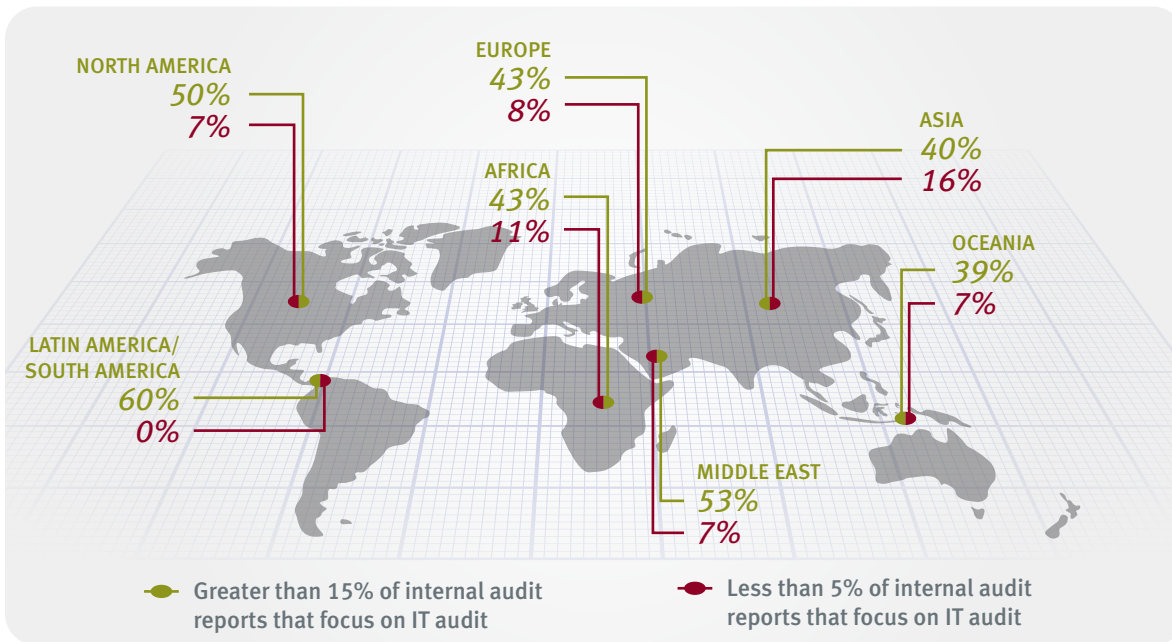
Please indicate the number of IT audit reports issued as a percentage of the total reports issued by the internal audit department.

Company Size (Annual Revenue)

	Greater Than 20%	YOY Trend	15-20%	YOY Trend
Greater than US$5 billion	24%	⬇	30%	⬆
US$1 billion - US$4.99 billion	21%	⬇	26%	⬆
US$100 million - US$999.99 million	20%	⬇	23%	⬆
Less than US$100 million	26%	⬌	18%	⬇

Please indicate the number of process audit reports (that included a review of the underlying technology) issued as a percentage of the total reports issued by the internal audit department.

Company Size (Annual Revenue)

	Greater than US$5 billion	US$1 billion - US$4.99 billion	US$100 million - US$999.99 million	Less than US$100 million
Greater than 20%	37%	32%	32%	21%
15-20%	17%	17%	16%	18%
10-14%	10%	12%	13%	9%
5-9%	8%	12%	10%	11%
Less than 5%	8%	9%	11%	9%
None/Don't know	20%	18%	18%	32%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Greater than 20%	24%	21%	33%	42%	20%	35%	25%
15-20%	24%	18%	18%	16%	27%	15%	14%
10-14%	16%	13%	9%	12%	3%	10%	29%
5-9%	8%	19%	10%	8%	13%	9%	11%
Less than 5%	11%	21%	7%	4%	13%	8%	3%
None/Don't know	17%	8%	23%	18%	24%	23%	18%

KEY FACT

20

Ideal percentage (or greater) of IT audit reports that are issued relative to the total number of audit reports.

Action Items for Internal Audit and IT Audit Leaders

- Work with management and the board to ensure that IT audit operates as an independent and impartial function in the organization.

- Ensure that IT and cybersecurity risks are understood and monitored as strategic-level risks, when warranted, and as a matter for the board of directors and audit committee to monitor regularly.

- Ensure that the individual qualified to brief the audit committee on the organization's IT risk profile, ideally the IT audit director, is qualified to discuss these issues and communicate them in a concise and non-technical manner.

- Bring in to the IT audit function the necessary resources, either internal or external, with the necessary expertise to help the organization identify and manage its IT risks effectively.

- Strive to have at least 20 percent of all internal audit and process audit reports focus specifically on IT audit-related matters.

"WE ARE PRIMARILY FOCUSED ON IT SOX COMPLIANCE RELATIVE TO THE COSO FRAMEWORK. WE ARE JUST BEGINNING TO BRANCH OUT INTO SECURITY AND GOVERNANCE ASSESSMENTS RELATIVE TO THE NIST CYBERSECURITY FRAMEWORK AND THE TOP 20 CRITICAL SECURITY CONTROLS."

– IT audit manager, large manufacturing/engineering company, North America

ASSESSING IT RISKS

For every company size group and country group, there are small but meaningful numbers of companies that are not conducting any type of IT audit risk assessment. Of particular note, there is an increase in the number of small companies that are not doing so (though last year's results are not shown here).

GLOBAL LEADER
MIDDLE EAST

95% of organizations conduct IT audit risk assessments.

Given how technology drives virtually every function and process in organizations today, it is absolutely critical to conduct an IT audit risk assessment at least annually. Otherwise, there are no assurances that key IT risks are included in the audit plan. Furthermore, organizations reduce the effectiveness of their efforts to address the top technology challenges discussed earlier. Both ISACA's Performance Standard 1202 Risk Assessment in Planning, and The IIA's Performance Standard 2010.A1, recommend annual IT audit risk assessments.

On a more positive note, there has been noticeable upward movement in the frequency with which IT audit risk assessments are updated. We see the numbers higher for both large and small organizations where these assessments are updated continually, monthly or quarterly. In light of ongoing change in IT environments, together with the aforementioned technology challenges, this is good to see.

