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# How to Get Started With Continuous Auditing

By Tammy Whitehouse

As management's tolerance for risk narrows and the ability of technology systems to handle larger and larger data sets improves, continuous auditing methods are emerging as a way to better understand and control many business processes.

While continuous auditing isn't new—the idea was first put to use by AT&T Bell Laboratories in 1989 to keep tabs on the company's billing system—the approach is gaining favor among internal auditors and compliance professionals, because it can provide a more timely, more insightful look at what risks need to be explored and remediated. As its name suggests, continuous auditing occurs on an ongoing basis rather than at a point in time. “At the moment continuous audit is still leading edge, but in two-to-five years, at most, it will be part and parcel of internal audit and compliance work,” says Neil White, a partner with Deloitte.

John Verver, vice president at technology provider ACL, says continuous auditing essentially is just a variation of traditional auditing. “It means performing some type of risk and control assessment on a more frequent, ongoing basis,” he says. The terms “continuous auditing” and “continuous monitoring” often are used interchangeably, but they have an important distinction, says Verver. “The primary difference is the ownership and responsibility for the process,” he says. Continuous monitoring is the job of management or the business process owner to assess and correct their own work, but continuous auditing is the internal auditor's job to verify that controls are operating properly.

Robert Mainardi, an independent consultant and author on continuous auditing, says the concept of continuous auditing is often misunderstood. Debunking a common point of confusion or myth, Mainardi says continuous auditing is not necessarily automated. “People will say to me, ‘What software do I need to buy?’ but it's not about software,” he says. “It's about having a methodology that defines what you are trying to do and how you are going to do it.”

Another common misunderstanding, he says, is that continuous auditing is endless. “In true continuous auditing, there's a start and a finish to validate selected controls over a continuous cycle,” he says. A continuous audit plan, for example, might test or validate controls over six consecutive months, then again at the end of months 9 and 12, he says. That will give a good view of exceptions that need to be studied, but it also validates the “swim lane,” he says. (The swim

lane is the range of acceptable values or results, outside of which something would be scrutinized.) “It validates the sample to say the information that you're assuming is correct because it's inside the swim lane,” he says.

Some business processes lend themselves to a continuous auditing approach more readily than others. For example, most companies will make their first foray into continuous auditing by applying it to accounts payable or travel and entertainment expenses, says White. “It is a relatively cheap and effective

solution at identifying waste or mismanagement and potential fraud,” he says. A continuous audit approach applied to such areas will typically spot any number of exceptions or patterns that warrant further study, he says. Verver says continuous auditing can also provide significant benefits to the revenue cycle, by sniffing out incorrect billings, missed billings, missing invoices, and any number of other control weaknesses that may lead to problems.

On the other hand, the process is not ideally suited to areas that are highly complex or subject to significant judgment, says Mainardi. Financial institutions, for example, likely would find it cumbersome to apply continuous auditing to loan approvals. “When a process is as complex as that, it's hard to select one or two key controls to test,” he says. “You'll get a lot of false positives and have to sift through a lot of data.”

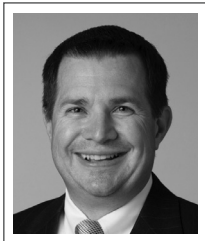
Mainardi advises companies to consider continuous auditing for areas where they need to increase risk coverage. “Audit committees are asking: ‘Are you covering everything we need to cover?’” he says. “Where can I use this methodology to leverage my team and my resources to get a better span of cover-

**“People will say to me, ‘What software do I need to buy?’ but it's not about software. It's about having a methodology that defines what you are trying to do and how you are going to do it.”**

—Robert Mainardi,  
Independent Consultant/Author,  
Continuous Auditing

age?” Beyond accounts payable and travel & entertainment, Mainardi says continuous auditing could provide plenty of benefits when applied to various compliance requirements. “Compliance is the number one place to start,” he says. “The majority of the time, there’s not a lot of interpretation to whether you comply with a rule. Either you comply or you don’t.”

