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Journey to brilliance: unleashing the power of analytics for internal audit

Internal audit digital and analytics survey 2023

MAKING AN IMPACT THAT MATTERS since 1845

Contents

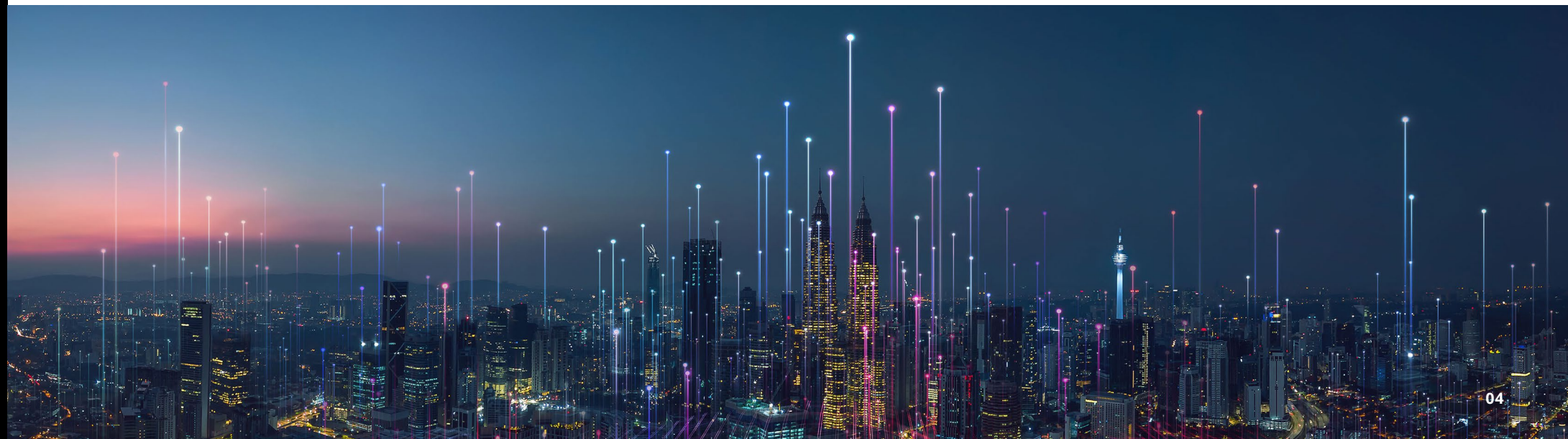
Foreword

We are pleased to welcome you to our **2023 Internal Audit Analytics survey.**

We surveyed organisations across industry sectors to understand future vision and strategy for Internal Audit (IA) Analytics. We focused on challenges and opportunities as well as key learnings from organisational adoption, and skills development to tooling.

The survey is based on an online questionnaire together with qualitative insights from interviews with IA Analytics leaders, practitioners and our own experiences supporting functions in their digital transformation journeys.

We hope you find the content thought-provoking and helpful as you continue this journey. We would like to thank our clients who took part in this survey. Your willingness to share challenges and success stories was insightful, inspiring, and greatly appreciated.



Executive summary

Our 2021 survey generated interesting insights on the adoption of technology and analytics. It highlighted where functions were struggling but making notable progress.

In the past two years, we've seen consistent growth across functions of all sizes, as well as, a real ambition to develop analytics capabilities. For example, large functions have placed significant focus on developing digital* assets while broadening the complexity and depth of analytics application across the Internal Audit lifecycle.

Small and medium-sized functions have comparatively fewer skills and resources at their disposal, but have still made progress in many areas. We've also seen many move up the maturity curve from "defined" to "mature."

We feel encouraged to see such a strong focus on people, with more and more functions taking a people-centric approach and investing heavily in training programs. When coupled with the drive to innovate, this has made a positive impact on the mindset of functions. We believe this is a key component to success.

* see Appendix A

Current use of analytics

In this section we cover:

- Driving factors for the use of analytics.
- Current use of tools and technologies.
- Application of analytics across the audit lifecycle.
- Key risks that functions are analysing.

Key insights:

- Improving the effectiveness of the function through greater coverage is still a priority for all functions remaining at the top of the list in 2021 and 2023.
- Growing emphasis for medium functions to gain better access to data. This has doubled from 40% in 2021 to 85% in 2023.
- The use of analytics in fieldwork continues to be widespread, with 95% in 2023 of respondents using analytics in fieldwork, compared to 96% in 2021.

Barriers and Challenges

We consider the areas with commonplace struggles for functions across all industries. We'll also focus on current data access models and how functions are addressing this critical component of data analysis.

Key insights:

- 69% of functions report access to appropriate data as being their biggest barrier, followed by skills and knowledge and poor data quality.
- Internal data is frequently used, with 98% of functions using structured internal data and 64% using unstructured internal data.
- Data quality still remains an ongoing issue. This has stalled – or even halted – progress for some functions.

Talent and resourcing

People and top-flight teams are a key component in providing value-adding, quality data analytics for Internal Audit.

This section looks at how functions structure their teams, provide access to skills, and manage the team mindset to make analytics a success.

Key insights:

- The centralised operating model is less prevalent than before (39% in 2023). There is a slight increase in the hybrid approach (45%) with the decentralised model doubling from 7% in 2021 to 15% in 2023.
- The percentage of functions with a dedicated analytics team remains relatively unchanged at 54%.
- Many functions have continued to invest in analytics training. This ranges from classroom courses and seminars to provision of licenses for online training platforms enabling self-paced learning.

Analytics Maturity

Functions are increasingly seeking opportunities to improve their use of analytics. This section presents our view on the current levels of maturity in functions across industries.

Key insights:

- The maturity curve has shifted to the right. This shows a gradual increase in overall maturity across respondents with more functions moving from lower maturity ratings into the more mature categories.
- This growth is mostly attributed to smaller functions catching up with the larger ones in terms of maturity. This is in line with our 2021 prediction of the upcoming "democratisation" of analytics in the Internal Audit space due to lower barriers to entry.

Future priorities

This section explores past and current priority areas for functions and where we see the need for functions to accelerate and embrace innovation.

Key insights:

- The vast majority of respondents stated that they have a clear vision for the future and a strategy to further develop capabilities in line with the overall Audit function's strategy and priorities. This remains unchanged from 2021.
- Small functions are still placing high focus on expanding the use of analytics in fieldwork – as reported in 2021.
- Large functions aren't placing future efforts on fieldwork at all. It's likely that analytics is consistently applied to this area already. Large functions have also cited automated Audit Committee reporting as their next area of focus.

Purpose Driven, Digitally Powered

Our Internal Audit 4.0 (IA4.0) publication places a strong emphasis on the role of digital within a function. While the goal is not digital itself, it plays a large role in what it allows functions to do and the capabilities it enables.

This section collates our views on IA4.0, digital enablement, and the role of analytics and technology to build a forward-looking Internal Audit function.

Current use of analytics

In this section we cover:

- The driving factors behind the use of analytics and what functions want to achieve.
- Current use of tools and technologies.
- The level of application of analytics across the audit lifecycle and how this ranges in complexity from simple to advanced techniques.
- Key risks being analysed by functions.

Key takeaways:

- Improving the function's effectiveness through greater coverage is still a top focus for all functions remaining top of the list in 2021 and 2023.
- An increased priority for medium functions to gain better access to data. This has doubled from 40% in 2021 to 85% in 2023.
- The use of analytics in fieldwork continues to be widespread. In 2023, 95% of respondents used analytics in fieldwork, compared with 96% in 2021. This is followed closely by individual audit planning at 70% in 2023. We were also pleased to see the use of analytics in risk assessment more than double from 30% in 2021 to 70% in 2023.
- Results for 2023 are mostly unchanged from 2021 for the types of tools utilised. All respondents, who currently perform analytics, are utilising descriptive analytics. This is closely followed by diagnostic analytics at 61%. Cognitive analytics remains mostly unexplored at 14% – with only the more advanced functions citing capability to perform more complex analytics.
- Visualisation tools remain popular in many functions, with 91% of respondents using tools such as Power BI and Tableau.

Key driving factors

In our last survey, participants stated that the key driving factor behind the use of analytics was **improving the effectiveness of the function through greater assurance coverage**. This was followed by **identifying outliers and unusual items for focus**. Another key driving factor for many functions was **improving auditee engagement through richer insights and greater visualisations**. Two years on, not much as changed. The same three driving factors are among the top priorities for all functions – regardless of size. However, we did notice a shift in some of the other priority areas. The most notable were:

Improving the effectiveness of the function through greater coverage is still a top focus for all functions remaining top of the list in 2021 and 2023.

Gaining access to better data more than doubled from 40% in 2021 to 85% in 2023 for medium functions. This finding is unsurprising as access to data was also a common challenge from our 2021 survey. Functions are constantly looking for new and better ways to access necessary data.

Upskill the function. This increased significantly for small functions from 20% in 2021, to 67% in 2023, and from 53% (2021) to 77% (2023) for medium-sized functions. We've noticed that functions are investing more time in training – particularly for business auditors. This will enable a better understanding of the applications of analytics, while empowering business auditors to perform basic analytics themselves.

Future proof the function climbed from 25% in 2021 to 52% in 2023 for small functions. Technology is developing at a rapid pace. Functions will be challenged to keep up. It's encouraging to see this higher up on the agenda of smaller functions.

Drive collaboration rose for small and large functions but dropped for medium-sized functions, from 53% in 2021 to 23% in 2023. For larger functions, this is probably down to an increased focus on embedding more digitalisation across the audit lifecycle and better integration of analytics as part of day-to-day activities.

