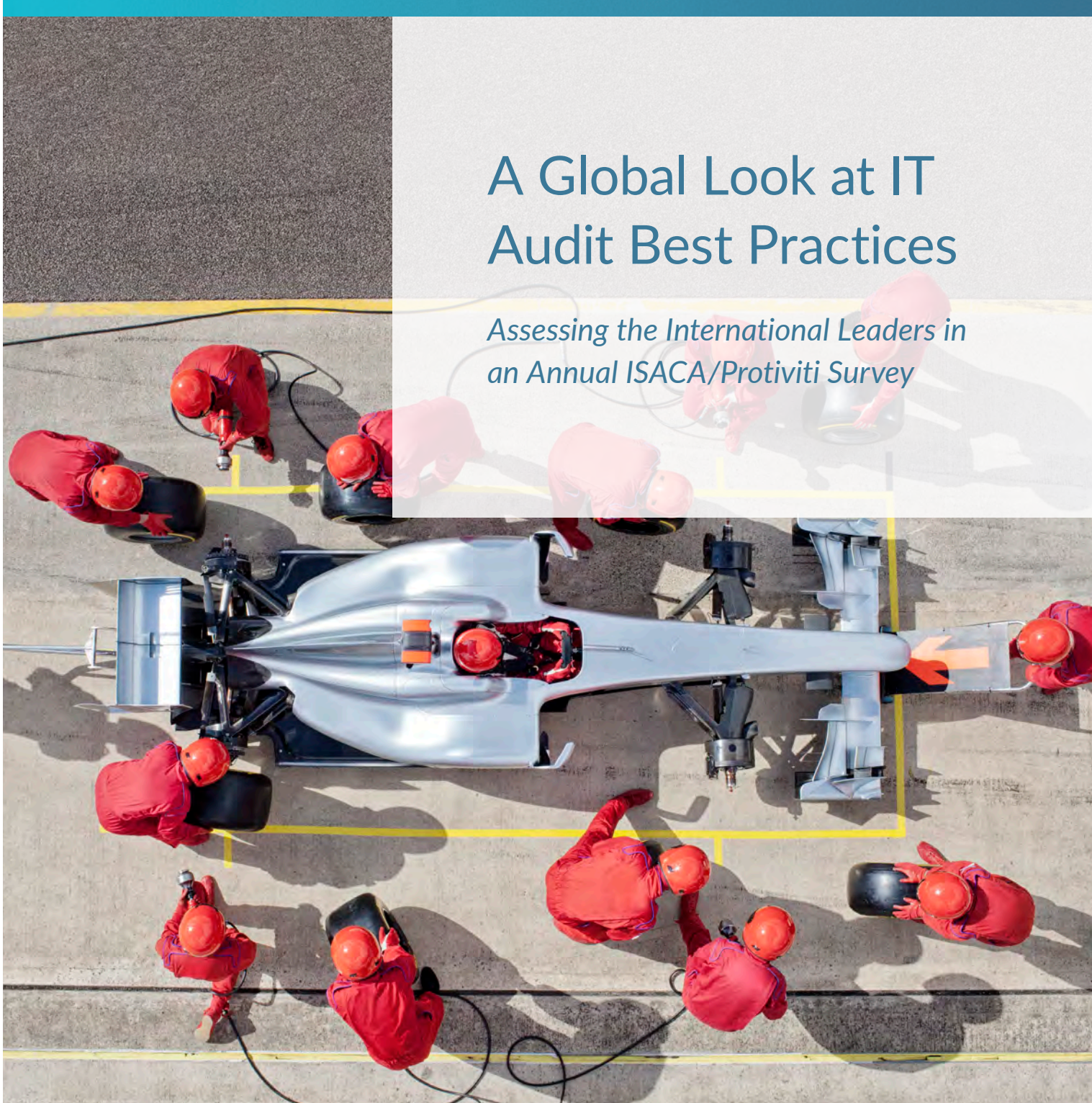


A Global Look at IT Audit Best Practices

*Assessing the International Leaders in
an Annual ISACA/Protiviti Survey*



Executive Summary

The IT audit function has never held a more crucial role. From substantial cybersecurity, privacy and infrastructure challenges and management issues to the implementation of new technologies in the organization, IT auditors work closely with management and the board of directors to fulfill a vital role in helping to maintain an effective control environment amid a changing business climate and dynamic global marketplace.

The results of the latest **IT Audit Benchmarking Study** from ISACA and Protiviti illustrate the increasingly integrated role IT audit leaders and professionals are assuming in regard to technology initiatives in their organizations. A majority have a significant or moderate level of involvement in major technology projects, and a majority of IT audit directors regularly attend audit committee meetings (a noteworthy change from just a few years ago). Yet, as we explore in this report, there is room for improvement in many areas. Most notably, one in three IT audit functions have minimal or no involvement in significant technology projects in the organization. And for those that are more involved, most of their efforts appear to be focused on the post-implementation stages rather than in planning, design or testing.

Why aren't IT auditors involved earlier and more often in major technology projects? More broadly, why are certain types of audits not performed? Is lack of the right framework and/or the right IT audit talent and skills the primary issue? Does IT audit have the necessary authorization from management and the board to become involved in these projects earlier and in greater detail? Is IT audit building the appropriate relationships with management and line-of-business leaders to earn a seat at the table when critical technology projects are being planned and implemented? In our report, we provide possible answers to these questions and guidance for IT audit leaders seeking to grow their function into a strategic partner for their organizations.

OUR KEY FINDINGS

01

Cybersecurity is viewed as the top technology challenge — This has been a highly ranked challenge in our prior years' surveys, but still has increased in importance and clearly is the top-of-mind concern for IT audit leaders and professionals. These results are consistent with the results of Protiviti's annual survey of technology leaders, which show that IT security and incident response capabilities dominate the priority lists for CIOs.¹

02

There appears to be more executive-level interest in IT audit — A majority of IT audit leaders are regularly attending audit committee meetings, and many more are reporting directly to the CEO (though this reporting relationship may not be ideal). There also is more audit committee involvement in the IT audit risk assessment process.

03

More CAEs are beginning to carry leadership for IT audit directly — CAEs are becoming increasingly IT-literate and appear to be taking on the daily management and leadership of the IT audit function. This is a positive trend as it provides the IT audit function with greater visibility and improved stature.

04

Most IT audit shops have a significant or moderate level of involvement in key technology projects — While it is encouraging to find some involvement in the early stages of a project such as planning and design, IT audit functions are more frequently involved post-implementation. Given that a strong majority of organizations have implemented a new IT system or application within the past three years, there likely are opportunities for IT audit to become more involved earlier on with these initiatives.

05

Most perform IT audit risk assessments, though a majority do so annually or less frequently — Considering the growing risk landscape resulting from cybersecurity threats and emerging technologies, more organizations should consider an approach that includes continually reviewing the IT risk landscape and adjusting IT audit plans accordingly.

¹ From *Cloud, Mobile, Social, IoT and Analytics to Digitization and Cybersecurity*, Protiviti, 2016, www.protiviti.com/ITtrends.

Methodology

ISACA and Protiviti partnered to conduct the 6th Annual IT Audit Benchmarking Survey in the third and fourth quarters of 2016. This global survey, conducted online, consisted of a series of questions grouped into six categories:

- Emerging Technology and Business Challenges
- IT Implementation Project Involvement
- IT Audit in Relation to the Overall Audit Department
- Risk Assessment
- Audit Plan
- Skills, Capabilities and Hiring

More than 1,000 (n = 1,062) executives and professionals, including CAEs as well as IT audit vice presidents and directors, completed our online questionnaire. Detailed respondent demographics can be found on pages 51-54.

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

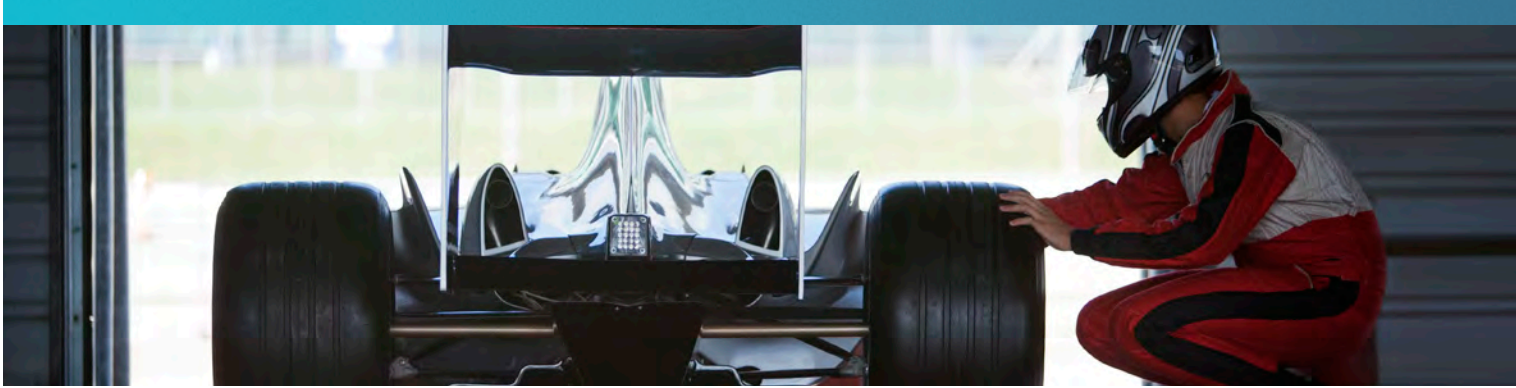
Cybersecurity sits atop the list of top technology challenges. This increasing focus on — and concern about — privacy and cybersecurity should not be a surprise to IT audit practitioners in light of high-profile breaches and coverage of security in the mainstream press. As we continue to see businesses and governmental entities compromised through various forms of breaches, IT auditors must be vocal in providing consultation and advice as well as ongoing assurance around controls that help secure sensitive information. Executives should view IT audit as a critical resource that helps to ensure their organizations stay protected.

Beyond cybersecurity, other technology challenges are just as striking. Compared to our prior results, there are noteworthy changes in the relative position of regulatory compliance, emerging technology challenges, budgetary challenges and cloud computing. With regard to regulatory compliance, this is a striking change given that updates to the regulatory landscape tend to occur slowly. Emerging trends around infrastructure management and regulatory compliance have likely driven the continued challenge IT departments face regarding controlling budgets and costs. Organizations seek to capitalize on more mature cloud offerings with the promise of increased flexibility and reduced cost, but realizing the benefits will, in many cases, take some time.

Challenges related to new technologies — specifically those concerning emerging technology (innovation, transformation and disruption) — have moved down the list. Some change in this regard is to be expected as practitioners become more adept at dealing with the increasing pace of disruptive innovation and managing externalized, virtual environments.

Lastly, for the first time in our survey, third-party/vendor management ranks among the top technology challenges. Organizations that rely on IT service providers have found that they must increase the maturity of their vendor management processes. For companies that have strategically moved toward sourcing their most critical IT processes or applications from service providers, a highly mature and appropriately resourced vendor management program should be a requirement.

Current	YOY Trend	2015
IT security and privacy/cybersecurity		Emerging technology and infrastructure changes — transformation, innovation, disruption
Infrastructure management		IT security and privacy/cybersecurity
Emerging technology and infrastructure changes — transformation, innovation, disruption		Resource/staffing/skills challenges
Resource/staffing/skills challenges		Infrastructure management
Regulatory compliance		Cloud computing/virtualization
Budgets and controlling costs		Bridging IT and the business
Cloud computing/virtualization		Big data and analytics
Bridging IT and the business		Project management and change management
Project management and change management		Regulatory compliance
Third-party/vendor management		Budgets and controlling costs



IT Implementation Project Involvement

Most organizations have implemented an IT system or application within the past three years. The results are consistent with Protiviti's latest survey of CIOs and technology leaders, which indicated that a majority of organizations currently are undergoing a major IT transformation.

With regard to the IT audit function's involvement in significant technology projects, while a majority have either a significant or moderate level of involvement, a surprising number have minimal or no involvement. IT auditors generally do not believe they are brought in early or frequently enough to these projects. In a related survey finding, IT auditors generally are involved in evaluating various aspects of IT implementation projects — most notably, post-implementation project review, test phases and project governance. But in almost every case, reported involvement is less than a majority of possible opportunities.

According to a study by McKinsey and the BT Centre for Major Programme Management at the University of Oxford, the average large IT project runs 45 percent over budget, 7 percent over time, and delivers 56 percent less value than expected.² The bottom line is that, considering these factors, there likely are opportunities in the organization for the IT audit group to add significant value to technology projects. In fact, IT audit leaders

should assume responsibility for becoming involved in these projects, and explore dialogues with management and line-of-business leaders to determine how they can contribute and add value. However, this cannot happen without at least an implicit invitation to do so. For this reason, strong relationships with the organization's management, audit committee and line-of-business leaders are paramount, together with a good understanding of the organization's culture and the tone for IT audit's involvement. These elements will help IT audit leaders gain a seat at the table for practical “nuts and bolts” matters as well as higher-level strategic issues.