The credit card industry provides a great case study on where continuous auditing can provide significant benefits, says Brian Christensen, executive vice president for global internal audit at consulting firm Protiviti. “They have day-



Christensen

to-day procedures in place to really look for unusual behavior against a defined pattern of behavior, and it’s very effective,” he says. “The auditing element comes in when the auditor can start to see a pattern or a series of events related to control monitoring that speaks to a control issue.”

In Mainardi’s view, continuous auditing may have its roots in financial services, but it is gaining attention in all sectors. “It doesn’t matter what type of company you have,” he says. “You can find a place where this approach will give you the most benefit.”

Still, continuous auditing isn’t for everyone. Peter Bible, partner in charge of the public companies group for audit firm EisnerAmper, says he sees continuous auditing still mostly applicable to larger companies with high volumes of transactions and big budgets to spend on technology. “It takes a client that is fairly sophisticated in its IT applications,” he says. “At a large company you would clearly expect to see more of this, but in the middle market or the lower end, you’re talking about an IT system that is not in anybody’s capital plan.”

White challenges companies to look beyond the notion of continuous auditing or continuous monitoring and think in terms of applying analytics to business processes to root out problems and make improvements. Continuous auditing and continuous monitoring tend to be focused on controls, he says, but analytics more broadly looks at performance. “It’s not just about controls, but it’s about the tolerances within which a business wants to run itself,” he says. “That may include vendor compliance, payment tim-

ing, or product pricing. Business analytics captures what’s going on in the marketplace, better identifies what’s happening in the business, and then identifies exceptions.” ■

**CONTINUOUS AUDITING V. CONTINUOUS MONITORING**

Below, Deloitte provides an explanation of continuous auditing and continuous monitoring.

Continuous Monitoring is an automated, ongoing process that enables management to:

- » Assess the effectiveness of controls and detect associated risk issues
- » Improve business processes and activities while adhering to ethical and compliance standards
- » Execute more timely quantitative and qualitative risk-related decisions
- » Increase the cost effectiveness of controls and monitoring through IT solutions

Continuous Auditing is an automated, ongoing process that enables internal audit to:

- » Collect from processes, transactions, and accounts data that supports internal and external auditing activities
- » Achieve more timely, less costly compliance with policies, procedures, and regulations
- » Shift from cyclical or episodic reviews with limited focus to continuous, broader, more proactive reviews
- » Evolve from a traditional, static annual audit plan to a more dynamic plan based on CA results
- » Reduce audit costs while increasing effectiveness through IT solutions

Source: Deloitte.

# Maturing the Use of Data Analytics

By John Verver, CA, CISA, CMC  
Vice President, Product Strategy and Alliances  
ACL Services

Just about every recent survey and report on trends affecting internal audit has ranked the areas of data analytics and continuous auditing and monitoring as being of high importance. Although continuous auditing and monitoring can theoretically take place without automation, there is widespread acceptance that technology, specifically data analysis technology, underlies these processes. How do these three areas relate to each other, and how do organizations implement these approaches?

In practice, the use of analytics is usually part of a continuum. It tends to start off with ad hoc use, then move to repetitive use and, finally, to continuous auditing and continuous monitoring. Let us take a look at the typical evolution in usage.

The first stage in using data analysis is often performing a preliminary analysis as part of an analytical review or initial risk assessment. The objective is to gain an understanding of the nature of the transactions that have taken place within a given audit area. So if auditors are working on the purchase-to-pay cycle, for example, they first need to obtain access to the transaction data for purchase orders, goods received, invoices, and payments. They then examine the data using software to better understand what has occurred during the audit period and to identify any immediate indicators of risk or abnormality.

In the case of a payroll audit, for example, this may mean analyzing all compensation payments for a given period by performing basic statistical analysis and finding that in one particular location, employees are receiving unusually large amounts of overtime or high pay rates. A bank audit example may involve stratifying mortgage interest rates to find that certain loan officers are issuing loans at unusually low rates. None of these analytics are particularly complex—they simply provide the auditor with some exploratory insight into areas that warrant further investigation.

