The Diligent Audit Analytic Capability Model

How to get from basic data analysis to continuous monitoring

Diligent

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"The Diligent Audit Analytic Capability Model provides clear guidance for organizations looking to improve their use of analytics. It's how to talk to the business about the value of audit."

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Introduction

Audit is increasingly required to assess the effectiveness of risk management processes, in addition to its standard assurance duties. Declining or flat budgets, reduced resources, and increasing complexities around regulatory compliance make this challenge harder. Audit must evolve to be more forward-looking and risk-predictive.

Audit must have a comprehensive understanding of past events, offer valuable insights into current circumstances, and anticipate potential risks for the future. In essence, a continuum encompassing hindsight, insight, and foresight.

The answer to being able to deliver these insights is data, but many organizations still don't have the analytics capabilities required to extract all of those meaningful insights.

As organizations apply greater automation and continuous auditing and monitoring, audit analytics make it possible to detect patterns or trends in audit and control issues. These provide foresight on increasing or changing risks within business and financial control processes.

That's why Diligent developed the Audit Analytic Capability Model, a framework for assessing different levels of audit analytic techniques and benefits. This white paper will outline the Model, illustrate the five progressive levels through which an audit department should look to evolve its use of analytics, and outline the fundamental building blocks (people, process, and technology) that are required.

Diligent's Audit Analytics Capability Model (Figure 1) is intended to help organizations evaluate their use of analytics as they progress through the levels.

