

● ● ● CONTINUOUS AUDITING:

A STRATEGIC APPROACH TO  
IMPLEMENTATION



A CaseWare IDEA Research Report



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## INTRODUCTION

Organizations are producing more data than ever before, creating an environment where users of financial information require assurance that the data contained in any report is accurate, complete, and relevant to their needs. As data proliferates, management functions are becoming more dependent upon executive information systems, balanced scorecards and dash-board level decision tools. Therefore, monitoring outputs and auditing controls surrounding the systems used to create those outputs is an important organizational priority. Traditional audits conducted in annual (or less frequent) cycles cannot provide the level of assurance management needs in these areas, so the potential for continuous auditing to provide more effective monitoring of the control environment and the resultant output more than justifies the cost and effort.

Many are looking at continuous auditing as a software application or tool that can help internal auditors meet this challenge while surviving the critical professional staffing shortage that is prevalent today. Continuous auditing is not a tool, but rather a process that brings together fundamental practices all auditors follow, including planning, risk assessments, control assessments and use of technology to perform much of the audit work. It should bridge the gap between audit reports submitted under traditional assurance services and continuing evidence that the issues identified (for those critical controls) have been rectified.

Recent surveys indicate nearly half of internal audit departments are using some form of continuous auditing techniques, and almost 40% more are planning to develop them.<sup>1</sup> Software solutions range from \$2,000 plus time to develop and automate tests to more than \$1,000,000. Such a wide range of options and possible cost factors can cause an audit department to overanalyze its situation when the key to getting started lies in work that might have already been accomplished.

If your audit function is struggling with a decision on how to best implement continuous auditing to benefit your organization, consider audits currently in progress or recently completed, and align the scope and objectives of future audits with management's strategic, operational, financial, compliance and competitive analysis levels. By making use of this information and incorporating it into the control and risk assessments that require more frequent monitoring, internal auditors can easily move into continuous auditing - without reinventing your staff or charter, while ensuring that the most critical controls receive attention at a frequency reflected by your risk assessment. This research report outlines a strategic approach to implementing continuous auditing in your organization.

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<sup>1</sup>PricewaterhouseCoopers 2007 State of internal audit profession study. Interestingly, the 2008 report is silent on the subject of continuous auditing. A 2008 survey (unpublished) by university professors Conni Lehmann and Marcia Watson found that 55% of internal audit departments are using or planning to use continuous auditing and 32% are aware and interested.

## WHAT IS CONTINUOUS AUDITING?

In 1999, the Canadian Institute of Chartered Accountants (CICA) defined continuous auditing as follows<sup>2</sup>:

“...a methodology that enables independent auditors to provide written assurance on a subject matter using a series of auditors' reports issued simultaneously with, or a short period of time after, the occurrence of events underlying the subject matter...”

This definition is broad and covers both internal and external audit. By focusing on the basic requirement that audit reports (opinions for external auditors and findings and conclusions for internal auditors) be supported by evidential matter about the subject matter, it becomes clear that continuous or continuing procedures must be performed if reports are to be issued with or shortly after the audit period ends. Even when the report is only needed annually, a continuous audit approach can help identify and correct errors before the period ends, which results in a stronger control environment.

The following case study illustrates how a three-year cycle for an audit of expense reports became the starting point for development of a continuous auditing approach that reduces risk and improves controls overall.

In the past, the auditors had tested expense reports by randomly selecting a few individuals and reviewing the expense reports, then examining larger dollar charges to travel expense categories. While exceptions were found, there was no adverse conclusion and the area was assigned for review again in three years. During that time, the company experienced substantial growth.

For the current year, internal auditors used data analysis software to summarize travel and entertainment expense details for 60 cost centers, noting which cost centers had higher instances of exceptions or anomalies in multiple test areas. Test areas included such things as late personal expense reports (date entered was more than 30 days after date of travel or expenditure), high dollars charged to miscellaneous travel expenses, high airfare, high bonus, duplicate payments, etc. The auditors found that one third of the cost centers with the highest instances of exceptions and anomalies were related to marketing. They identified three individuals who were submitting expenses from actual receipts and credit card statements, and uncovered several instances of inappropriate purchases charged to travel-miscellaneous, and a scheme where multiple parties dining together were claiming the same meals for reimbursement.

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<sup>2</sup>Canadian Institute of Chartered Accountants and the Accounting Standards Board of the AICPA. 1999. Continuous Auditing, (page xiii).