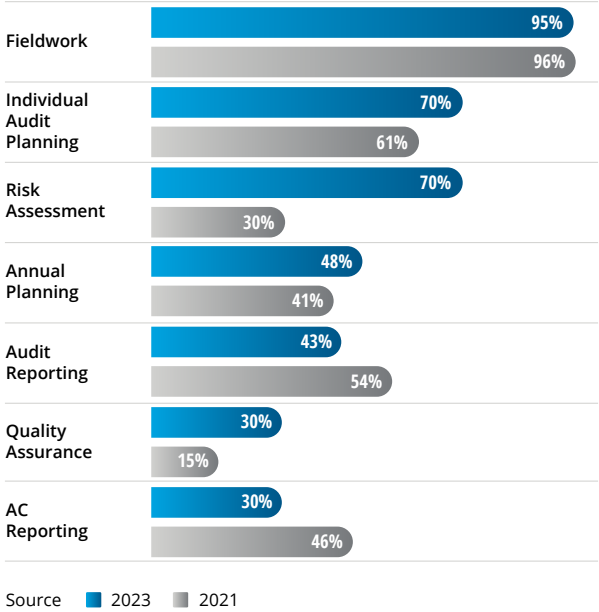
Analytics across the lifecycle

The use of analytics in fieldwork continues to top the list with 95% of respondents in 2023 using analytics in fieldwork, compared with 96% in 2021. This is followed closely by individual audit planning at 70% in 2023. There is, however, a qualitative shift in the level of analytics techniques utilised in fieldwork. Historically this area would predominantly consist of analytics solutions that test whole populations, instead of a sampling approach. More recently, functions are starting to embrace more in-depth techniques and perform more complex analysis. One such example is the use of Natural Language Processing (NLP) and machine learning to identify themes in natural language (free-text) datasets, such as complaints data.

We were pleased to see the use of analytics in risk assessment more than double from 30% in 2021 to 70% in 2023. Risk assessment analytics involves early profiling of the target dataset to help identify trends and outliers. These can help guide the direction of the audit and focus on higher risk areas. Dashboarding and data visualisation techniques are found to be the most impactful for risk assessment analytics. We have seen a general trend of IA functions seeking to implement analytics earlier on in the audit lifecycle, as functions have found that this results in sharper and more value generating audits.

Although we are seeing IA functions expanding their use of analytics in the early stages of the IA lifecycle, latter stages are still trailing behind. In this year's survey we have seen a notable decrease in analytics applications for individual audit and audit committee reporting. Common examples of analytics solutions in this area are automated audit committee reporting and report tone analysis. These tend to only be considered by larger and more mature functions. This may be down to the investment and scale required to properly benefit from these solutions. However, that being said, the growth of AI and more accessible technologies, as well as the improved functionality of many Audit Management Systems (AMS) stand to make these capabilities more attainable for smaller and medium-sized functions. We encourage all functions to continue experimenting and expanding the application of analytics and digital beyond fieldwork.

Figure 1. Audit lifecycle
Activities which functions use analytics to support



"We have seen a general trend of IA functions seeking to implement analytics earlier on in the audit lifecycle as functions have found that this results in sharper and more value generating audits."

Current use of tools

Visualisation remains at the top of the list in 2023 with PowerBI as the tool of choice. However process mining and automation are still relatively unexplored.

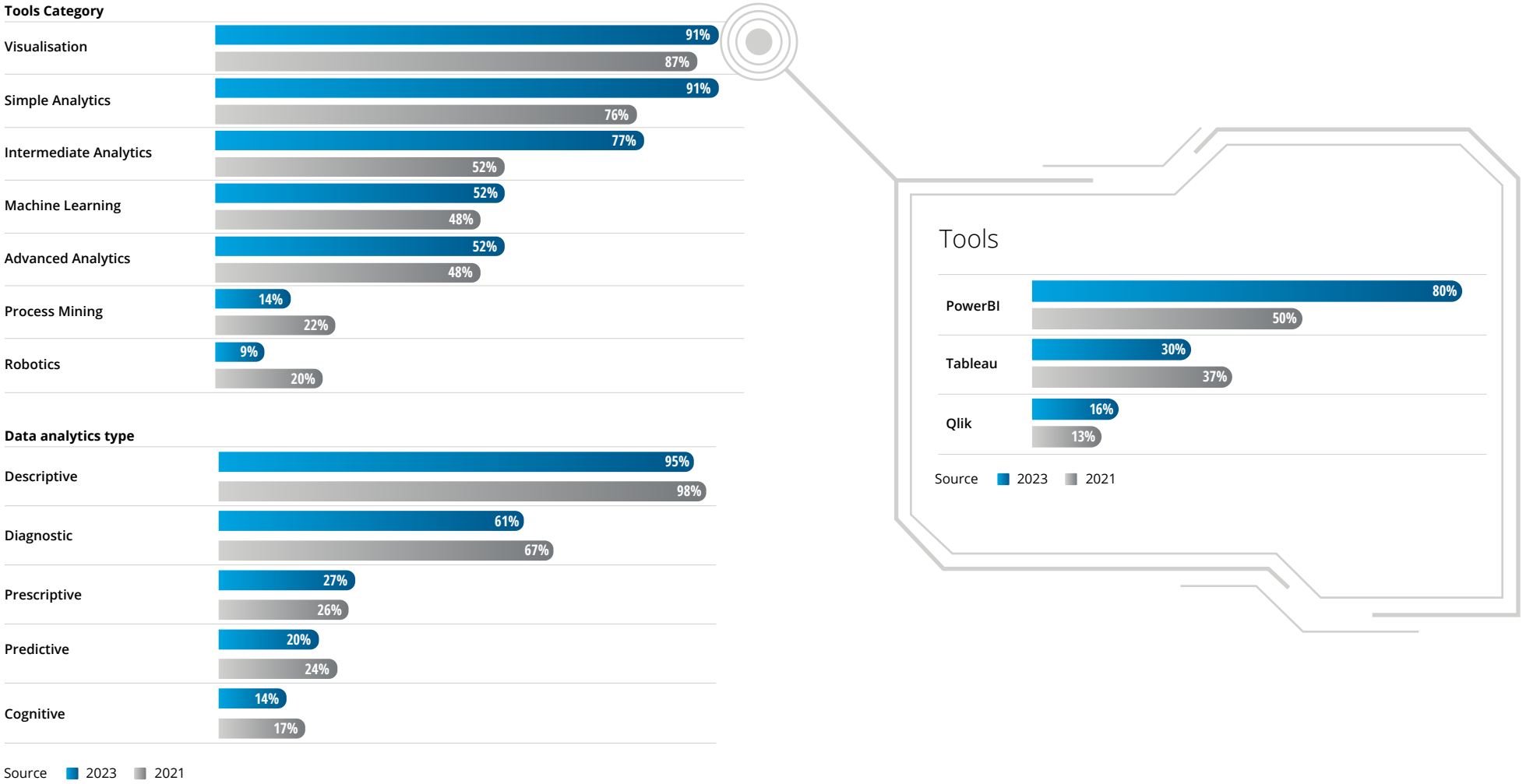
When it comes to tooling, results for 2023 are mostly unchanged from 2021. We found that all respondents are utilising descriptive analytics, closely followed by diagnostic analytics at 61%. Cognitive analytics remains mostly unexplored at 17% – with only more advanced functions citing capability to perform more complex analytics. As mentioned before, the increase in technology and support available has increased significantly. We believe there's still opportunity for functions, regardless of size, to harness some of these capabilities.

Visualisation is used by 91% of participants in 2023. This was slightly higher than the 87% reported in 2021. The breakdown of visualisation tools revealed that PowerBI is the most popular tool of choice with 80% of participants using it in 2023 compared to 50% in 2021. PowerBI's popularity is most likely to be down to lower cost, accessibility, and its integration with wider Microsoft applications such as SharePoint, Teams, PowerPoint etc.

The use of simple analytics went up from 76% in 2021 to 91% in 2023. This finding was expected and good to see. Such growth can be attributed to a systematic investment into basic analytics training by IA functions to make sure that delivery teams can efficiently use simple analytics techniques such as Excel on audits.

Process mining and robotics have been less explored. We've seen a downwards trend in these areas from 22% in 2021 to 14% in 2023, and 20% in 2021 to 9% in 2023 respectively. Both were mentioned in our interviews as medium-to-long-term priorities, with IA teams seeing the value of applying such technologies. The largest blockers explaining the lack of adoption of these technologies in the IA space are cost of associated tools and the lack of skills in the function to operate these tools. Interestingly, a significant number of functions that were actively utilising process mining, opted to develop in-house tools. This helps address both main barriers, albeit at the expense of an internal development time and higher skills requirements.

Figure 2. Digital tools and technologies
What type of digital and analytics tools are used within the function?



Analytics for key risks

Key risk areas remain unchanged from our 2021 survey. The areas of focus are sensible, and based on the richness of data associated with them.

However, we still encourage functions to reflect on what more could be done and how other aspects of automation and digital could be applied to gain more efficiency and insight.

In terms of use of analytics by IA functions to assess key risks, the top areas haven't changed since our 2021 survey. Financial risk remains at 80%, while operation risk is at 77%. Both saw only a marginal movement in comparison to 2021. These are followed by fraud risk at 64%, I.T. at 55% and financial crime at 48%. We believe these areas have maintained their lead due to their rich datasets and associated ease for scoping and implementing data analytics in an impactful way.

Despite the lack of any material change in the way analytics is applied to assessing risks, we believe that internal audit functions must reflect on this section and challenge themselves on whether these are still the right risk areas of focus for their organisation.

Figure 3. Analytics for key risks
What types of risks does the function use analytics techniques to assess?

Our point of view: **Current use of analytics**

While functions continue to progress in the right areas, growth has been somewhat slower than we expected. Large functions continue to lead the charge, however questions such as: "What next?" and "Are we doing enough?" are still at the forefront of everyone's minds.

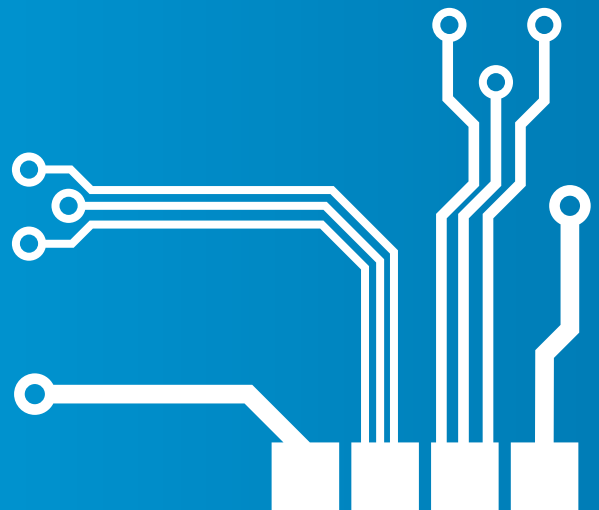
In 2021, we believed that functions could be doing more to embrace digital and analytics across the audit lifecycle. We still maintain this belief and although progress has been made in some areas, such as risk assessment, functions are potentially lagging in other areas.