The next stage may well be a more specific and structured process. A step in a purchase-to-pay audit program may be to determine that purchase order approval controls are working effectively. Instead of testing a sample of purchase orders, a specific analytic test can be performed to determine that every purchase for a 12-month period was properly approved by a valid authorizing officer, within the limits defined by approval policies. Once this step has been performed successfully, it usually makes sense

to save the test procedures for repeated use. This involves creating a simple application that can be repeated as needed by auditors—during a subsequent audit or by other auditors in different locations.

The next stage in the continuum of analytics usually involves developing a suite of tests that can be applied for each audit area. These suites do not have to be all encompassing—typically they evolve over time, beginning with areas that produce the best results for the effort required to implement them.

## Moving to continuous auditing and monitoring

Once the value of a particular analytic has been established, the natural next step is to determine whether it makes sense to run the test on a regular basis—as continuously as possible. The argument for doing this is straightforward. If there is value in knowing about control breakdowns and problem transactions sooner rather than later, then why not run the tests on a frequency that allows a timely response and correction of the problem? There are definitely people and process issues to consider when moving to a more continuous auditing approach, but from a technology point of view, it is not a large step to go from automated standard tests to running them on a regular basis. This may mean testing purchase-to-pay transactions daily, payroll on a weekly basis, and journal entries once a month. Continuous can mean many

things in the context of auditing and monitoring and, particularly in the case of testing transactions, is rarely truly continuous in terms of real time processing.

The next level along the continuum involves management. Although there continues to be some debate about the meaning of continuous auditing compared to continuous monitoring, the broad consensus is that continuous monitoring is the responsibility of management. Continuous auditing is performed by audit, who normally will communicate the results of continuous auditing procedures to management on a timely basis. Why not take the next step and have management take responsibility for monitoring controls and transactions to enable a rapid response and address issues before internal audit is involved? If management can see on a timely basis that a problem is occurring, such as a purchasing officer exceeding his or her limits and bypassing the approval processes (with the possible existence of fraud), then the organization should be able to respond more rapidly. The underlying technologies are very similar between continuous auditing

*Consider a basic question:  
Why do surveys identify  
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progress?*



and monitoring, though effective continuous monitoring usually involves specific capabilities to manage exceptions and the resolution process.

Each stage is part of a continuum, and most organizations tend to progress from one stage to another. However, there is value in being able to use analytics at all stages. Let me explain. If an organization is performing continuous auditing or monitoring, what happens when specific problems are identified? It may be that the exceptions identified generate sufficient information to lead to problem resolution. Frequently though, additional ad hoc data analysis may be required to gain deeper understanding about the nature of related transactions and activities—for example within a specific department or region. It may involve additional analysis to drill down and investigate a particular authorizing manager, gathering a complete set of information on his or her activities in a specific time period.

### The value of data analytics

Consider a basic question: Why do surveys identify proficiency with data analysis as a critical area in which auditors need to progress? The traditional audit approach involves identifying control objectives, assessing and testing controls, probably performing a walk-through procedure, and doing some sampling (often on a judgmental basis, occasionally on a statistical basis) to see whether they support the conclusions around control effectiveness.

With data analytics, this approach changes fundamentally. It is now possible for organizations to look at every transaction and every balance, and to apply a whole range of tests to that data. This allows a greater degree of assurance about the effectiveness of the controls and the substantive validity of transactions and balances. It also provides greater audit coverage. Auditors have come to recognize this is a highly efficient approach. If analytic procedures are set up effectively, a significant reduction in audit time and costs often occurs (approximately 25 percent on average).