GLOBAL LEADER
Africa

68%

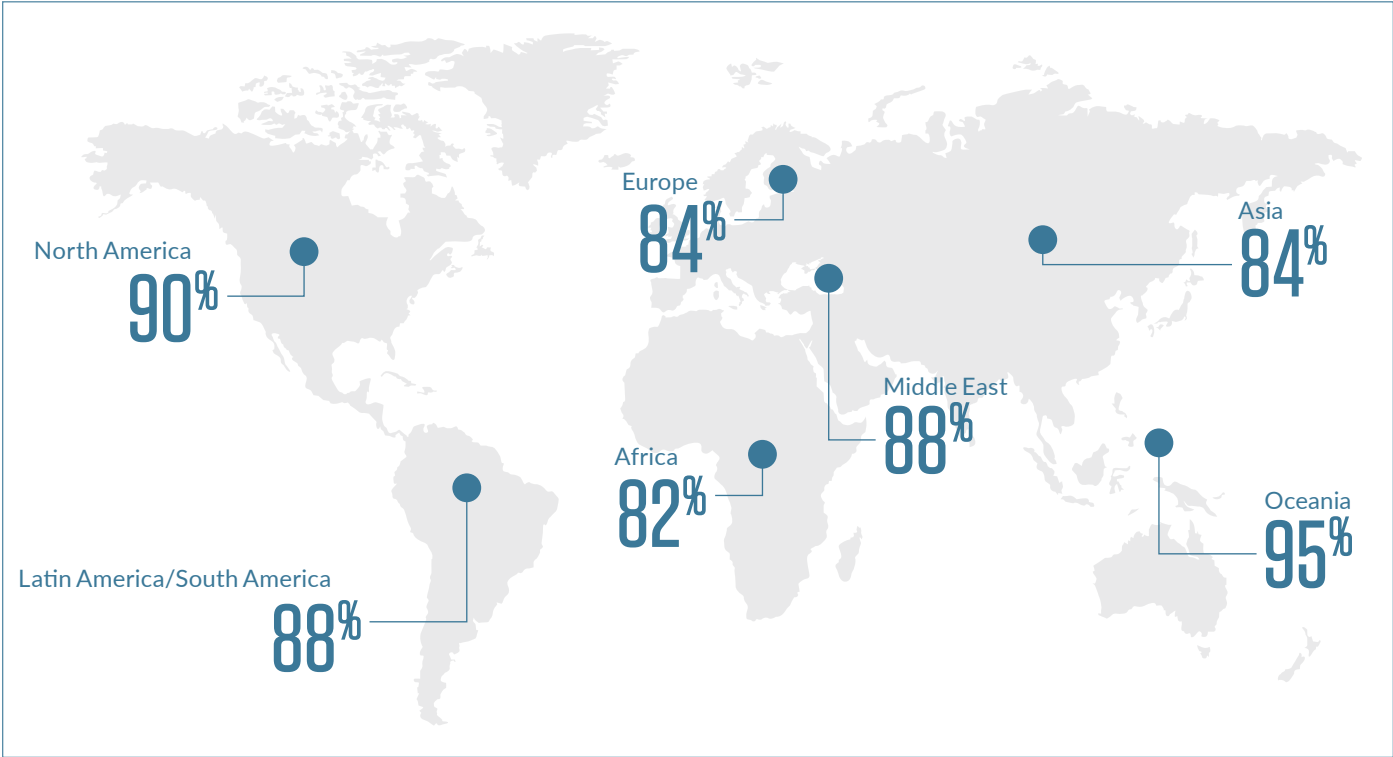
of IT audit functions have a significant or moderate level of involvement in significant technology projects.

² Bloch, M., Blumberg, S., Laartz, J., 2012. “Delivering large-scale IT projects on time, on budget, and on value.” www.mckinsey.com/business-functions/digital-mckinsey/our-insights/delivering-large-scale-it-projects-on-time-on-budget-and-on-value.

• • • **Has your company implemented an IT system or application in the last three years?**

Yes	88%
No	8%
Unsure	4%

Region ("Yes" responses)



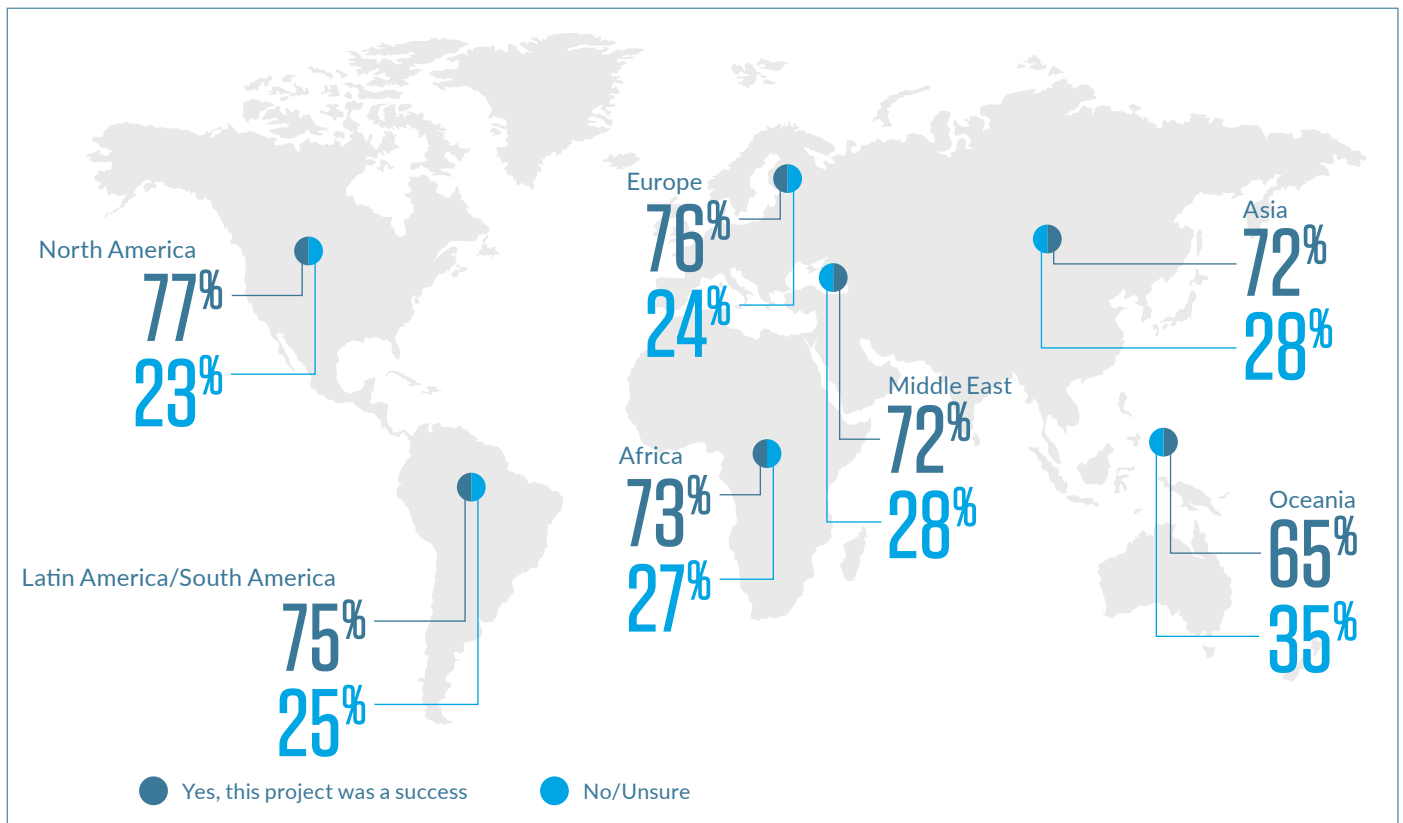
- • • **What was the primary purpose of the IT implementation project?**

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Process automation	44%	52%	30%	48%	34%	32%	35%
Core/foundational infrastructure improvement	31%	22%	30%	33%	34%	35%	22%
Business intelligence	9%	10%	15%	10%	17%	8%	11%
Customer interface: ease of use	5%	8%	11%	3%	7%	9%	16%
Collaboration	9%	1%	9%	3%	0%	3%	8%
Customer interface: personalization	0%	4%	2%	3%	3%	2%	3%
Other	2%	3%	3%	0%	5%	11%	5%

- • • **From the organization's perspective, was the IT implementation project a success or a failure?**

Region

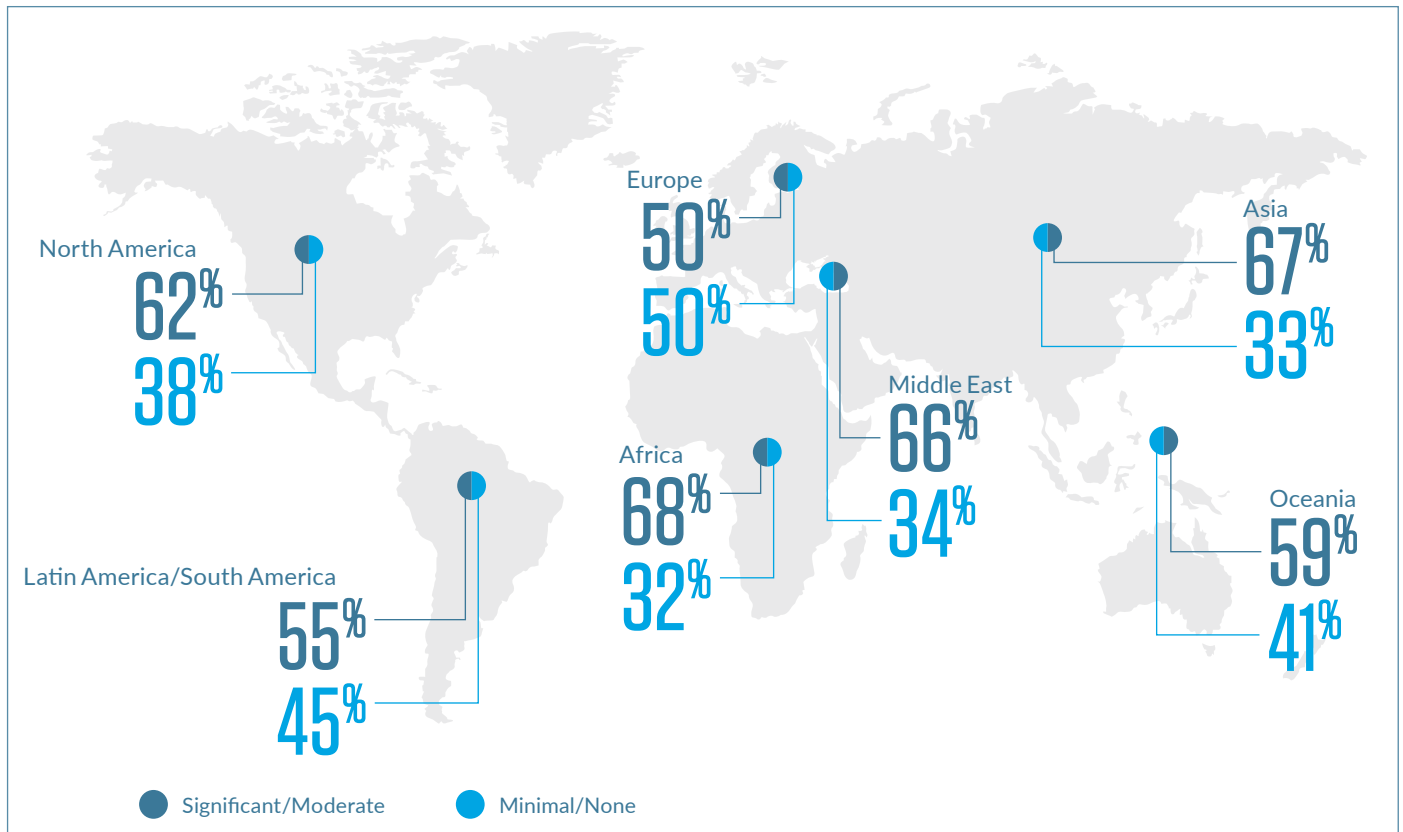


- • • **What level of involvement does IT audit have in significant technology projects?**

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
Significant	26%	24%	14%	31%
Moderate	45%	33%	42%	27%
Minimal	25%	32%	36%	30%
None	4%	11%	8%	12%

Region



- • • **When does IT audit become involved in significant technology projects?
(Multiple responses permitted)**

Planning	43%
Design	35%
Testing	38%
Implementation	37%
Post-implementation	65%
No involvement	12%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Planning	48%	34%	40%	40%	34%	47%	35%
Design	35%	29%	34%	25%	21%	38%	44%
Testing	53%	31%	26%	43%	28%	41%	44%
Implementation	41%	27%	29%	33%	31%	42%	44%
Post-implementation	70%	67%	65%	68%	48%	64%	62%
No involvement	7%	9%	17%	15%	24%	10%	15%

- • • **For IT implementation projects that occurred in the last three years, which of the following did IT audit evaluate? (Multiple responses permitted)**

Post-implementation project review	51%
Test phases	48%
Project governance	48%
Project risk management plan	45%
System development lifecycle (SDLC)	45%
Data conversion process	44%
Alignment of project success measures to desired business outcomes	41%
Project plan	41%
Project requirements	40%
Communication plan – project plan	30%
Communication plan – stakeholders	28%
Project budget	25%
Define project success measures	23%
Stakeholder identification	23%

- • • **For IT implementation projects that occurred in the last three years, which of the following did IT audit evaluate? (Multiple responses permitted)**

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Post-implementation project review	65%	48%	48%	58%	48%	50%	56%
Test phases	56%	41%	40%	40%	38%	52%	41%
Project governance	48%	37%	50%	43%	38%	50%	53%
Project risk management plan	52%	39%	53%	50%	41%	42%	50%
System development lifecycle (SDLC)	44%	38%	40%	35%	45%	50%	24%
Data conversion process	57%	38%	29%	38%	31%	50%	38%
Alignment of project success measures to desired business outcomes	63%	38%	47%	43%	38%	35%	47%
Project plan	43%	25%	36%	45%	48%	45%	38%
Project requirements	44%	28%	40%	35%	31%	42%	35%
Communication plan – project plan	35%	21%	23%	20%	28%	35%	29%
Communication plan – stakeholders	37%	19%	21%	20%	21%	32%	29%
Project budget	41%	16%	29%	35%	24%	22%	21%
Define project success measures	38%	16%	25%	25%	21%	21%	21%
Stakeholder identification	30%	8%	24%	15%	21%	26%	15%

- • • **What is the most significant risk factor for IT implementation projects within your organization?**

Frequency of updates to project goals and outcomes based on changing business requirements	26%
Goals and objectives are not clearly defined	17%
Frequency of change in project specifications without formal assessment	14%
Absence of a defined and documented project management methodology	13%
Capabilities and skills of the project manager and/or broader project team	12%
Level of employee turnover on project teams	7%
Other	11%



IT Audit in Relation to the Internal Audit Department — Profiling Today's IT Audit Function

We see that while the results for organizations that have a designated IT audit director position are flat (showing little year-over-year change), a small but increasing number of IT audit leaders are reporting directly to the CEO. In these instances, it is possible that the CAE is serving as the IT audit director, which is a positive trend as it provides the IT audit function and responsibilities with greater visibility and stature. It also is a logical progression given how more organizations have become increasingly technology-dependent, driving the need for the technology-savvy CAE to also serve as IT audit director. More CAEs are now assuming this role, which can be advantageous because, among other reasons, skilled and experienced IT audit directors are hard to find.