Going forward, internal auditors created scripts from the data analysis tests that had been used in order to provide for unattended monthly reports of marketing travel expenses so that this high-risk area could be monitored for possible continuing fraud and abuse. The risk ranking (see figure below) allowed the auditors to select which cost centers to audit more frequently.

	COST_CENTER	LATE_EXP_FLAG	HIGH_MISC	HIGH_AIRFARE	ATF_PO	PR_SPLIT	HIGH_BONUS	DUP_BONUS	TOTAL_RISK
1	33335000	✗	✓	✓	☐	✗	✓	✓	3
2	44220110	✗	☐	✓	✓	✗	✓	✓	3
3	11550000	☐	✗	✓	✓	?	✗	☐	3
4	12265000	✗	✗	✓	✓	✗	✗	✓	3
5	99876650	✗	✗	✓	✓	✗	✓	☐	2
6	11570000	✗	✗	✓	✓	✗	✓	☐	2
7	11520000	✗	✓	✓	✗	☐	✗	✓	2
8	11510000	✓	✓	✓	☐	✗	✓	☐	2
9	11500000	✗	✓	✓	☐	☐	✓	✓	2
10	11450000	☐	✓	?	✓	☐	✗	✓	2
11	12275000	☐	✓	✓	☐	✗	✓	✓	2
12	12255000	☐	✗	✓	✓	☐	✓	✓	2
13	12250000	✗	✗	✓	✓	✓	✗	☐	2
14	12245000	✗	✓	✓	✓	☐	✓	☐	2
15	12240000	✗	✗	✓	✓	✗	✓	☐	2
16	96960000	✗	☐	✓	☐	✗	✓	✓	1
17	11530000	✗	☐	✓	?	☐	✗	☐	1
18	12270000	✗	☐	✓	✓	✗	☐	✓	1
19	11490000	✗	✓	✓	☐	☐	✓	☐	0
20	12280000	✓	☐	☐	✗	✓	☐	✓	0
21	11560000	✗	☐	✗	✗	✗	✓	☐	-1
22	11540000	✗	✗	✓	☐	☐	✓	☐	-1
23	11480000	✗	✓	✓	☐	☐	✗	☐	-1
24	11470000	✗	☐	✓	☐	☐	✗	✓	-1
25	11460000	✗	✓	✓	✗	☐	☐	☐	-1
26	12260000	✗	☐	✓	✓	✗	✓	☐	-1
27	23456790	✗	☐	✓	☐	✗	✗	☐	-2
28	66332120	✗	☐	✓	☐	☐	✓	☐	-2

The symbols illustrated in this IDEA database are editable multistate fields that have underlying numerical values representing risk assignments based on the results of each test. Total risk is a cross-footing of the columns (not all columns are displayed). The database was then indexed in descending order by total risk.

This example of continuous auditing is quite strategic in nature – more like a data driven analysis process used by internal auditing functions to determine where internal audit resources will be deployed over the next audit plan cycle. Most internal audit functions plan for a year in advance, but the cycles will continue to shorten as internal auditing functions bring more processes into the data driven model. (See Appendix A for other examples of continuous auditing.)

Continuous auditing today is maturing and evolving into a process to be used by chief auditing leaders to determine when and where to deploy internal auditing resources. It enables them to learn what issues and patterns exist or could exist that would cause internal audit to change future audit plans. Recognizing that improvements will drive increasingly higher maturity levels, internal audit leaders see continuous auditing not as a place but a path.

## HOW DOES CONTINUOUS AUDITING DIFFER FROM CONTINUOUS MONITORING?

In the last five years, automated risk management solutions have entered the market place under the name “continuous monitoring”. The mission of these systems is primarily to provide assistance to companies interested in meeting compliance with regulations such as Sarbanes Oxley. The marketing press associated with these systems almost always includes the potential to provide a future stepping stone to venturing into Enterprise-wide Risk Management (ERM). Recent acquisitions of enterprise-level ad-hoc reporting tools by major information systems companies indicates a continuing increase in the need for management to put into place automated mechanisms for monitoring the controls within a system.