With regard to the use of frameworks, we see the NIST Cybersecurity Framework used most frequently in the United States, which is not surprising given that this is a North American standard. The same holds true for ISO and ITIL in other territories.
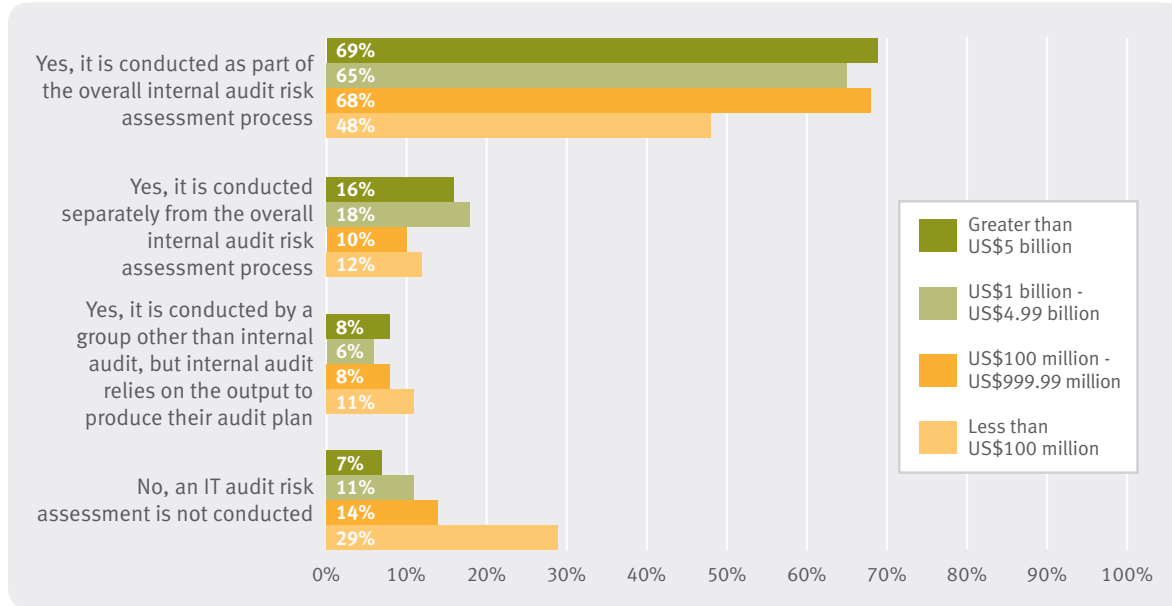
"GIVEN THE SIZE AND SOPHISTICATION OF THE ORGANIZATION, OUR IT AUDIT RISK ASSESSMENT MEETS [OUR] NEEDS. HOWEVER, WE ARE IN A GROWTH AND EXPANSION PHASE THAT WILL NECESSITATE REEXAMINING OUR APPROACH AND ADJUSTING TO NEW ORGANIZATIONAL DYNAMICS."

– Chief audit executive, small financial services company, North America

CONDUCTING AN IT AUDIT RISK ASSESSMENT

Does your organization conduct an IT audit risk assessment?

Company Size (Annual Revenue)

Yes, it is conducted as part of the overall internal audit risk assessment process
- 69%
- 65%
- 68%
- 48%

Yes, it is conducted separately from the overall internal audit risk assessment process
- 16%
- 18%
- 10%
- 12%

Yes, it is conducted by a group other than internal audit, but internal audit relies on the output to produce their audit plan
- 8%
- 6%
- 8%
- 11%

No, an IT audit risk assessment is not conducted
- 7%
- 11%
- 14%
- 29%

Legend:
- Greater than US$5 billion
- US$1 billion - US$4.99 billion
- US$100 million - US$999.99 million
- Less than US$100 million

Region

Yes, it is conducted as part of the overall internal audit risk assessment process
- 63%
- 63%
- 68%
- 55%
- 60%
- 65%
- 77%

Yes, it is conducted separately from the overall internal audit risk assessment process
- 8%
- 15%
- 8%
- 20%
- 30%
- 17%
- 8%

Yes, it is conducted by a group other than internal audit, but internal audit relies on the output to produce their audit plan
- 12%
- 6%
- 11%
- 5%
- 5%
- 7%
- 8%

No, an IT audit risk assessment is not conducted
- 17%
- 16%
- 13%
- 20%
- 5%
- 11%
- 7%

Legend:
- Africa
- Asia
- Europe
- Latin America/ South America
- Middle East
- North America
- Oceania

ORGANIZATIONAL ENGAGEMENT AND INVOLVEMENT

Indicate the level of involvement of each of the following individuals/groups in your organization's IT risk assessment process.

(Shown: Significant/Moderate levels of involvement)

NORTH AMERICA
38%
66%

EUROPE
46%
64%

ASIA
61%
60%

AFRICA
51%
68%

OCEANIA
52%
65%

**LATIN AMERICA/
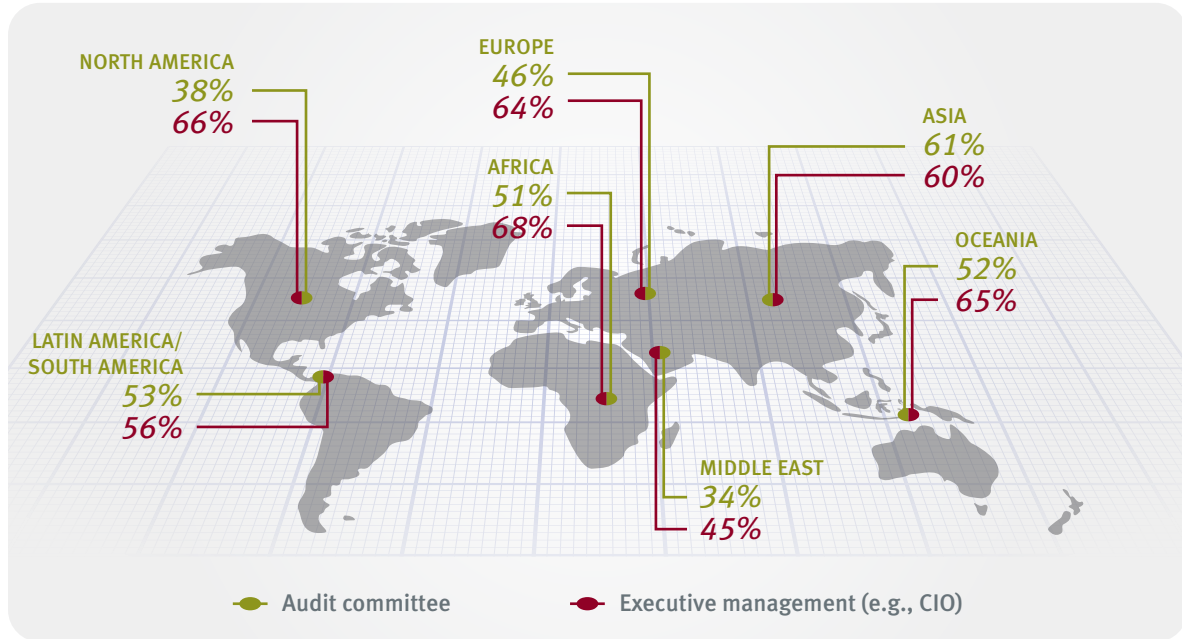SOUTH AMERICA**
53%
56%

MIDDLE EAST
34%
45%

● Audit committee   ● Executive management (e.g., CIO)

Frequency with which the IT audit risk assessment is updated.

Company Size (Annual Revenue)

	Greater than US$5 billion	YOY Trend	US$1 billion - US$4.99 billion	YOY Trend	US$100 million - US$999.99 million	YOY Trend	Less than US$100 million	
Continually	16%	⬆	8%	⬇	12%	⬆	12%	⬇
Monthly	2%	⬆	1%	⬆	2%	⬆	0%	⬇
Quarterly	13%	⬆	11%	⬆	10%	⬇	7%	⬇
Semi-annually	10%	⬇	8%	⬌	6%	⬇	8%	⬇
Annually	55%	⬇	66%	⬇	65%	⬆	64%	⬆
Less than annually	4%	⬌	5%	⬇	5%	⬇	5%	⬇
Never	0%	⬇	1%	⬆	0%	⬇	4%	⬆

Frequency with which the IT audit risk assessment is updated.

Region

48% of organizations update their IT audit risk assessments at least quarterly.