Overall, with more organizations and internal audit groups becoming increasingly technology-centric, it is a natural progression for CAEs to assume IT audit leadership roles. Higher numbers of IT audit leaders reporting to the CEO likely reflect a number of trends, from the growing emphasis on digital transformation initiatives to the need to maximize independence while mitigating conflicts of interest.

A similar trend shows significantly higher numbers of IT audit directors regularly attending audit committee meetings, with notable jumps in most regions. Boards and audit committees are asking for additional assurance around critical IT risks — internal audit and

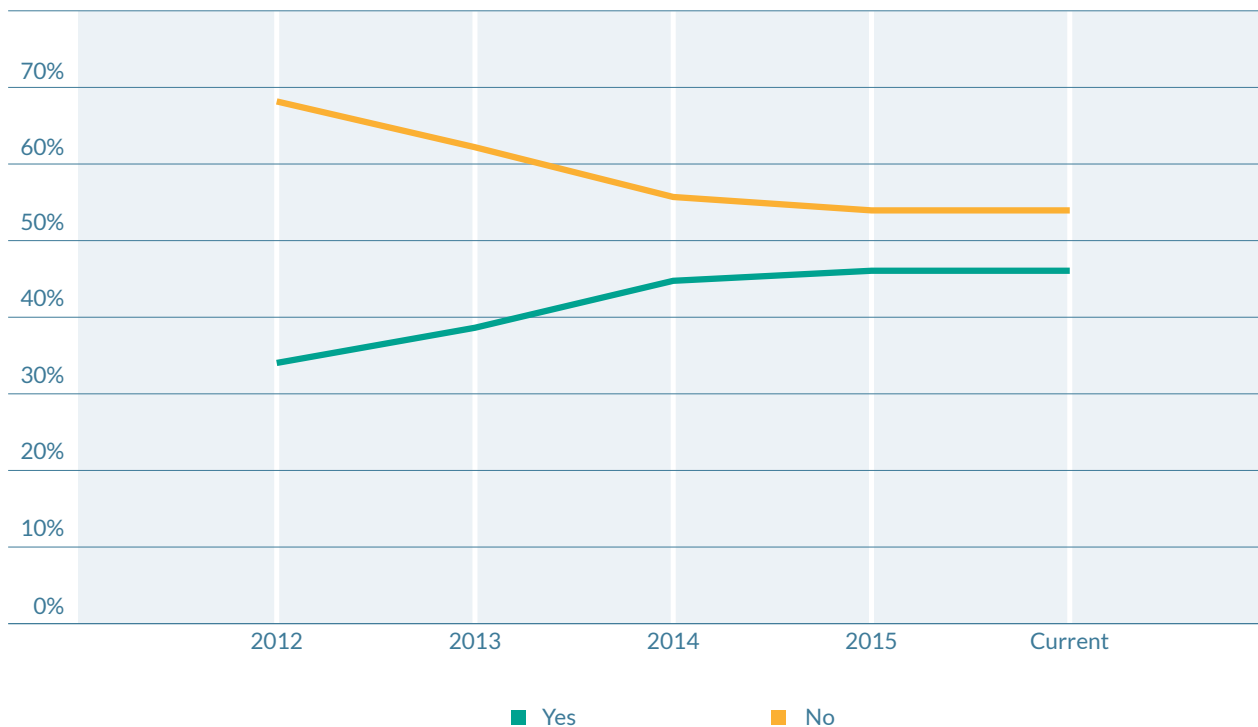
IT audit leaders must be prepared to demonstrate audit coverage and articulate where the highest risks remain.

We also find that in cases where the IT audit director is not attending audit committee meetings regularly, the CAE usually has sufficient knowledge to discuss IT audit matters with the committee. While it is positive to see IT audit garnering sufficient attention at the board level, there are some important caveats. First, it appears that in one in four organizations, the CAE lacks sufficient knowledge to have these discussions. Second, reviewing the mechanics of IT audit with the board is different from discussing deeper technology risks associated with the expanding use of technology across the organization. In these instances, it is important that a technical expert be available to the audit committee.

There also is an opportunity to enhance IT audit activities by having the CAE or IT audit director in attendance at various IT meetings at increasing levels throughout the organization. Whether it is regular meetings with the CIO, large-scale IT-enabled project meetings or IT portfolio management meetings, the rate of CAE or IT audit director attendance at these key discussions is disappointingly low.

Within IT audit functions, a lack of resources and aligned skill sets remains a significant challenge. For many organizations, these issues are often drivers for the use of outside resources.

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



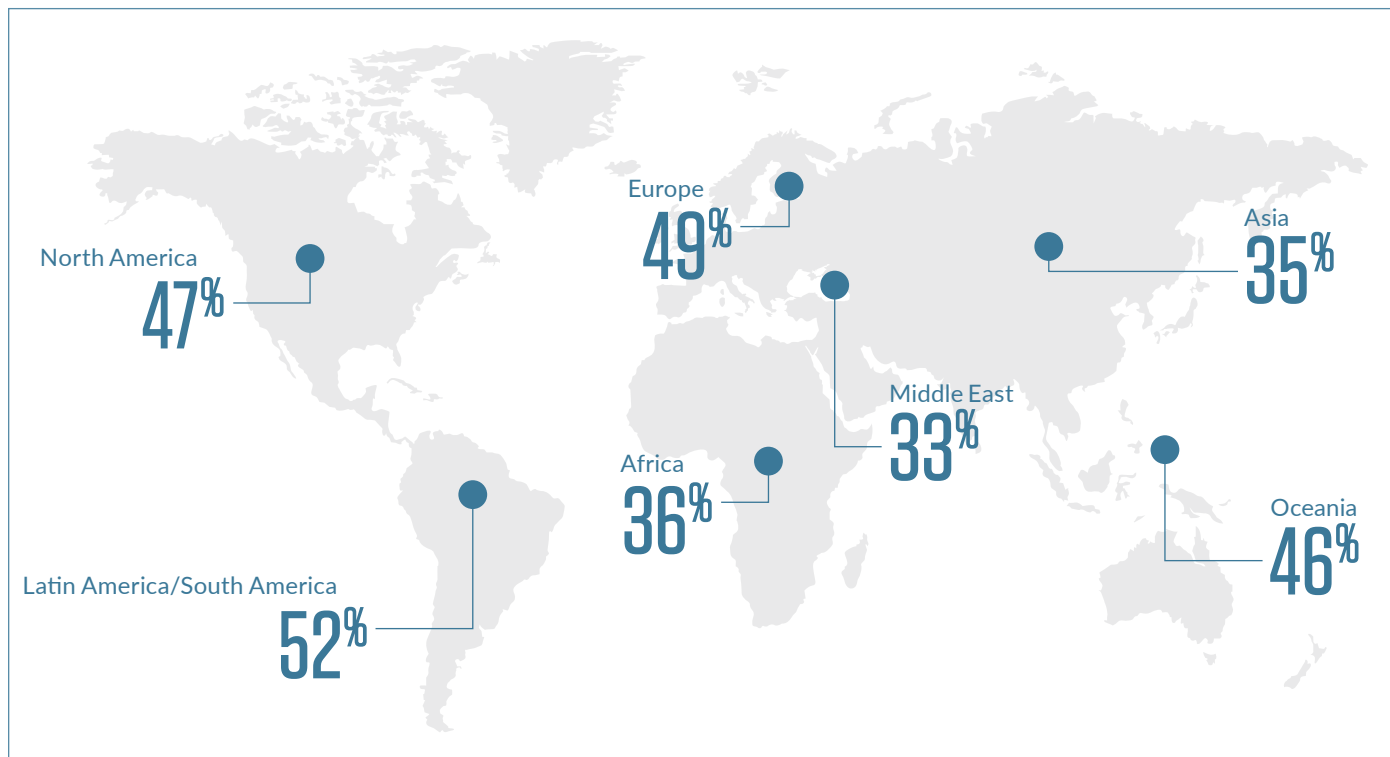
*Company Size (Annual Revenue)**

	Current	2015	2014
Greater than US\$5 billion	59%	60%	59%
US\$1 billion – US\$4.99 billion	44%	40%	37%
US\$100 million – US\$999.99 million	36%	31%	39%
Less than US\$100 million	38%	41%	37%

* Percentages of "Yes" responses shown

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

Region (“Yes” responses)

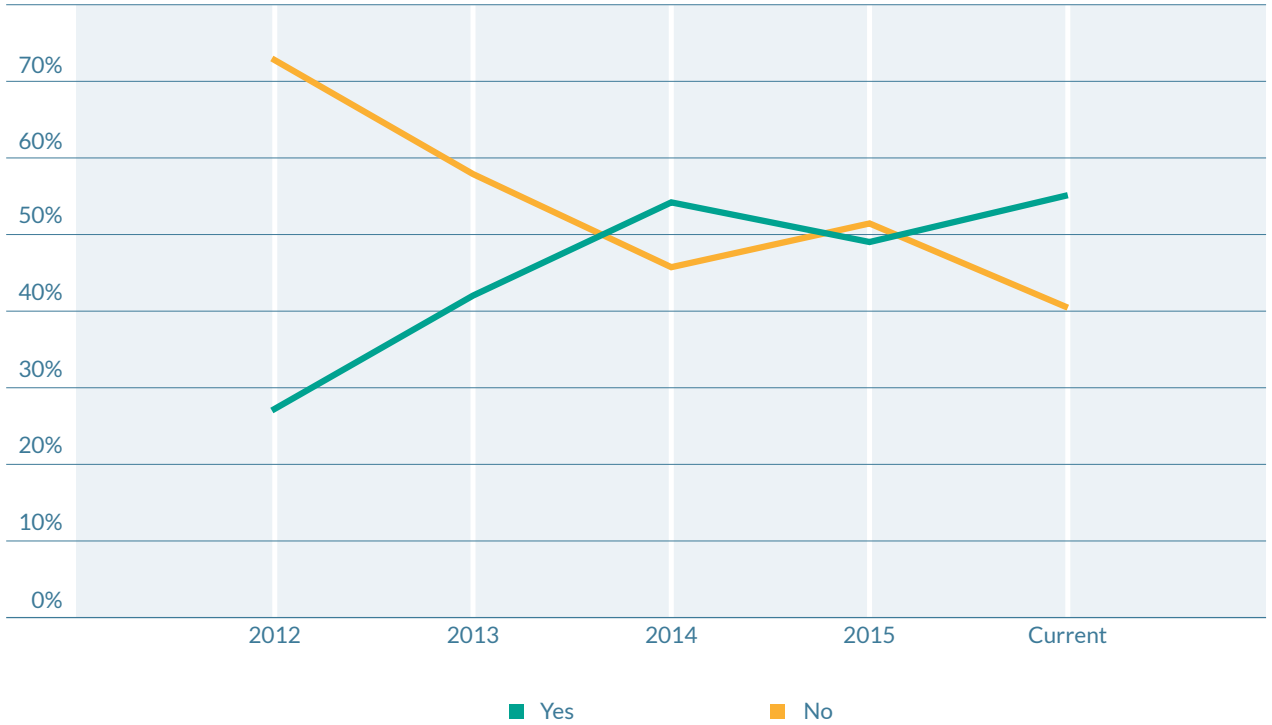


- To whom within the organization does your IT audit director report?