The move to automated testing and continuous audit procedures also changes the traditionally cyclical nature of the audit process. Comprehensive testing of transactions and controls effectiveness, on an ongoing automated basis, enables audit to move to a more risk-based approach. The results of continuous auditing techniques provide visibility into whether risk is increasing in specific areas and warrants additional audit focus. This use of analytics provides continuous insight into control effectiveness

and the compliance of transactions. As long as internal audit can depend on the integrity of these testing procedures, it frees up audit resources to address other areas of risk. Reducing the need to commit substantial resources to regular financial and operational audits provides the ability to focus more on areas of higher risk in which professional judgment and expertise are key.

The use of data analytics for audit (a key part of CAAT's) dates back at least two decades. At that time, it was a highly specialized area, often requiring mainframe programming expertise and was the domain of the most technical audit personnel. The development of specialized audit analysis software has transformed this area so that analytics can now be applied effectively to a broad range of audit procedures, in many cases without the need for technical specialization.

### How to progress with analytics usage?

Although most audit departments now use data analysis in some manner, the actual extent of use and degree of benefit varies considerably. How do audit departments use analytics most effectively?

It begins at the audit planning stage. Some audit organizations require that consideration be given to the use of analytics in every audit and involve a specialist to identify potential applications. This

means working through an audit program and considering, for every audit objective and step, whether analytics could provide more effective results than manual procedures. If it is clear that there is potential, the next step is to determine the availability of appropriate data.

In a typical audit of a financial or operational process area, our own experience is that analytics can often be applied to at least 50 percent of audit steps. In practice, there needs to be a prioritization in terms of where analytics can provide the greatest benefit, with the lowest effort required. There is nothing like proving the successful use of analytics in

one audit to encourage more extensive use on other audits.

At the completion of an audit, it is good practice to have a specialist review how analytics were used, assess the overall effectiveness and recommend further opportunities for use in subsequent audits. This should include whether it makes sense to automate specific procedures for continuous use, and whether management should be involved in and take on the responsibility for continuous monitoring of specific controls and transactions.

A “big bang” approach to using data analytics is seldom the

*In a typical audit of a financial or operational process area, our own experience is that analytics can often be applied to at least 50 percent of audit steps.*



best approach. As long as there is management commitment to integrating analytics into the audit process when there are clear benefits, then it is normally a case of constant progression in use. This means extending usage from one audit to another—and from one group of auditors to another—so that over time, experience and expertise become engrained throughout the audit team.

As use of data analysis widens, there are also benefits in viewing the results as a whole, at the management level. This may mean an audit director reviewing a dashboard with the CAE. The summary can be in terms of numbers of control points and transactions examined, the number and severity of exceptions identified, together with the status of resolution.

### Technology platform

It is possible that basic data analysis can be performed using a range of tools, including spreadsheets and database query and reporting systems. There are certainly risks from using spreadsheets, apparent to any auditor, because of the difficulty of ensuring data integrity. General purpose analysis tools also have their own limitations. It is clear that the analytics process must be managed in order to be relied upon by audit, which is why audit-specific analysis software should include capabilities such as:

- » Maintaining security and control over data, applications, and findings
- » Logging all activities
- » Analysis techniques designed to support audit objectives
- » Automated creation and execution of tests

The objective is to make the use of data analytics a sustainable, efficient, and repeatable process. As with most uses of software

technology, it is not a magic bullet. It requires attention to people and process issues, from management's commitment and support through training and the assignment of roles. ■

### ABOUT THE AUTHOR

*John Verver, Vice President, Product Strategy & Alliances, has overall responsibility for ACL's product and services strategy, as well as for relationships with key organizations in the audit and control market. His previous responsibilities at ACL have included leadership and growth of worldwide direct and channel sales, as well as ACL's professional services organization, including consulting, training and technical support.*

*John is acknowledged as an expert authority and domain thought leader on continuous controls monitoring and data analytics and led the overall development of ACL's original CCM product suite. He is regularly asked to speak at global audit and control conferences and is an inaugural member of the Center for Continuous Auditing's advisory board. John was a key contributor to the Institute of Internal Auditor's Global Technology Audit Guide #3 on continuous auditing and controls monitoring.*

