

Data Analytics Roadmap:

Leveraging the Power of Your Data to Improve Internal Controls

HIGHLIGHTS

- Data analytics produces real-time results with a low margin for error
- Not every risk area is the best analysis candidate
- Stakeholder buy-in is essential to get your program off the ground
- Data analytics software is a tool, not a solution
- Evaluating your program frequently helps it evolve

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Organizations constantly capture and store information to help provide a more complete picture of their products, clients, employees, or operations. Data analytics takes that stored information and analyzes it computationally to reveal patterns, trends, and associations. Advances in technology now allow organizations to analyze their captured information in real-time to quickly act on cost savings, customer relations, and process improvement opportunities. For example, a shipping company may have historically collected package movement data to provide intelligence about arrival timeliness, route efficiencies, and cost savings areas. By implementing more advanced analytics around collected data from their carriers, the company now monitors performance to make real-time route and schedule adjustments that will lower fuel costs or expedite delivery.



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Value to Internal Audit

Tasked with improving governance and control effectiveness, internal audit has traditionally audited samples from a previous period of time. It may take an entire year for an internal audit function to plan, conduct fieldwork, and report pertinent risks or control deficiencies. That exposes organizations to potential loss and operational inefficiencies.

Data analytics provides internal auditors the opportunity to use the data they've already accumulated to bring control deficiencies to light, provide insights into trends, and leverage predictive analysis to influence decisions. Implementing a data analytics program will help pinpoint red flags in real-time so that you can act quickly on the control deficiencies or failures that need to be addressed immediately. It also enables you to assess an entire data population around a control, eliminating the error rate that statistical sampling can create in a traditional internal audit process.

As we continue to place technology at the center of our processes, operations, intellectual property, and customer interaction, it's safe to assume our need to collect and understand data will only grow. Organizations that can harness their data into effective analytics programs will have a leg up on the organizations that do not. Whether you are just beginning or are looking to refine an existing analytics program that's not delivering your desired results,

following these six steps will help set your program up for success:

1. Establish the building blocks for your data analytics program.
2. Define what a successful program looks like for your organization.
3. Identify which individuals will become part of your data analytics program.
4. Select the right analytics tool to fit your program's needs.
5. Create a roadmap to address your target areas and fit your available resources.
6. Report your results in the appropriate context to your stakeholders.

Getting Started

By now, your organization likely has started the conversation around data analytics. Deciding to invest in a program is the first step, but there are still areas that require your attention prior to execution. Chief Audit Executives (CAE) should recognize and consider the risks. According to the 2018 North American Pulse of Internal Audit, most CAEs (71%) indicate their organization's residual data analytics risks are moderate to extensive. Topping the list is the risk that their organizations will fail to meet changing needs and requirements related to data analytics. This response isn't surprising when you consider that only about 26% of organizations have a fully established or mature data analytics program. Jumping into data analytics without taking time to properly lay a framework opens organizations up to disappointment when results do not align with their expectations. This can cause many to only partially develop, or even abandon their program altogether, without fully realizing the potential advanced analytics can have over their internal audit function. In serious cases, improperly implemented data analytics programs can open organizations up to financial, reputational, or security risks.

Ask Before Getting Started:

- What are my organization's strategic objectives?
- What are our stakeholders' expectations?
- What information are we trying to find?
- Where does our data currently reside?
- Which people need to be involved with this initiative?
- Do the appropriate people have access to the data they need?
- What resources do we currently have available?
- Have we identified an analytics tool?

At a minimum, organizations should complete the following to get started:

1. Identify the pain points and areas of interest of key stakeholders.
2. Gain an understanding of your data architecture and existing information management practices.
3. Anticipate any potential barriers to success and develop a mitigation strategy.
4. Fill the critical roles on the analytics team, including designating a data analytics champion.

Understand What Success Looks Like

Without clearly defining what success looks like, achieving it becomes a difficult challenge. Developing your key points for success is a challenge unto itself, considering your stakeholders are likely a diverse group comprised from more than one department and have unique expectations for how the program fits within the organization's strategic goals. Identifying duplicative payments to your vendors might be a win for your Accounts Payable team, but the Board of Directors may want a more advanced analytics program that forecasts future risks. Seek to understand the objectives and pain points of each stakeholder. Converting this feedback into clear goals that everyone agrees to will arm the data analytics team with what it takes to achieve success.