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
CAE	47%	41%	51%	75%	91%	64%	63%
A director under the CAE	8%	8%	6%	12%	0%	10%	6%
CEO	28%	23%	26%	13%	9%	13%	19%
CIO	3%	10%	8%	0%	0%	2%	0%
Reports through some other function	14%	18%	9%	0%	0%	11%	12%

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





GLOBAL LEADER
Latin America/South America

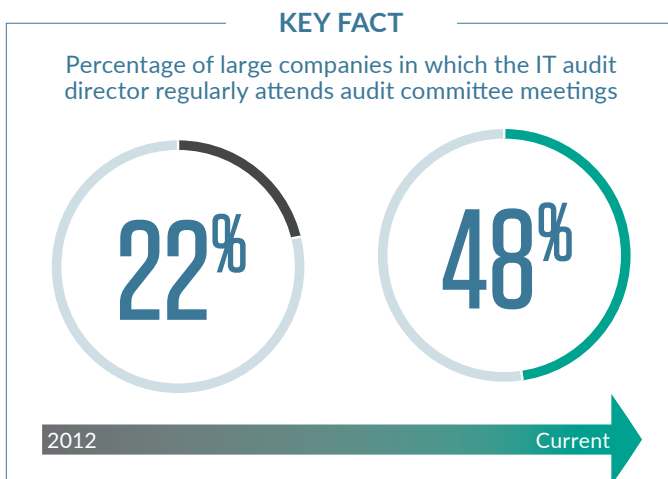
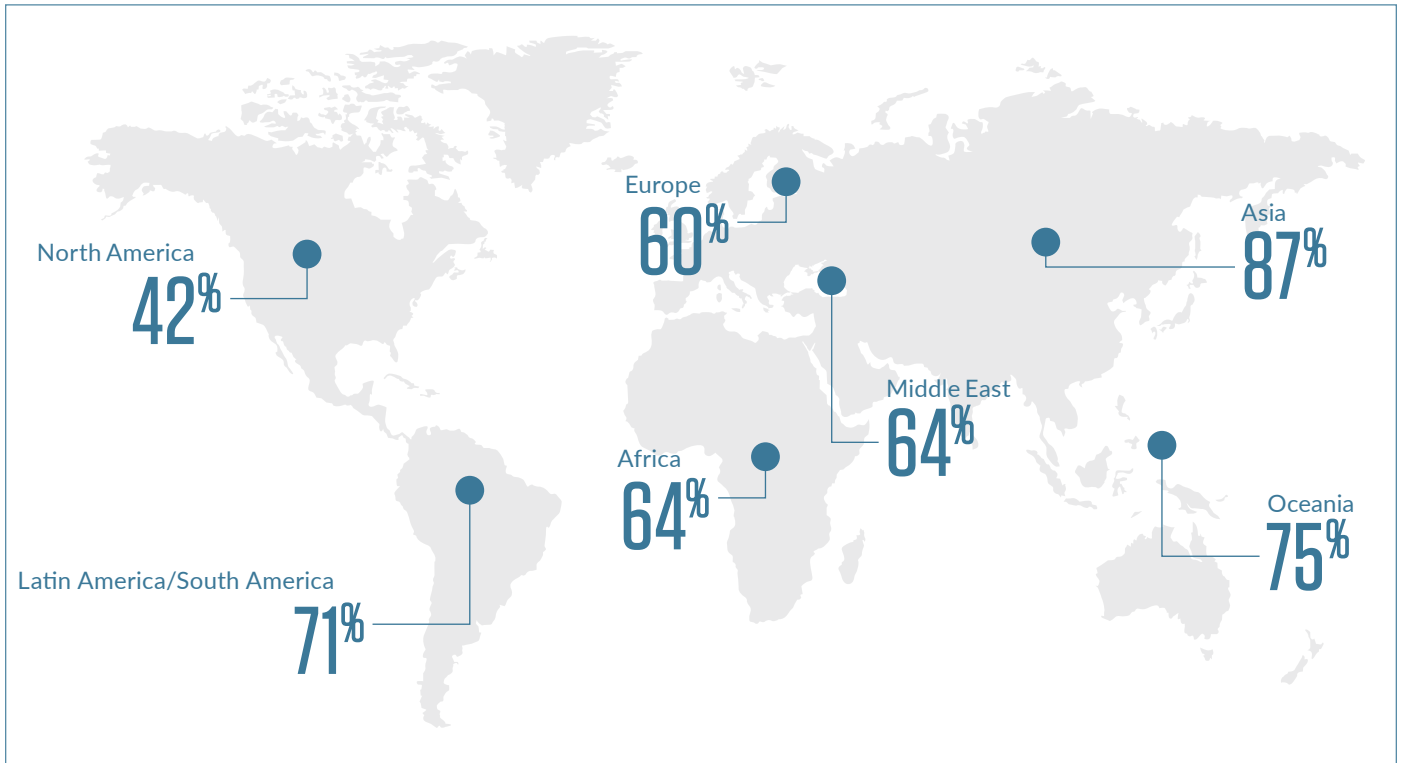
52%

of organizations have an IT audit director or equivalent position.

Our IT audit team is segmented to provide coverage of (1) IT infrastructure, (2) IT security, (3) integrated audits, and (4) advisory projects.

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

- • • Does the IT audit director (or equivalent position) regularly attend audit committee meetings?
Region (“Yes” responses)



- • • **If “No”: Does the chief audit executive (CAE) have sufficient knowledge to hold a discussion about IT audit matters with the audit committee?**

Yes	72%
No	16%
Don't know	12%

- • • **Does the CAE or IT audit director attend any of the following meetings to help construct the IT audit plan? (Multiple responses permitted)**

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Regularly scheduled meetings with CIO	31%	27%	43%	31%	31%	51%	54%
Large-scale IT audit project meetings	28%	23%	26%	27%	22%	39%	31%
IT strategy meetings	35%	26%	31%	29%	34%	30%	23%
IT department staff meetings	15%	20%	26%	36%	9%	26%	23%
IT portfolio management meetings	15%	13%	15%	11%	19%	18%	23%

- • • **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		
	Current	2015	2014	Current	2015	2014	Current	2015	2014	Current	2015	2014
Part of the internal audit department, not a separate function	50%	56%	55%	61%	56%	59%	59%	63%	59%	46%	44%	36%
Part of the internal audit department, but considered to be a separate function	36%	35%	35%	26%	31%	27%	23%	22%	23%	22%	17%	23%
Embedded in the organization as a separate audit function, e.g., line of business teams, process teams, etc.	10%	7%	8%	8%	7%	8%	10%	9%	12%	21%	27%	30%
No IT audit resources are available within the organization	4%	2%	2%	5%	6%	6%	8%	6%	6%	11%	12%	11%

- • • **How are IT audit resources organized within your organization?**

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Part of the internal audit department, not a separate function	49%	44%	55%	52%	30%	58%	54%
Part of the internal audit department, but considered to be a separate function	30%	35%	25%	26%	42%	25%	14%
Embedded in the organization as a separate audit function	14%	14%	13%	17%	9%	11%	20%
No IT audit resources are available within the organization	7%	7%	7%	5%	19%	6%	12%

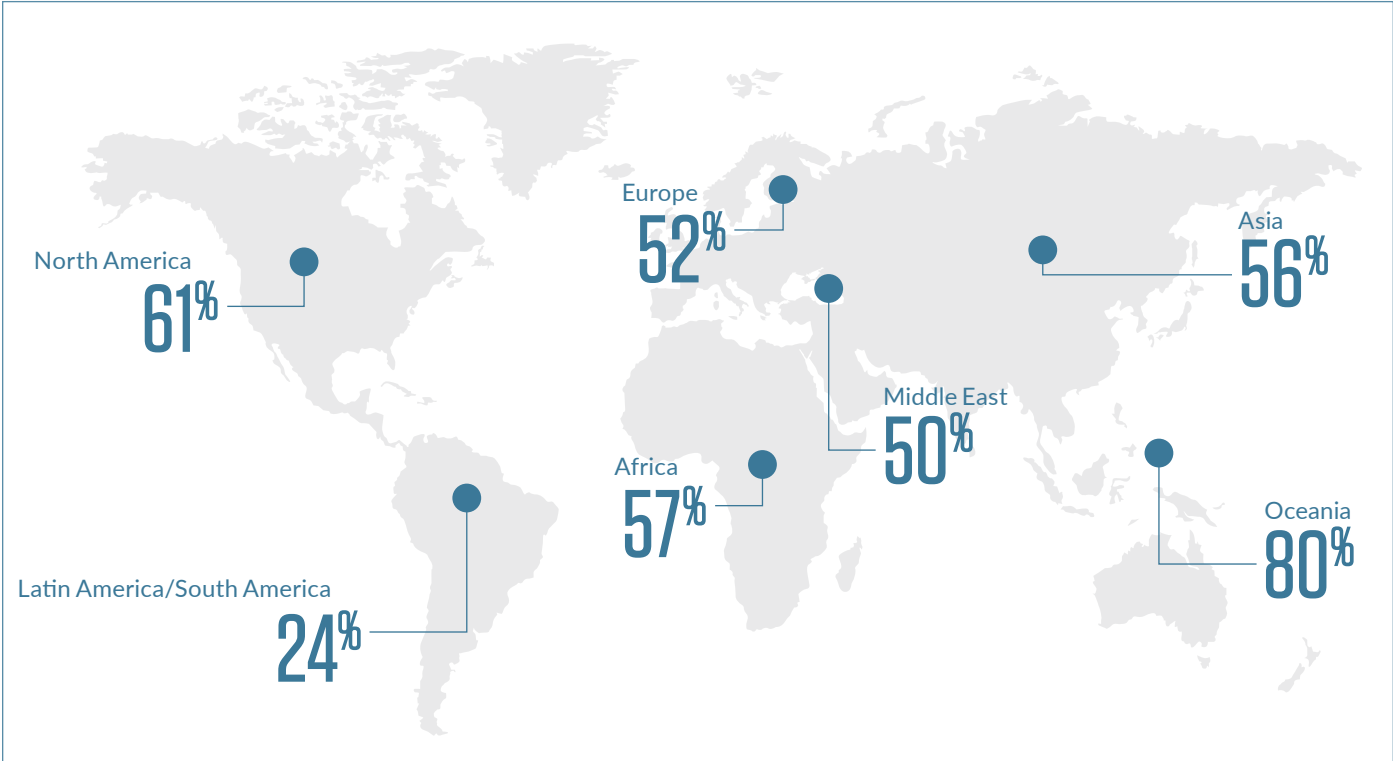
- • • **Do you use outside resources to augment/provide your IT audit skill set? (Multiple responses permitted)**

Company Size (Annual Revenue)

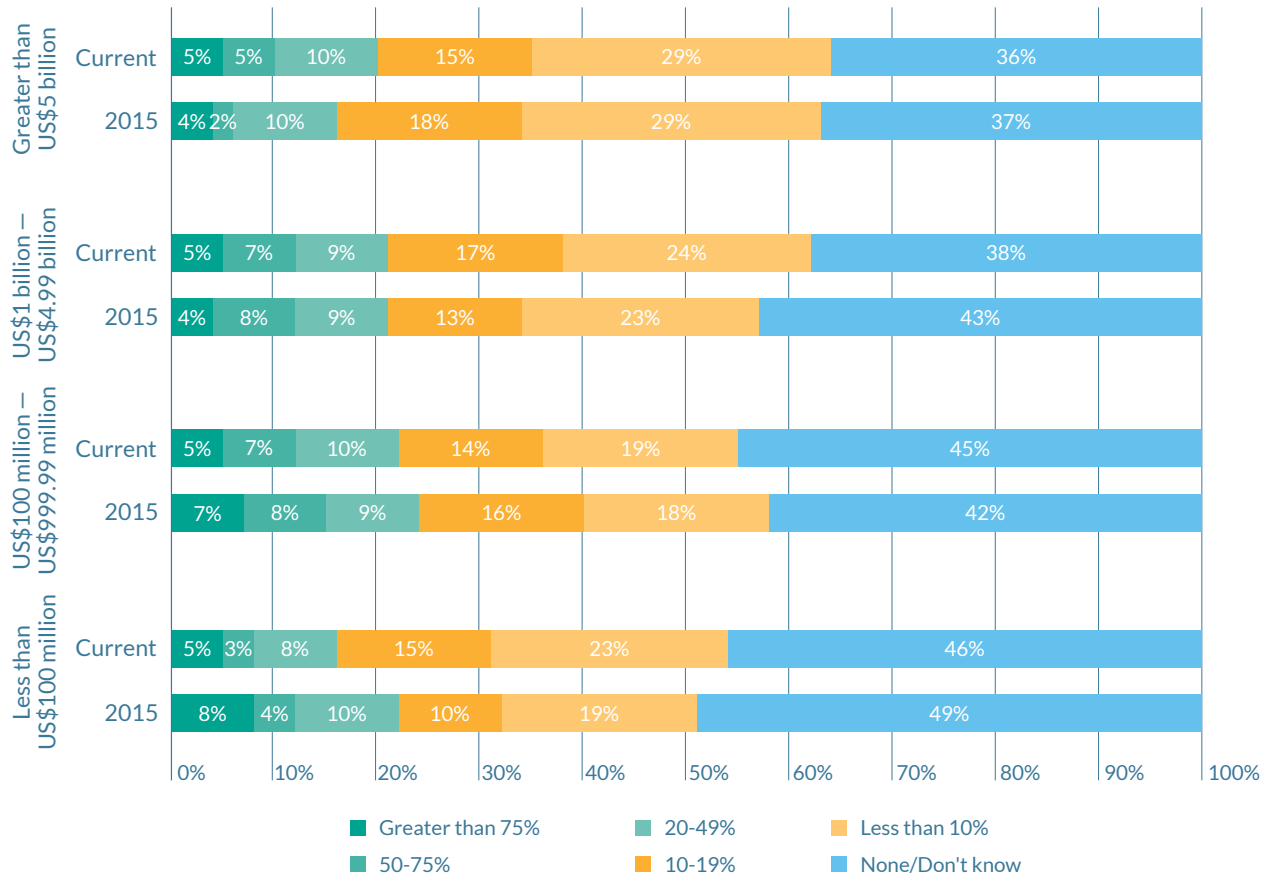
	Yes, we use guest auditors			Yes, we outsource the IT audit function			Yes, we use co-source providers			Do not use outside resources		
	Current	2015	2014	Current	2015	2014	Current	2015	2014	Current	2015	2014
Greater than US\$5 billion	22%	24%	21%	6%	5%	4%	36%	40%	35%	43%	41%	40%
US\$1 billion – US\$4.99 billion	15%	17%	17%	5%	9%	5%	46%	34%	34%	40%	48%	44%
US\$100 million – US\$999.99 million	24%	21%	21%	8%	10%	7%	30%	32%	25%	45%	47%	47%
Less than US\$100 million	22%	28%	18%	8%	11%	10%	23%	20%	17%	51%	49%	55%

- • • Do you use outside resources to augment/provide your IT audit skill set?