Traditionally functions have focused analytics on areas of data that are transactional in nature which lend themselves well to planning, risk assessment, and fieldwork analytics. However, it's likely that functions have a wealth of untapped data at their disposal. Some examples of this include: resource scheduling, team skills and capabilities, risk taxonomies, audit issues, root cause analysis, control deficiencies etc.

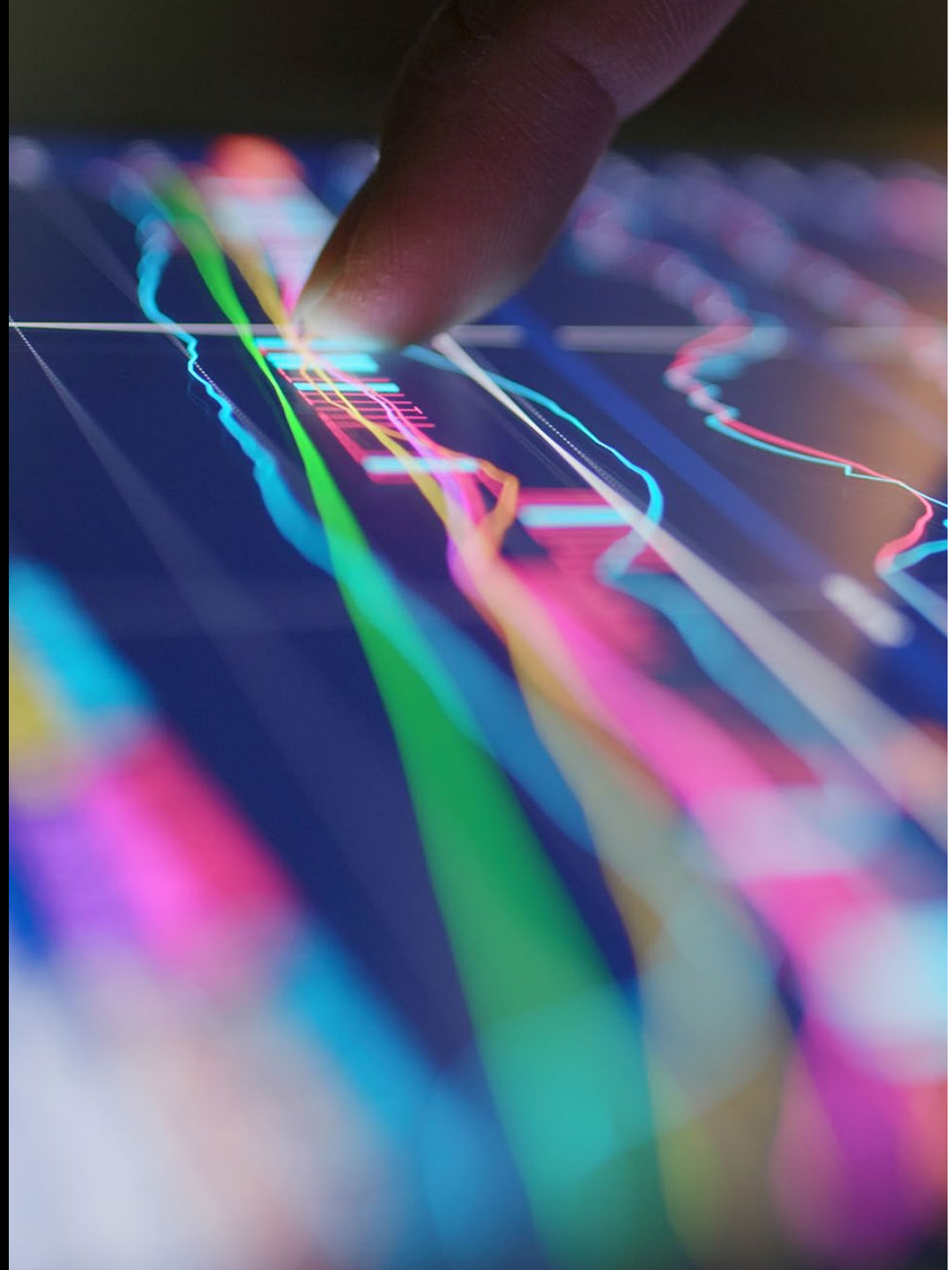
Functions should consider the other possibilities this data presents and the capabilities that can be explored. These include: schedule optimisation, control testing automation, text mining and sentiment analysis, intelligent interview analysis, and more. The list of possibilities is vast.

Automation and process mining are still mostly unexplored by the majority of IA functions. We see this being attributed to the prohibitive cost of off-the-shelf software or lack of relevant skills in the team. Functions that do implement process mining use their in-house development resource to build custom solutions.

Additionally, automation and process mining (more so the former) sits slightly adjacent to the standard "analytics" skillset; it's often lower down on the list of priorities for small and medium functions. We anticipate the adoption of automation and process mining to increase as more and more success stories arise, helping IA functions justify investment in the space.



Barriers and challenges



In this section, we consider the areas that are common struggles for functions across all industries. We will also focus on the current data access models and how functions are addressing this critical component of data analysis.

Key takeaways:

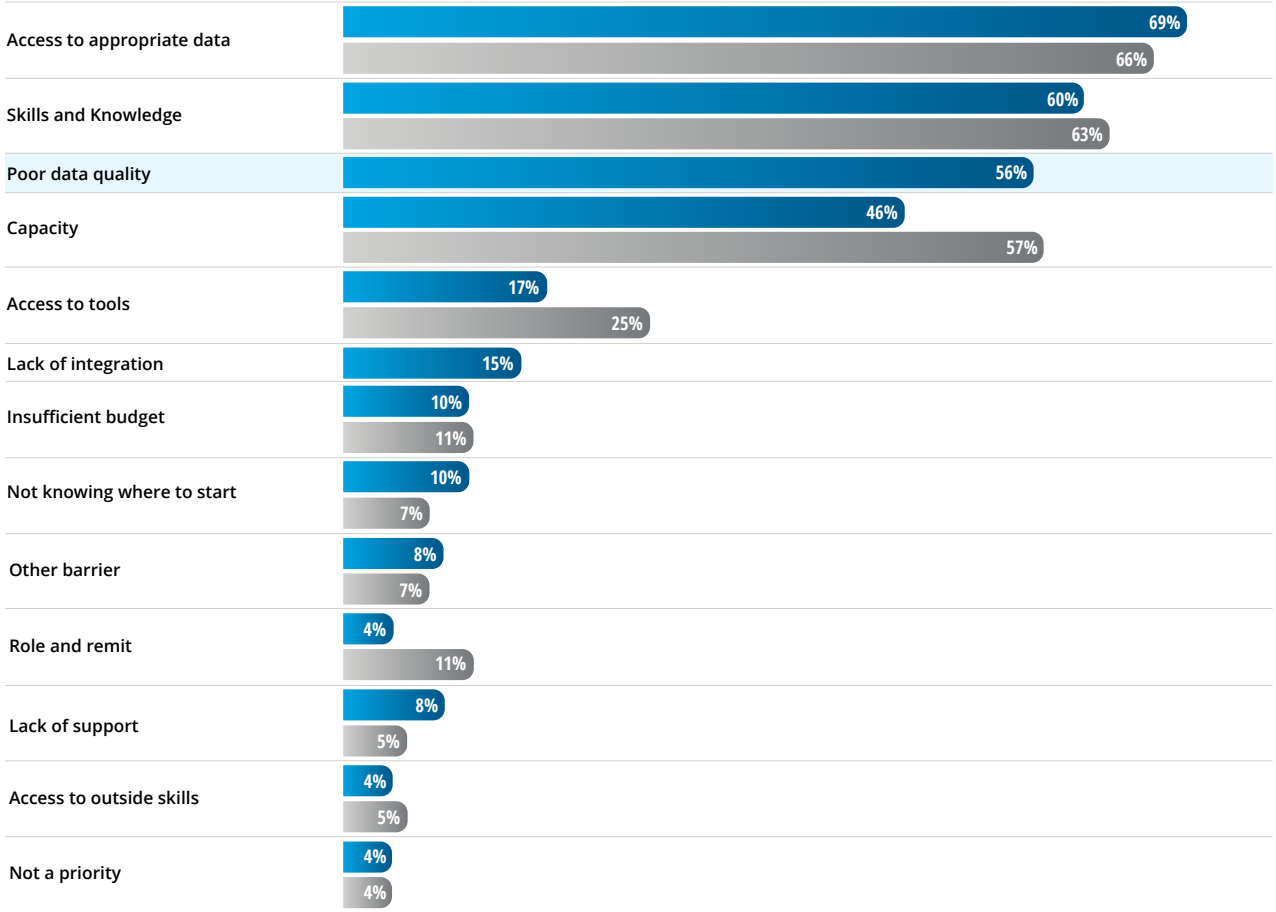
- The outcome for 2023 is largely similar to what we saw in 2021, 69% of functions report access to appropriate data being their biggest barrier, followed by skills and knowledge and poor data quality.
- Given the high prevalence of data access challenging many functions, we chose to explore this area further in 2023. Internal data is used most frequently, with 98% of functions using structured internal data and 64% using unstructured internal data. The rise in the use of unstructured data is likely due to the increased application of more advanced techniques such as Natural Language Processing.
- Although functions have made significant progress, data quality still remains an ongoing issue, which has slowed or even halted progress for some functions. Despite this key challenge we advise functions to still press forward with analytics whilst providing challenge and insight back to the business on data quality issues.

Access to appropriate data remains a top barrier for 69% of functions. 56% of functions also cited data quality as a challenge.

