Agenda

Deloitte’s 2018 Global Chief Audit Executive research survey

Hot Topics

Data Analytics

Internal Audit 3.0 & Agile
Deloitte’s 2018 Global Chief Audit Executive research survey
The following are the key findings of our 2018 Global CAE research survey:

<table>
<thead>
<tr>
<th>Impact and Influence</th>
<th>Resourcing Models</th>
<th>RPA</th>
<th>KPIs</th>
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<tbody>
<tr>
<td>Internal Audit's</td>
<td>Resourcing models are evolving—but must evolve faster.</td>
<td>RPA is making inroads. Yet, no Irish Internal Audit functions are using RPA as an enabling technology.</td>
<td>KPIs are used by most groups, but need updating.</td>
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<thead>
<tr>
<th>Challenges</th>
<th>Agile Practices</th>
<th>Cyber Risk Assessments</th>
<th>Organisational Culture Audits</th>
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<tbody>
<tr>
<td>Key challenges facing Internal Audit include a shortage of new skills, while analytics is the highest priority.</td>
<td>Agile practices are gaining momentum.</td>
<td>Cyber risk assessments are conducted by only about half of Internal Audit groups.</td>
<td>Organisational culture audits are conducted by less than 25 percent by Irish Internal Audit leaders.</td>
</tr>
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</table>
Over the last 2 years, Chief Audit Executives (CAEs) feel the Internal Audit (IA) function’s impact and influence within organizations have increased—but there’s still room for improvement. Locally we are marginally higher than global results where 6% still believe they have “little to none” or “not sure”.

While organisations are generally aware of the Internal Audit function’s capabilities and services...

Extent to which the broader organisation understands what the Internal Audit function does is positive.
Locally we outperform our global peers with only 46% Very aware and 51% Somewhat aware.
Internal Audit’s impact and influence have strengthened

**Missing skills present a key challenge...**
The most often-cited key challenge to making more of an impact within the organisation is missing skills or talent, with budget cited second most often.

**Key challenges faced by the Internal Audit function in making an impact**

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Missing key skills and/or talent</td>
<td>37%</td>
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<tr>
<td>Insufficient budget</td>
<td>27%</td>
</tr>
<tr>
<td>Limited advisory activities performed</td>
<td>26%</td>
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<tr>
<td>Narrow scope of assurance activities performed</td>
<td>20%</td>
</tr>
<tr>
<td>Lack of visibility/authority due to position/reporting relationship</td>
<td>18%</td>
</tr>
<tr>
<td>Other</td>
<td>23%</td>
</tr>
<tr>
<td>Not sure</td>
<td>7%</td>
</tr>
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</table>

**...while implementing analytics is the leading priority.**
Ireland respondents broadly align to the global perspective and see their function’s leading strategic priorities over the next three to five years as implementing Internal Audit analytics, strengthening their talent pipelines, partnering with the business, and enhancing quality. However implementing RPA and AI is considerably lower at 14% v 30% globally.
Resourcing models must evolve faster

Interestingly, Irish respondents (77% compared to 46% globally) believe that an accountancy qualification is one of the most competencies sought by the Internal Audit Function. Apart from seeking qualified accountants (CPAs or equivalent) and CIAs, Internal Audit recruitment efforts tend to target certified IT auditors and experts in analytics—specialists in high demand. Not coincidentally, the most commonly cited reason for using an alternative resourcing model is specialist skills.

Internal Audit groups are also seeking “other” competencies—cited by nearly one in five—which may include polymaths (people who combine diverse skill sets) and “purple people” (those who combine sophisticated data analysis skills or “red skills,” with communication skills, business acumen, and political sense or “blue skills”), both of whom are becoming increasingly useful in Internal Audit.

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[Diagram showing competencies and designations most sought out by the Internal Audit function.]

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Resourcing models must evolve faster

Progress has been made
In 2016, we asked CAEs about specific resourcing models they expected to use over the next three to five years. Progress since the last survey has exceeded CAE expectations when considering the use of external resources, such as co-sourcing and outsourcing. Meanwhile, nearly one in four Internal Audit groups still do not use alternative resourcing models, despite citing challenges in accessing the skills and talent they require.

Almost 80% of global IA functions using an alternative resourcing model use it to access specialized skills, 51% stated it provided capacity and 9% cited it provided access to lower cost resources.
Use of advanced analytics is up, but there’s still far to go

While the majority of Internal Audit groups still typically use basic analytics (68% v 56% globally) and data querying and manipulation (82% v 84% globally)

Since our 2016 survey use of advanced analytics has tripled from 7% to 21% globally but locally there is room to improve as this is still only 9%

However, 64% of respondents indicated that implementing IA analytics is their key strategic priority over the next 3-5 years.