Region ("Yes" responses)



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



- • • **Please indicate the primary reason(s) your company uses outside resources to augment IT audit skills. (Multiple responses permitted)**

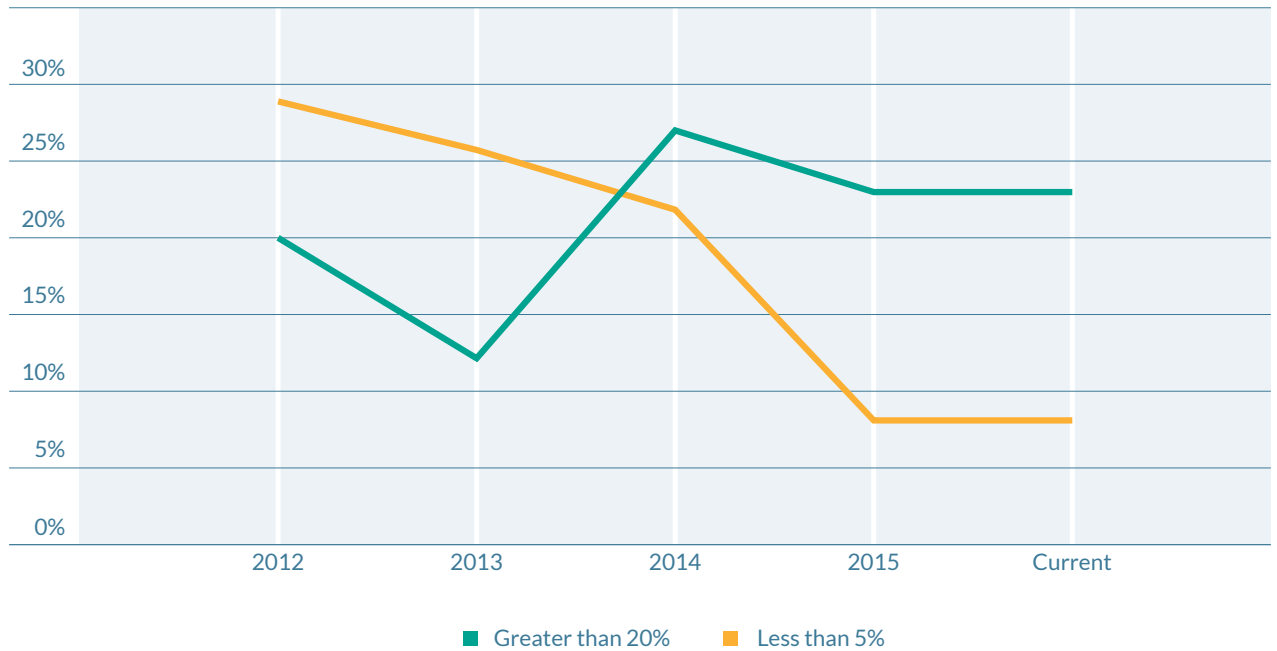
Company Size (Annual Revenue)

	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 skill sets	22%	27%	25%	21%
Variable resource modeling	19%	10%	9%	12%
Different/outside perspectives	24%	18%	20%	17%
Lack of resources	35%	40%	31%	27%
Provides the opportunity for people to learn from the experiences of outside resources	21%	25%	23%	16%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
In-house internal audit department lacks IT audit skill sets	19%	26%	18%	9%	16%	27%	29%
Variable resource modeling	16%	12%	12%	7%	9%	13%	14%
Different/outside perspectives	16%	25%	17%	7%	16%	21%	31%
Lack of resources	28%	23%	29%	27%	25%	38%	43%
Provides the opportunity for people to learn from the experiences of outside resources	21%	26%	19%	13%	16%	23%	17%

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

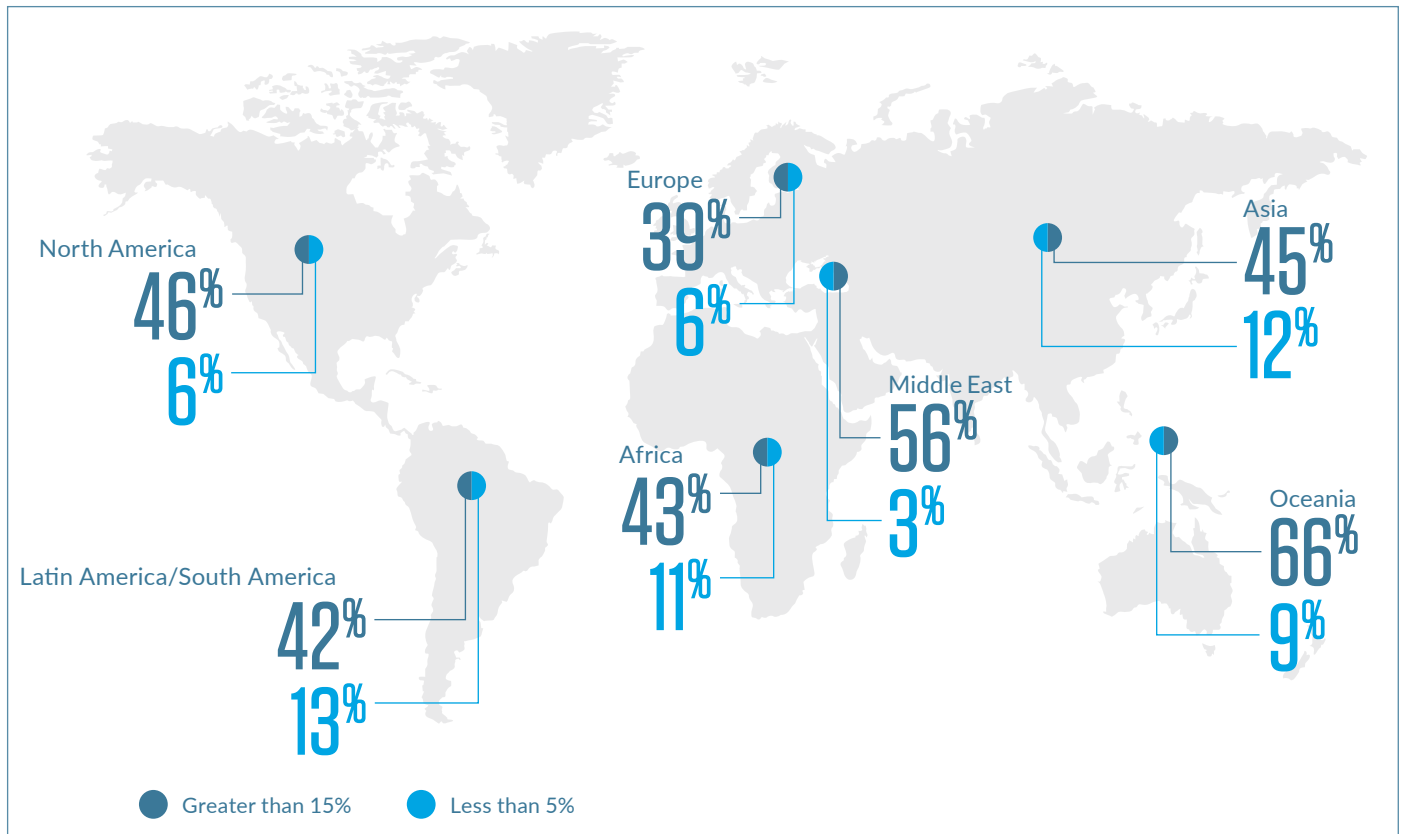


The IT audit function is new. We have only conducted a few IT general controls audits of agencies of the government to build the capacity of our IT auditors and IT implementation audits.

– IT audit director, small government organization, Africa

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

Region



Company Size (Annual Revenue)

	Greater than 20%	YOY Trend	15-20%	YOY Trend
Greater than US\$5 billion	27%	↑	25%	↓
US\$1 billion – US\$4.99 billion	23%	↑	22%	↓
US\$100 million – US\$999.99 million	21%	↑	23%	↔
Less than US\$100 million	22%	↓	17%	↓

- • • 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%	32%	33%	28%	22%
15-20%	18%	15%	16%	19%
10-14%	16%	13%	14%	14%
5-9%	12%	12%	15%	10%
Less than 5%	6%	11%	12%	13%
None/Don't know	16%	16%	15%	22%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Greater than 20%	30%	20%	29%	31%	16%	31%	23%
15-20%	17%	27%	14%	24%	25%	14%	20%
10-14%	9%	15%	13%	16%	22%	14%	17%
5-9%	12%	15%	14%	11%	16%	11%	14%
Less than 5%	14%	10%	8%	11%	9%	10%	10%
None/Don't know	18%	13%	22%	7%	12%	20%	16%

The IT audit team is a unit of the internal audit department. Resources are matrixed across IT and process audits and are based on risks and skills required.

– IT audit director, large insurance company, North America

Assessing IT Risks

One of the critical core duties for IT audit is to understand the relevant risks to the organization and understand how those are affected or mitigated by the use of technology. As many companies do not conduct a separate IT risk assessment, the responsibility often falls to the IT audit department to do so. The survey results suggest that, across company size and region, most IT audit functions are conducting IT audit risk assessments. In addition, the audit committee and executive management have a significant or moderate level of involvement in the IT audit risk assessment in a majority of cases.

But there are gaps. Some organizations, albeit a small percentage, do not conduct any type of IT audit risk assessment, which is imprudent in light of today's technology environment and accompanying security challenges. We also find that most organizations are updating the IT audit risk assessment on just a semi-annual or less frequent basis. If providing timely IT audit coverage over the highest risk areas is the goal, as may be suggested by the pace of transformative change in many organizations, these numbers suggest substantial room for improvement. While ultimately this frequency depends on the organization and its unique circumstances, it can easily be argued that amid today's dynamic technology challenges and emerging threats (including cybersecurity issues), IT audit risk assessments should be updated quarterly or more frequently. And if the organization is performing the IT audit risk assessment annually, the IT audit function needs to consider whether it is keeping up-to-date on every risk issue that might emerge due to internal developments in the organization or in the market.

If your organization is performing an annual IT audit risk assessment, it may be desirable to make this activity more frequent. Strategies to do so include:

- Make the IT audit risk assessment flexible enough to add or remove the highest risks as the organization's circumstances change.



- Continually adjust risk ratings based on developments throughout the year.
- Plan specifically to adjust the risk assessment on a periodic basis, or plan to deprioritize certain areas in lieu of other risk issues.

Long-term, more organizations likely will adopt more data-driven approaches to their IT audit risk assessments, which will enable more frequent or even continuous updates. For most, this will require significant advances in data access and management, but we expect such approaches to become the norm.



GLOBAL LEADER
North America

86%

of organizations conduct IT audit risk assessments.

- • • **Does your organization conduct an IT audit risk assessment?**

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
Yes, it is conducted as part of the overall internal audit risk assessment process	68%	59%	59%	54%
Yes, it is conducted separately from the overall internal audit risk assessment process	16%	16%	17%	16%
Yes, it is conducted by a group other than internal audit, but internal audit relies on the output to produce their audit plan	6%	7%	8%	7%
No, an IT audit risk assessment is not conducted	10%	18%	16%	23%

Region

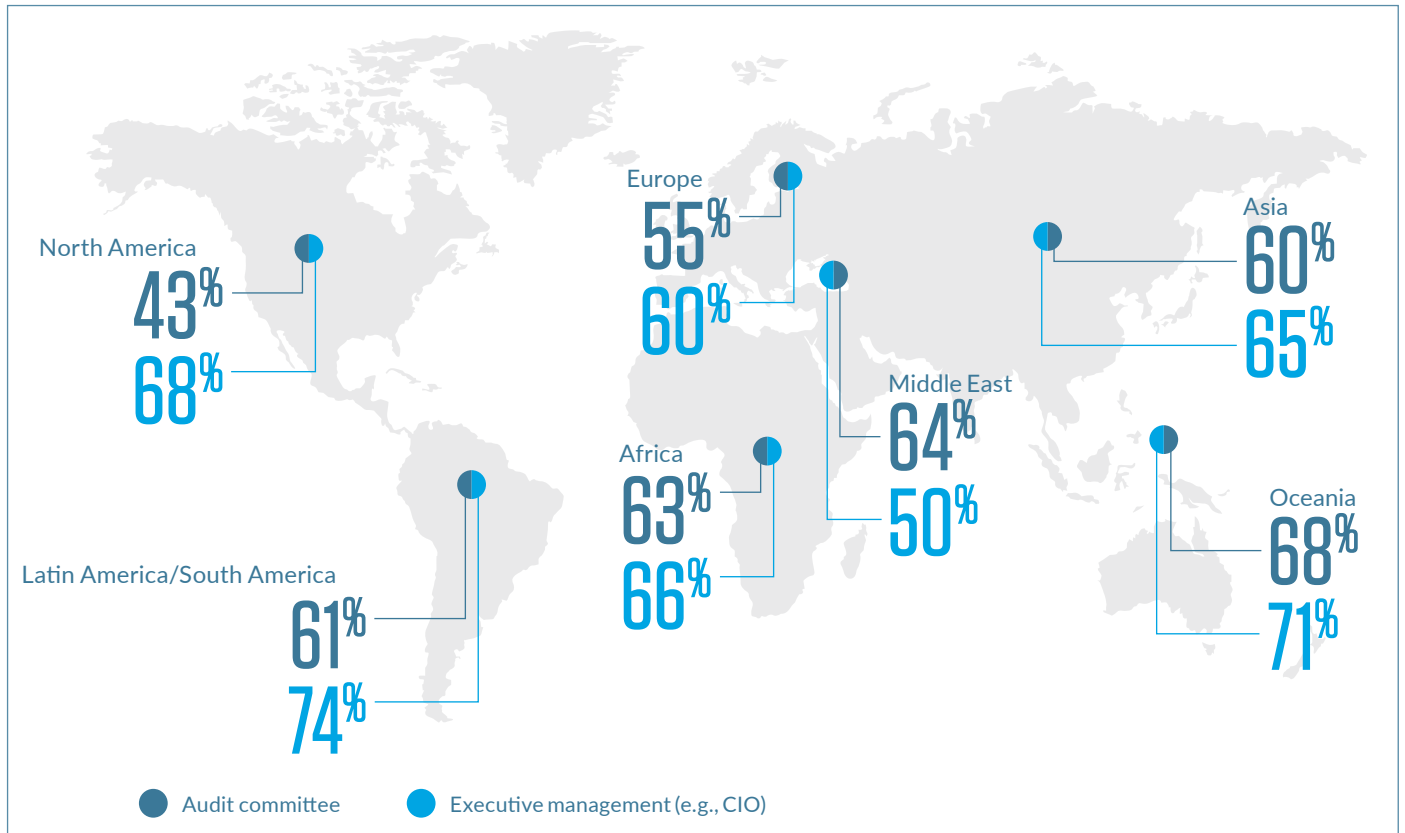
	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Yes, it is conducted as part of the overall internal audit risk assessment process	53%	49%	66%	69%	41%	62%	66%
Yes, it is conducted separately from the overall internal audit risk assessment process	20%	21%	11%	7%	25%	17%	8%
Yes, it is conducted by a group other than internal audit, but internal audit relies on the output to produce their audit plan	6%	10%	8%	2%	9%	7%	6%
No, an IT audit risk assessment is not conducted	21%	20%	15%	22%	25%	14%	20%

The IT audit risk assessment is done as part of the entitywide assessment. It is also assessed as part of the IT steering committee.