Our 2021 survey highlighted widespread barriers across all functions – regardless of size. They were: access to appropriate data (66%), skills and knowledge within the function (63%), and capacity within the function (57%).

The outcome for 2023 is largely similar. 69% of functions reported access to appropriate data being their biggest barrier. This was followed by skills and knowledge (60%) and poor data quality (56%) – which we added as a new question for this survey. Capacity within the function dropped to fourth place. 46% of participants cited this a barrier – that's 9% lower than 2021.

Figure 4. Key barriers (overall)
What are the key reasons/barriers currently preventing the function using analytics?



Data access

In 2021, all functions reported using structured data. 39% said they used unstructured data, while 17% used third party data. We revised this question in 2023 to gain more insight on the type of data used.

Internal data was most prevalent. 98% of functions said they used structured internal data, while 64% used unstructured internal data.

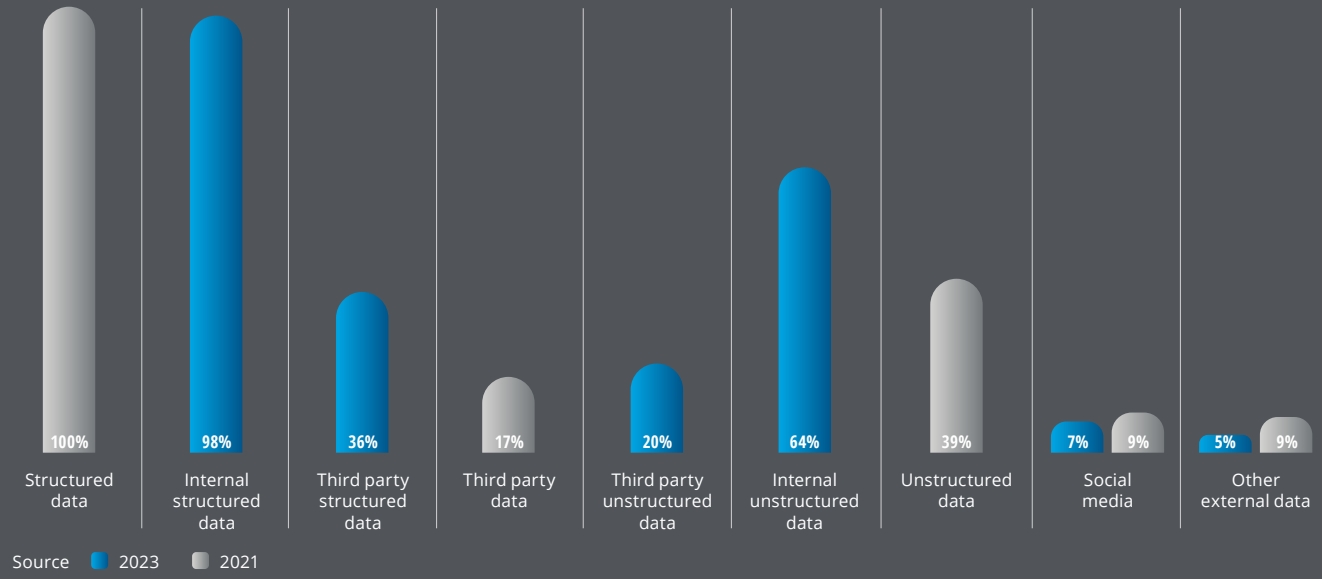
The use of third party data has also increased. 36% of functions reported using structured third party data, while 20% used unstructured third party data.

Functions have reported using more unstructured data which is likely coupled with the use of more advanced techniques such as Natural Language Processing (NLP).

There's still room for functions to do more when it comes to data access. We're pleased to hear that access to data is a priority and recognise the effort required to get this right. However, most organisations are investing heavily in data lakes and business-wide data solutions that IA can start tapping into.

Overall, when comparing 2021 to 2023, we observed minor shifts in the preferred data access models:

Figure 5. Data Sources
What sort of data sources do functions perform analytics over?



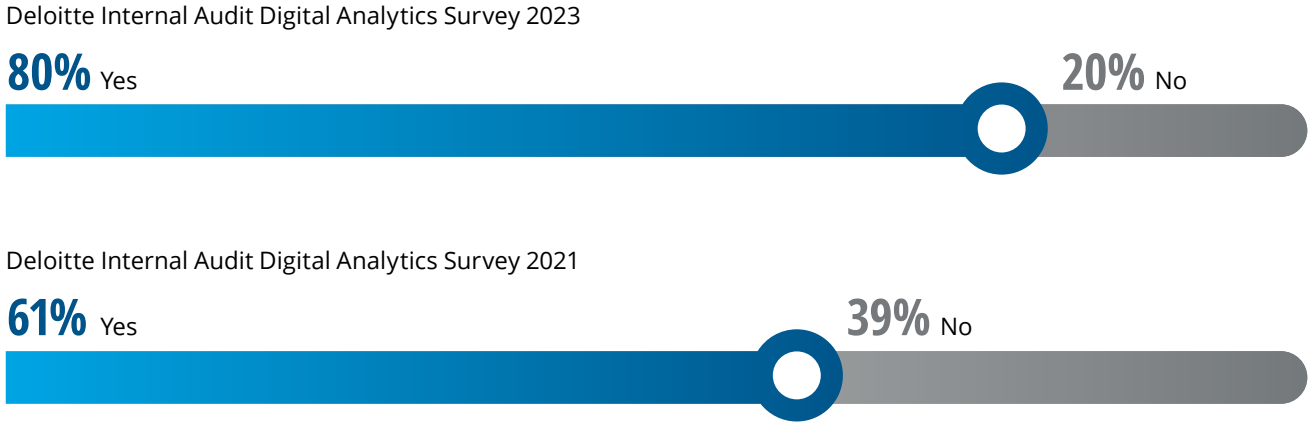
- **Data extracts from business or I.T.** increased from 39% in 2021 to 48% in 2023 for medium-sized functions.
- There was a slight increase in the use of **dedicated IA data warehouses** for medium functions, from 3% in 2021 to 6% in 2023. Fewer large functions are choosing this approach. We saw a drop from 20% in 2021 to 15% in 2023, despite it being the preferred option based on our conversations with functions.
- **Direct access to business systems** remained largely in line with past results.
- **Feeds from business systems** increased for large functions from 23% in 2021 to 31% in 2023. It was equal in preference to **Data extracts from business or I.T**.

Data quality

Although functions have made significant progress, data quality remains an ongoing issue. Every function we speak to raises this as a concern, and to some extent this has halted efforts to drive analytics forward as efforts are undermined by inaccurate results. So, what can be done to address this? Managing data quality is an ongoing exercise that needs to be managed at an organisational level. It must be a key focus of the Data Governance team.

That being said, we advise and encourage functions to persevere with analytics regardless. Poor quality data can highlight control deficiencies and point to underlying system issues that could be the root cause of data quality issues. Analytics provides a clear view on the scale and depth of the problem. It also allows IA to provide constructive feedback on where issues lie, while supporting the business and Data Governance teams to get to the heart of the issue.

Figure 6. Do you independently evaluate the quality of the data before running analytics?



Data quality continues to be a key issue. We advise and encourage functions to continue with analytics regardless. Poor quality data can highlight control deficiencies and point to underlying system issues that could be the root cause of data quality issues.

Our point of view: **Barriers and challenges**

Access to the right data at the right time, as well as data that meets the necessary quality standards, is hard to achieve. All functions face this struggle and are likely to continue navigating data challenges as organisations continue to grow in data maturity. However, it's not all doom and gloom. Many functions have made inroads and achieved success through perseverance, patience, and some experimentation.

Our advice to functions is:

Keep going – even if the data isn't perfect. Continue with analytics activities regardless and highlight where data is poor, where changes need to take place, and share your findings with the business.

Challenge the business to drive improvement in data quality and data access.

Stay close to Data Governance forums, business data solutions, digital transformation projects and the like – not just as an advisor on risk, but as a consumer of data.

Talent and resourcing

People and top-flight teams are a key component in providing value-adding, quality data analytics for Internal Audit (IA).

This section looks at how functions have structured their teams, provided access to skills and managed the team mindset to make analytics a success.

Key takeaways:

- The centralised operating model is less prevalent than before (39% in 2023). We saw a slight increase in the hybrid approach (at 45% in 2023) with the decentralised model doubling from 7% in 2021 to 15% in 2023. A small number of functions flexed operating model depending on the complexity of the analytics required.
- In 2023, the percentage of functions with a dedicated analytics team remains relatively unchanged with 54% having a dedicated team. We decided to expand the question in 2023, and found 15% of functions had a part-time analytics team.
- Many functions have continued to invest in analytics training. Training ranged from classroom courses and seminars, to the provision of licenses for online training platforms, with the intent to encourage self-paced learning. Our results showed that functions are also actively tracking and measuring training KPIs. Many have ambitions to train the entire function in basics analytics. This approach has also improved the mindset of the team when considering and applying analytics to audits and in day-to-day work.
- Functions should start to consider using AI and robotics to further enhance their team's skills and efficiencies, while accelerating innovation. For example, these tools can support teams with lower levels of coding skill by facilitating interrogation of data using natural language processing (NLP).

Operating model

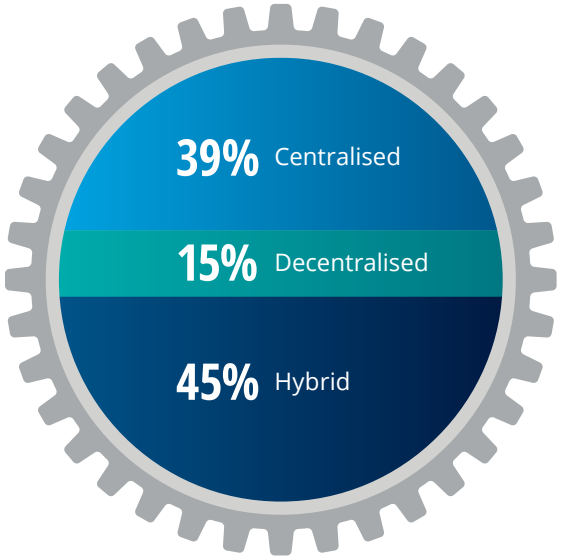
In 2021, we found that a centralised operating model across IA functions was the most popular. Our findings showed that over half of respondents organised themselves with a central specialist analytics team that performed the majority of, if not all, analytics activities (Figure 7). This model was followed, in popularity, by a hybrid model (43%) where business auditors run most of analytics (largely basic tasks) with support from centralised Centre of Excellence teams, as required, and primarily on advanced and more technical areas.