Internal auditors have played an important role in working with management to evaluate these systems. In many cases, audit routines (including the data analysis tools used) designed by internal audit have been passed over to the applicable business unit so that management can begin to monitor the areas themselves without having to invest in more costly continuous monitoring applications. Auditors should be aware that when this happens, their independence could be affected in subsequent periods if the routines are simply placed in service or if they continue to be involved in the disposition of matters. A solution to this problem would be to share tools and knowledge gained with the IT and business unit functions. Empowering them to perform self audits using data analysis techniques moves audit processes into control activities. Everyone wins, but the auditor should be careful to remain independent of this activity once it is transferred.

Confusion about independence and ownership of these control activities can be avoided by understanding the key differences between continuous auditing and continuous monitoring:

“Continuous monitoring is a feedback mechanism, primarily used by management, to ensure that systems operate and transactions are processed as prescribed...Continuous auditing is the collection of audit evidence, by an auditor, on systems and transactions, on a continuous basis through a period...monitoring systems [can] provide the evidence to be collected and assessed...”<sup>3</sup>

The article referenced provides an example of continuous auditing where the auditor might extract details of unusual or large adjusting journal entries on a daily basis, then validate the reasons for the entries and document his findings. Management benefits by having this information and being able to correct errors before the reporting requirement. Audit benefits by gaining earlier knowledge of what is happening in the company, which will improve the audit planning and risk assessment process. If the daily extraction report is part of a continuous monitoring program, the review and response activity should belong to management. Audit evidence will then become a review of management's response to the anomalies identified by the continuous monitoring system.

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<sup>3</sup>Handscombe, “Continuous Auditing From a Practical Perspective,” Information Systems Control Journal, Volume 2, 2007.

## A STRATEGY FOR INTERNAL AUDITING

Setting a strategy should involve defining your vision for the future; a self-assessment of where you are now and what time, talent and other resources will be needed to get there. Deeply embedded in the strategy must be the decision to empower the internal auditing function with data analysis software. You have already most likely embraced this strategy to drive efficiency and effectiveness. (For more information, see Research Report on Data Analysis<sup>4</sup>) The chief audit executive (CAE) must be involved at the very beginning for any continuous auditing program to be successful. The following activities should have already been completed before the CAE embarks on a path to implement continuous auditing:

1. Develop and implement a risk-based methodology that focuses on setting audit priorities based on probability of occurrence and impact of the risks.
2. Create a perpetual inventory of all current and future business information systems. Learn how to monitor the integrity and reliability of information coming from these systems.
3. Document the data life cycles for each system.
  - a. Know what can go wrong
  - b. Identify the red flags that management uses to identify potential problems
  - c. Be alert for changes in the red flags
  - d. Build programs that identify the red flags
  - e. Follow through on investigating all identified red flags
4. Develop a close working relationship with the IT department.
5. Increase management participation in engagement planning and engagement wrap-up processes. Communicate your plan to revise the focus of audit to incorporate continuous auditing.

Auditors who participated in Sarbanes Oxley or similar legislative compliance initiatives will quickly recognize that most of this work already exists in the documentation.

Appendix B reviews continuous auditing maturity levels you may use for benchmarking your audit function.

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<sup>4</sup>CaseWare IDEA Inc. Data Analysis: The Cornerstone of Effective Internal Auditing, 2007.

# FIVE STEPS TO IMPLEMENTING CONTINUOUS AUDITING

After completing a self assessment and determining the internal audit function's readiness to move towards continuous auditing, the following five steps will lead to successful implementation:

## **1. Assess risks and controls (What to test and why)**

Evaluate each area on the basis of management's tone and commitment to monitoring its controls, whether continuously or periodically. If the area represents a high risk and controls are not being monitored continuously, you have identified a gap that would be a good candidate for continuous auditing. You should document the audit objectives and reasoning for selection as a continuous audit technique. If management has implemented effective monitoring, but their system produces many "false positives" or provides indications that exceptions are not being cleared on a timely basis, you might offer consulting services to help management further analyze the alerts generated by the monitoring system.

## **2. Determine what data is available and arrange for automatic transfer to an independent platform (Whether the tests can be data driven)**

Ideally, the systems have already been documented and data has been obtained during prior audits where data analysis was used in the audit. IT departments frequently resist requests for data because they interrupt the workflow processes. Communicating to them the benefits of establishing automatic transfers to reduce future periodic requests should help you get past this potential roadblock. For example, an automatic extract of all journal entries that are not system generated could be transferred to an audit data warehouse on a daily basis. An independent platform can be a server or high capacity workstation.