*Prior to joining ACL, John spent 15 years with Deloitte in the UK and Canada. He was Director of Computer Services for Deloitte Haskins & Sells, with responsibility for IT audit and security services, as well as accounting systems consulting and implementation. After the merger that formed Deloitte & Touche, he became a principal in Deloitte & Touche Management Consultants, where he was responsible for building and managing the system development and implementation practice in British Columbia.*

*John is a Chartered Accountant, Certified Management Consultant and Certified Information System Auditor. He has served on the Council of the Institute of Management Consultants of B.C. and on a variety of committees of the Institute of Chartered Accountants of B.C. He has an honors degree from King's College, University of London, England.*







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# How Continuous Auditing Yields Efficiency

By Tammy Whitehouse

The internal audit department at Arrow Electronics took stock of its resources and processes in late 2010 and determined it was time for a change.

Arrow, a \$20 billion electronics components company with nearly 400 locations in 53 countries, was collecting massive amounts of data, but it wasn't using the data in its internal auditing function in any meaningful way.

"We understood we were not, from an audit perspective, using that data to decide what audits to do," says Frank Navarra, senior manager in corporate audit. "So we thought it was a good idea to step into this world."

By "this world," Navarra means the world of continuous auditing. It's an approach to analyzing data and checking transactions that occur on a continuous and usually automated basis, rather than at a point in time, so it can turn up issues that need to be addressed before a period closes, for example. Continuous auditing is getting increased attention in audit circles because it can provide better, faster insight into where there may be risks that need to be addressed, and the tools to implement it are getting increasingly sophisticated.

Arrow, guided into the continuous audit approach by its consultants at Deloitte, did what many companies do to get started: Corporate auditors first tried out the idea on travel and entertainment costs and accounts payable, where problems are more common and easier to pinpoint. "We got a lot of quick wins," says Navarra. Continuous auditing exposed issues in both areas that otherwise might have slipped through unnoticed, he says.

Off the bat, Arrow discovered instances where it paid vendors more than once for the same invoice. But the change not only uncovered problem invoices and expense reports; it also identified some ways that Arrow could improve the business. For example, the company quickly learned it was more cost-effective to pay sales agents for standard mileage than for direct cost of gasoline, so it made a policy change in how it would reimburse those charges, Navarra said. Arrow also found vendors who were receiving immediate payment that would be fine getting a 30-day payment. Switching those vendors to a 30-day pay cycle made a huge improvement in corporate cash flow.

Internal auditors soon discovered they had a powerful new tool at their disposal with lots of potential, and they wanted to put it to greater use. "We took a step back," Navarra said. "Should we really live in this silo of just doing these [continuous audits] on one function or process at a time? We learned we can help the audit team by identifying the highest risk transactions, especially at remote locations."

The company learned with its data analytical tools, it could extract data on a particular business location, exam-

ine the general ledger, accounts payable, accounts receivable, sales, and other areas to prepare the audit team before they ever visit the location. "Normally, you would just test 25 transactions, but now we have the highest-risk transactions," he says. The company identified nine separate audit projects where continuous audit or data analytics would provide significant support to the audit function, he says. "That's where we get the biggest bang for our buck," he says. "We're getting better and smarter."

Continuous auditing isn't just for Fortune 150 companies like Arrow. Plenty of smaller companies are finding success with the approach as well. For example, Mindspeed Technologies, a \$162 million communications semiconductor company, is using continuous auditing to speed up the audit process and identify trouble spots in real time.

Bill Hagerman, former executive director of internal audit at Mindspeed and now an independent consultant, says he was looking for a way in the early days of Sarbanes-Oxley Act compliance to make the internal control reporting process more efficient. "We were very focused on the quarter end, and it was labor intensive," he says. "We wanted something that would balance the workload and spread it more evenly over time. If we could get information on a real-time basis, we could audit the information much more quickly rather than doing it all at the end of the quarter."