In 2023, the picture has shifted. The centralised model is less prevalent (39% in 2023). There's also a slight increase in the hybrid approach (to 45% in 2023). We saw the decentralised model double from 7% in 2021 to 15% in 2023. We also saw that for a small number of functions the operating model flexed depending on the complexity of the analytics required, with more complex analytics being performed by a central team.

When discussing current operating models with our clients we observed an increased focus in supporting business auditors with the relevant training and tools to perform basic analytics as part of planning and fieldwork activities. In some cases larger, more advanced functions are considering and investing in self-service analytics for internal auditors. This will help make analytics more accessible for every member of the function. This approach has allowed the core analytics team to focus on more complex and advanced analytics, research and development activities to support innovation and digital enablement of the function as a whole.

The Hybrid Operating model is the most popular in 2023 with many functions empowering business auditors to perform basic analytics. This frees up specialist time for advanced analytics, and research and development.

Figure 7. What is the current operating model for digital and analytics?



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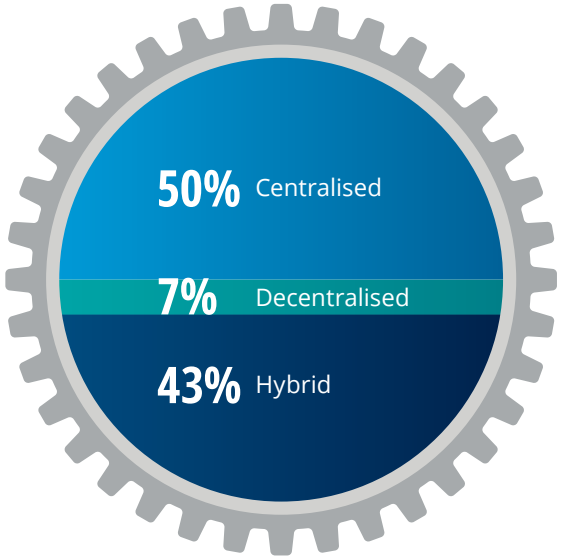
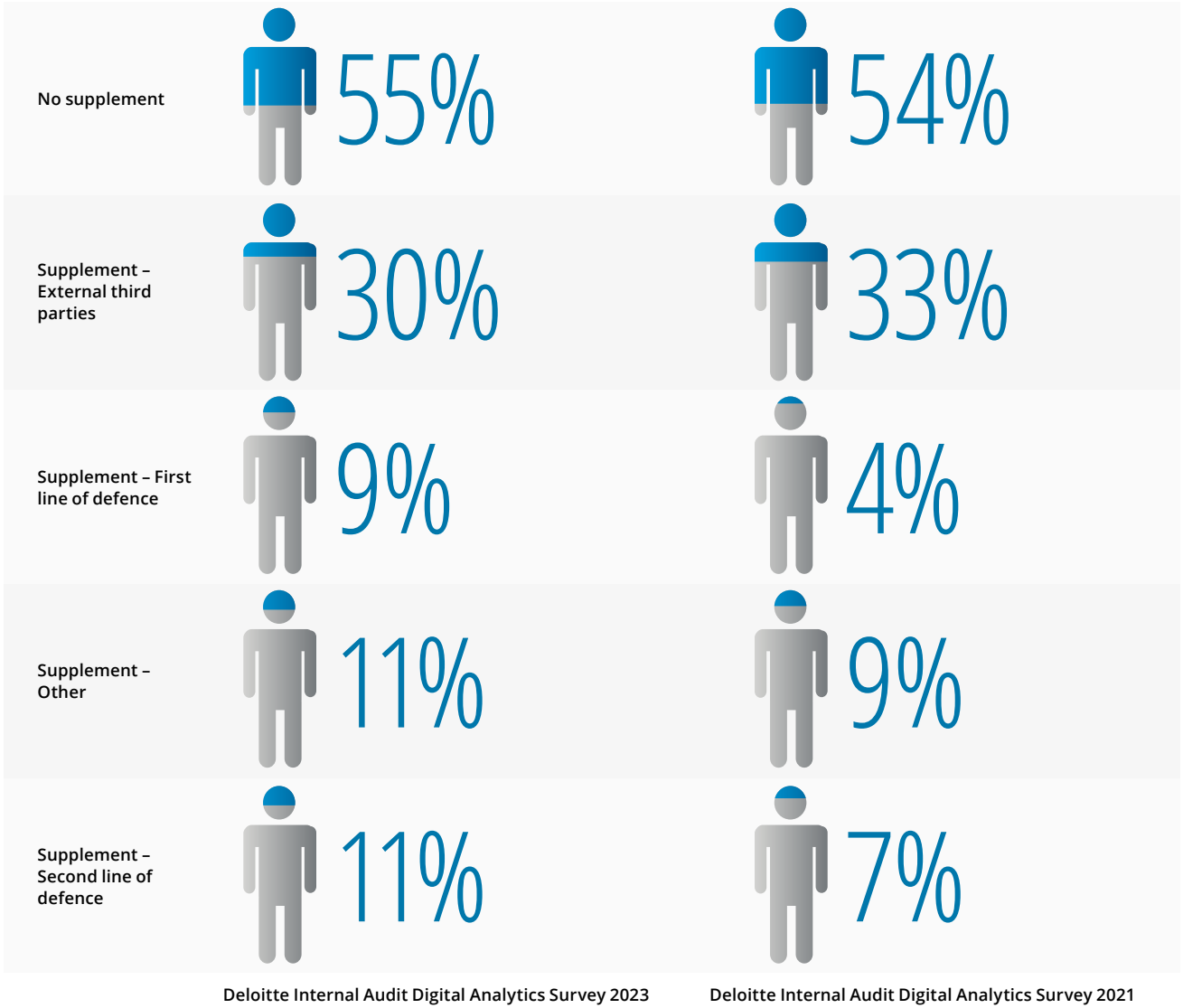


Deloitte Internal Audit Digital Analytics Survey 2021

In 2023, the percentage of functions with a dedicated analytics team remains relatively unchanged. 54% told us they have a dedicated team, while 15% reported having a part-time analytics team.

There have only been incremental changes in the sources of analytics support. 55% of functions don't supplement skills, while 30% (down 3% from 2021) utilise third-party support. Despite the fact that there have been very slight increases in utilising support from elsewhere, functions are seeking relatively little support from the first (9% 2023) and second lines of defence (11% 2023).

Figure 8. Functions that supplement their digital and analytics capabilities with external support



Skills and training

We decided to ask the question on skills in a different way for 2023. We asked functions to tell us what percentage of their non-analytics team members had advanced analytics skills (e.g. Python, process mining) vs those with basic skills (e.g. Excel, Alteryx, SQL):

- Basic skills were more prevalent in large functions. 40% of respondents said that between 21% – 60% of the team were being upskilled. 30% told us that more than half of their teams could perform basic analytics without specialist support.
- 52% of small and 62% of medium functions reported having less than 10% of their team with advanced analytics skills.
- 80% of large functions reported that less than 10% of their team had advanced skills.

When considering the dedicated team and the level of advanced skills, larger functions reported having a higher number of skilled individuals:

- 60% of large functions have more than half of their dedicated team equipped with advanced analytics skills.
- 17% of medium functions and 18% of small functions reported more than half of the dedicated team having advanced analytics skills.
- 20% of large, 33% of medium and 36% of small functions reported having between 21% – 60% of individuals with advanced skills.

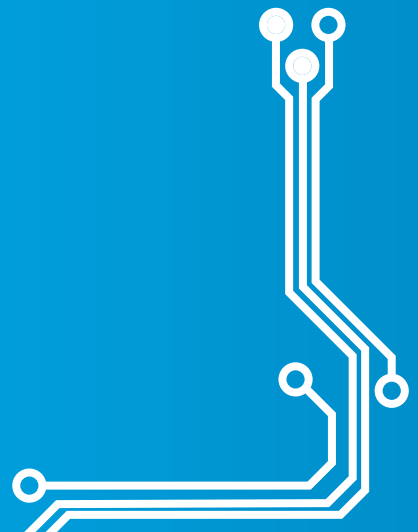
We also asked the question around training provided to wider team. We split the question into two categories, the first being basic analytics training and the second being advanced analytics training:

- 30% of large, 23% of medium and 38% of small functions had provided basic training to more than half of the wider team.
- Advanced training was on the lower end with 80% of large functions training between 1% – 20% of the wider team. This was followed by 25% for medium functions and 18% for small functions.

Many functions have placed analytics training high up on their agenda and are actively tracking uptake. This approach has, in many instances, improved the mindset of the function when considering and applying analytics in Internal Audit.

Our point of view: **Talent and resourcing**

From discussions with many of our clients, we observed an increase in a people-centric approach. Functions have invested heavily in training staff, ranging from classes, conference type events, one-on-one coaching, and access to online training programs. In our IA 4.0[2] publication we highlighted the need for a change in mindset when it comes to IA and digital.



The willingness to experiment and explore is crucial to success. Functions should continue to invest in training initiatives while creating safe spaces for teams to experiment, generate new ideas, and cultivate innovation. Some functions have started capturing ideas from all areas and teams to generate pipelines of innovation projects. We believe this is something functions of every size, can benefit from to nurture creativity and innovation.