GLOBAL LEADER
OCEANIA

NORTH AMERICA
24%
76%

EUROPE
27%
73%

ASIA
17%
83%

AFRICA
34%
66%

OCEANIA
48%
52%

LATIN AMERICA/ SOUTH AMERICA
12%
88%

MIDDLE EAST
39%
61%

Quarterly or more frequently   Semi-annually or less frequently
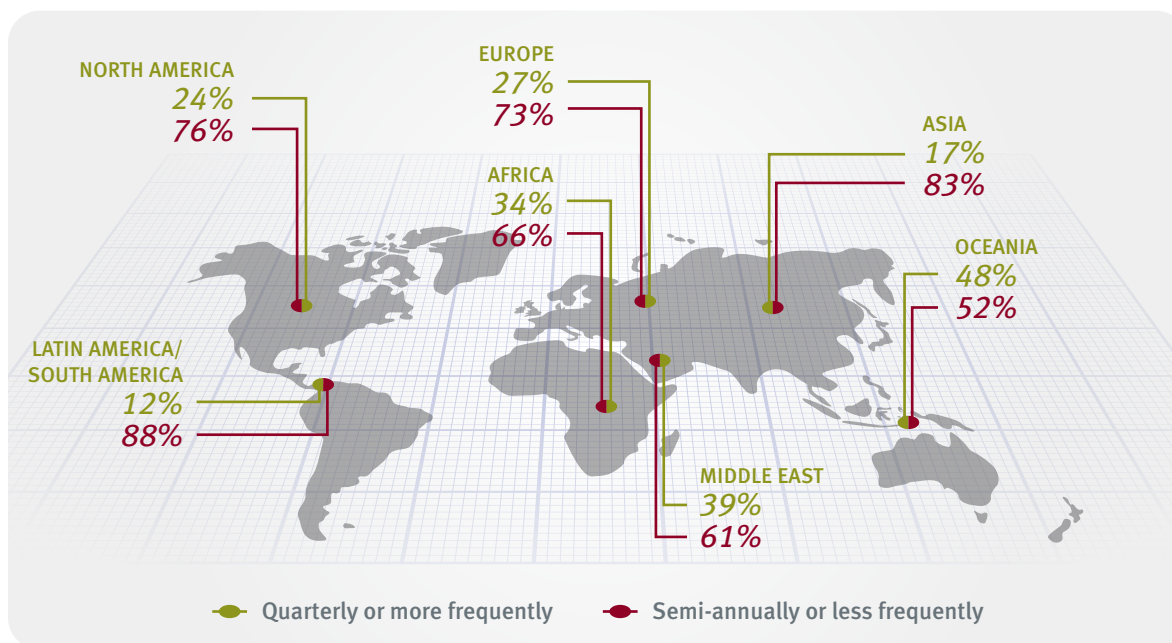
FRAMEWORKS

On which of the following accepted industry frameworks is the IT audit risk assessment based? (Multiple responses permitted)

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
COBIT	76%	56%	68%	88%	56%	68%	57%
COSO	34%	46%	41%	67%	22%	52%	26%
ISO	46%	38%	30%	45%	61%	16%	30%
ITIL	32%	19%	32%	36%	33%	15%	35%
NIST CSF	7%	3%	6%	9%	11%	22%	4%
Basel III	20%	6%	11%	12%	0%	3%	13%

Industry Frameworks

COBIT – COBIT 5 is the latest edition of ISACA's globally accepted framework, providing an end-to-end business view of the governance of enterprise IT that reflects the central role of information and technology in creating value for enterprises. The principles, practices, analytical tools and models found in COBIT 5 embody thought leadership and guidance from business, IT and governance experts around the world.

COSO Internal Control – Integrated Framework – This framework, produced as part of a landmark report from the Committee of Sponsoring Organizations of the Treadway Commission (COSO), establishes a common definition of internal control that serves the needs of different parties for assessing and improving their control systems. It provides principles-based guidance for designing and implementing effective internal controls. In 2013, COSO released its long-awaited update to its Internal Control – Integrated Framework. Developed over a two-and-a-half-year period, COSO's new framework and related illustrative documents are intended to help organizations in their efforts to adapt to the increasing complexity and pace of change, to mitigate risks to the achievement of objectives, and to provide reliable information to support sound decision-making.

ISO – The International Organization for Standardization is the world's largest developer of voluntary international standards. International standards give state-of-the-art specifications for products, services and good practices, helping to make industry more efficient and effective. Developed through global consensus, they help to break down barriers to international trade.

ITIL – ITIL, the most widely accepted approach to IT service management in the world, can help individuals and organizations use IT to realize business change, transformation and growth. ITIL advocates that IT services are aligned to the needs of the business and support its core processes. It provides guidance to organizations and individuals on how to use IT as a tool to facilitate business change, transformation and growth.[9]

NIST Cybersecurity Framework – In February 2014, in response to a U.S. Presidential Executive Order calling for increased cybersecurity for the critical infrastructure of the United States, the National Institute of Standards and Technology (NIST) issued the final version of its Framework for Improving Critical Infrastructure Cybersecurity and a companion NIST Roadmap for Improving Critical Infrastructure Cybersecurity. The Framework is a risk-based approach to managing cybersecurity risk. It is comprised of three components: the Framework Core, the Framework Implementation Tiers and the Framework Profile. Each of these components reinforces the connection between business drivers and cybersecurity activities.

BASEL III – BASEL III is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, designed to enhance the banking regulatory framework. BASEL III seeks to improve the banking sector's ability to deal with financial and economic stress, improve risk management, and strengthen banks' transparency.
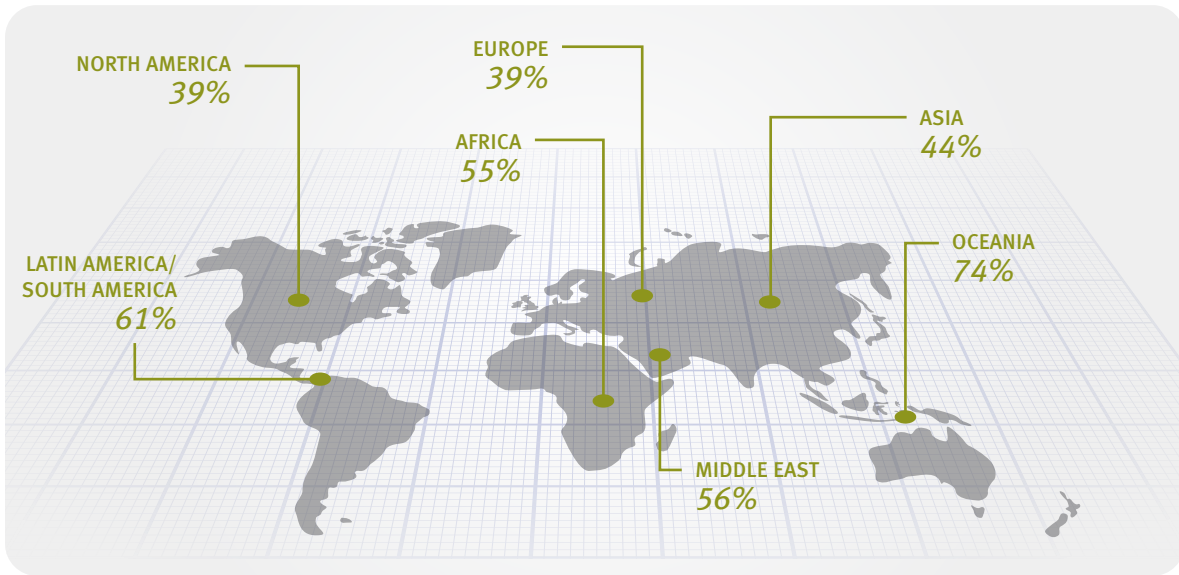
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[9] AXELOS, www.axelos.com.

If your company has an enterprise risk management (ERM) program, does your IT audit risk framework link to the ERM catalog?