Critical Roles to Fill

Data Analytics Champion

Supports data analytics and actively promotes its use throughout the organization

Relationship Manager

Builds and maintains relationships with the individuals or departments who own the data or data model

Stakeholder Liason

Bridges the gap between the day-to-day analytics team and your organization's management, Board of Directors, or other key stakeholders

Data Manager

Understands your data inventory and can facilitate data access when required

Information Technology Expert

Possesses an expertise in working with data and information technology systems

Potential Barriers to Success

Defining your goals sets your team on course, but the team need to prepare to face roadblocks along the way. Multiple factors could present barriers to achieving

success. The first and arguably most important is gaining buy-in from your executive team. Inability to convince executives of the benefits can eliminate the funding and resources required to execute the program before it even gets started. Consider piloting your program by focusing on one or two areas of invested interest for your executives where you can quickly share quantifiable results. A “quick hit” project can help demonstrate any cost savings, risk mitigation, operational innovation, or process improvements that you were able to achieve to win over key stakeholders. Once executives are on board, your next big challenge is putting together the right team. This goes beyond identifying individuals with a proficiency in statistical analysis. This group needs to keep the business’ risk, objectives, and strategic initiatives in mind to maximize the benefit to your organization. Finally, data security should always be considered. Throughout your data analytics program large amounts of sensitive information may be stored in your environment, usually independent of production. Set up controls and work closely with your information security department so they can make sure you’re safely storing information.

Building the Right Team

Your data analytics program is only as strong as the individuals who execute it. When putting together your analytics team, there are a few critical roles to fill. While some team members’ skill sets, knowledge, or capacity could allow them to take on multiple roles, it’s recommended that you designate one individual for each critical role to prevent loss of focus. Consider which individuals and departments should be involved throughout the various stages of your program. Building and maintaining relationships with data architects and owners will be important. Data architects control the enterprise data model and can tell you where the data resides, whereas data owners approve access and can give meaning to the data. Your team can always expand in the future as your program grows or evolves.

Designating an Analytics Champion

Identifying your data analytics champion should be the first step to building your team. The larger team will likely consist of individuals at different levels from

different departments, but designating an executive or member of management as your champion can help bring visibility to the program and expedite decision-making. Executives tend to be involved in organizational strategic planning, so they can apply this understanding throughout the program to make sure you're headed in the right direction. Consider those who have experience working with a variety of data and information technology systems to reduce the learning curve.

Ultimately, the most important characteristics of a data analytics champion are a passion for analytics and the ability to effectively communicate. Your champion not only serves as your primary driver for program execution, but they're also responsible for gathering individuals to join the effort, making results accessible and easy to understand to outsiders, and publicizing success. Without having someone like this at the wheel, it'll be difficult for you to steer your organization toward a culture of data analytics.

Selecting the Right Tool

It's no secret that data analytics programs with robust tools typically stretch their investment dollars and increase their success rate. The reality is many organizations jump right into procuring a data analytics tool with the anticipation that simply owning the tool will be enough. Organizations that skip the crucial steps around understanding the basics often have difficulty effectively applying them within their tool. When implementation becomes daunting or difficult, analytics tools can be abandoned completely.

If you have not procured an analytics tool, resist the urge to license the top software package directly off the trade show floor. For many internal audit functions, using Excel to train your team up on statistical analysis isn't a bad place to start. When you're ready to identify a tool that works for your program, do some legwork beyond budgeting. Make sure that you have a thorough understanding of the information you possess, the functions you need it to perform, the people who need access, and the people who will ultimately review the results. Take into account the available training programs around the tool as well to alleviate some of the burden as you implement.


Questions to Ask a Potential Vendor:

- Can the analytics tool integrate with our existing data-connected tools?
- What types of data can be input?
- What are the limitations of the tool (i.e. records, fields)?
- How does the tool connect back to the data sources?
- What are the scheduling capabilities?
- How complex is the scripting language?
- How many users can access the tool?
- Are the outputs easy for non-analysts to understand?
- What are the presentation capabilities?
- Can the tool integrate with my workpapers?
- What type of training is available for the product?
- How is the integrity of the data maintained and protected by the tool?