Hagerman says the company began applying continuous monitoring tools to its key performance indicators and key risk indicators, such as sales turnover, inventory turnover, and others to get "flash reports" that show when a KPI or KRI deviates from a preset accepted threshold. Internal auditors and even external auditors can monitor and leverage those reports as well, he says.

Before Hagerman left Mindspeed to begin his own consulting practice, he said the company reduced its external audit hours from a high of nearly 1,800 hours in the first year after Sarbanes-Oxley to about 600 hours. True, public companies generally saw big declines in audit activity as the work to implement SOX subsided and internal control reporting and auditing became more efficient, but Hagerman believes the results were more dramatic at Mindspeed as a result of its foray into continuous monitoring and continuous auditing.

## Adding Value

James Harper, director at New England audit firm Blum-Shapiro and a former controller for a billion-dollar private company that also put continuous auditing to use, says that the approach not only brings more efficiency to the audit process, but it can score wins in other parts of the business, too. "When you think of audit, you don't think of a lot of value add," he says. "But we saw this differently." The company plugged a new tool into its existing SAP system to get a di-

rect feed on general ledger and other data. “We had about 19 different routines that we ran for continuous audit,” he says. “We wanted to use it on corporate accounting to bring more efficiency to the close process.”

The company looked at manual journal entries associated with closing a reporting period and determined how they could be batched and managed in the pre-close instead of being left to the end, which bogged down the close process, says Harper. “It took a couple of days out of the close process, so that gave management two extra days of analysis that they didn’t have before,” he says. “Continuous auditing can help facilitate that.”

Hagerman in particular is convinced the high-tech tools like continuous audit and data analytics are the future of auditing. “Traditional audit is probably still 80 percent of the audit approach today, but it’s old school,” he says. “The technology is available. It’s there, and we’re way behind.” He builds his consulting practice now around preaching the virtues of using technology to get more audit coverage for more

risks more efficiently.

Not all auditors are convinced, however, that continuous auditing is on the verge of changing the profession. According to the latest research by AuditNet, which polled 1,500 auditors who work in a variety of different settings, most auditors aren’t using it. About one-third said few of the auditors in their organizations are proficient at using audit software technology, and only 3 percent have fully integrated data analytics into their departments. “We found that the state of technology for auditors is surprisingly low considering the technology has been available for so many years,” says Jim Kaplan, founder and CEO of AuditNet, an internet portal for auditors. “This really is a wake-up call for the audit profession.”

Many companies are still paralyzed by budget concerns or fears of implementing another high-tech tool. So internal audit executives who have the greatest zeal for pursuing continuous audit approaches tend to be the “mavericks” in the organization. They also typically have a strong second-in-command who is equally convinced of the value. ■

## IMPLEMENTING CONTINUOUS AUDITING

Below are some insights from the IIA on implementing continuous auditing:

### Establishing Priority Areas

The activity of choosing which organizational areas to audit should be integrated as part of the internal audit annual plan and the company’s risk management program. Many internal audit departments also integrate and coordinate with other compliance plans and activities, if applicable.

Typically, when deciding priority areas to continuously audit, internal auditors and managers should:

- » Identify the critical business processes that need to be audited by breaking down and rating risk areas.
- » Understand the availability of continuous audit data for those risk areas.
- » Evaluate the costs and benefits of implementing a continuous audit process for a particular risk area.
- » Consider the corporate ramifications of continuously auditing the particular area or function.
- » Choose early applications to audit where rapid demonstration of results might be of great value to the organization. Long extended efforts tend to decrease support for continuous auditing.
- » Once a demonstration project is successfully completed, negotiate with different auditees and internal audit areas, if needed, so that a longer term implementation plan is implemented.

When performing the actions listed above, auditors need to consider

the key objectives from each audit procedure. Objectives can be classified as one of four types: detective, deterrent (also known as preventive), financial, and compliance. A particular audit priority area may satisfy any one of these four objectives. For instance, it is not uncommon for an audit procedure that is put in place for preventive purposes to be reconfigured as a detective control once the audited activity’s incidence of compliance failure decreases.