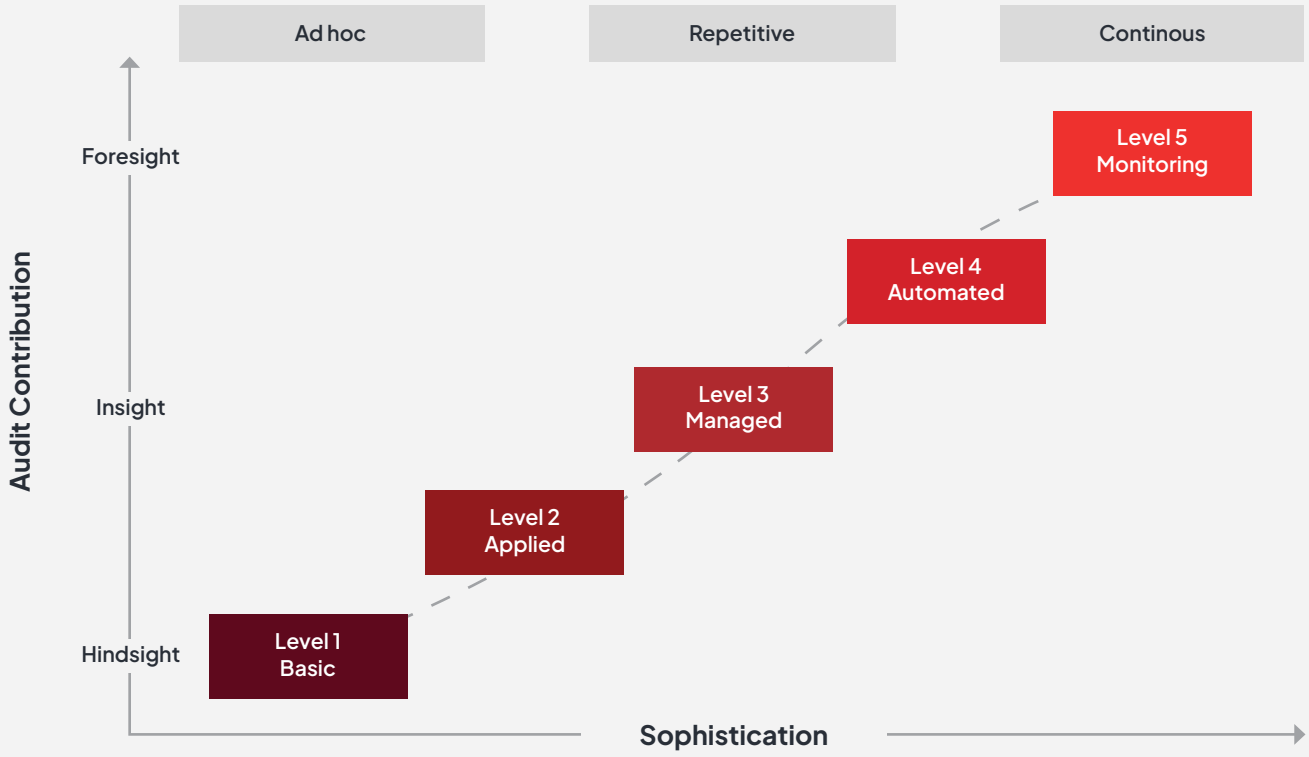

Figure 1: Diligent's Audit Analytic Capability Model

In the next section, we'll explore the characteristics and benefits of each level. Additionally, we'll look at some of the challenges that auditors face while using audit analytic technology, as well as the risks that organizations may face at each level. We will also provide tips on how to optimize people, processes, and technology to reduce those risks and improve the effectiveness of audit analytics, while progressing toward continuous monitoring.

Level 1: Basic

Organizations performing at this level use audit-specific data analysis technology to perform queries and analysis of large data sets. An auditor typically starts by using analytics to produce statistical overviews and classifications of data. This allows the auditor to identify anomalies and to better understand the transactions and balances within a specific area. Obvious problems such as duplicates are easily identified with pre-built analytic tests. Transactions and master data can be compared between systems, providing indicators of errors and fraud.

Characteristics

The use of data analytics is typically ad hoc. There is usually little involvement from management. Often an auditor with technical interests selects the analytic software, which is then used by that person or only a limited number of specialists.

Benefits

Better view of risk and control issues within a given audit area. Analysis is more in-depth than can typically be obtained by general-purpose software or manual procedures. As a result, auditors can quickly identify specific instances of fraud, error, and abuse, as well as inefficiencies and control weaknesses. In some cases, the time to analyze data can be cut down from days to minutes when compared to manual techniques.

Challenges

The most common challenge for auditors at this level is data access. This includes understanding what data is required to support a specific test, as well as obtaining that data.

The Metropolitan Atlanta Rapid Transit Authority created a clear strategy to adopt digital technology for internal operations with a modernized approach to audits resulting in efficiencies and other benefits.

By implementing Diligent Audit Management to securely manage digital workflows, automate and streamline audit processes, they can now see where they are in the life cycle of each audit engagement. The cloud-based audit platform allows the MARTA team to work on a laptop or mobile app even when out of the office.

Organizational risks

Obtaining data can become a significant risk and resource constraint to the organization if the process is not planned and managed effectively. Because audit-specific software can handle massive amounts of data, security is critical.

The risk that an auditor may jump to conclusions based on analysis that hasn't been thoroughly understood. At this level, there are often minimal review and quality assurance procedures to ensure the validity of work performed and that the work is focused.

How to optimize

By focusing on improvements in the areas of people, process, and technology, organizations can overcome these challenges and risks, and increase the effectiveness of audit analytics at the Basic level.

People

- Train your team. Although audit-specific data analysis is not difficult to use at this level, training is important and beneficial.
- Unless the IT department is mandated to support audit, it's often a good idea to have a strong technical resource available that can help deal with data access.

Technology

- Select audit-specific software that supports continuous auditing and monitoring for future growth.
- Ensure hardware systems can support large volumes of data storage and processing.
- Use the built-in capabilities to ensure audit activities are logged.

Process

- Start with a simple plan. Identify where to use data analysis, the audit objectives that are supported, the period to be covered, and timeframes.
- Work with the IT department to identify and access data.
- Ensure that the data obtained is accurate and complete.
- Determine the format(s) of reports, and document procedures.