The use of analytics is primarily deployed during fieldwork at 73%, followed by scoping at 59%, broadly in line with global results.

Types of analytics techniques ‘typically’ in use within the Internal Audit function

<table>
<thead>
<tr>
<th>Type of Analytics</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Data query and manipulation</td>
<td>82%</td>
</tr>
<tr>
<td>Basic analytics</td>
<td>68%</td>
</tr>
<tr>
<td>None</td>
<td>14%</td>
</tr>
<tr>
<td>Advanced analytics</td>
<td>9%</td>
</tr>
<tr>
<td>Robotics and rules-based systems</td>
<td>5%</td>
</tr>
<tr>
<td>Cognitive intelligence</td>
<td>0%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
</tr>
<tr>
<td>Not sure</td>
<td>0%</td>
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Enhancing the process—Agile Internal Audit

Adopting Agile Internal Audit methods provides ways of enhancing flexibility in audit planning, execution, and reporting.

Locally 59% of Internal Audit groups are either using Agile Internal Audit methods or are considering adopting them which is consistent with global peers at 56%.

Internal Audit functions that embrace this methodology enjoy benefits such as:

- more timely audits,
- streamlined documentation,
- engaged clients,
- empowered Internal Audit teams, and
- insightful results.

Adoption of agile approach by the Internal Audit function*

*Figures do not add to 100% due to rounding.
Robotic Process Automation (RPA) is making inroads

RPA has the ability to remove the burden of performing repetitive rules-based tasks. Among other things, it can help Internal Auditors fill forms, make calculations, and extract structured data from documents.

The Irish result shows that no respondents are already using RPA.

Internal Audit groups will need to assist the broader organisation in understanding where RPA may be practically applied.

Use of RPA as an enabling technology in Internal Audit*

- 68% Not considering using and/or have not researched
- 14% Considering using and/or are researching
- 18% Not sure
Only half of Internal Audit groups are assessing cyber risks

As applications, digitized processes, Internet of Things (IoT) devices, and use of cloud services expand within the enterprise, cyber risks increase dramatically.

Yet only about half of Internal Audit groups are conducting cyber risk assessments, while about four in five devote less than 10% of their audit plans to cyber risks.

Conducted a cyber-focused risk assessment

- 51% Yes
- 45% No
- 4% Not sure

Percentage of Internal Audit plan related to cyber risk

- 17% More than 10%
- 17% None
- 31% Less than 5%
- 31% Between 5-9%
- 4% Not sure

Expanding coverage of cyber risks—a high-profile issue for senior executives and boards—can greatly enhance impact and influence.
Internal Audit is considering culture more frequently—but not frequently enough

Globally about 70% of IA groups are not conducting assessments of organizational culture.

Among those that are, many are in Financial Services, given that financial services regulators often expect Internal Audit to review culture.

Organisations in every industry face risks arising from culture breakdowns, as well as the need to build a culture that will enable the organization to implement its strategies and achieve its goals yet only 23% of local internal Audit functions have assessed culture in the past 3 years.

Formally evaluated the broader organization’s culture within the past 3 years*

- 23% Yes
- 77% No
Toward the function of the future

Here are key considerations which can enable you to become more innovative and, as a result, more impactful and influential within your organizations:

1. Accelerate adoption of advanced analytics
2. Automate core assurance
3. Apply Agile Internal Audit principles
4. Innovate to “future proof” the function
5. Consider next-gen resourcing models to secure needed talent and skills
6. Advise and anticipate—don’t just provide assurance
Toward the function of the future

Assure

Advise

Anticipate
Hot Topics
Crisis Management
Actively protecting brand value and reputation

Why is it important?

• Crises present the biggest and growing threats to corporate value and executive reputation.
• Reputation, strategic interests, bottom line, and even their existence are at risk

Potential Challenges?

• Senior audit sponsor
  ◦ Lack of an obvious C-suite sponsor
• Lack of transparency
  ◦ Areas of weakness may not want to share details of failings

What should you be doing?