### Monitoring and Continuous Audit Rules

The second step consists of determining the rules or analytics that will guide the continuous audit activity, which need to be programmed, repeated frequently, and reconfigured when needed. For example, banks can monitor all checking accounts nightly by extracting files that meet the criterion of having a debt balance that is 20 percent larger than the loan threshold and in which the balance is more than U.S. \$1,000.

In addition, monitoring and audit rules must take into consideration legal and environmental issues, as well as the objectives of the particular process. For instance, how quickly a management response is provided once an activity is flagged may depend on the speed of the clearance process (i.e., the environment) while the activity’s overall monitoring approach may depend on the enforceability of legal actions and existing compliance requirements.

Source: Institute of Internal Auditors.



# Putting Continuous Auditing Into Practice

By José Tabuena  
Compliance Week Columnist

For many auditors, continuous auditing remains more of a goal than a reality.

The concept—which shifts the internal auditing paradigm from routine periodic audits of a small sample of transactions, to the ongoing review of much larger volumes of data—has proven difficult to put into practice. Financial and audit executives warmed to the idea of continuous auditing (and monitoring) some time ago, yet implementation remains a work-in-progress. Despite its potential, only a few organizations have begun to realize the benefits.

Continuous auditing enables internal auditors to determine more quickly and accurately where to focus attention and resources to improve audit quality. For audit thought leaders like Norman Marks, the value proposition for continuous auditing is in its ability to provide assurance when it is actually needed—that is, delivering “audit at the speed of business.”



**Jose  
Tabuena**  
Columnist

The accounting system is based on historical transactions; hence, the method of traditional auditing is to perform random tests of completed transactions in order to obtain reasonable assurance that the events recorded reflect the true financial position of a company. With traditional practices, financial-reporting systems are audited annually or quarterly, and individual business

processes are audited every year or every few years.

In contrast, continuous auditing is an automated approach, and all data relevant to the audit being performed is examined in real time, rather than just a representative sample.

Yet in many respects the use of the term continuous is somewhat misleading. Some companies refer to any audit activities performed more often than every three months as “continuous.” Other companies consider it *continuous* when a particular process fails an audit and the audit is repeated several times over the next year. Very few companies actually audit certain business processes in anything akin to real time. Any definition at this time is a moving target, as technology advances and the methods organizations use to perform audits continue to evolve.

Still, a working definition is in order, as confusion remains about continuous auditing and related activities. According to the Institute of Internal Auditor’s Global Technology Audit Guide, continuous auditing is: “Any method used *by auditors* to perform audit-related activities on a more continuous or continual basis.” GTAG further pro-

vides that technology plays a critical role in continuous audit activities by “helping to automate the identification of exceptions or anomalies, analyze patterns within the digits of key numeric fields, review trends, and test controls, among other activities.”

Continuous auditing itself should be considered in the context of the following related terms and processes:

- » *Continuous monitoring as a management function* to ensure that company policies, procedures, and business processes are operating effectively and addresses management’s responsibility to assess the adequacy and effectiveness of internal controls.
- » *Continuous risk assessment* (also known as *risk monitoring*), including the use of analytical techniques to identify trends, and other indicators to develop and maintain the periodic audit plan.

It’s important to consider how continuous *auditing* differs from continuous *monitoring*, since both entail the automated testing of available transactions and system activities within a given business process against internal control rules. Typically, monitoring is done by company management; continuous audits are performed by the internal audit department to evaluate the adequacy of management’s monitoring—although both often cover the same ground.

While continuous auditing and continuous monitoring do not need to coexist, putting both in place can maximize the value of each by increasing coordination between management and internal audit thereby minimizing the duplication of controls and efforts. Implementing both can also help integrate management’s responsibilities for performance of controls with internal audit’s accountability for assurance over management’s controls, while preserving IA’s independence.