> " Diligent Audit Management is our window into business operations. And without that window, you don't know what information is even available to you, so it's impossible to effectively audit."
>
> — Mitch Mertz, Manager, Data Analytics, United States Postal Service, OIG

Level 2: Applied

The second level builds on the first, but is distinct because the analytics are far more comprehensive, fully integrated into the audit process, and begin to transform how audits are performed. At this level, audit planning takes analytics into account so that, wherever beneficial and practical, an audit step or objective is achieved with the help of a specific analytic test. A full suite of repeatable tests is built to support an entire audit area.

Characteristics

Most audit organizations perform at the Applied level. However, within this level there is a broad range of skills and applications, with some organizations far more advanced than others.

People and process issues become increasingly important. Audit management needs to provide direction and support, and a specialist is often assigned the role of data analyst to oversee the development of analytic projects and procedures. Review and quality assurance procedures are put in place to confirm the quality and validity of audit analytics.

The use of analytics is progressive within this level. After starting with "low-hanging fruit," usage grows over time as additional tests are added to support a broader set of audit objectives. Consideration is given to how analytics can best be applied on every new audit.

Benefits

- At this stage, analytics begin to fundamentally transform the audit process, providing greater levels of assurance.
- Manual auditing, sampling, and testing procedures are reduced. As a result, many tasks are performed more quickly, freeing auditors to focus on areas of new and evolving risk.

Oklahoma City auditors used analytics to audit state sales tax revenues and to identify missing payments, inconsistent application of statutes and fees, and improper vendor reporting. In one project, the audit team uncovered $45 million in lost municipal revenues, and the discovery led to changes in the way all cities within the state collect sales tax payouts.

Challenges

There are a range of challenges that the audit team may face as it adopts widespread implementation of audit analytics and integration into the audit process. For instance, auditors must recognize that there is a big difference between the occasional use of an analytic tool and making analytics a core part of the audit process. Analytic programs must be owned, managed, and people, roles, and processes changed, as necessary.

Organizational risks

At this level, the greatest risks to an organization are often a result of the decentralized and distributed environment that evolves from the expanded number of end users and increasing audit analytic content.

As the data environment becomes decentralized, the risk of duplicated efforts increases. Security issues also increase as data and results proliferate across a range of laptop and desktop computers.

Critical data on auditors' computers may not be subject to the usual enterprise security standards. Sensitive data, such as credit card details and social security numbers, is often not encrypted or masked and may be visible to others.

Lastly, there is a good chance that knowledge rests in the heads of a few key people whose possible departures could cause a loss of investment and progress.

How to optimize

To overcome these challenges and risks and to maximize the effectiveness of audit analytics at the Applied level, organizations should consider the following.

People

- Assign overall responsibility for the success of an audit analytics program to someone with technical skills.
- Consider technical and audit expertise when determining audit leadership roles. (Few auditors are able to successfully combine capabilities in technical data analysis with in-depth understanding of audit and control processes and objectives.)
- Develop and train specialists in data access and test development.
- Ensure management reviews test logic and results. (Too often, analytics are left to specialists to design with minimal review at the management level.)

Technology

- If data access challenges exist, consider specialized data connectors (e.g., SAP or other core business systems).

Process

- Define and broadly communicate goals and objectives for using analytics and establish a realistic estimate of resource and investment requirements.
- Develop procedures for quality control of analytics development and use, like independent review to ensure that test logic is correct.
- Develop a comprehensive audit analytics program plan that can evolve to meet the needs of subsequent Audit Analytic Capability Model stages. Start with key audit objectives and determine which can be achieved most efficiently and effectively through data analysis.

Level 3: Managed

The objective at this level is to achieve team-based data analysis in which data and processing is centralized, secure, controlled and efficient. Audit organizations operating at the Managed level must have the people, processes, and technology in place to effectively manage content and activities, and is essential for moving forward in the Model.

Characteristics

The Managed level typically involves the development of many analytic tests that process large volumes of different data sets. In most cases, many people are involved in this process and information is spread across various devices.

Audit organizations performing at this level typically have a well-structured and centrally managed server environment to store and maintain the large data sets and content of the audit analytics processes.