Company Size (Annual Revenue)

	Greater than US$5 billion			US$1 billion - US$4.99 billion			US$100 million - US$999.99 million			Less than US$100 million		
	2015	2014	2013	2015	2014	2013	2015	2014	2013	2015	2014	2013
Yes	47%	50%	58%	40%	46%	43%	44%	40%	39%	34%	42%	33%

Region ("Yes" responses)

NORTH AMERICA
39%

EUROPE
39%

ASIA
44%

AFRICA
55%

OCEANIA
74%

LATIN AMERICA/
SOUTH AMERICA
61%

MIDDLE EAST
56%

Action Items for Internal Audit and IT Audit Leaders

- Communicate with management and the audit committee regularly to emphasize the importance of conducting an IT audit risk assessment.
- Strive to update your organization's IT audit risk assessment on at least a quarterly basis.
- Consider linking your IT audit risk assessment with the ERM catalog to show the integration between the two.
- As appropriate for your organization, base the IT audit risk assessment on a proven framework such as COBIT or COSO.
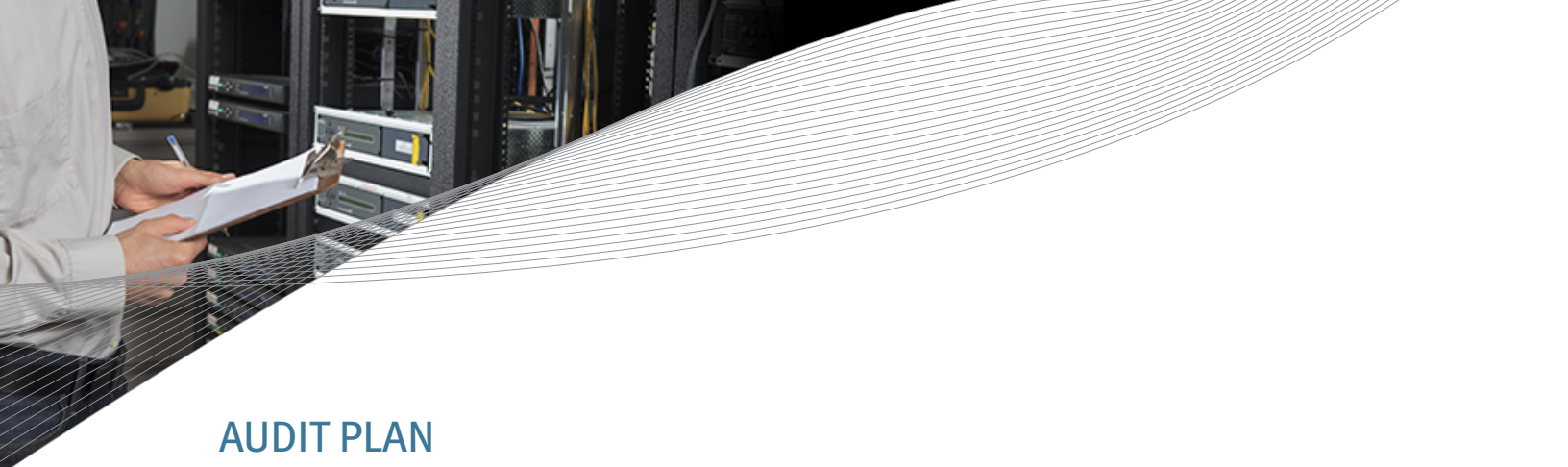
AUDIT PLAN

As expected, a majority of the IT audit function's activities and time are devoted to compliance-related efforts, from IT general control audits to application and IT process audits. This trend holds true across company size and region, though IT audit functions in North America and Europe appear to be more focused on conducting IT process audits relative to other regions.

Similar to last year, approximately half of all IT audit departments now have a significant or moderate level of involvement in significant technology projects for the organization, and many become involved in the early stages (planning/design), which is good to see. Still, there are many organizations in which IT audit has little to no involvement, which is less-than-ideal given the commensurate level of IT risk that technology projects usually introduce.

It's also noteworthy that more organizations appear to be focusing on auditing vendors. While this area was not among the top five areas in terms of IT audit function responsibilities, it moved out of the bottom five, where it was positioned in last year's study. These results are consistent with the findings of a vendor risk management study conducted by Protiviti and the Shared Assessments Program.[10]

One area to raise as a "red flag" is the focus, or lack thereof, on continuous auditing. It ranks near the bottom in terms of activities in the audit plan for which IT audit is responsible. The dynamic environment in which organizations operate today requires an ongoing assurance that controls are working effectively and risk is mitigated properly. By enabling the automation of controls, IT audit can improve its efficiency and effectiveness by identifying issues and correcting them as soon as they arise.

"WE SIT DOWN WITH THE CIO AND THE SUPPORTING DEPARTMENTS AND GO OVER NEW PROJECTS, CURRENT AND PAST ISSUES, AND GENERAL TOPICS WITH THE EXTERNAL AUDITORS."

– Chief audit executive, large distribution and transportation company, North America

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[10] *2015 Vendor Risk Management Benchmark Study*, Shared Assessments Program and Protiviti, www.protiviti.com/vendor-risk.

IT AUDIT HOURS AND RESPONSIBILITIES

Which of the following activities is your IT audit function responsible for? (Multiple responses permitted)

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Top 5							
Conducting IT general control audits	81%	81%	89%	98%	89%	85%	88%
Conducting IT process audits	79%	70%	87%	90%	95%	79%	84%
Conducting application audits	81%	66%	78%	83%	95%	74%	88%
Conducting IT infrastructure audits	71%	62%	86%	80%	74%	67%	72%
Conducting IT governance audits	73%	55%	79%	66%	89%	65%	64%
Bottom 5							
Conducting social media audits	13%	8%	20%	15%	37%	29%	40%
Conducting PCI DSS compliance audits	21%	22%	27%	32%	32%	23%	20%
Maintaining internal control framework documentation	23%	38%	25%	37%	11%	33%	24%
Performing continuous auditing	50%	30%	25%	41%	32%	32%	36%
Conducting IT fraud investigations	56%	32%	35%	41%	53%	29%	32%

"WE COVER A FULL SCOPE OF CONSULTING, COMPLIANCE, PRE- AND POST-IMPLEMENTATION, INFRASTRUCTURE, APPLICATION AND EMERGING TECHNOLOGY AUDITS."

– Chief audit executive, large manufacturing/engineering company, North America

Of the total number of IT audits conducted annually, what percentage of total IT audit hours are spent on the following areas?

Company Size (Annual Revenue) – Top 3 Audit Areas by Percentage

	Greater than US$5 billion	US$1 billion - US$4.99 billion	US$100 million - US$999.99 million	Less than US$100 million
Conducting IT general control audits	●	●	●	●
Conducting IT process audits				●
Conducting application audits	●	●	●	
Testing for IT Sarbanes-Oxley or other related country-specific compliance	●	●	●	
Conducting and analyzing data analytics				●

Region – Top 3 Audit Areas by Percentage

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Conducting IT general control audits	●	●	●	●	●	●	●
Conducting IT process audits			●			●	
Conducting application audits	●	●		●	●		●
Conducting cybersecurity audits							●
Conducting and analyzing data analytics	●	●	●				
Conducting integrated audits				●			
Conducting pre- and post-implementation audits					●		
Testing for IT Sarbanes-Oxley or other related country-specific compliance						●	

What level of involvement does IT audit have in significant technology projects?