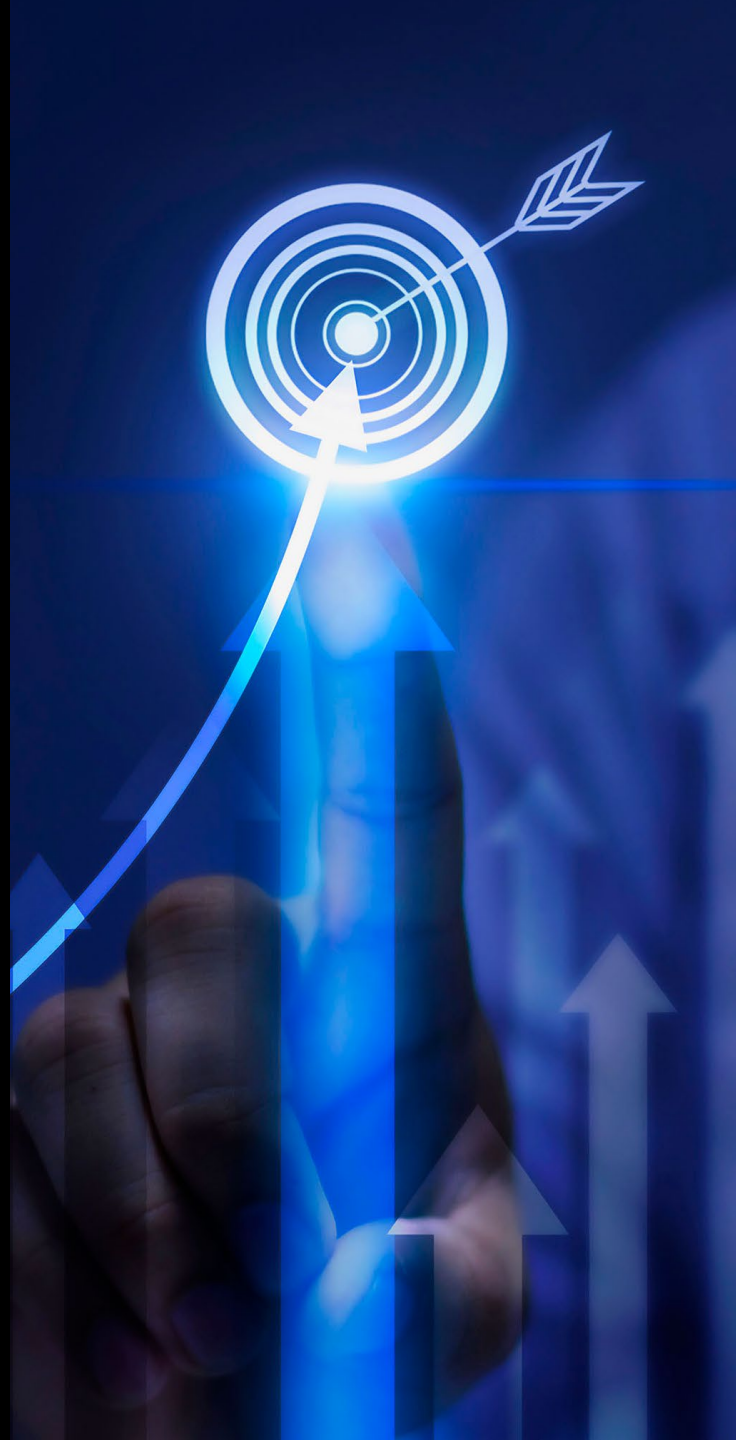
We also saw how functions with a high focus on analytics are starting to structure their teams differently. The drive to place more tools and capabilities into the hands of auditors means that analytics teams have more time and flexibility to focus on innovation and asset development. Team responsibilities are often split between day-to-day support and research and development (R&D).

A number of functions we spoke to have heavily invested in dedicated research and development teams, who solely focus on generating assets and products to support IA. We also noted that these functions had a common goal to prioritise innovation with R&D teams reporting into an innovation lead.

Lastly we'd be remiss to not mention Artificial Intelligence (AI) and the role it has to play in IA. While AI and robotics aren't designed to replace a member of the team or substitute subject matter expertise, they can enhance the skills and efficiencies of the team while helping to accelerate innovation.

For example, teams with lower levels of coding skills can use tools to help generate code or interrogate data using natural language. Of course, any use of AI comes with a health warning. A certain level of understanding is still needed to know whether the output and application is sound, and there's a risk when relying solely on the AI output.

Analytics maturity



Maturity curve

Functions are increasingly seeking opportunities to improve their use of analytics. We feel encouraged by conversations with clients on the level of focus this has been given over the past two years. This section presents our view on the current maturity levels of functions across industries.

Key takeaways:

- The maturity curve has shifted to the right. This indicates a gradual increase in overall maturity across respondents with more functions moving from lower maturity ratings into the more mature categories.
- This growth is mostly attributed to smaller functions catching up with the larger ones in terms of maturity. This is in line with our 2021 prediction of the upcoming "democratisation" of analytics in the Internal Audit (IA) space due to lower barriers to entry.

One of the goals of this survey is to consolidate the wealth of data points collected about the data analytics capabilities within IA functions into a single comprehensive "maturity" score. While we recognise that such assessment is heavily dependant on the methodology adopted and availability of key data points, we've used a proprietary methodology to ensure consistency. This allows us to benchmark current survey results against those from our 2021 survey.

A six-point scale was used to measure the maturity from '0. None' data analytics is not being utilised, all the way up to '5. Innovating' using leading practices across all elements of data analytics. The position of each function's maturity on this scale is calculated by analysing data collected around four key factors:

01 **People and skills**

02 **Process**

03 **Applications of analytics**

04 **Technology**

As can be seen from the 2023 vs 2021 survey comparison, the overall maturity curve has shifted to the right. This indicates a gradual increase in overall maturity across respondents with more functions moving from lower maturity ratings into the more mature categories. This growth is mostly driven by smaller functions catching up to the larger ones in terms of maturity. This is in line with our 2021 prediction of the upcoming "democratisation" of analytics in the Internal Audit (IA) space due to lower barriers to entry. Interestingly, large non-Financial Services functions have also seen a significant growth in 2023 compared with 2021 as they see higher rate of development against their Financial Services counterparts.

This year we've seen small functions entering the "4. Mature" category for the first time. We believe this is due to functions' leadership placing greater emphasis on innovation and analytics, recognising the composite nature of long-term return on investment in these areas.

"The overall maturity curve has shifted to the right. This indicates a gradual increase in overall maturity across respondents, with more functions moving from lower maturity ratings into the more mature categories."

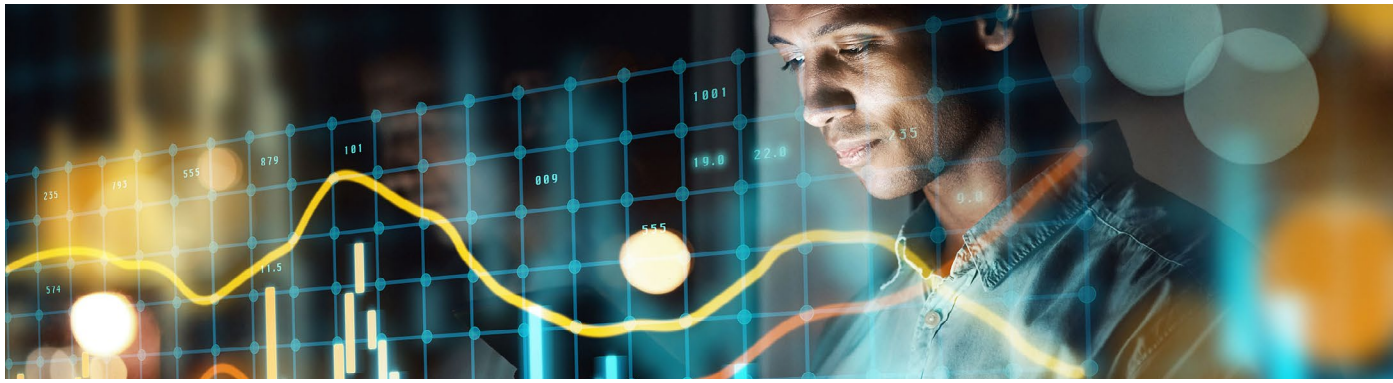


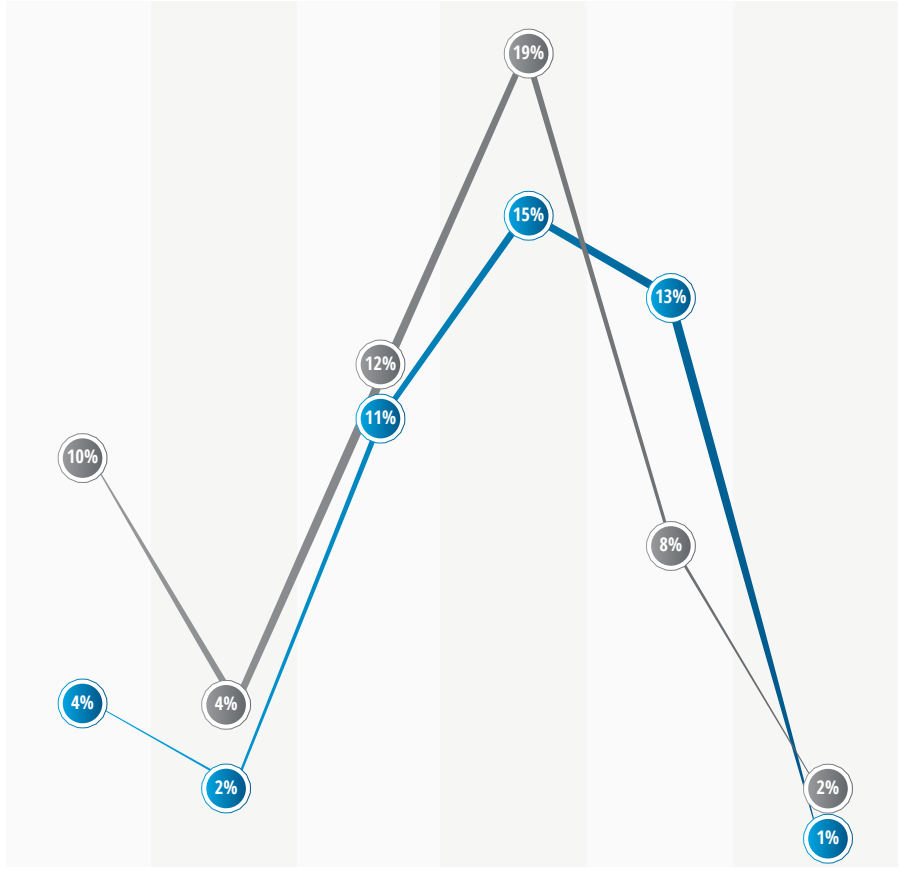
Figure 9a. Analytics maturity against surveyed organisations' IA function size

Source: Deloitte Internal Audit Digital Analytics Survey 2023

Number of Internal Audit FTEs

Small (<=20) Medium (>20 & <=100) Large (>100)

Figure 9b. 2021 vs 2023 maturity curves



Source 2023 2021

Future priorities

This section explores past and current priority areas for functions and where we see the need for functions to accelerate and embrace innovation.