• Review
  – The process and controls set out in the firm’s crisis management policy
  – The lessons learned
  – The progress against remedial activity
• Audit Crisis Management capabilities allowing you to:
  – Identify vulnerabilities in the lifecycle
  – Benchmark against existing best practice
  – Make recommendations
Cyber

Shielding digital assets

**Why is it important?**

- Cyber risk remains a **key priority** for all stakeholders
- Identified as ‘**maybe the single most important**’ risk
- Expectations of FS regulators in European jurisdictions:
  - **Develop and communicate** clearer standards and expectations
  - **Formalise incident identification and breach reporting**
  - Place increased pressure on Boards to **demonstrate ability to provide effective challenge**
  - Focus on **risk and control frameworks**

**Potential Challenges?**

- **Flexibility**
  - Executives need to anticipate emerging threats analysis and cyber programmes
- **Timeliness**
  - Many cyber initiatives have an objective of **improving cyber maturity** over a period of years
  - IA should focus on their responsibility to provide the Board with **timely insight**
- **Resourcing**
  - IA may find **resourcing Cyber audits** with staff who have had exposure to Cyber specific risks difficult

**What should you be doing?**

- Consider a shift in focus to “**recoverability**”
- Assessing whether the organisation has an **understanding of the digital**
- Challenging management on their **ability to understand**
- **Utilising new technologies**
Cloud

Backing up data safely, securely and efficiently

Why is it important?

• There has been a rapid growth of cloud services and “cloud first” strategies.
• Internal Audit’s ability to understand the impact of cloud services and migrating data to the cloud is critical.

What should you be doing?

• Varies depending on the level of cloud adoption
• If limited cloud footprint, Internal Audit should focus on
  – Appropriateness of strategy
  – Capability of existing risk management functions
• In more mature cloud environments, Internal Audit should perform reviews to assess:
  – The effectiveness of controls
  – The degree to which stated benefits of cloud migrations have been realised

Potential Challenges?

• Resourcing
  – The limited availability of resources
• The shared responsibility model of controls and the technology that supports cloud environments is required to perform robust reviews of cloud controls
• Cloud migration
  – Involvement in initial cloud migration project setup
Artificial Intelligence and Robotic Process Automation

Evolving business process efficiency

**Why is it important?**

- Organisations are operating in an increasingly ‘digital’ environment.
- Need for a robust and reliable control environment.
- **Artificial Intelligence** makes use of machine learning, visual recognition and natural language processing techniques, with advanced algorithms offering the ability to analyse data in an “intelligent” way.

**Potential Challenges?**

- **Auditability**
  - AI solutions are developed to ‘learn’ and evolve making it inherently challenging to completely decode their decision processing layers
- **Skillset**
  - Potential lack of sufficient in-house skills
- **Full participation**
  - A shift to using a “sandbox” environment with involvement from IA

**What should you be doing?**

- Mapping AI & automation assets against the audit universe
- Establishing a framework and methodology for auditing technologies
- Continue to monitor global regulatory developments where relevant
Culture
A powerful competitive advantage

Why is it important?

- Where culture aligns to strategy this can provide a competitive advance
- Can be transformed through understanding
- Increasingly seen as a priority measure for Boards

What should you be doing?

- There are a variety of ways to audit Culture including:
  - Performing a cultural assessment for each and every audit on the plan
  - Align IA’s work to existing culture framework
  - Delivery of findings aligned to business’ strategic objectives

Potential Challenges?

Subjectivity is an inherent challenge

- **Audit approach**
  - Need to develop cost effective and efficient approach to audit

- **Audit skills**
  - Requires heightened self-awareness

- **Benchmarking**
  - IA will need to access an appropriate benchmark to compare
Oversight of 3rd parties

Identifying and Mitigating third party risk

Why is it important?

- High profile cases where third party supplier failure have caused either monetary loss or reputational damage
- Organisations continue to increasingly outsource activities

What should you be doing?

Consider if the firm has an adequate Third Party Risk Management (TPRM) framework embedded across the business and should examine this from both a design and an operating effectiveness perspective.

Potential Challenges?

Organisations will have to decide on implementing either a centralised or decentralised TPR operating model.

- Inconsistency
  - A decentralised model may result in inconsistent application

- Complexity
  - Firms may have partially or fully outsourced the management of TPM/TPRM to external providers.
  - IA will face challenges in ensuring they have the technical skills

**Design effectiveness**

Assess if the following factors are designed adequately:
- Governance framework
- TPR framework and associated policies
- Allocation of roles and responsibilities
- Processes and controls to manage TPRs
- Tools and technologies
- Appropriateness of metrics

**Operating effectiveness**

Assess control performance in the following areas:
- Risk identification and assessment
- Third Party selection
- Contract execution
- Role and responsibility allocation
- Ongoing monitoring and reporting
- Assessment appraisal
- Contract termination and exit or renewal management
Data Privacy and GDPR
Continuous effort to be fully compliant

Why is it important?