Company Size (Annual Revenue)

	Significant			Moderate			Minimal			None		
	2015	2014	2013	2015	2014	2013	2015	2014	2013	2015	2014	2013
Greater than US$5 billion	22%	21%	22%	41%	40%	46%	30%	31%	25%	7%	8%	7%
US$1 billion - US$4.99 billion	20%	15%	12%	34%	44%	45%	35%	37%	31%	11%	4%	12%
US$100 million - US$999.99 million	18%	19%	9%	43%	38%	35%	30%	34%	43%	9%	9%	13%
Less than US$100 million	16%	28%	7%	35%	40%	30%	34%	27%	41%	15%	5%	22%

Region

NORTH AMERICA
57%
43%

EUROPE
52%
48%

ASIA
60%
40%

AFRICA
86%
14%

OCEANIA
63%
37%

LATIN AMERICA/ SOUTH AMERICA
57%
43%

MIDDLE EAST
67%
33%

● Significant/Moderate   ● Minimal/None
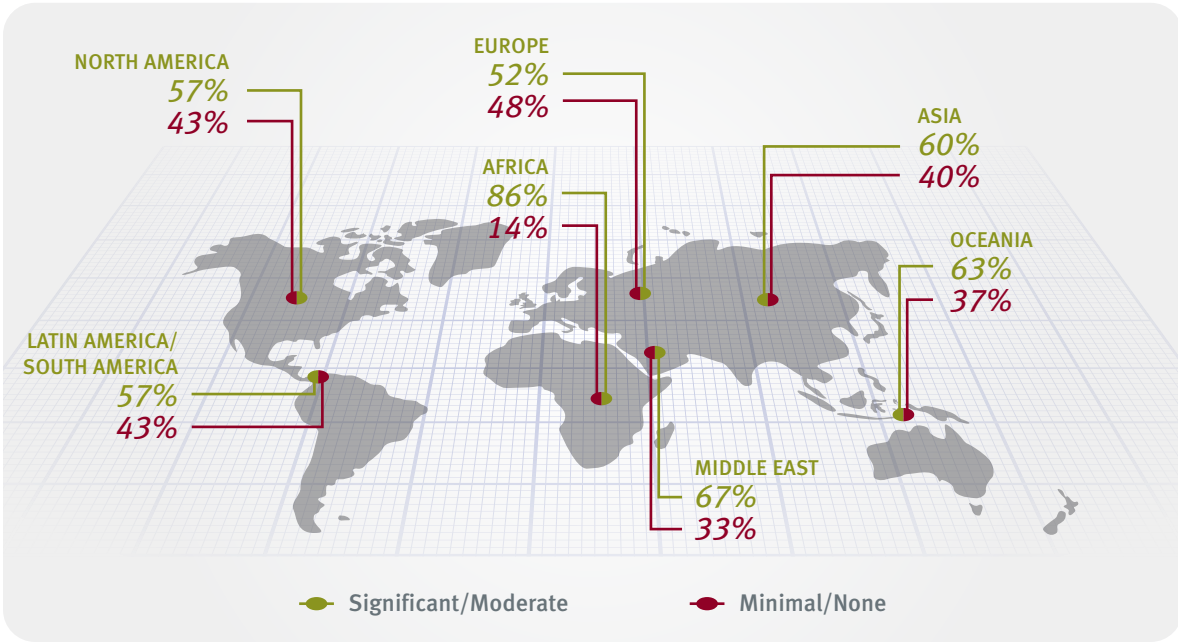
When does IT audit become involved in significant technology projects?

	2015	2014	2013
Planning	30%	30%	32%
Design	10%	18%	18%
Testing	8%	9%	10%
Implementation	11%	11%	8%
Post-implementation	27%	23%	18%
No involvement	14%	9%	14%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Planning	34%	21%	30%	14%	17%	34%	32%
Design	14%	7%	10%	6%	0%	9%	23%
Testing	0%	10%	4%	17%	0%	10%	4%
Implementation	14%	12%	6%	20%	17%	11%	9%
Post-implementation	26%	35%	28%	31%	25%	25%	23%
No involvement	12%	15%	22%	12%	41%	11%	9%

GLOBAL LEADER
AFRICA

In 86% of organizations, IT audit has a significant or moderate level of involvement in significant technology projects.


GLOBAL LEADER
OCEANIA

In 59% of organizations, IT audit is involved in the planning, design and testing stages of significant technology projects.

"[IT AUDIT PLAYS A] PIVOTAL ROLE IN THE INTERNAL AUDIT ORGANIZATION, ESPECIALLY IN UNDERSTANDING AND ANALYZING EMERGING PROCESSES, PRODUCTS AND PLATFORMS."

– Chief audit executive, large retail and hospitality company, Middle East

In your most recently completed year of U.S. Sarbanes-Oxley compliance, what percentage of your organization's IT audit hours were associated with SOX-related activities?

Base: Respondents required to comply with the U.S. Sarbanes-Oxley Act
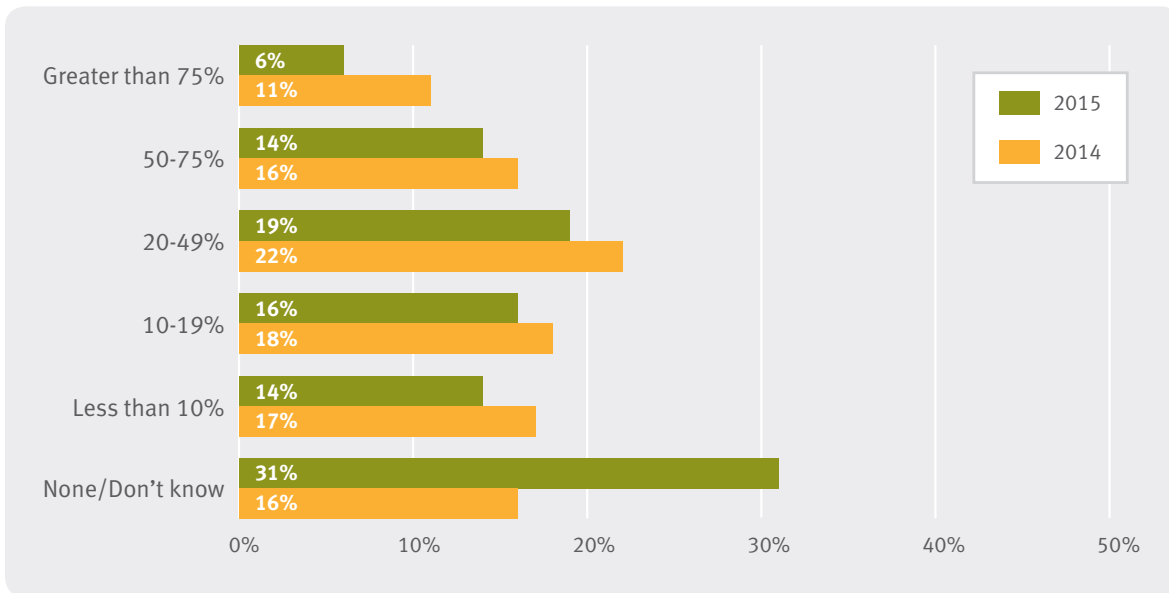
What percentage of time does the IT audit function spend on assurance, compliance and consulting activities?