Key takeaways:

- The vast majority of respondents stated that they have a clear vision for the future and a strategy for the further development of capabilities. This finding is in line with the overall Audit function's strategy and priorities, and is unchanged from 2021.
- Small functions are still placing a strong emphasis on expanding the use of analytics in fieldwork – as reported in 2021.
- Large functions aren't placing future efforts on fieldwork at all. It's likely that is due to it already being an area where analytics is consistently applied. Large functions have also said that automated Audit Committee reporting will be their next area of focus.
- All functions are considering doing more across the lifecycle. However, we've not seen growth in terms of focus areas between 2021 and 2023. We believe there's more for functions to consider and room for innovation when it comes to applying analytics and digital across the audit lifecycle.

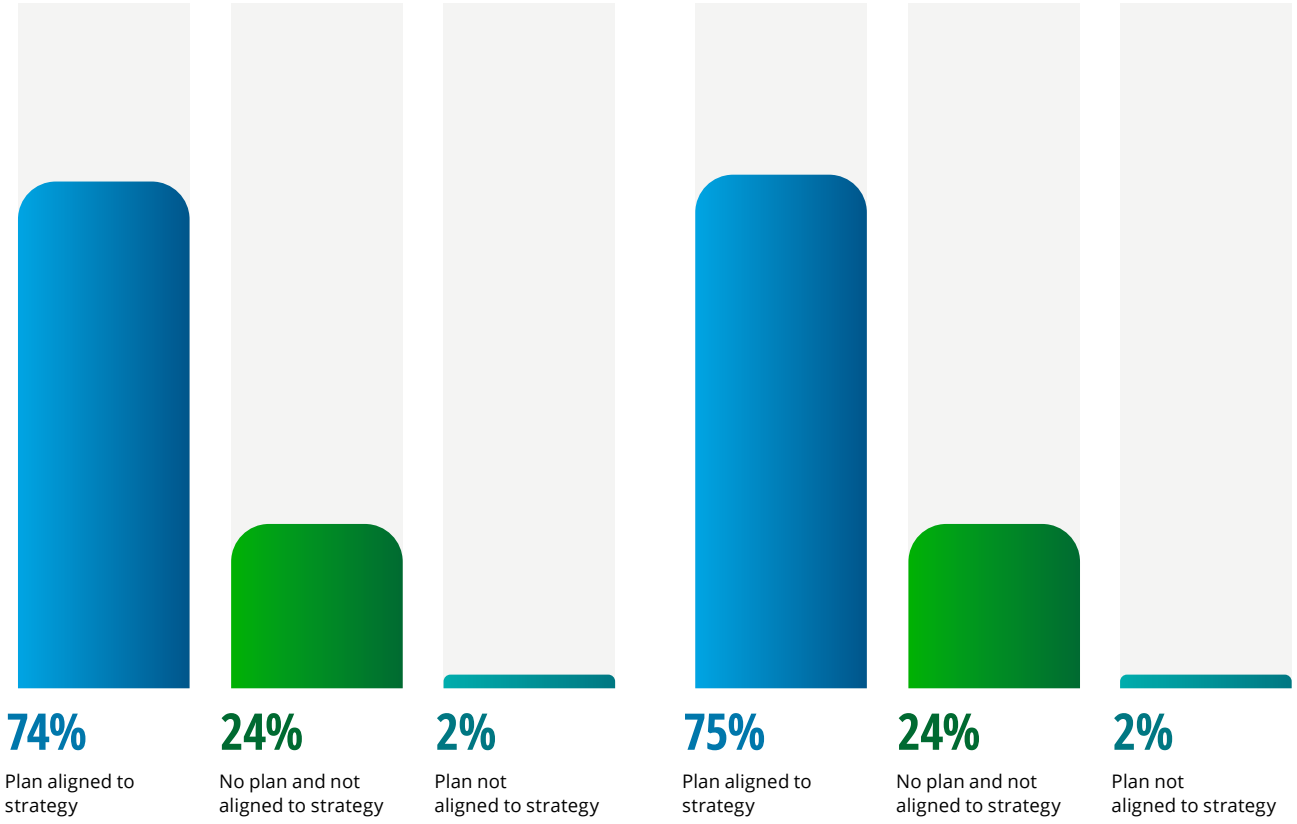
Vision and strategy

We were heartened to see that 79% of functions have a clear vision for the future and a strategy for the further development of capabilities, in our 2021 survey. This was in line with the overall Audit function's strategy and priorities (74% in 2021).

There's been little movement in 2023, with 75% of functions (only 1% more than 2021) having an IA analytics plan that aligns with the overall strategy of the function. While the results from both years are positive, we encourage functions to align their analytics strategy with the overall strategy of the function. The integration of analytics shouldn't be a standalone activity. The benefit is wide-reaching, with countless opportunities for functions to drive efficiencies and insight if leveraged correctly.

Most functions report having a clear vision and strategy for analytics. This is still a key focus area for many and has remained consistent over the past two years.

Figure 10. Is the analytics strategy aligned to the broader function priorities?



Deloitte Internal Audit Digital Analytics Survey 2021

Deloitte Internal Audit Digital Analytics Survey 2023

Outcomes for the future

In terms of outcomes that the functions are aiming to achieve through delivering on their strategic priorities, we saw a slight shift from 2021 to 2023. (see figure 11)

Improve the effectiveness through assurance is still at the top of the list moving from 89% in 2021 to 91% in 2023.

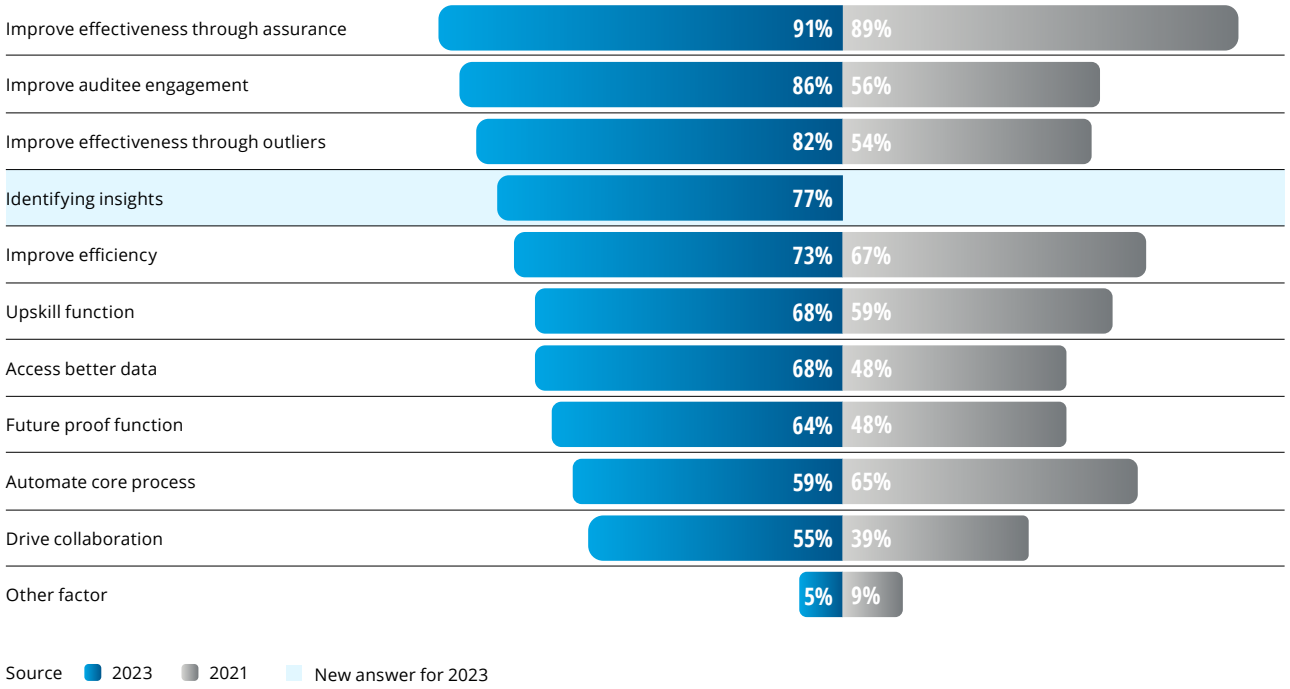
Improved auditee engagement has replaced "improve efficiency" in second place at 86% in 2023. That's gone up from 57% in 2021.

Improve effectiveness through outliers was third on the list of future priorities at 82% in 2023; up from 54% in 2021.

Automating core processes dropped from 65% in 2021 to 59% in 2023.

Based on conversations with clients we'd have expected to see automation of core processes as a higher future priority area for functions. This is mainly due to the increased focus on digitalisation of functions and the pressure to keep pace with the evolutions of new technology and Artificial Intelligence (AI).

Figure 11. What are the key driving outcomes that the function seeks to achieve in the future?



Improving the function's effectiveness and engagement with auditees are top future priorities for functions. However, more can to be done in automation for functions to keep pace with the rapid evolution of technology and AI.

