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How to Launch and Advance an Internal Audit Data Analytics Program

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Data is a powerful tool for internal audit teams, but launching an advanced program can be daunting. Many need a practical and methodical approach to implement or enhance an effective data analytics program.

In this article, Crowe professionals address how organizations can deliver meaningful impact from the outset while avoiding excessive investments of time, expense, or other overwhelming propositions as they establish and advance data analytics in their internal audit functions.

Building a data analytics program

Organizations and their internal audit functions have access to a sea of data. Harnessing the power of that data through analytics enables internal audit teams to accomplish greater coverage with less effort, enable targeted sampling, and tell a meaningful story about risk through data visualization and other analytics results. The value is clear, but many internal audit teams struggle to establish and progress a data analytics program.

Building a robust, sustainable data analytics program begins with ensuring effective data governance and integrity, implementing on a manageable scale, and demonstrating value. From there, internal audit departments can integrate data analytics into their processes and methodology to achieve greater focus and insight into risk with fewer resources.

Navigating challenges and pitfalls

Before leaping to implement a data analytics program, internal audit teams need to understand common challenges and pitfalls they might face during the process. Awareness and preparedness for addressing these obstacles upfront can make the process more manageable and meaningful.

- **Data governance.** Many organizations lack the foundation of strong data governance, which presents a significant challenge. Challenges include data stored in a variety of formats, uncontrolled access to data, lack of system interfaces, lack of common identifiers across systems, and/or inconsistent data inputs and storage. For example, phone numbers and social security numbers might appear with dashes in some applications but without in others, and ID numbers might be preceded by zeroes in some but not other applications.

  These differences might present obstacles to efficient and effective data analysis. If this is the case for the organization, the incorporation of a data governance audit into the internal audit plan might help move the needle or at least start a conversation toward enhancing data governance. However, strong data governance is generally a longer-term initiative, so the sooner an organization can start down that path, the better.

- **Data integrity.** Data analytics can only be useful if the data used is complete and accurate. Unreliable data will produce unreliable results. Within any data acquisition process, internal audit needs to have a strong data validation step within the process. Managers who find themselves on the losing end of the data analysis might be quick to discredit the accuracy of that data, so ensuring the integrity of the data going into the analysis can lend credibility to internal audit's comments and results.

- **Scale.** Many internal audit leaders feel overwhelmed by what it will take to get a data analytics program off the ground. That's often driven by attempts at giant leaps and bounds instead of manageable steps incorporated into the normal course of the audit plan and audit projects.

  Rather than trying to implement advanced analytics all at once, internal audit teams should take a scaled approach by focusing on strategic alignment and prompt demonstration of high value from the analytics. They should identify which audits on the plan align best with strategic focal points or hot-button issues of the organization, start with analytics for those audits to facilitate quick wins for internal audit analytics, and then build from there. Internal audit should also consider process areas on the audit plan that are rich in reliable data and dollar value and where data complexity is low to moderate.

- **Buy-in.** Starting with a targeted approach that delivers value through internal audit's initial uses of analytics, quick wins can be used to garner support from key decision-makers. Securing budgetary buy-in from leadership is essential to advancing an internal audit data analytics program. With resource buy-in, incremental investments can be made to further scale-up team and technology to progress both the extent and nature of internal audit analytics in a program. Building a strong partnership in the IT function can also help an internal audit team get the right data in the right format and in a timely manner.

- **Talent.** When progressing a data analytics program beyond basic ad hoc analytics, the ability to deploy talent with the appropriate skills and experience is critical. While many organizations lack such talent in their internal audit function, the necessary talent often exists on other teams within the organization. Taking advantage of limited, part-time use of available, internal talent and tools (keeping internal audit independence in mind) might be an option. Alternatively, experienced internal audit analytics consultants might be able to provide focused technical capability and strategic insight.

Aiming for sustainability

When selecting an audit project from the audit plan in which to incorporate analytics, identifying common processes with large amounts of available data and a significant level of risk is a good place to start. A project with this type of process creates a value proposition while allowing internal audit teams to manage the project, even if an organization lacks strong data governance.