## **3. Develop audit program steps and test routines using scripts or assistance (initially) from IT, taking into consideration the frequency for running automated tests (How the tests will achieve the audit objectives)**

For continuous auditing in an area where data analysis has already been used, a script can very easily be developed from the history file of past audits. For new areas, the tests can be recorded as they are performed within the software. In the journal entry example above, the routine to develop might include extraction of large dollar entries and creation of a population of all entries over a given time period, with trend analysis and time series analysis being performed on the monthly or quarterly data. In order to provide timely reports to management, determine how and when audit results will be communicated. If possible, build alerts into the reporting process.

#### **4. Apply a continuous improvement process to the tests (How the results can be most effective)**

For each test, you should analyze anomalies, and adjust parameters and criteria to eliminate false positive results. This will be an iterative process, and is the primary reason tools such as IDEA are more effective than out-of-the-box solutions. For example, a continuous auditing process initially used by a large energy company's internal audit department that was passed on to accounts payable became more and more sophisticated as the users learned from their system what conditions most often resulted in duplicate payments.

#### **5. Practice continuous planning (How to build on successes)**

Monitor the change processes within internal auditing to be sure continuous auditing activities stay on track and the maximum benefits are obtained. Use successes in marketing internal auditing services to other areas. This and previous steps can be accomplished within the context of conducting this year's audit plan. As each planned audit is completed, it should be assessed for inclusion in your continuous auditing activities. Your internal auditors will benefit by learning more about each system or process they review, and their use of technology will continue to improve.

## CONCLUSION

Today, management and internal audit find themselves working on the same problem but on opposite sides of the fence. If management controls and monitoring processes do not stop errors and fraud, then the auditing routines must. Going forward, management will be evaluated on sustainability of compliance and competitiveness. Internal audit will be evaluated based on the ability to tailor its activities to the areas of highest risk and opportunities to add the most value.<sup>5</sup>

As new ways of looking at the data from information systems are developed and perfected, the processes will be transferred to that function's leadership.

Continuous auditing will eventually lead to continuous reporting. In the Information Age, this is essential as investors and creditors also demand timely financial information for their decision making. Some companies have gone so far as to embed the analysis directly into the production system. In real-time mode, alerts are immediately generated to notify internal auditing and management that a transaction with certain characteristics has entered the production environment.

CAEs can achieve and maintain their status as strategic leaders amid the grind of management roll-call meetings, budget and planning activities, SOX and other regulatory compliance deadlines, and staffing and resource issues by implementing continuous auditing as the best path to enterprise wide risk management implementation.

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<sup>5</sup>Deloitte – Optimizing the role of internal audit in the Sarbanes-Oxley Era (Second Edition, page 10).