– Chief audit executive, midsize utility company, Africa

- • • Please indicate the level of involvement of each of the following individuals/groups in your organization's IT audit risk assessment process. (Shown: Significant/Moderate levels of involvement)

Region



Internal audit is the only group currently conducting a risk assessment for IT. Our enterprise risk management function does not look at IT in their program.

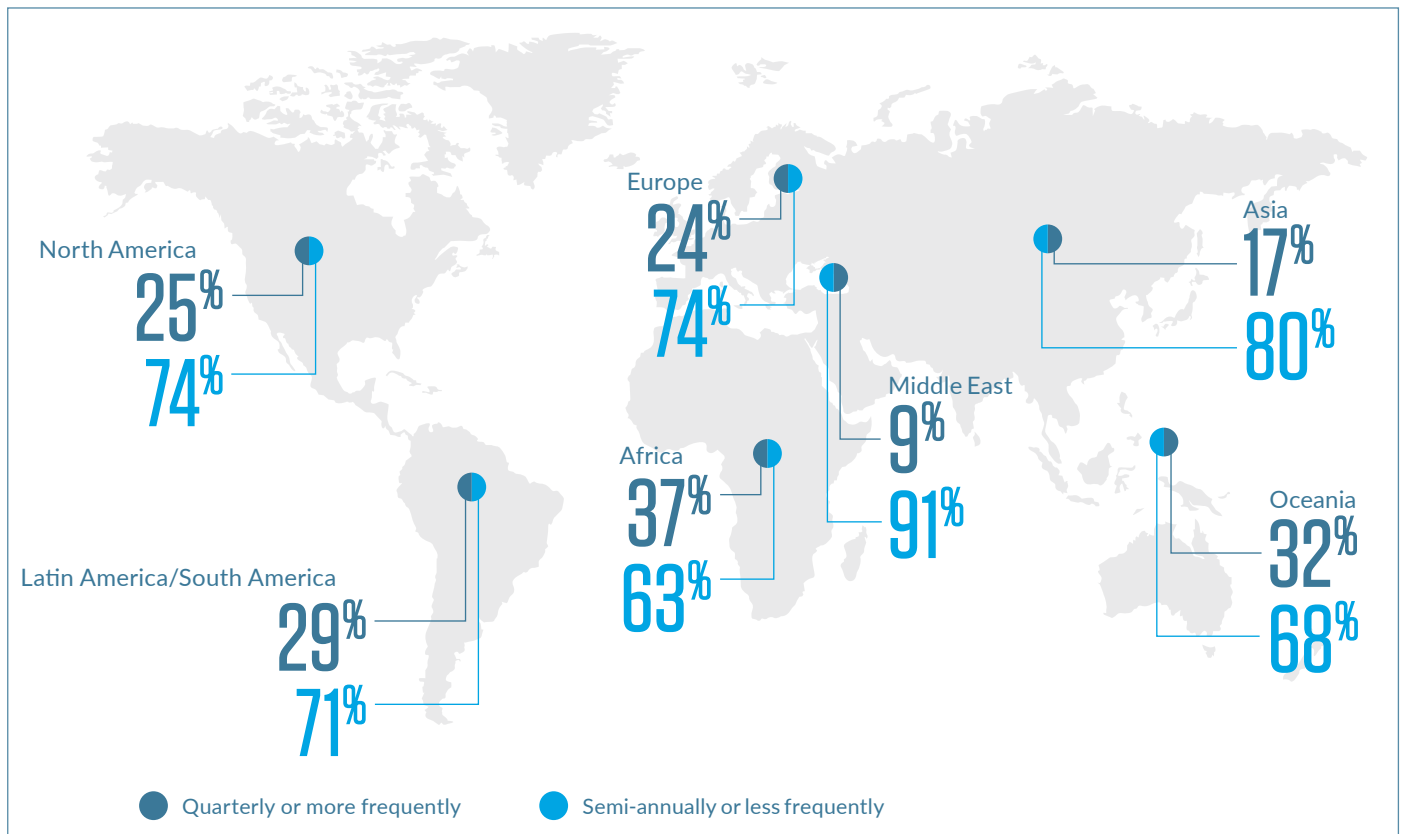
– Chief audit executive, midsize financial services company, North America

- • • **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	YOY Trend
Continually	18%	↑	11%	↑	6%	↓	14%	↑
Monthly	2%	↔	1%	↔	1%	↓	1%	↑
Quarterly	12%	↓	14%	↑	11%	↑	9%	↑
Semi-annually	13%	↑	8%	↔	14%	↑	6%	↓
Annually	52%	↓	60%	↓	60%	↓	61%	↓
Less than annually	2%	↓	5%	↓	6%	↑	8%	↑
Never	1%	↑	1%	↑	2%	↑	1%	↓

Region



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

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
COBIT	71%	52%	63%	85%	77%	62%	79%
COSO	50%	33%	35%	65%	27%	48%	21%
ISO	56%	40%	41%	47%	41%	19%	36%
ITIL	37%	24%	32%	44%	23%	19%	32%
NIST CSF	12%	4%	6%	6%	18%	27%	14%
Basel III	15%	13%	6%	6%	14%	3%	11%



GLOBAL LEADER
Africa

37%

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

A formal qualitative risk assessment is performed annually using a structured risk scorecard covering all IT processes. Informal risk discussions are held throughout the year with IT leaders and staff.

– IT audit director, large insurance company, North America

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 2013 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. Among other drivers for updating the COSO Internal Control Framework, the revised framework reflects the increased relevance of technology, as well as the fact that organizations have an increased reliance upon third parties for operations.

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.³

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.

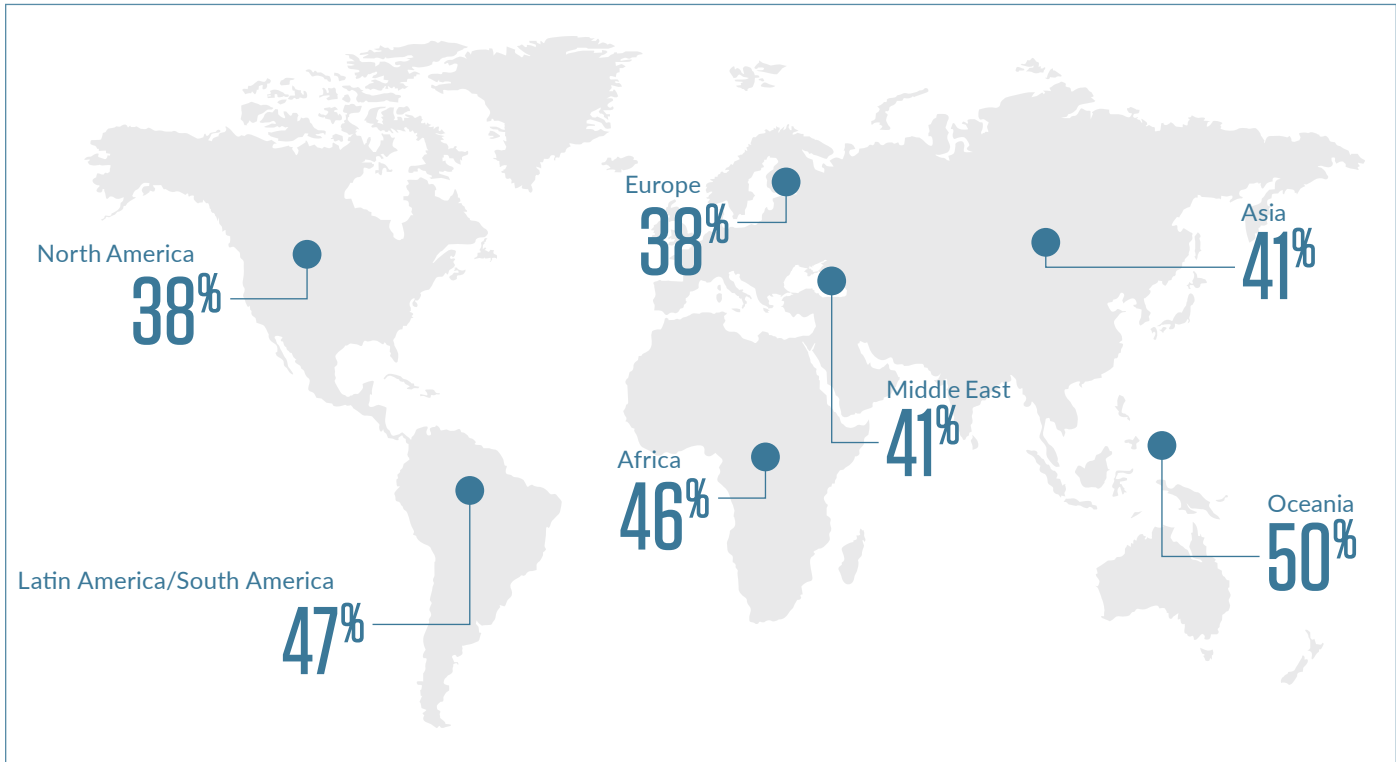
³ AXELOS, www.axelos.com.

- • • If your company has an ERM program, does the IT audit risk framework used for the risk assessment link to the ERM framework?

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		
	Current	2015	2014	Current	2015	2014	Current	2015	2014	Current	2015	2014
Yes	47%	47%	50%	36%	40%	46%	42%	44%	40%	33%	34%	42%

Region (“Yes” responses)



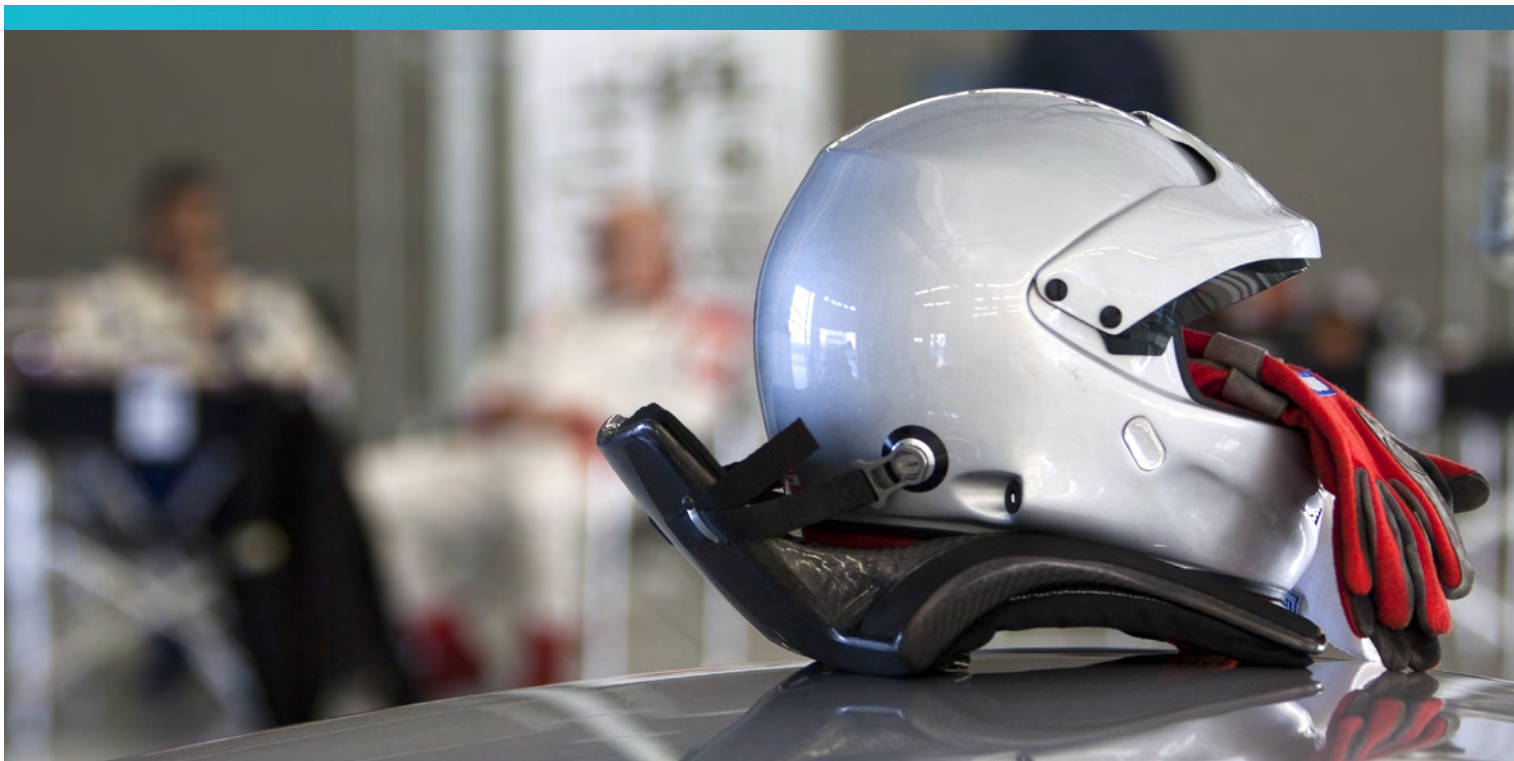
Audit Plan

Not surprisingly, we find that IT audit functions remain highly focused on conducting IT general control audits, application audits, IT process audits and, in many cases, integrated audits. In addition, an increasing number of IT audit functions are responsible for developing and implementing data analysis activities within the internal audit function.