Accounts payable or payroll, for example, offer plenty of data that is often readily obtainable and known to the internal audit team. Data analytics in these process areas can quickly identify potentially nefarious vendors, employees, and payments through anomalies and outliers generated by the analytics. High-risk results that are easy to quantify can grab the attention of decision-makers and receive investment funding to continue advancing the internal audit data analytics program.

An internal audit data analytics program, like most business functions, needs to demonstrate a return on investment to become a viable, long-term asset. Consider: How do organization leaders and those who make investment decisions relevant to the data analytics program define value? Often, the answer is found through the risk assessment process, wherein key executives share input on high-risk areas, risk indicators, and matters of concern.

For some organizations, the executive leadership team might be highly sensitive to risk and perpetration of fraud. For others, the primary area of concern might be the prevention and minimization of regulatory scrutiny, sanctions, or related media. Many are primarily focused on revenue maximization and cost minimization. Whatever the drivers of risk and value to the organization are, they are often a great place to start for incorporating robust analytics into internal audit projects.

Once internal audit departments identify hot-button issues, the right approach can put their data analytics projects on the path to sustainability. The following steps can help organizations take action:

- **Set manageable expectations and goals.** Leaders at some organizations might shy away from implementing a data analytics program because they imagine the immediate expense of building a fully formed platform from scratch. An internal audit team can set a more reasonable expectation with an ad hoc project that draws on existing resources. The team can build on the success of that initial plan progressively as value merits further resource investment.

  Before the project begins in earnest, verify that all stakeholders – internal audit team members and management – agree on the project goals. The internal audit team members leading the project are

responsible for educating decision-makers on the process and results. No one should believe data analytics is a silver bullet for a particular pain point. Rather, it is a tool to better understand and address a particular issue. By implementing an initial pilot project with data analysis in place, organizations can expand in a way that balances data relevance and stretches goals without overburdening or overwhelming individuals, teams, or stakeholders.

- **Quantify.** Once an internal audit department has defined value, quantifying the results can demonstrate data analytics return on investment. Business professionals and decision-makers alike respond to dollars and cents. In some cases, this quantification may come in the form of potential fines or penalties avoided from regulatory bodies such as the Occupational Safety and Health Administration (OSHA), U.S. Food and Drug Administration (FDA), Centers for Medicare and Medicaid Services (CMS), Office of the Comptroller of the Currency (OCC), and data privacy regulators.

  The internal audit team can support quantified results through use of industry benchmarks to provide a relevant, objective measurement. The more an internal audit team can quantify the benefits from using data analytics in internal audit projects, the more likely the analytics initiative can gain support for expanding and advancing a sustainable data analytics program.

- **Refine the process.** When launching a project, manage it with the intention of making it repeatable, and demonstrate its relevance to the goals and focus of the organization. Document what was found to be the most efficient pathway to acquiring, cleansing, and transitioning data into the format necessary for the analytics.

  To support future analysis, document and retain details about the systems from which data was ultimately obtained, the queries or reports used to obtain the data sets from the source systems, the contacts that were most useful and helpful, and any other logistical hurdles for efficient data acquisition. To refine future analytics, document false exceptions and other insights found from testing anomalies, outliers, and exceptions produced by the analytics. This documentation, along with retention of other lessons learned, can facilitate the expansion of using initial data analytics from a single project to continuous auditing of data at a fraction of the cost of time and resources.

- **Continue to build out initial analytics in other process areas.** Once a couple of quick wins have been demonstrated to support further investment in the program, continue a sustainable expansion of initial analytics into audits of other key process areas. Take a bite-sized approach for initial analytics in additional process areas each year, and begin to advance the analytics for the first set of audits in which analytics are incorporated.

Advancing beyond ad hoc analytics and internal audit projects

Incorporating ad hoc analytics into an initial few internal audit projects is a manageable, scalable first step, and it can be a foundation for incremental advancement of internal audit's data analytics program.