If you've already selected an analytics tool, don't panic. Take the time to walk through similar considerations and reach out to your organization's administrator or vendor representative to confirm areas that may have been overlooked during selection. Provide training to those that need to access the tool, especially if you currently only have one or two people with the knowledge of how it works. Organizations that take the time to do this are more likely to continue their data analytics program if a key member of the team moves on to other initiatives or places.

Data Analytics Roadmap

Once you understand your organization's goals and data architecture, established your team, and gained access to the right tools, you're ready to embark on your data analytics journey. The path that your organization chooses should be unique and may not even align to organizations within your same industry. It's important to select an approach that works with the components you've already established. In general, many



organizations choose to start in one of two ways:

1. Conducting a risk assessment to identify areas to apply analytics.
2. Evaluating their existing internal audit approach and applying analytics directly within key areas.

Analyzing Your Highest Risk Areas

If you have resources dedicated solely to data analytics, you might consider mapping out your program around specific high-risk areas. Conducting a risk assessment at the start will highlight areas that you can either identify or quantify via data analysis. Talk to your stakeholders and management to catalogue their specific concerns around their departments or areas of responsibility. Ask yourself what data is already catalogued or could be captured to support these areas. Once you have a grasp on the risks to incorporate, use them to build out specific program objectives and outcomes. For example, your payroll department might express concern about ghost employees or individuals recorded on the payroll system that do not work for your company. Identifying these individuals in your payroll register can prove difficult, especially if you manage large numbers of employees, multiple office locations, or rotating, seasonal teams. Analyzing your organization's payroll register could identify the ghost employees quickly, saving the payroll department manpower and resources, while simultaneously adding dollars back to your organization's bottom line by preventing future ghost paychecks.

Aligning Analytics with Your Existing Internal Audit Plan

Your organization may not be ready to hire data analysts and invest in building an entire program from the ground up. An alternative approach is to identify a few areas to apply analytics within your internal audit function, especially if you face audit fatigue or pressure to conduct a certain number of audits within a period of time. This technique allows you to build your analytics program directly into your already scheduled audit cycle. In this way, data analytics can supplement your existing internal audit plan by

providing a more defined or expanded view into areas you've already identified need focus. For example, a national restaurant chain may only have the capacity or investment to audit a handful of locations annually. Currently, it may be using revenue, geographic location, or changes in management to select which locations make the most sense to include in the audit plan. Applying analytics around the point-of-sale (POS) system, inventory, order history, or payroll data, could help pinpoint the restaurant locations that require more attention or automate some of the control testing altogether, freeing up additional hours for internal audit to incorporate more locations into their plan. As you become comfortable with adding data analytics into your annual audit cycle, think of different areas to incorporate into your analytics tool over time.

Integrating Analytics into Your Workpapers

Regardless of which approach you take to get started, you need to address how to incorporate your data analytics program results into your workpapers to seamlessly demonstrate your conclusions. Most data analysts are not familiar with the amount of documentation required in internal audit processes so they'll need a method to convey their results that aligns with your existing methodologies. Developing templates that your data analysts or designated auditors are required to complete helps ensure that you capture the information needed to integrate into your reports. These templates should include items that confirm data validation, such as data sources, queries, data manipulation, results, and conclusions. Data analytics tools often have the ability to integrate directly with your workpapers, and this should be a key criteria that you evaluate during the selection process. If you already have a tool, determine its capability to perform this function directly within your workpaper system.

Determining Data Validity

Internal auditors understand that the accuracy of reporting can mean the difference between rapidly addressing risks and becoming the headline in a cautionary tale. When you begin to integrate data analytics into your overall audit program, you need to account for data validity to ensure that the information

you ultimately report to management and your stakeholders is complete and accurate. Understanding and documenting the data you possess, where and how it is stored, and the internal controls in place will help you facilitate complete, accurate, and efficient data use. Determine the location from which you pull your data. If your data represents production data retrieved from the core system, you will need to review your query to ensure the results are retrieving the desired information. Also consider the input and processing controls associated with the system to ensure data is complete and accurate. If your organization offloads its production data into a warehouse, you should conduct an audit to make sure that the data is current and wasn't altered during the transfer process before you start the query review. Periodic review of your documented queries should also be a part of your standard process. This will prepare you to confirm data validity when questioned.