In many regions, one area that ranks on the lower end of the scale in terms of IT audit responsibility is conducting cybersecurity audits. This is surprising given the growing risks globally around security and privacy, together with the fact that it ranks as the top technology challenge for organizations (as we detailed on pages 4-5). A key responsibility for the

IT audit function is to audit the organization's most significant risks. Even if the IT audit group is deferring to other parts of the business for certain cybersecurity activities, internal audit ultimately has a responsibility to the board to audit and report on the organization's most critical risks — cybersecurity, technology, compliance, regulatory, and so forth.

Of note, the reported percentages for vendor audits appear relatively low. Depending on the organization and its specific circumstances, this could represent an opportunity for growth given the number of risks involved with third-party vendors, coupled with the volume of data and projects that organizations are outsourcing to these vendors.



- • • **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
Conducting IT general control audits	89%	78%	87%	86%	80%	85%	88%
Conducting application audits	82%	67%	71%	77%	77%	73%	85%
Conducting IT process audits, e.g., security, privacy, etc.	77%	65%	80%	72%	73%	79%	82%
Conducting IT governance audits	74%	54%	74%	70%	67%	68%	71%
Conducting IT infrastructure audits	70%	61%	70%	79%	67%	70%	59%
Conducting integrated audits	50%	43%	63%	65%	43%	60%	65%
Conducting pre- and post-implementation audits	68%	42%	54%	53%	47%	60%	65%
Collecting and analyzing data analytics	67%	56%	48%	65%	50%	44%	50%
Conducting cybersecurity audits	49%	35%	58%	56%	50%	70%	53%
Testing IT compliance	61%	44%	45%	60%	27%	58%	41%
Providing consultative services	38%	34%	39%	35%	30%	54%	44%
Conducting IT fraud investigations	49%	26%	36%	49%	43%	28%	21%
Performing continuous auditing	45%	24%	23%	56%	27%	29%	38%
Providing external audit support	39%	23%	27%	35%	20%	46%	35%
Conducting vendor audits	38%	30%	34%	33%	27%	33%	21%
Maintaining internal control framework documentation	33%	28%	24%	33%	23%	24%	12%
Testing for IT Sarbanes-Oxley or other related country-specific compliance	12%	16%	18%	33%	0%	54%	9%
Conducting social media audits	21%	10%	20%	26%	23%	24%	32%
PCI DSS	18%	12%	18%	23%	13%	24%	15%

- • • **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

	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	●	●	●	●
Testing for IT Sarbanes-Oxley or other related country-specific compliance	●	●	●	
Conducting application audits	●		●	●
Conducting integrated audits		●		
Collecting and analyzing data analytics				●

Region – Top 3 Audit Areas

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Conducting IT general control audits	●	●	●	●	●	●	
Conducting application audits	●	●	●	●	●		●
Collecting and analyzing data analytics	●	●					●
Conducting integrated audits			●	●			
Testing for IT Sarbanes-Oxley or other related country-specific compliance						●	
Conducting cybersecurity audits						●	
Conducting IT process audits, e.g., security, privacy, etc.							●
Providing consultative services					●		

- • • **What percentage of time does the IT audit function spend on assurance vs. compliance vs. 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	23%	31%	23%	12%	7%	4%
Compliance	4%	18%	24%	28%	17%	9%
Consulting	1%	6%	12%	24%	42%	15%
US\$1 Billion – US\$4.99 billion						
Assurance	18%	29%	24%	15%	8%	6%
Compliance	7%	20%	25%	23%	15%	10%
Consulting	1%	3%	11%	20%	50%	15%
US\$100 Million – US\$999.99 million						
Assurance	21%	32%	23%	10%	9%	5%
Compliance	9%	17%	31%	21%	13%	9%
Consulting	2%	7%	15%	19%	43%	14%
Less than US\$100 million						
Assurance	18%	25%	17%	16%	15%	9%
Compliance	11%	16%	24%	29%	9%	11%
Consulting	7%	5%	11%	23%	36%	18%

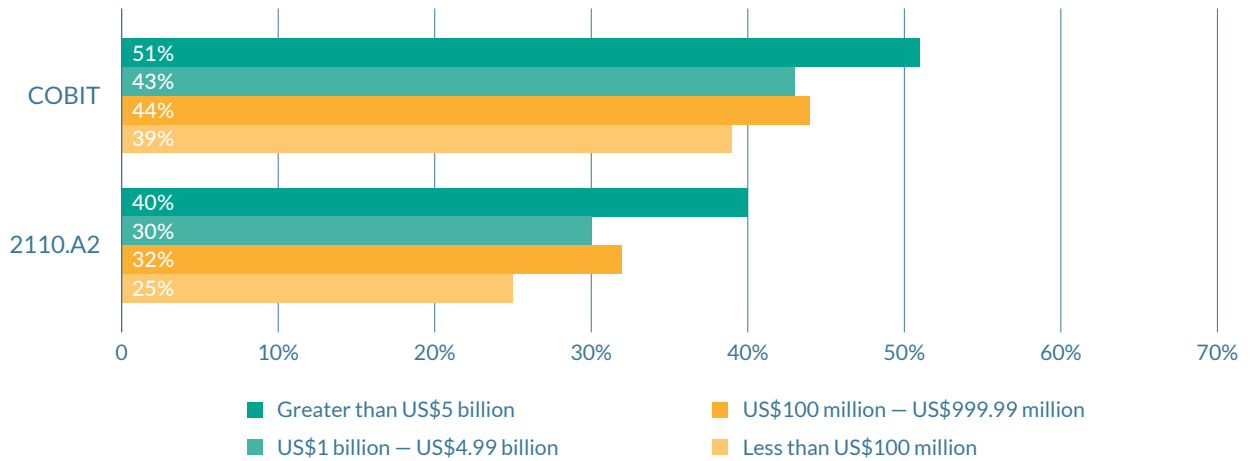
- • • **What percentage of time does the IT audit function spend on assurance vs. compliance vs. consulting activities?**

Region

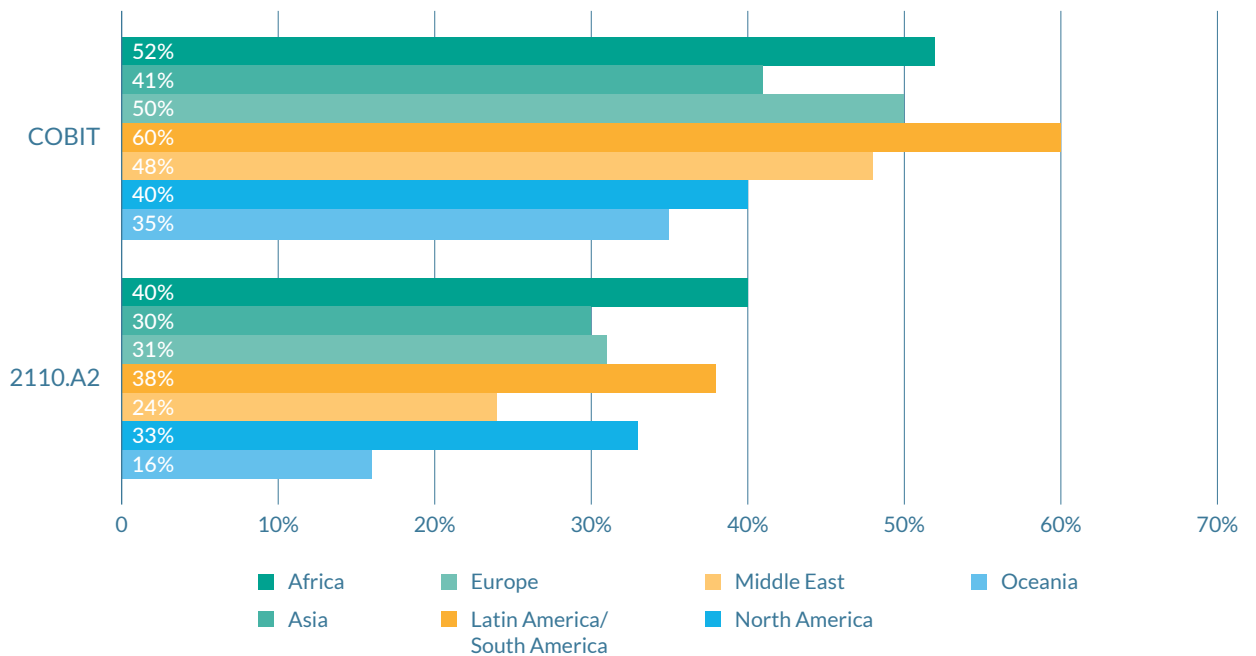
	Greater than 75%	50-75%	25-49%	15-24%	1-14%	None/Don't know
Africa						
Assurance	25%	39%	11%	12%	11%	2%
Compliance	11%	15%	31%	31%	9%	3%
Consulting	7%	3%	11%	23%	42%	14%
Asia						
Assurance	20%	29%	23%	18%	5%	5%
Compliance	6%	17%	29%	30%	11%	7%
Consulting	4%	7%	22%	24%	32%	11%
Europe						
Assurance	24%	26%	20%	11%	11%	8%
Compliance	6%	16%	18%	32%	16%	12%
Consulting	1%	5%	10%	21%	46%	17%
Latin America/South America						
Assurance	15%	38%	18%	15%	12%	2%
Compliance	0%	25%	25%	30%	13%	7%
Consulting	3%	3%	10%	12%	60%	12%
Middle East						
Assurance	28%	28%	14%	17%	3%	10%
Compliance	4%	10%	41%	14%	10%	21%
Consulting	3%	10%	10%	31%	31%	15%
North America						
Assurance	17%	27%	25%	13%	10%	8%
Compliance	9%	19%	27%	22%	13%	10%
Consulting	2%	6%	12%	21%	44%	15%
Oceania						
Assurance	26%	39%	19%	3%	10%	3%
Compliance	6%	13%	13%	23%	35%	10%
Consulting	0%	6%	16%	29%	26%	23%

- • • **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)



Region



- • • 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	14%	8%	35%	27%
US\$1 billion – US\$4.99 billion	12%	14%	33%	20%
US\$100 million – US\$999.99 million	19%	14%	30%	21%
Less than US\$100 million	18%	14%	30%	14%



GLOBAL LEADER
Latin America/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
Africa

40%

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.**

Region

	Yes, within the next year		Yes, but not within the next year	
	COBIT	2110.A2	COBIT	2110.A2
Africa	47%	33%	25%	19%
Asia	13%	11%	36%	23%
Europe	10%	4%	35%	15%
Latin America/South America	25%	20%	44%	16%
Middle East	7%	0%	33%	18%
North America	12%	12%	30%	22%
Oceania	35%	27%	35%	19%

- • • **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	50%
US\$1 billion – US\$4.99 billion	56%
US\$100 million – US\$999.99 million	57%
Less than US\$100 million	56%

- • • **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)**

Region

Africa	74%
Asia	57%
Europe	52%
Latin America/South America	73%
Middle East	66%
North America	48%
Oceania	68%

- • • **When performing IT process assessments, does the IT audit function use ISACA’s COBIT Framework? (“Yes” responses shown below)**

Company Size (Annual Revenue)

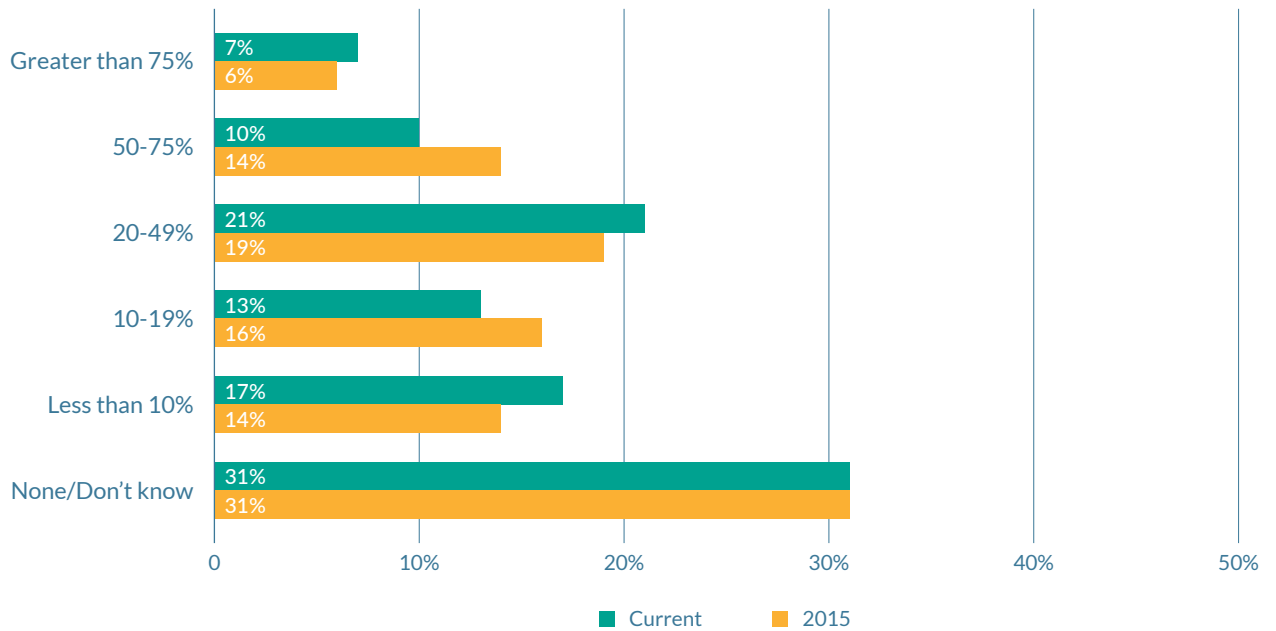
Greater than US\$5 billion	67%
US\$1 billion – US\$4.99 billion	58%
US\$100 million – US\$999.99 million	66%
Less than US\$100 million	55%

Region

Africa	78%
Asia	53%
Europe	60%
Latin America/South America	85%
Middle East	62%
North America	58%
Oceania	77%

- • • **In your most recently completed year of Sarbanes-Oxley (SOX) compliance, what percentage of your organization's IT audit hours are associated with SOX-related activities?**

Base: Respondents required to comply with the U.S. Sarbanes-Oxley Act





GLOBAL LEADER
Africa

74%

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



GLOBAL LEADER
Latin America/South America

85%

of organizations use ISACA's COBIT Framework when performing IT process assessments.