- **Turn ad hoc into efficiently repeatable, continuous auditing.** With refined analytics, documented processes, and lessons learned, the opportunity to conduct recurring data analytics and exception-testing of the same processes at a defined frequency becomes possible. Work to improve the queries and data analytics based on the results investigated with each recurring analytics run. As time progresses, the analytics results will deliver greater effectiveness of exceptions presented by minimizing false exceptions and requiring a diminishing level of effort.

- **Advance internal audit analytics.** Following successful completion of a number of projects that demonstrate value-added analytics, the internal audit function can be in a much better position to naturally take one or more of a few optional steps into advanced analytics.

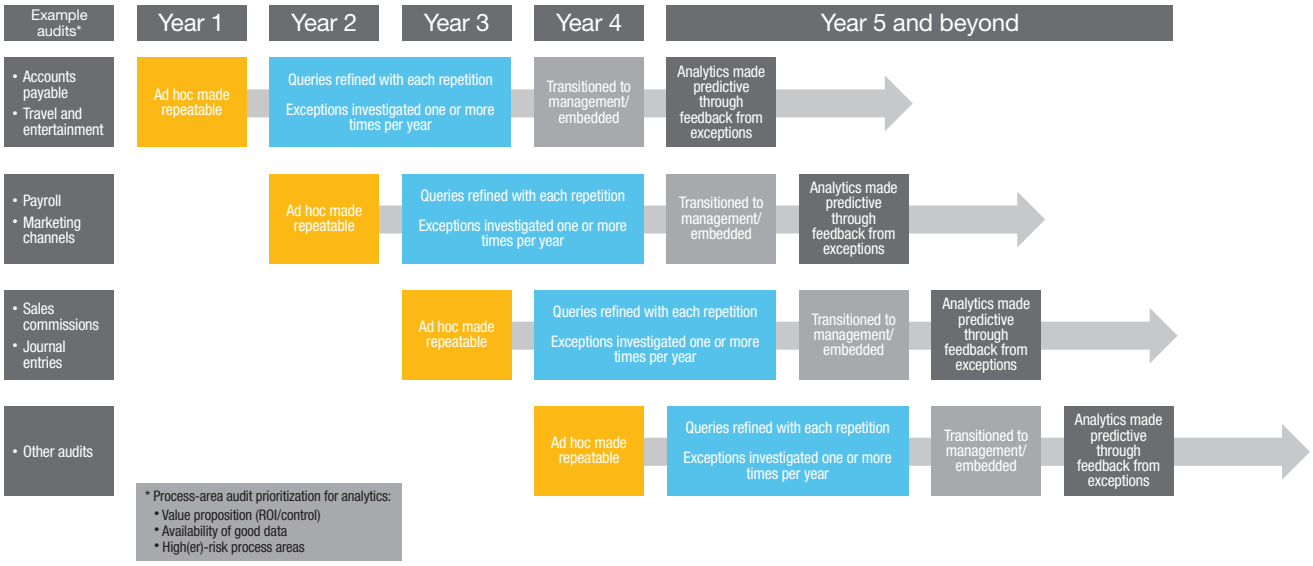
  1. **Embedded analytics.** Explore options with IT to build efficiently repeatable analytics into the corresponding systems with reporting dashboards, visualizations with drill-down capabilities, exception alerts or follow-up, and resolution workflow. In many cases, this point might be when management (the first or second line of defense)

takes over the analytics from internal audit and embeds them as a monitoring control. However, if management doesn't want to use the technology, audit can continue to use its powerful insights.

2. **Predictive analytics.** Internal audit's analytics program, built on a sound foundation of basic queries and results, can be harnessed over time. Work with IT to build algorithms to identify a multiplicity of lead indicators of future exceptions based on historical indicators of validated exceptions. In this way, internal audit and management can stop a problem before it happens.
3. **Machine learning and anomaly detection.** Machine learning expertise and related technological capabilities are continuing to expand, and they can provide endless opportunities for internal audit to take its initially basic analytics program to a more sophisticated level. Entry-level anomaly detection tools can be used to identify even the oddest transactions within a population for ad hoc testing or investigation purposes.