Reporting Your Results

The best data analytics programs are the ones that excite the entire organization, but it can be difficult to generate enthusiasm if colleagues and stakeholders don't understand your results. Identify the audiences who will ultimately read your results and the level of detail that they expect. Be mindful of your presentation methods, because they may differ from audience to audience. Time constrained members of your executive management team may not need the same detailed level of analysis that department managers require. Data analytics tools offer a variety of interactive data visualization methods or you can create them own. The key is to balance visuals with detail to communicate your results effectively to each audience.

Making the Data Work for You

After you've implemented your data analytics program and realized some initial success, you might consider transitioning from conducting periodic audits to performing continuous auditing and monitoring. This allows you to automatically execute recurring analysis of certain information that's important to your organization. Your analytics tool likely has a flexible interface that can execute provided commands

Considerations to Make Over Time:

- Is our program providing any value?
- Is there more that we can do in this area?
- Have there been any changes that we should account for?
- Are there new strategic objectives that we need to integrate?
- Are there new goals for internal audit?
- What is the feedback we've received from our stakeholders?

and save them in a log, which can later be used to create specific scripts. These custom scripts can run automatically, sending real-time reports to you or management for review and remediation without having to wait for a formal audit report.

Adding more items to your continuous auditing cycle will greatly reduce the number of hours required of your internal audit team for those areas. Over time, you might even be able to let the analytics tool do the work and take an entire audit off their plate.

Evolving Your Analytics Program Over Time

Rolling out a new initiative involves many moving parts, and data analytics is no exception. Incorrect queries or missing data can jeopardize your program's success from the very beginning. Consider the internal control implications as your program evolves. When your program is not aligned with your organization's expectations for internal controls, it can decrease the support you receive and increase your likelihood of experiencing a critical issue. Using a systems development lifecycle or change management process during analytics development can help reduce the risk of incorrect analysis or conclusions. Implementing appropriate controls around the data involved in analysis helps ensure the confidentiality, integrity, and availability of the data. It might be necessary for your team to meet frequently to evaluate the operation of the program, determine that the right people are involved, and ensure that the results ultimately align back to



strategic objectives. Even with tenure, data analytics programs should be re-evaluated as part of your annual planning at a minimum.

Conclusion

Any organization can benefit from data analytics with the right resources, but that doesn't mean programs are one-size-fits-all. Those that excel take the time to understand their goals and limitations and tailor their programs to their unique criteria.

- Understand what your stakeholders care about and how they define success. Plan for the barriers you may face along the way.
- Identify the right people, departments, and tools that you need to get the job done.
- Determine the risks ripe for analysis, whether they be new areas to review or integrated within your existing audit program.
- Establish frequent, consistent reviews of your program so it remains relevant and accounts for future growth.

Regardless of which avenue you choose to get started, success is obtainable with proper planning, resources, and evolution over time.

About CBIZ Risk & Advisory Services

CBIZ, Inc. is a publicly-traded business consulting, tax, and financial services provider. With over 100 offices and over 4,600 employees in major metropolitan areas and suburban cities, we are proud to be one of the Top Ten accounting providers in the nation, as ranked by *Accounting Today*, *INSIDE Public Accounting*, and *Public Accounting Report*.

For over 25 years, organizations have chosen to add our team of experts to their internal controls staff. We couple our real-world experience with the right technology and resources to help clients meet their strategic objectives while remaining flexible so we can evolve as those objectives change over time. When you choose CBIZ Risk & Advisory Services, you get proactive, accessible professionals who communicate in understandable terms and deliver practical solutions on time without surprises.

Based on our experience, we understand how important it is for our clients to continually demonstrate improvement, and we believe that a strong data analytics strategy can be an effective tool in that journey toward success.

Our data analytics services are designed to:

- Create strategies that align with your business.
- Develop and implement continuous auditing and monitoring programs.
- Create and implement enterprise and regulatory data governance.
- Provide technical support for forensic investigations and litigation.
- Construct real-time, risk-based scoring models.
- Train users on analytics applications.



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