Complex processing of large data volumes is typically performed on high-powered servers. Access to and use of content is subject to planned processes and is controlled and secure. Detailed procedures, standards, and documentation are developed.

Most significantly, at this level it is more practical and common for non-technical auditors to efficiently access and use the results of tests.

Benefits

- Improves team efficiency, as it becomes easier and more efficient to share audit analytics content among the entire audit team, not just analytic specialists. Dependence upon individual staff members is reduced and staff departures have less impact on work continuity.
- Supports processes that make it easier to maintain the quality and integrity of analytic work. The ability to access and change tests can be controlled more efficiently and enterprise-level data security standards can be easily maintained.
- Improves effective relationships with IT by adhering to more typical standards for storing and processing data.

Challenges

For the chief audit executive (CAE) and audit team, moving to a managed analytics model requires preparation. Establishing a managed and centralized environment for audit analytics is as much about process and people as it is about technology. This means that implementation needs planning, preparation, and resources.

Organizational risks

There are few immediate risks to an organization that has evolved to this level. The issue is more one of senior executive expectations for moving to continuous procedures. At this point, the audit department has typically built a suite of tests and implemented procedures to maximize benefits from analytics in support of a cyclical audit process.

Case study: efficient, secure, & rapid analysis

Oregon Secretary of State's Audits Division provides oversight of public spending within Oregon state. A lot of their time is spent getting data, analyzing it and doing the resulting audit work. The team manages audits with large-scale data systems and millions of records.

They needed a platform to help analyze huge amounts of data, spot anomalies and protect taxpayer dollars. Data analysis and audit technologies are a core component of its audit work — and Diligent offered the best analytics solution for them.

Oregon Secretary of State has seen tremendous value from Diligent saving taxpayer dollars and analyzing enormous datasets. They also support other Oregon government organizations, making recommendations for how agencies and departments can use technology to improve their processes.

How to optimize

The following are a few areas an organization should consider for improving the effectiveness of audit analytics at the Managed level.

People

- Implementation of the Managed level of audit analytics requires overall leadership and direction from audit management.
- Designate a repository administrator who understands the audit organization and processes, as well as how to establish effective content security procedures.

Technology

- Ensure software is designed to manage and control audit analytics content and supports efficient data access.
- Ensure server hardware is in place to support the central server-managed analytics platform.

Process

- Structure the audit analytics repository so that content can be used and controlled efficiently (e.g., categorize data by audit area, location, and period).
- Carefully consider account access, security, and control requirements. Limit access to sensitive payroll and payments data, and prevent changes to tests except by authorized people.
- Encrypt or mask sensitive data.
- Confirm the completeness and validity of repository data (e.g., by reconciliation to control data or to general ledger balances).
- Standardize localization and structure of documentation for data, tests, and procedures.

Level 4: Automated

Once a comprehensive suite of tests is developed and well managed, audit is ready to move ahead with automation. However, to be effective, continuous auditing involves some fundamental changes in audit processes.

A traditional cyclical audit has a clearly defined timeframe. A continuous audit is different, as the processes for running tests, reviewing, and reporting are ongoing. Roles and responsibilities for performing continuous auditing are also different in this approach.

Characteristics

The Automated level builds upon the previous levels as the foundation for continuous auditing and monitoring. Comprehensive suites of tests have been developed, tested, and are available in a central, controlled environment. All that remains is to schedule tests to run regularly.

However, continuous audit requires more than just technology issues to be addressed. It usually requires a significant shift in audit processes. Most audit departments begin continuous auditing in one area and then expand to additional areas over time as appropriate procedures are established.

Benefits

- Meets the increasing expectations from audit committees and management for audit to provide insight and assurance that is timely and more valuable.
- The ability to track current status of audit, risk, and control issues leads to a more efficient and effective audit process overall. Auditors can keep track of changes in risk profiles.
- Saves considerable expense and effort. Audit resources can be assigned to areas of more significant risks.
- Allows audit management to provide more thorough and higher-value reporting to the audit committee and senior management.
- As an example, City of Gainesville's City Auditor, Carlos Holt, describes how Diligent Audit Management has increased team performance, replaced manual processes and significantly improved the way they work.
- Can be used to demonstrate to business process management the value of audit analytic techniques.
- The team can also follow trends with targeted analytics and promote more effective controls.