Company Size (Annual Revenue)

	Greater than 75%	50-75%	25-49%	15-24%	1-14%	None/ Don't know
Greater than US$5 billion						
Assurance	25%	35%	26%	8%	3%	3%
Compliance	5%	13%	28%	30%	17%	7%
Consulting	1%	3%	13%	20%	51%	12%
US$1 billion - US$4.99 billion						
Assurance	22%	34%	20%	12%	8%	4%
Compliance	7%	20%	26%	15%	27%	5%
Consulting	2%	2%	17%	24%	41%	14%
US$100 million - US$999.99 million						
Assurance	22%	25%	28%	11%	9%	5%
Compliance	4%	14%	27%	27%	16%	12%
Consulting	2%	4%	19%	19%	43%	13%
Less than US$100 million						
Assurance	19%	31%	23%	11%	4%	12%
Compliance	11%	12%	28%	20%	18%	11%
Consulting	4%	4%	23%	15%	30%	24%

What percentage of time does the IT audit function spend on assurance, compliance and consulting activities?

Region

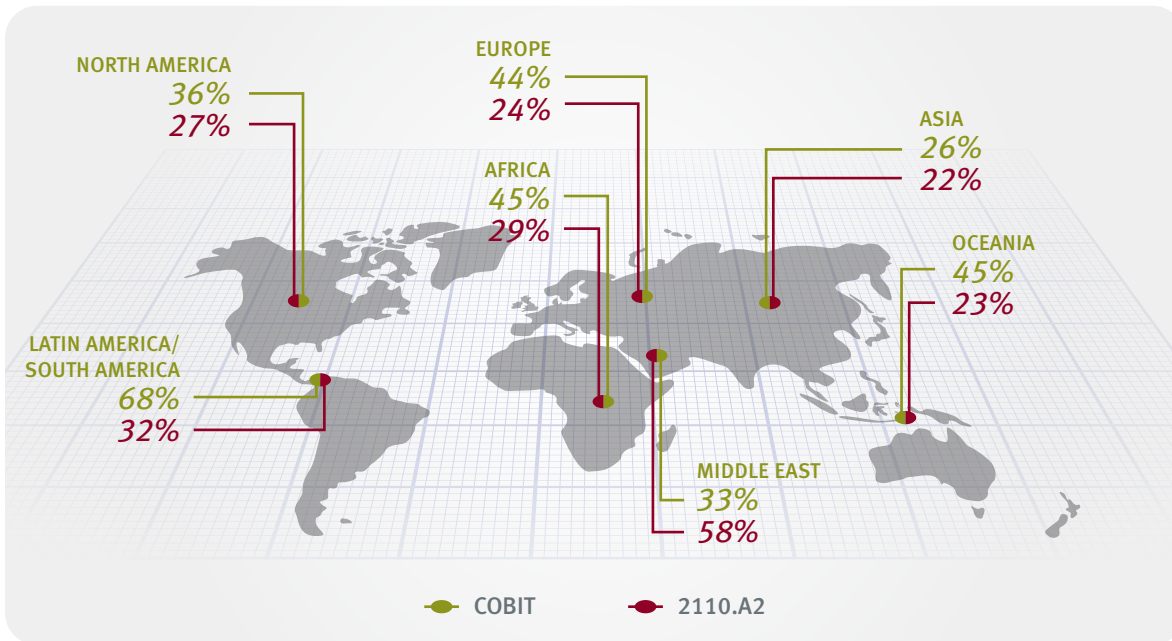|	Greater than 75%	50-75%	25-49%	15-24%	1-14%	None/ Don't know
Africa						
Assurance	24%	36%	28%	7%	5%	0%
Compliance	7%	14%	38%	26%	12%	3%
Consulting	2%	2%	24%	17%	45%	10%
Asia						
Assurance	18%	29%	22%	9%	13%	9%
Compliance	9%	20%	29%	18%	18%	6%
Consulting	4%	7%	21%	15%	32%	21%
Europe						
Assurance	33%	38%	16%	6%	4%	3%
Compliance	5%	9%	25%	27%	24%	10%
Consulting	1%	3%	13%	17%	50%	16%
Latin America/South America						
Assurance	35%	24%	24%	17%	0%	0%
Compliance	6%	29%	27%	35%	3%	0%
Consulting	9%	3%	18%	23%	41%	6%
Middle East						
Assurance	25%	17%	33%	17%	8%	0%
Compliance	0%	8%	42%	17%	17%	16%
Consulting	8%	17%	8%	8%	59%	0%
North America						
Assurance	17%	31%	28%	11%	6%	7%
Compliance	6%	17%	27%	23%	19%	8%
Consulting	1%	2%	17%	23%	42%	15%
Oceania						
Assurance	41%	36%	14%	9%	0%	0%
Compliance	9%	0%	14%	27%	45%	5%
Consulting	5%	0%	14%	18%	54%	9%

IT GOVERNANCE

Has your IT audit activity completed an evaluation and assessment of your organization's IT governance process, in accordance with ISACA's COBIT framework and IIA Standard 2110.A2? ("Yes" responses shown below)

Company Size (Annual Revenue)

	COBIT	2110.A2
Greater than US$5 billion	42%	34%
US$1 billion - US$4.99 billion	32%	22%
US$100 million - US$999.99 million	43%	29%
Less than US$100 million	40%	15%

Region

NORTH AMERICA
36%
27%

EUROPE
44%
24%

ASIA
26%
22%

AFRICA
45%
29%

OCEANIA
45%
23%

LATIN AMERICA/
SOUTH AMERICA
68%
32%

MIDDLE EAST
33%
58%

COBIT   2110.A2

GLOBAL LEADER
LATIN/SOUTH
AMERICA

68% of organizations have completed an evaluation and assessment of their IT governance process, in accordance with ISACA's COBIT framework.

GLOBAL LEADER
MIDDLE EAST

58% of organizations have completed an evaluation and assessment of their IT governance process, in accordance with IIA Standard 2110.A2.

If you answered "No" to the previous question, indicate whether you intend to complete an evaluation and assessment of your organization's IT governance process.

Company Size (Annual Revenue)

	Yes, within the next year		Yes, but not within the next year	
	COBIT	2110.A2	COBIT	2110.A2
Greater than US$5 billion	19%	10%	19%	24%
US$1 billion - US$4.99 billion	20%	18%	26%	20%
US$100 million - US$999.99 million	20%	12%	28%	18%
Less than US$100 million	21%	16%	29%	19%

Region

	Yes, within the next year		Yes, but not within the next year	
	COBIT	2110.A2	COBIT	2110.A2
Africa	30%	28%	48%	31%
Asia	12%	8%	32%	25%
Europe	21%	11%	13%	11%
Latin America/South America	18%	26%	64%	9%
Middle East	38%	0%	13%	20%
North America	20%	14%	24%	24%
Oceania	17%	12%	8%	12%

When planning, conducting and reporting the results of IT audits, does the IT audit function utilize ISACA's standards, guidelines and procedures, as incorporated in the Information Technology Assurance Framework (ITAF)? ("Yes" responses shown below)

Company Size (Annual Revenue)

Greater than US$5 billion	56%
US$1 billion - US$4.99 billion	55%
US$100 million - US$999.99 million	56%
Less than US$100 million	52%

Region

Africa	68%
Asia	47%
Europe	57%
Latin America/South America	68%
Middle East	75%
North America	57%
Oceania	32%

When performing IT process assessments, does the IT audit function use ISACA's COBIT framework? ("Yes" responses shown below)

Company Size (Annual Revenue)

Greater than US$5 billion	67%
US$1 billion - US$4.99 billion	66%
US$100 million - US$999.99 million	68%
Less than US$100 million	57%

Region

Africa	71%
Asia	54%
Europe	72%
Latin America/South America	85%
Middle East	67%
North America	62%
Oceania	73%

GLOBAL LEADER
MIDDLE EAST

75% of organizations use ISACA's ITAF when planning, conducting and reporting the results of IT audits.