Appendix – Staff Skills and Capabilities

- • • 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	61%	33%	4%	2%
Risk analysis	60%	32%	6%	2%
Process assessment	48%	42%	8%	2%
Data analysis	37%	42%	19%	2%
Accounting/audit	33%	40%	23%	4%
Project management	27%	49%	20%	4%
Consulting	23%	47%	24%	6%
Conversational fluency on IT matters	49%	39%	9%	3%

- • • 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	63%	31%	5%	1%
Report writing	61%	32%	6%	1%
Strategic thinking	53%	36%	9%	2%
Team building	44%	42%	12%	2%
Conflict management	46%	42%	11%	1%
Negotiation	36%	50%	12%	2%
Leadership	36%	51%	11%	2%
Conversational fluency on business matters	47%	44%	7%	2%

- • • **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)

	Current		2015		2014	
	Yes	No	Yes	No	Yes	No
Greater than US\$5 billion	87%	13%	84%	16%	88%	12%
US\$1 billion – US\$4.99 billion	83%	17%	82%	18%	84%	16%
US\$100 million – US\$999.99 million	74%	26%	66%	34%	72%	28%
Less than US\$100 million	67%	33%	64%	36%	64%	36%

- • • **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)

	Current		2015		2014	
	Yes	No	Yes	No	Yes	No
Greater than US\$5 billion	41%	59%	46%	54%	48%	52%
US\$1 billion – US\$4.99 billion	48%	52%	45%	55%	47%	53%
US\$100 million – US\$999.99 million	45%	55%	39%	61%	49%	51%
Less than US\$100 million	45%	55%	40%	60%	43%	57%

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

Company Size (Annual Revenue)

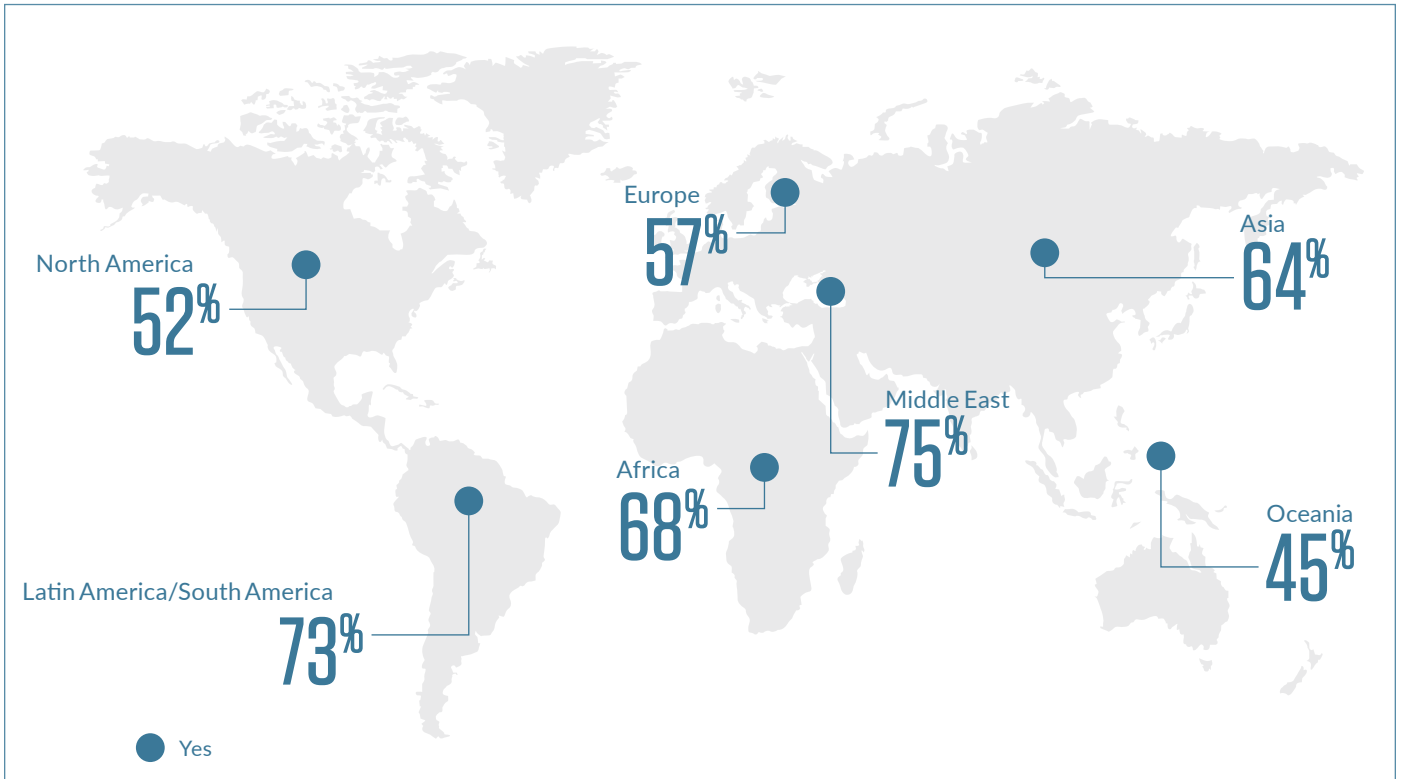
	Greater than US\$5 billion	US\$1 billion – US\$4.99 billion	US\$100 million – US\$999.99 million	Less than US\$100 million
Increase it by more than 20%	7%	9%	8%	8%
Increase it by 11-20%	5%	5%	6%	8%
Increase it by 5-10%	21%	13%	10%	18%
Remain about the same	56%	61%	63%	52%
Reduce it by 5-10%	0%	1%	1%	1%
Reduce it by 11-20%	1%	0%	0%	0%
Reduce it by more than 20%	1%	0%	1%	1%
Don't know	9%	11%	11%	12%

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Increase it by more than 20%	12%	11%	6%	10%	21%	6%	7%
Increase it by 11-20%	3%	15%	7%	0%	4%	5%	6%
Increase it by 5-10%	19%	18%	17%	15%	7%	15%	13%
Remain about the same	47%	44%	58%	55%	54%	63%	65%
Reduce it by 5-10%	0%	0%	0%	0%	0%	1%	3%
Reduce it by 11-20%	1%	0%	1%	3%	0%	1%	0%
Reduce it by more than 20%	0%	1%	2%	2%	0%	0%	0%
Don't know	18%	11%	9%	15%	14%	9%	6%

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

Region



- • • 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%	34%	18%	43%	13%	29%	53%	42%
50-75%	10%	13%	17%	20%	21%	11%	16%
20-49%	10%	19%	4%	13%	29%	10%	6%
10-19%	7%	17%	8%	5%	4%	4%	3%
Less than 10%	29%	21%	17%	28%	4%	4%	3%
None/Don't know	10%	12%	11%	21%	13%	18%	30%

- • • **What other certifications do people within your IT audit department hold? (Multiple responses permitted)**

Region

	Africa	Asia	Europe	Latin America/ South America	Middle East	North America	Oceania
Certified Internal Auditor (CIA)	47%	37%	47%	38%	39%	54%	42%
Certified Public Accountant (CPA)	27%	27%	18%	13%	11%	43%	35%
Certified Information Systems Security Professional (CISSP)	19%	27%	30%	18%	32%	33%	26%
Certified in Risk and Information Systems Control (CRISC)	36%	26%	27%	40%	32%	27%	26%
Certified Information Security Manager (CISM)	40%	31%	32%	38%	29%	22%	29%
Project Management Professional (PMP)	15%	18%	18%	18%	25%	16%	19%
Chartered Certified Accountant (CA)	27%	23%	14%	3%	18%	6%	39%
Certified in the Governance of Enterprise IT (CGEIT)	14%	10%	9%	8%	25%	7%	10%
Certified Information Technology Professional (CITP)	0%	1%	1%	0%	0%	4%	6%

- • • **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	14%	12%	10%	20%
Internal from within internal audit department	5%	8%	8%	9%
Internal from within the IT department	10%	6%	10%	7%
Internal from within another department	4%	5%	2%	9%
External hire	67%	69%	70%	55%

- • • **If colleges/universities are a source for hiring new IT audit staff in your organization, what degrees do you target for this position? (Multiple responses permitted)**

	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	69%	64%	74%	39%
BS in Computer Science	56%	55%	53%	53%
BS in Accounting and Information Systems	78%	36%	42%	47%
BS in Management Information Systems	66%	73%	47%	18%
BS in Information Assurance and/or Auditing	53%	41%	42%	32%
BA in Business Information Systems	50%	41%	32%	24%
BS in Software/Systems Engineering	34%	23%	21%	37%
BS in Computer Engineering Technology	34%	27%	21%	16%

- • • **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	7.2	7.0	6.4	6.0
IT audit manager	5.8	5.9	5.7	5.5
IT audit staff	3.7	4.0	3.9	3.8

- • • **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	49.2	40.8	38.8	42.4
IT audit manager	53.1	49.7	43.7	51.0
IT audit staff	54.6	45.9	45.8	48.2

- • • **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	35%	47%	52%
Self-study	30%	41%	48%
External web-based	27%	37%	41%
Internal classroom study	12%	17%	26%

- • • **What is the primary destination of IT auditors who leave the IT audit department? (Multiple responses permitted)**

	IT Audit Director	IT Audit Manager	IT Audit Staff
Move internally into another position within the internal audit function	7%	10%	12%
Move internally into another department	17%	22%	23%
Join another organization as an IT auditor	15%	24%	36%
Join another organization in another position	16%	18%	22%
None/Don't know	56%	41%	32%

Survey Demographics

- • • **Position**

Chief Audit Executive (or equivalent)	10%
Other C-Suite Executive	1%
IT Audit Director	9%
Audit Director	5%
IT Audit Manager	27%
Audit Manager	9%
IT Audit Staff	23%
Audit Staff	6%
Other	10%

• • • **Industry**

Financial Services	26%
Government/Education/Not-for-Profit	14%
Professional Services	8%
Insurance	6%
Manufacturing/Engineering	6%
Technology	5%
Technology Services Consulting	4%
Healthcare Provider	3%
Telecommunications	3%
Retail	3%
Energy	3%
Consumer Products	3%
Utility	2%
Transportation	2%
Healthcare Payer	1%
Distribution and Transportation	1%
Media	1%
Life Sciences/Biotechnology	1%
Hospitality	1%
Other	7%

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

\$20 billion or greater	13%
\$10 billion to \$19.99 billion	6%
\$5 billion to \$9.99 billion	8%
\$1 billion to \$4.99 billion	20%
\$500 million to \$999.99 million	11%
\$100 million to \$499.99 million	14%
Less than \$100 million	28%

- • • **Type of Organization**

Publicly traded	37%
Private	36%
Government	17%
Not-for-profit	6%
Other	4%

- • • **Organization Headquarters**

North America	47%
Europe	19%
Asia	12%
Africa	11%
Latin America	5%
Oceania	3%
Middle East	3%

- • • **IT Audit Department Headquarters**

North America	46%
Europe	17%
Asia	14%
Africa	12%
Latin America	5%
Oceania	3%
Middle East	3%

- • • **Audit Department Headcount**

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

0-4	21%
5-9	21%
10-19	19%
20-29	9%
30+	30%

- • • **Total Number of Full-Time Auditors**

0	8%
1	24%
2	16%
3	11%
4	7%
5	5%
6-10	12%
More than 10	17%

ABOUT PROTIVITI

Protiviti is a global consulting firm that delivers deep expertise, objective insights, a tailored approach and unparalleled collaboration to help leaders confidently face the future. Protiviti and our independently owned Member Firms provide consulting solutions in finance, technology, operations, data, analytics, governance, risk and internal audit to our clients through our network of more than 70 offices in over 20 countries.

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