Challenges

A successful move from traditional audit processes is difficult to achieve unless it's led and supported by senior audit management who understand the benefits and objectives, as well as the necessary investment and effort.

The most significant challenges are usually encountered when allocating sufficient resources to support the change in approach, as well as recognizing that change of this type requires ongoing management review.

Organizational risks

The greatest risk to an organization at this stage is that findings are not shared with management or are not responded to in a way that adds value to the business through improved controls and business performance.

How to optimize

Below are a few areas an organization should consider when looking to improve the effectiveness of audit analytics at the Automated level.

People

- Designate a continuous auditing program manager who is responsible for leading and coordinating efforts across people, processes, and technology.
- Modify work processes so that an individual auditor's continuous auditing responsibilities fit in with other audit roles.

Technology

- Keep in mind that technology issues most often relate to getting the appropriate data on an automated basis. When issues exist, start with confirming that the right data is available.

Process

- Develop a prioritization plan for the business areas that require continuous auditing. Should continuous auditing be first applied to common business process areas like purchase-to-pay, or procurement cards? Or to complex areas of greater risk?
- Determine the appropriate frequency of tests for each audit activity (e.g., weekly or bi-weekly for payroll; daily, weekly or monthly for purchasing and payments).
- Assign responsibility of reviewing the results of continuous audit tests. Define the actions to be taken on continuous audit results.
- Create procedures for modifying tests when results indicate changes are required.
- Ensure data validity and completeness. (Timely availability of accurate data is critical for continuous auditing.)
- Determine procedures to undertake if a test fails to run.

Level 5: Monitoring

With all of the building blocks of the preceding levels in place, you're well positioned to increase the benefits of audit analytics by expanding it to other business areas.

Audit is often in the best position to demonstrate to organizational process management the practical value of audit analytics to detect policy breaches, and control problems, as well as operational performance improvements. By encouraging and supporting the implementation of continuous monitoring, the benefits of audit analytic techniques become obvious to a wider audience. For example, it's not unusual to hear an organizational process owner comment that they had been looking for some form of exception reporting system to provides greater insight into operational performance, and be relieved when audit is able to provide that.

Continuous monitoring can also become an important component within an organization's risk management processes, helping to provide the organization with a clearer picture of risks, issues and trends.

The view of the audit profession is that responsibility for continuous monitoring should be passed to business management. This approach results in the desired outcome of continuous auditing being performed by audit, and continuous monitoring performed by management.

Characteristics

The highest level of audit analytics occurs when the results of regularly repeated (continuous) testing of transactions and controls are provided directly to management for response. Continuous monitoring is a natural progression from continuous auditing, involving many similar processes and technologies.

While most auditors agree that continuous monitoring is the responsibility of management, audit is in a position to recommend and guide management.

- ✓ Duplicate payments
- ✓ Split transactions
- ✓ Restricted merchant category codes (MCC) on credit cards
- ✓ Suspicious journal entries
- ✓ Employee/ vendor match
- ✓ Exceeding purchase limits

Exception management

Automatically distribute exceptions found during data analysis testing to multiple stakeholders

- Accounts payable
- Purchasing
- Payroll
- Accounting
- Accounts receivable

Other than "ownership" of the processes, the main characteristic difference between Level 4 (continuous auditing) and Level 5 (continuous monitoring) are the workflow processes by which the business area is notified of exceptions and responds to them, as well as the use of dashboards for overall reporting. The results of widespread testing can be accumulated and reported to show evolving risks and trends.

Benefits

The greatest benefits from the use of analytics for auditing and control testing occur when the organizational process area has taken over responsibility for continuous transaction monitoring and can address flagged issues as they happen. If fully implemented at this level, audit can step back and review and assess the results of the continuous monitoring process. Audit can assess management response and remediation activities in order to determine what, or whether, additional audit procedures are required. This improves audit productivity since audit can focus on areas that are not subject to these techniques.