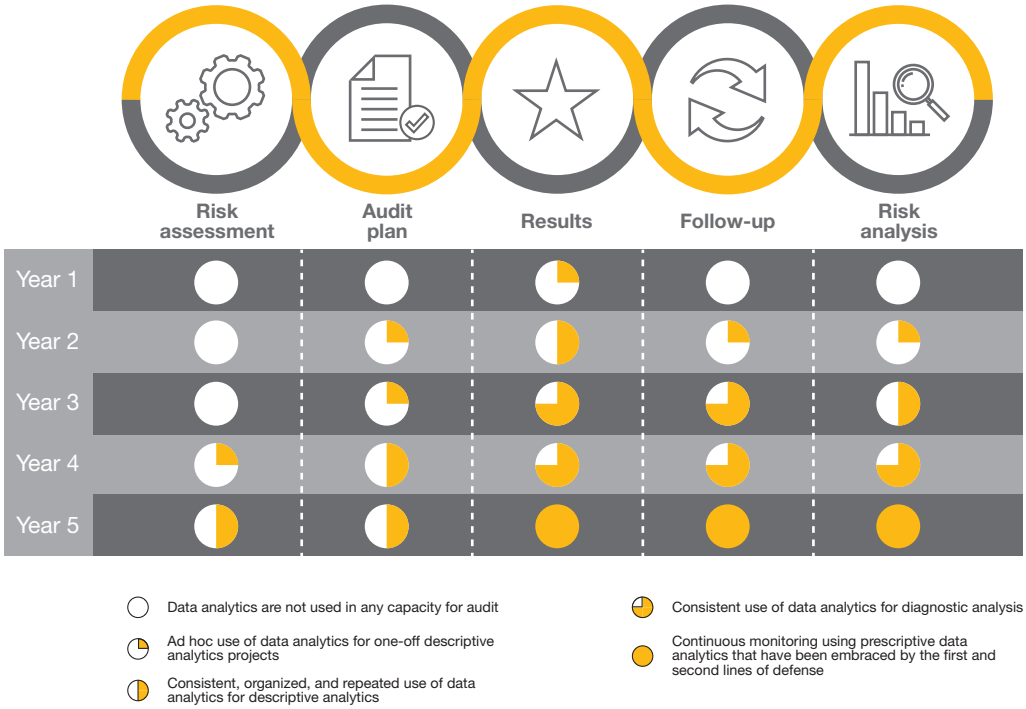
Exhibit 1 offers a visual representation of what a progression might look like over a five-year period for an internal audit data analytics program.

Exhibit 1: Potential internal audit data analytics program progression



Source: Crowe analysis

Exhibit 2: Data assessment and analytics: A road map



Source: Crowe analysis

- **Expand data analytics in other phases of the internal audit model.** With the power of data demonstrated and maturing, organizations can better position themselves to begin to employ the same power in managing the internal audit process, from risk assessment and audit planning to follow-up and risk analysis. The power and visualizations of data throughout the internal audit model can strengthen an organization's position and equip leadership and stakeholders to make decisions about the allocation of limited audit resources. Exhibit 2 offers one example of building a road map that includes where to incorporate analytics in the various phases of an internal audit model.

Maximizing opportunities

Internal audit teams continue to struggle with the starting point for their data analytics program that involves limitless options. Not to worry; internal audit teams can take a tapered, manageable approach to implementing and advancing their internal audit analytics program. Simple, ad hoc analytics built in to a few strategically aligned internal audit projects focused on data-rich and high-risk areas can be the start to a comprehensive program.

These opportunities can become efficiently repeatable analytics while additional analytics sets continue to be developed. From there, the internal audit team can be well-positioned for investment in new advanced analytics options.

Learn more

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