• Continues to be a topic of ongoing discussion by Management, Boards, and Internal Audit (IA) alike.
• Many organisations had “risk-accepted” not being fully compliant with the legislation.
• The challenge for organisations is to:
  − Undertake the remedial activities required to become fully compliant with GDPR, and
  − Transition their ongoing projects into BAU activities once firms have reached a position of full compliance.

Potential Challenges?

• Scoping
  − Many organisations have not yet fully scoped projects and resources needed
  − Many are unsure how large the gaps between current state and full compliance are

• BAU phase
  − The transition from project to BAU is often complicated

What should you be doing?

• Consider the gaps between the current state and full compliance
• Challenge how management aims to ensure ongoing compliance
• IA should challenge management and structure an audit plan focussing appropriately on this
• Role to play in ongoing monitoring through audits
Data Analytics
Objectives

Provide you with examples to assist with identifying areas where analytics can be applied in your business

Understand what needs to be done differently when utilising data analytics within reviews

Demonstrate benefits of using data analytics to perform more robust audit engagements

Demonstrate data analytics techniques through a deep dive exercise
The age of data has arrived and it's essential for organisations to embrace a new approach to their audit processes. Conventional audit techniques cannot keep up with the growth of available data and this increase means there are more variables to review, more outliers to identify, and more trends and patterns to analyse.

With new opportunities and risks around every corner, making the right decision at the right time has never been more important. By embedding analytics in every phase of the audit process, Internal Audit can help the business navigate a world that has become vastly more volatile, uncertain, and complex. We call this approach to embedding analytics within internal audits as “insights-driven auditing”.
Benefits of insights-driven audits

- Enhance traditional auditing techniques
- Generate valuable new insights
- Provide greater levels of assurance
- Greater focus on high risk areas
- Analyse 100% of populations and test samples based on exceptions
- Shifts the focus of IA from primarily compliance to compliance and business improvement
Hindsight, Insight, Foresight
Analytics involves a range of approaches and solutions, from looking backward and evaluating what happened in the past, to forward-looking scenario planning and predictive modelling.

- **Optimization** “What’s the best that can happen?”
- **Predictive Modelling** “What will happen next?”
- **Randomized testing** – “What happens if we try this?”
- **Statistical analysis** “Why is this happening?”
- **Exceptions/Alerts** “What actions are needed?”
- **Query / drill downs** “What exactly is the problem?”
- **Ad-hoc reports** “How many, how often, where?”
- **Standard reports** “Why did it happen”
Embedding Analytics
Each phase of the audit lifecycle will benefit from analytics
What Our Clients Say

Current deployment of analytics

63% 46% 31% 26% 18% 18% 14% 4%

Fieldwork Scoping Annual Planning Continuous Auditing Reporting Continuous Risk... Don’t Use Not Sure

Source: Deloitte 2018 Global IA Research Study
• % of respondents out of 1,100 Heads of Internal Audit across 40 countries.

Capabilities of the Internal Audit function’s analytics team

Advanced
Standard methods and training, using advanced tools and techniques
7%

Repeatable
Some standardisation of methods, some repeatable analytics
24%

Beginning
Ad-hoc analytics with limited repeatable solutions, basic tools (e.g., spreadsheets)
55%

No capabilities
11%

Not sure!
3%

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What “Good” Looks Like: Internal Audit Analytics

More and more frequently, organisations are harnessing the power of analytics through the development of more embedded analytic capabilities within their assurance landscape to enable increased continuous monitoring of risks.

The process of integrating analytics into the business is one of continuous improvement. The figure below represents an illustrative maturity model for Internal Audit analytics.
Analytics Project Typical Phases

Source, Load and Structure Data → Data Validation → Develop and Run Analytics → Insights Generation and Report
Embedding analytics: Refreshing the traditional audit approach

**Traditional audit methodology**

- Confirm audit objectives / scope
- Develop enhanced scope
- Audit commences
- Fieldwork and testing
- Communicate audit results

**Integrated data analytic steps**

- Identify potential analytics and develop analytics work plan
- Source, structure and load data
- Analyse and validate data
- Refine analytics work plan based on data availability
- Audit sampling of results, refine and iterate hypothesis
- Visualize and present board results

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What Data Analytics tools and resources are available?