GLOBAL LEADER
LATIN/SOUTH AMERICA

85% of organizations use ISACA's COBIT framework when performing IT process assessments.

Action Items for Internal Audit and IT Audit Leaders

- Ensure that IT audit leaders and staff are involved in significant technology projects for the organization – ideally in early stages such as planning and design.

- Work with the board, management and business leaders to identify areas where internal audit and IT audit can provide greater value by providing more consulting activities.

- Make it a priority to evaluate and assess your organization's IT governance process, using ISACA's COBIT Framework and IIA Standard 2110.A2.

- Consider the use of ISACA's COBIT Framework when performing IT process assessments.

- For IT auditing activities, including reports to management and the board, leverage the standards, guidelines, tools and techniques contained in ISACA's ITAF.

STAFF SKILLS AND CAPABILITIES

One of the more notable findings in this year's study is tied to the ability to explain complex IT issues for a non-technical business audience. Here, we see that three out of four organizations (73 percent) rate this as significant in terms of importance to their staff's interpersonal skills.

We hear this continuously in the market. One possible reason IT audit is not "at the table" enough, per our earlier results, is that they may be trying to communicate in overly technical language. This is a particular issue when communicating to C-suite executives and board members, who are addressing a wide range of organizational matters and likely lack the time or bandwidth to dive into technical details and reams of data. Bottom line, it's critical to know your audience and tailor your communications accordingly.

With regard to hiring, one thing we are not seeing is growth. Most organizations indicate that IT audit staff levels will remain about the same, which could be because it is becoming more and more difficult to recruit and hire good people. In today's market, it's a significant challenge to find qualified and experienced IT auditors, and talent levels are below where many organizations want them to be. This is a department that should be growing given the depth and breadth of IT and cybersecurity risks in today's market, but to this point the IT audit department is not growing in terms of staff and talent levels.

Please indicate the level of importance that you place on the following IT audit technical skills for your IT audit staff.

	Significant	Moderate	Minimal	None
Control analysis	66%	29%	3%	2%
Risk analysis	60%	33%	5%	2%
Process assessment	53%	39%	5%	3%
Data analysis	38%	44%	15%	3%
Accounting/audit	37%	42%	17%	4%
Project management	31%	48%	17%	4%
Consulting	23%	50%	21%	6%

Please indicate the level of importance that you place on the following business and interpersonal skills for your IT audit staff.

	Significant	Moderate	Minimal	None
Relationship building	68%	27%	3%	2%
Report writing	64%	30%	4%	2%
Strategic thinking	52%	38%	8%	2%
Team building	50%	40%	8%	2%
Conflict management	47%	40%	10%	3%
Negotiation	45%	42%	10%	3%
Ability to explain complicated IT issues for the non-technical business audience	73%	21%	4%	2%
Leadership	41%	46%	10%	3%

Are IT audits conducted by individuals who are full-time internal audit professionals in the internal audit department and who focus on IT audit projects?

Company Size (Annual Revenue)

	2015		2014		2013	
	Yes	No	Yes	No	Yes	No
Greater than US$5 billion	84%	16%	88%	12%	81%	19%
US$1 billion - US$4.99 billion	82%	18%	84%	16%	73%	27%
US$100 million - US$999.99 million	66%	34%	72%	28%	52%	48%
Less than US$100 million	64%	36%	64%	36%	58%	42%

Are there specific areas of your current IT audit plan that you are not able to address sufficiently due to lack of resources/skills?

Company Size (Annual Revenue)

	2015		2014		2013	
	Yes	No	Yes	No	Yes	No
Greater than US$5 billion	46%	54%	48%	52%	28%	72%
US$1 billion - US$4.99 billion	45%	55%	47%	53%	36%	64%
US$100 million - US$999.99 million	39%	61%	49%	51%	30%	70%
Less than US$100 million	40%	60%	43%	57%	31%	69%

What is your organization's hiring plan for the next 12 months in relation to IT audit staff?

Company Size (Annual Revenue)

	Greater than US$5 billion	US$1 billion - US$4.99 billion	US$100 million - US$999.99 million	Less than US$100 million
Increase it by more than 20%	6%	9%	8%	10%
Increase it by 11% - 20%	6%	5%	2%	7%
Increase it by 5% - 10%	17%	11%	11%	13%
Remain about the same	51%	60%	69%	39%
Reduce it by 5% - 10%	1%	1%	0%	2%
Reduce it by 11% - 20%	2%	1%	1%	1%
Reduce it by more than 20%	3%	0%	0%	2%
Don't know	14%	13%	9%	26%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Increase it by more than 20%	15%	8%	8%	12%	8%	7%	0%
Increase it by 11% - 20%	5%	4%	8%	3%	0%	5%	5%
Increase it by 5% - 10%	27%	11%	9%	12%	8%	14%	18%
Remain about the same	32%	59%	58%	47%	67%	58%	59%
Reduce it by 5% - 10%	0%	0%	2%	3%	0%	0%	4%
Reduce it by 11% - 20%	3%	0%	2%	3%	0%	1%	0%
Reduce it by more than 20%	3%	0%	2%	0%	0%	1%	0%
Don't know	15%	18%	11%	20%	17%	14%	14%

"WE ARE ACTIVELY LOOKING FOR GOOD INDIVIDUALS BUT THE MARKET IS VERY DIFFICULT TO HIRE … WITH [OUR] CURRENT STAFF, WE WANT TO CONTINUE THEIR EDUCATION AND PLACE CHALLENGES IN FRONT OF THEM TO KEEP THEM INTERESTED IN THE ORGANIZATION."

– Chief audit executive, large distribution and transportation company, North America

Does your organization require an IT auditor to acquire the Certified Information Systems Auditor (CISA) certification? ("Yes" responses shown below)

Region

NORTH AMERICA
49%

EUROPE
52%

AFRICA
70%

ASIA
59%

OCEANIA
59%

LATIN AMERICA/
SOUTH AMERICA
56%
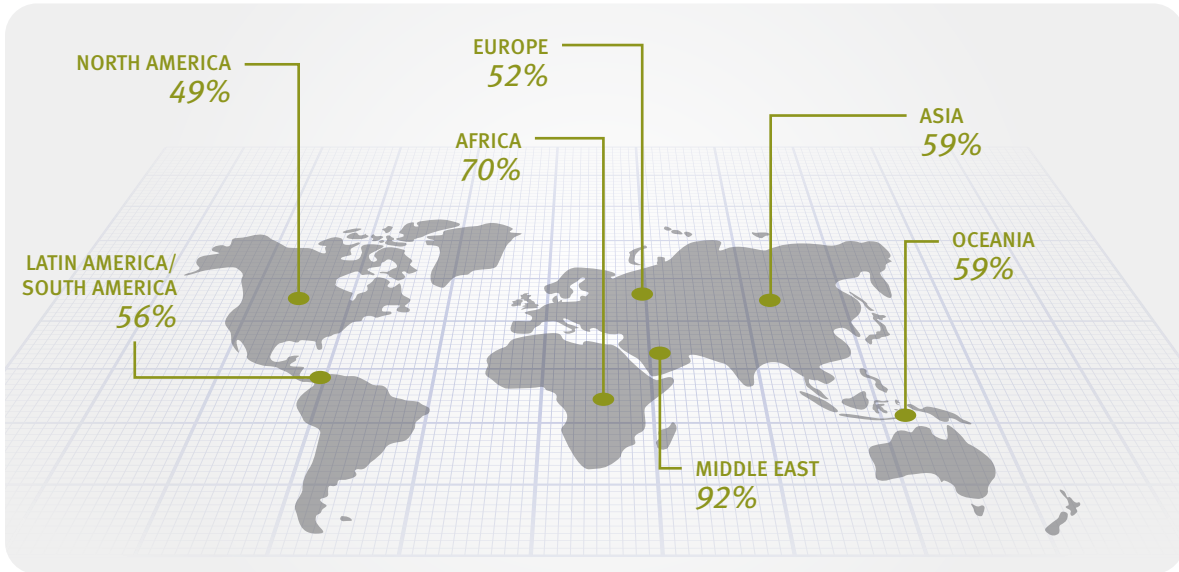
MIDDLE EAST
92%

What percentage of IT auditors within your organization have acquired, or are in the process of acquiring, their CISA certification?