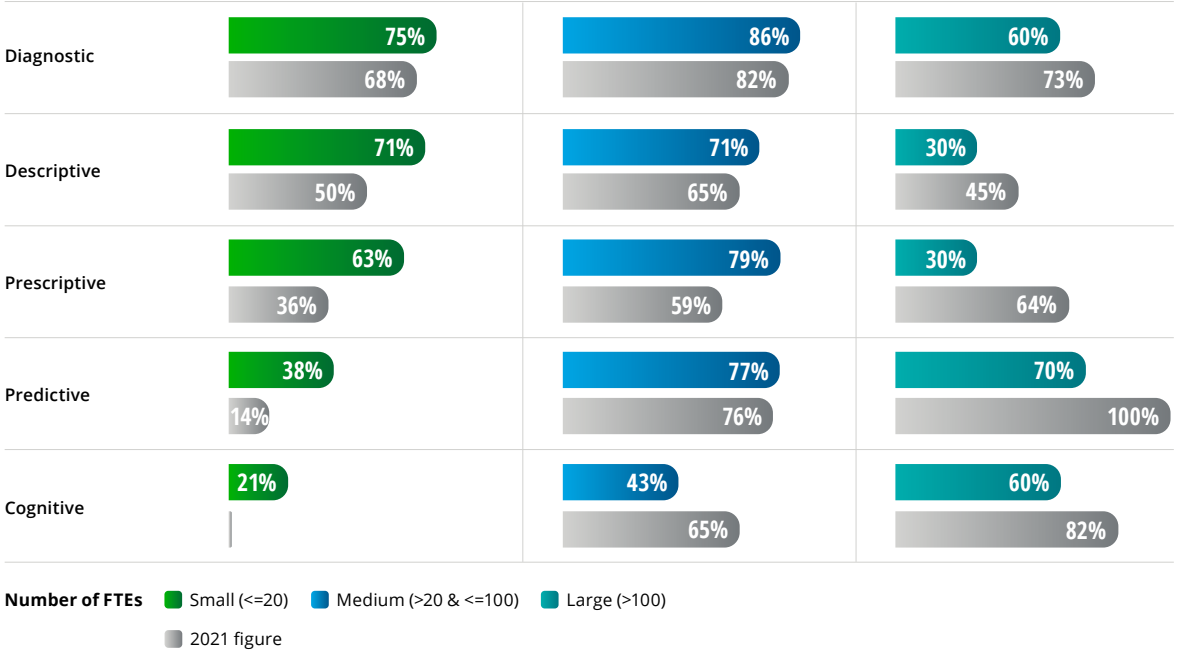
On the question around the activities and focus areas for the next three to five years, we noted that small and medium functions had plans to focus on more advanced analytics applications than in 2021. In our last survey we saw that many small and medium functions were still focused on getting the basics right. This has now changed with more focus being applied to some of the more advanced categories of analytics applications (see figure 12).

In contrast, larger functions report less of a future focus than before. This is most likely down to progress already being made in these areas, as we've also seen an increase in the application of more advanced techniques over the past two years. This can be found in the "Current use of analytics" section of this report

The areas of focus against stages of the audit lifecycle shows a divergence across functions. In 2021, larger functions placed the focus of their strategic development on the stages of Risk Assessment, Quality Assurance, and Audit Committee reporting. However in 2023, we found that smaller functions were placing greater focus on Risk Assessment and Audit Plan Development than large functions.

Small functions are still placing a strong emphasis on expanding the use of analytics as part of fieldwork, in comparison medium and large functions – although this was less than what was reported in 2021. Large functions aren't placing future development efforts on fieldwork, as it's likely that this is already an area where analytics are consistently applied. The area with the highest future focus for these functions is Audit Committee reporting.

Figure 12. Focus areas in the next 3 – 5 years (analytics techniques)



Purpose driven, digitally powered

"Adopting Digital" is not the end goal. The goal is improved quality, productivity, insights, innovation, collaboration, and practitioner engagement. This comes about by applying digital to audit work and by helping the organisation to use analytics effectively.

IA 4.0[2] aims to transform ways of working by embedding digital capabilities into Internal Audit (IA) work. For example in workflow management, automated assurance, audit management systems, communication interfaces, dashboards, and mobile applications such as drones for site inspection or inventory purposes. Potentially useful digital technologies include AI, RPA, SaaS, social media, and the Internet of Things (IoT). Applying digital requires us to look at the art of the possible, while taking a highly systematic approach to using technology.

Through our experience of delivering External Quality Assessments (EQAs) and looking in on leading functions who have made better progress in digitalising broader aspects of their functions, there are two differentiators we see in more digital functions:

Mindset

It doesn't matter if you're a small or large function, the mindset and willingness to explore and experiment with digital tools is half the battle. It's the reason why we've elevated digital up to the mindset level of our model, and something we think the future function needs to cultivate. So, help your teams get tech savvy. Enable them to see the possible applications through education and awareness. Promote innovation and make it safe for experimentation. Keep everything on the table; digital doesn't just mean analytics. And remember to encourage and celebrate desired behaviours to encourage ideas.

Approach

More digital functions have taken a systematic and methodical approach to digital innovation. They're taking the time to assess their ways of working to identify and prioritise opportunities to leverage digital. These functions intentionally pilot proof of concepts and measure Return On Investment (ROI) to guide purpose-driven investments.

Digital is not the goal; it's what it can help you achieve.

Appendices

Appendix A – About the survey

This survey aims to capture the current state of the digital and analytics capability of Internal Audit (IA) functions across organisations in the UK to gauge their progress since 2021 and current sentiments.

We surveyed professionals from 48 organisations in sectors including Financial Services, Consumer Products and Retail, Telecommunications, Technology, Health and Life Sciences, Oil and Gas, and the public sector.

Figure A illustrates the range of sectors participated in our survey.

This survey was commissioned by Deloitte LLP. The data was collated between January and May 2023. It was conducted by our senior practitioners either via direct interviews or through our online survey tool. Aside from the quantitative data, we've also leveraged a wealth of qualitative, or other information, shared or discussed over the past year with Internal Audit functions.

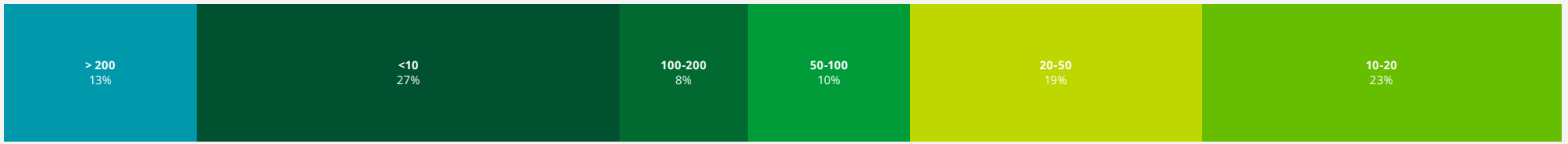
Our research team analysed the data to identify common themes, correlation across demographics, key lessons learned. The output includes a range of facts and figures, but also our perspectives on the state of the industry, what good looks like, key takeaways and insights for functions to consider.

* For clarity, when we talk about "digital" or "digitalisation" in the context of our report, we refer to the integration and embedding of digital assets or enablers to transform and automate existing operational processes. "Data analytics" may form part of a broader digitalisation agenda, but relate to the analysis and interrogation of data sets to identify anomalies, trends or potential issues for further investigation.

Figure A. Demographic split of survey respondents

Industry sectors

Number of Internal Audit FTEs



Appendix B – Definitions and glossary

Digital: The integration and embedment of digital assets or enablers (disruptive technologies, channels) to transform and automate existing operational processes, and increase the value offered to stakeholders.

Data analytics: Analysis and interrogation of data sets to identify anomalies, trends or potential issues for further investigation. The objective is to enhance the level of assurance provided by Audit, through higher quality of evidence, increased depth of testing and better indicators for controls issues – current and predicted.

Data science: An umbrella term for a group of techniques and methods, including machine learning, forecasting, text analysis, predictive analytics, network and cluster analysis and multivariate statistics.

Data visualisation: The representation of data in a graphical format, usually in the form of a chart or diagram.

Process mining: The analysis of a process in a visual manner, based on an event log, in order to derive insights and recommendations.

Robotic Process Automation (RPA): or "Robotics" are the terms used to describe human interactions which have been automated to complete a task based on a defined set of instructions.

Basic analytics: Ad-hoc and non-repeatable analysis, predominately using spreadsheet applications such as Microsoft® Excel®. May also include analysis performed using software packages designed for Internal Audit Analytics. These tools usually have a graphical interface similar to a spreadsheet and can perform complicated analysis via user-friendly dialogs. Basic automation can be achieved in order to perform analysis on a repeatable basis. (e.g., using data to tell us what happened in the past, often used for risk-based sampling and anomaly identification as well as root cause analysis).

Advanced analytics: The use of database environments and/or data science packages allowing for more complex and in-depth analysis. These tools enable users to run analysis on a server, removing the need to store data locally. Analysis can be performed on a continuous basis and in some cases real time. (e.g., predicting what's likely to happen in the future and self-learning algorithms).

Descriptive analytics: Summarising historic data to better understand what has happened.

Diagnostic analytics: Analysis of past results to understand not only what happened but also the reasons behind the results.

Predictive analytics: The use of statistical models based on historic data to predict possible outcomes of a scenario.

Prescriptive analytics: A combination of diagnostic and predictive analytics which create recommendations of future activities based on predicted outcomes.

Cognitive analytics: The blend of artificial intelligence and traditional data analytics to mimic human interactions with specific tasks. These techniques learn from past inputs to become more efficient.

Structured data: Data stored in a standard and expectable format; such as rows and columns.

Unstructured data: The exact opposite of structured data; a collection of data which doesn't follow a predictable pattern. This could be an email, an audio file, or a business document.

Artificial Intelligence: The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Appendix C – Resources and references

1. Building the data enabled function of the future.
Deloitte, 2021

2. Internal Audit 4.0: Purpose driven, digitally powered.
Deloitte Global, 2022

3. 2023 Hot Topics for IT Internal Audit: Riding the wave.
Deloitte, 2022

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