<table>
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<th>Overview</th>
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<tr>
<td>Microsoft Excel / Access</td>
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<td>ACL / IDEA</td>
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<tr>
<td>Microsoft SQL Server</td>
</tr>
<tr>
<td>R, Python, Automation Anywhere</td>
</tr>
<tr>
<td>Tableau / Qlikview / Power BI</td>
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<tr>
<td>Hadoop</td>
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Big Data Platform
Demo – Procurement Analytics
Analytics Engine
Developing a scalable analytics engine for detailed data interrogation
Tableau – Procurement Analytics
Internal Audit 3.0 & Agile
The IA profession has not been forced to innovate for decades

- **1941**: The birth of modern internal auditing with the establishment of the IIA
- **1992**: COSO Integrated Control Framework
- **2002**: Sarbanes Oxley
- **2018**: Cyber Risk, Integrated Audits and SME support
Organisations face increasing uncertainties

- The speed of change is unprecedented
- Organisations are adopting new technologies
- The breadth of risk continues to expand
- Failure to act will see risk and change outpace Internal Audit
Stakeholders want and need more from Internal Audit

Assure

Advise

Anticipate
Assurance needs are broad...

- Core processes
- Decision governance
- 3 LoD
- Truly greatest risks
- Behaviours
- Digital technologies
Assurance needs are broad...

Only 52% of CAEs indicated that their Internal Audit function has conducted a cyber-focused risk assessment to assess the organisation’s potential cyber exposures.

Only 28% of CAEs indicated that their Internal Audit function has formally evaluated the broader organisation’s culture in the past 3-5 years.

Truly greatest risks

Behaviours
... but Internal Audit’s role as an advisor is key to maximising the function’s value

- Control effectiveness
- During change
- 3 lines of defence enhancements
- Assurance by design
... although most of Internal Audit’s activities currently undertaken relate to assurance

Mostly assurance, some advisory: 63%
Even balance of assurance and advisory: 21%
Only assurance: 10%
Only / mostly advisory, some assurance: 4%
Unsure / Other: 2%

Meanwhile, 59% of CAEs indicated that the proportion of advisory services undertaken by their Internal Audit function will increase over the coming 3-5 years.

Source: Deloitte’s 2018 Global Chief Audit Executive Research Survey
Internal Audit can also help the business anticipate risk

- Risk Sensing
- Risk Learning

28% of CAEs believe that risk anticipation or use of cognitive technologies will be key innovative developments impacting Internal Audit over the coming 3 to 5 years.
Agile Internal Audit
What is Agile?

Agile is a way of approaching work based on *iterative development*, where requirements and solutions evolve through *collaboration* between *self-organising, cross-functional* teams, all focused on delivering the most important business *value* and *continually improving*. 

**Scrum**

**Kanban**

**Lean**

**Dynamic Systems Development Method (DSDM)**

**XP**

**Adaptive Software Development**
Agile has revolutionised information technology

**Agile’s success**

- Increased **success rates** in software development
- Improved **quality and speed** to market
- Boosted the **motivation and productivity** of teams

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**Waterfall**

- Features
- Quality
- Time
- Cost

**Agile**

- Time
- Cost
- Quality
- Features

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- **Fixed**
- **Variable**
Agile is a different way of working...
Applying Agile to Internal Audit

Traditional Internal Audit

<table>
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<th>PLANNING</th>
<th>FIELDWORK</th>
<th>REVIEW</th>
<th>REPORTING</th>
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</table>

- **COMMON PAIN POINTS**
  - Time consuming, upfront detailed planning phase
  - Scope of fieldwork is fixed
  - Quality review towards end of fieldwork
  - Numerous, disparate requests
  - Uncertainty until draft report
  - Value not delivered until late in the process
  - Report review time and revisions
Applying Agile to Internal Audit

Agile Internal Audit

Sprint 0
- Planning
- Fieldwork
- Review
- Report

Sprint 1
- Planning
- Fieldwork
- Review
- Report

Sprint 2
- Planning
- Fieldwork
- Review
- Report

Sprint 3
- Planning
- Fieldwork
- Review
- Report

POV

Report
Agile focuses on value and delivers it sooner and more frequently.
Agile Internal Audit “3-4-5”

Roles
- Product Owner
- Scrum Master
- Scrum Team

Ceremonies
- Daily Scrum
- Sprint Planning
- Sprint Closing
- Retrospective

Artifacts
- Audit Canvas
- Audit Backlog
- Workpapers
- Sprint POV
- Final Report
Characteristics of Agile IA:

- Increased Communication
- Frequent deliveries of results & Insights
- Teamwork & Collaboration
- Short Time-Boxed Iterations
- Flexible Audit Plan
- Point of view – meaningful insights
- Empowered and Cross-Functional Teams
- Adaptability

Agile IA is characterised by...
...which create greater value and impact

**BETTER**
- Value to User
- Quality
- Team Work
- Decisions

**FASTER**
- Time to Value
- Productivity
- Adaptation
- Reduced Waste

**HAPPIER**
- Stakeholders
- Teams
- Individuals
- Sustainable
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