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Greater than 75%	42%	37%	50%	32%	67%	55%	59%
50-75%	13%	14%	19%	12%	8%	17%	13%
20-49%	15%	14%	13%	23%	8%	7%	5%
10-19%	15%	14%	6%	6%	0%	3%	5%
Less than 10%	13%	15%	6%	21%	8%	4%	5%
None/Don't know	2%	6%	6%	6%	9%	14%	13%

What other certifications do people within your IT audit department hold?
Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Certified in Risk and Information Systems Control (CRISC)	43%	14%	31%	38%	42%	28%	18%
Certified Information Security Manager (CISM)	45%	24%	45%	32%	42%	22%	32%
Certified Internal Auditor (CIA)	45%	53%	39%	18%	67%	52%	23%
Certified in the Governance of Enterprise IT (CGEIT)	23%	5%	16%	9%	8%	10%	23%
Certified Information Systems Security Professional (CISSP)	20%	29%	32%	15%	25%	29%	36%
Certified Information Technology Professional (CITP)	0%	2%	2%	3%	0%	6%	5%

What is the primary source of new IT audit staff-level hires?

	Greater than US$5 billion	US$1 billion - US$4.99 billion	US$100 million - US$999.99 million	Less than US$100 million
Colleges/universities	11%	11%	6%	23%
Internal from within the internal audit department	3%	4%	8%	8%
Internal from within the IT department	14%	12%	8%	6%
Internal from within another department	3%	4%	3%	3%
External hire	69%	69%	75%	60%

If colleges/universities are a source for hiring new IT audit staff in your organization, what degrees do you target for this position?

	Greater than US$5 billion	US$1 billion - US$4.99 billion	US$100 million - US$999.99 million	Less than US$100 million
BS in Information Technology	61%	56%	56%	55%
BS in Computer Science	61%	50%	56%	55%
BS in Accounting and Information Systems	70%	50%	56%	40%
BS in Information Assurance and/or Auditing	61%	50%	33%	45%
BS in Software/Systems Engineering	48%	39%	33%	35%
BS in Management Information Systems	52%	44%	11%	35%
BA in Business Information Systems	48%	44%	11%	25%
BS in Computer Engineering Technology	52%	28%	22%	25%

What is the current average tenure (number of years within the audit department) for each position level?*

	Greater than US$5 billion	US$1 billion - US$4.99 billion	US$100 million - US$999.99 million	Less than US$100 million
IT audit director	6.7	6.5	6.3	5.5
IT audit manager	6.2	5.8	5.3	5.1
IT audit staff	4.2	4.4	4.1	3.9

* Figures represent estimates based on ranges provided by respondents.

How many hours of IT skills training/education do IT audit members acquire annually for each position level?*

	Greater than US$5 billion	US$1 billion - US$4.99 billion	US$100 million - US$999.99 million	Less than US$100 million
IT audit director	47.0	44.5	39.4	44.7
IT audit manager	52.1	48.9	45.2	51.1
IT audit staff	53.6	49.9	43.7	46.7

* Figures represent estimates based on ranges provided by respondents.

What are the primary sources of training/education for each level?
(Multiple responses permitted)

	IT Audit Director	IT Audit Manager	IT Audit Staff
External instructor-led	45%	53%	55%
Self-study	35%	43%	44%
External web-based	35%	42%	43%
Internal classroom study	14%	19%	25%
None/Don't know	28%	17%	14%

What is the primary destination of position levels who leave the IT audit department?

	IT Audit Director	IT Audit Manager	IT Audit Staff
Move internally into another position within the internal audit department	6%	7%	6%
Move internally into another department	15%	18%	19%
Join another organization as an IT auditor	13%	20%	29%
Join another organization in another position	12%	12%	13%
None/Don't know	54%	43%	33%

Action Items for Internal Audit and IT Audit Leaders

- Implement training for audit staff members that will enable them to build skills in key areas, including but not limited to technical skills (control analysis, risk analysis, process assessment) and interpersonal skills (building relationships, effective communications, report writing).

- Determine how you can enhance your recruiting efforts for IT auditing professionals, both internally and externally. Also consider ways to retain top talent so as not to lose them to other departments or organizations.

- Enhance the quality of your IT audit function by requiring every staff member to acquire the CISA certification.

- Require staff members to complete a minimum of 40 hours of continuing education annually.

SURVEY DEMOGRAPHICS

All demographic information was provided voluntarily by respondents and not all participants provided data for every demographic question.

Position

Chief Audit Executive (or equivalent)	14%
IT Audit Director	14%
Audit Director	6%
IT Audit Manager	29%
Audit Manager	10%
Audit Staff	23%
Other	4%

Industry

Financial Services	29%
Government/Education/Not-for-Profit	15%
Manufacturing/Engineering	9%
Professional Services	8%
Insurance	5%
Energy	5%
Retail	5%
Technology	4%
Healthcare Provider	4%
Telecommunications	3%
Utility	2%
Transportation	2%
Distribution and Transportation	2%
Media	1%
Life Sciences/Biotechnology	1%
Healthcare Payer	1%
Hospitality	1%
Real Estate	1%
Other	2%

Size of Organization (by gross annual revenue in U.S. dollars)

$20 billion or greater	15%
$10 billion to $19.99 billion	9%
$5 billion to $9.99 billion	11%
$1 billion to $4.99 billion	25%
$500 million to $999.99 million	10%
$100 million to $499.99 million	14%
Less than $100 million	16%

Type of Organization

Publicly traded	43%
Private	30%
Government	16%
Not-for-profit	7%
Other	4%

Organization Headquarters

North America	52%
Europe	21%
Asia	10%
Africa	7%
Latin America/South America	5%
Middle East	3%
Oceania	2%

IT Audit Department Headquarters

North America	52%
Europe	20%
Asia	10%
Africa	6%
Latin America/South America	6%
Middle East	3%
Oceania	3%

Audit Department Headcount
Total number of full-time equivalent (FTE) employees, including IT auditors

0-4	18%
5-9	21%
10-19	19%
20-39	16%
40-99	10%
100+	16%

Total number of full-time IT auditors

0	8%
1	23%
2	16%
3	11%
4	7%
5-9	16%
10-49	13%
50+	6%

ABOUT PROTIVITI

Protiviti (**www.protiviti.com**) is a global consulting firm that helps companies solve problems in finance, technology, operations, governance, risk and internal audit, and has served more than 60 percent of *Fortune* 1000® and 35 percent of *Fortune* Global 500® companies. Protiviti and our independently owned Member Firms serve clients through a network of more than 70 locations in over 20 countries. We also work with smaller, growing companies, including those looking to go public, as well as with government agencies.

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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 provides 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 the execution of individual projects by subject-matter experts in each IT audit area.

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