With continuous monitoring, organizations benefit from improved effectiveness of controls and require fewer control procedures since all transactions are monitored automatically. They experience a reduction in fraud, error, inefficiency and abuse — directly improving the bottom line and business performance, and reducing associated risks.

Continuous monitoring helps make the organization more aware of the benefits of auditing techniques, thus creating an "audit-aware organization." It can also foster a closer working relationship between audit and management regarding the impacts of risks and controls in which audit becomes more aware of organizational issues — the "organization-aware audit team."

> " It's a great tool for managing things. It's a great tool for strategic planning, for analyzing data. You can do so much with it. We're finding millions of dollars in most programs that we look at. So we're saving tax dollars every day."
>
> — Jamie Ralls, Audit Manager, Oregon Secretary of State

Challenges

Challenges at this stage are usually the result of the previous building blocks (processes, roles, and technologies) being poorly established, or because management does not fully understand or accept their critical role and responsibilities.

One of the most common issues is that management has different criteria for an exception. It may be that management isn't concerned about control weaknesses that matter to audit and are more interested in performance-based issues. This is an opportunity for management and audit to work together on an improved, common understanding of organizational needs and opportunities.

False positives are also common. If continuous monitoring produces mass numbers of false or insignificant positives on an ongoing basis, the process will usually grind to a halt.

Organizational risks

The continuous monitoring processes may not reveal any significant instances of control failures, even though from an audit perspective it may be that a lack of exceptions indicates there is assurance that controls are working effectively. As a result, business owners may fail to see the value of the process and dismiss or terminate the audit program.

How to optimize

The following are areas an organization should consider when looking to improve the effectiveness of audit analytics at the Continuous Monitoring level.

People

- Assign overall responsibility for the ongoing success of the continuous monitoring processes to an appropriate person. (This is a new organizational process, no longer a project.)
- Allocate resources to the review and follow-up of exceptions according to the nature and severity of the exceptions identified.

Technology

- The technology requirements for continuous monitoring are very similar to those for continuous auditing, although usually with the addition of capabilities to support the management and reporting of exceptions.
- Dashboards on the status of continuous monitoring and results over a given timeframe are usually a valuable way of quickly assessing overall risk patterns and highlighting trends.

Process

- Establish ownership and the respective roles of audit and business process management. In principle, audit should be independent of the continuous monitoring process and pass all responsibility over to business management.
- Once the continuous monitoring processes and results are assessed, the auditor needs to decide the impact on audit procedures.
- Continuous monitoring tests should be validated to ensure that specific control failures and problem transactions are correctly identified, and to reduce the problem of false positives.

Conclusion

This document provides an introduction to the Diligent Audit Analytic Capability Model. Each organization will encounter unique challenges in optimizing the benefits at the different levels along with typical people, processes, and technology issues to address. When continuous auditing is combined with continuous monitoring, it's possible to achieve a level of continuous assurance over the effectiveness of controls and the integrity of transactions in business process areas in a way that isn't otherwise possible.

At a high level, the Model provides audit with a means of assessing the current level of use of audit analytics and identifying the desired level of use, together with a basic understanding of some of the issues to address. It can be used as a roadmap to communicate plans, and to make the business case to management for building an audit analytics strategy.

Overall, the Model supports audit in making the business more aware of the benefits of auditing techniques, as well as helping audit become more aware of what's happening within the business. The result is an increase in the value that audit contributes to the organization. Forward-looking audit departments are embracing action in the form of carefully planned and executed implementations that help their organizations harness the value of richer insights and greater foresight each step of the way.

Diligent

About Diligent

Diligent is the global leader in modern governance, providing SaaS solutions across governance, risk, compliance, audit and ESG. Empowering more than 1 million users and 700,000 board members and leaders with a holistic view of their organization's GRC practices so they can make better decisions, faster. No matter the challenge.

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