Because continuous audit activities differ from those taking place during a traditional audit, core audit principles such as independence also need to be reconsidered. When the internal audit department’s role is not just to scrutinize management monitoring, but to provide the data-analytic scripts for management to use in monitoring activities, auditors can find themselves in the middle of the transaction flow.

For example, at a brokerage firm that monitors its clients’ electronic transactions, auditors are notified when a transaction is blocked after certain analytical parameters are met. The auditor in follow-up then deals directly with the client. Where the distinctions between management monitoring and continuous auditing can be blurred, it is important

for internal auditors to make sure that the continuous audit process has a system of checks and balances to maintain the independence and objectivity of their work throughout the audit.

### Implementation Challenges

Whether an internal auditing approach on a particular process can be considered “continuous” depends on several factors, such as: the number of assessments, timing, frequency of automation, and the sophistication of the technology employed. The frequency of continuous auditing itself will depend on a number of factors, including the rate and timing at which the transactions occur (for example, journal entries are predominantly a month and quarter-end activity), and the frequency with which controls are performed.

Some of the challenges in rolling out a continuous audit program are:

- » **What do we want to do?** Start with the risks you want to monitor, as the potential opportunities can quickly become overwhelming. Identify areas appropriate to pursue based on projected benefits, costs, and return on investment. For example, concern regarding data-privacy has become a hot-button issue in healthcare, so continuous auditing and monitoring of the access to electronic health records may be worth the investment in that regulatory environment. One approach might involve automatically identifying users who share log-in information and passwords by detecting concurrent use of the same login and password information at different computers.
- » **Show me the data:** The collection of data can be an elusive challenge. Often at a large, complex company, the data is not all housed in the same place. There can be formidable logistics involved in working with the IT department to get data in a readable format and compile it in one database to enable the use of a single set of queries instead of several.
- » **Can we (afford to) keep doing it?** As any experienced auditor realizes, the identification of exceptions and anomalies is but one step in the process. Audit and management resources are needed to review and assess access logs and findings that are now being generated.

Effort is needed to recognize significant false positives and to fine tune the rules to better ensure only high-risk activity is flagged. After a decision is made to develop a continuous audit routine, then the challenge becomes determining its scope and setting failure thresholds. When configuring a continuous audit procedure, you should consider the cost benefits of error detection, and the audit and management follow-up activities that will be required.

**While continuous auditing and continuous monitoring do not need to coexist, putting both in place can maximize the value of each by increasing coordination between management and internal audit thereby minimizing the duplication of controls and efforts.**

Neither continuous auditing nor continuous monitoring should be viewed as a short-term endeavor; both are commitments toward a new way of doing business. Basic approaches will still apply, and auditors will need the core skills that manual testing instills and the know-how to evaluate risks and controls.

Auditors understand that even when all transactions are examined, assurance is provided only as to those transactions. Testing does not provide assurance that the controls themselves are adequate and that they will ensure

the integrity of future transactions.

Still continuous auditing enables an internal auditing function to provide assurance, when it is needed, on the more significant areas of the organization’s governance, risk-management, compliance, and related operational controls processes.

The benefits of implementing a continuous auditing system will outweigh the costs. Though it can require a large capital investment up front, it should be viewed as a long-term, strategic investment. An effective continuous audit and monitoring system will increase the reliability of financial data, assist in making improving financial information, and ultimately enhance the company’s internal audit function. ■

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**José Tabuena** is with Texas Health Resources Vice President, Compliance for Texas Health Physician Group and writes a column every other month about internal auditing challenges. He offers a unique perspective on internal auditing issues bringing Big Four firm experience and having held a variety of audit-related roles, including compliance auditor, risk manager, corporate counsel, and chief compliance officer. Tabuena has conducted sensitive internal investigations and assessed the performance of internal audit and ethics and compliance programs in highly regulated industries.

Tabuena can be reached at [jose.tabuena@complianceweek.com](mailto:jose.tabuena@complianceweek.com).