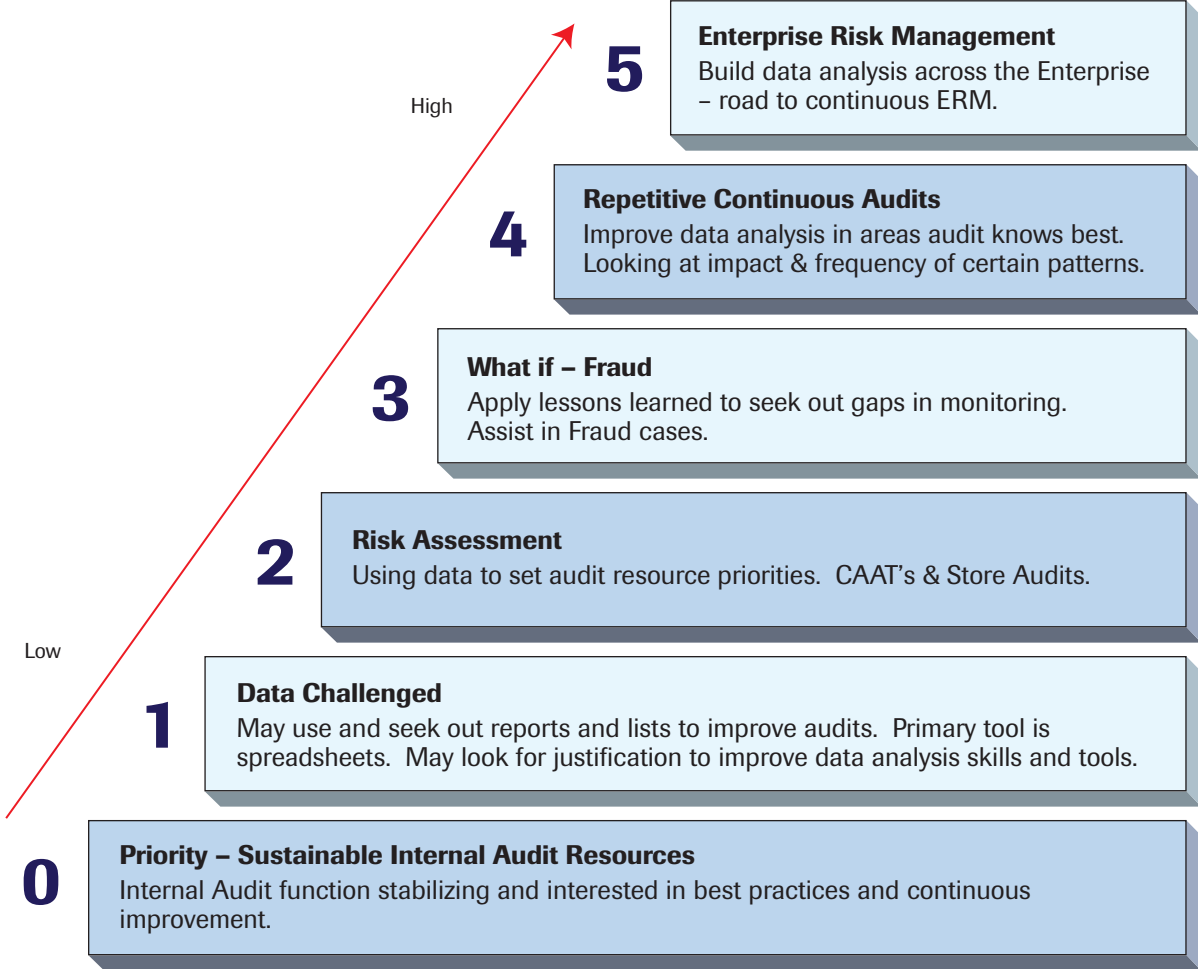
## APPENDIX A: CONTINUOUS AUDITING IN PRACTICE

Many approaches to continuous auditing involve using audit specific data analysis tools such as IDEA to audit databases. Responses to a recent informal interview of internal auditors regarding the use of continuous auditing in their organizations resulted in the following examples already in operation:

- Continuous auditing can aid in the streamlining of audit efforts. For example, focusing on revenues and expenses depends on a key driver. Data from operations and finance are then combined to come up with ratios. These ratios are a) reviewed from month to month and b) cross-checked against price catalogues. Identified anomalies result in inquires to the appropriate functions in operations and/or detailed tests.
- Monitoring of purchasing card usage provides early detection of errors and improper purchases. For example, the internal auditor receives transaction data from the bank monthly, using data analysis techniques to identify potential misuse. When misuse is identified, the auditor can demonstrate to management through the data analysis that the risk of misuse is higher than expected.
- Human Resources data anomalies and payroll trends, patterns, relationships in hours and dollars can be monitored. Out of balance conditions between subsidiary ledgers and general ledger control account balances, along with the monitoring of key master file fields against company standards allow the monitoring of changes in business units included in financial statement consolidation.
- Continuous auditing can involve obtaining data outputs from critical processes several times per year, resulting in 'traffic light' overviews, substantiated with key operational and financial data, limited review work and interviews.
- Key indicators such as those related to financial and operational measures, and regression models (net revenue and earnings (usually EBITDA)) can be monitored. Quarterly, the information is downloaded into the profile, outliers are highlighted in RED based on formulas, and staff members follow-up on outliers with emails, with phone calls and review of other documentation used to resolve the outliers.
- Continuous auditing in lending might include having retail loans disbursed at the branch submitted to a central location within 2 days for checking completeness of documentation, adherence to policy and procedures and recovery of income.
- A weekly or monthly retrospective analysis of cash disbursements to identify potential duplicates.

These examples provide a sampling of the areas where an organization might take advantage of current technology to better monitor activities. Data driven analysis processes are used by internal auditing functions to determine how to allocate internal audit resources over the next relevant time period. The process is data driven because nearly every business function is automated.

APPENDIX B: CONTINUOUS AUDITING MATURITY LEVELS





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