

Michael P. Cangemi, CPA, is the former editor in chief of the *ISACA Journal* (1987–2007), past international president of ISACA, and former president and chief executive officer of Financial Executives International (FEI) and Etienne Aigner Inc. Cangemi now concentrates on his writing and business advisory practice, and serves on FEI's Committee on Finance and Technology (CFIT). He is a coauthor of *Managing the Audit Function, 3rd Edition*.

From Continuous Auditing to Continuous Monitoring—You Should Be the Champion

It is often said: It is better to understand than to be understood.

When a career, which started in IT audit, runs through positions including chief audit executive (CAE), chief information officer (CIO), chief financial officer (CFO), chief executive officer (CEO), public company director, audit committee chair, as well as a 20-year stretch as the editor-in-chief of the *ISACA Journal*, what would you expect next?

I doubt many of you would have expected a concentration on, of all things, continuous monitoring (CM). When Pfizer was facing the loss of its patent protection on Lipitor, would you expect them to turn to CM? I'll explain this one later.

The central themes to my long career include business development, finance/accounting and information technology. I started out on Wall Street at 16, and the first computer arrived at the firm while I was in college studying accounting. My big break came when a search was made for a CFO who could advance the use of technology to grow the business.

The one skill set that propelled my career was the use of technology: first in audit, then in finance, and then in management. Technology, combined with a passion to advance the organization's development and performance, was the ticket to success. Technology's expansion kept the wind at my back.

Now that I can choose whatever I want to focus on, I like to spend my time with technology companies. Within technology I have a chance to promote what I have always regarded as key: CM. When I was first exposed to automated auditing in the 1970s, it fueled a desire to see a paradigm shift away from traditional backward-looking audit methods to real time. As an early adopter of computer technology for governance, risk and compliance (GRC), I predicted the explosive growth of continuous automated auditing. In fact, I predicted it at least a half dozen times!

Well, even a broken clock is correct two times a day!

My vision of the future was to come, but much more slowly than I expected. But, come it has! These days, there is an ever-expanding, Orwellian¹ interest in monitoring in general. Think of cameras looking for terrorists, credit card fraud monitoring, traffic-signal violations monitoring, medical-condition monitoring; however, in financial areas, we have tended to focus on continuous assurance/auditing and continuous controls monitoring.

This is the era of big data, which are large pools of data that can be captured, communicated and analyzed. With advancing high-speed computer processing, CM systems are being deployed using automated advanced analytics to sift through the large volumes of structured data, such as financial transactions, that comprise a large part of an organization's big data. Available software employing intelligent, proprietary and, in some cases, patented techniques highlights and, electronically of course, passes on to humans actionable information for follow up.

Think about how IBM's Watson computer sifts through reams of data to estimate and weigh correct answers, allowing it, a computer, to compete against *Jeopardy's* human champions.

Last year, I coauthored a research paper titled "The Benefits of Continuous Monitoring."² Under the direction of Financial Executives Research Foundation (FERF), and its Committee on Finance and Technology, the authors interviewed major companies to determine the level of understanding in organizations regarding CM and the state of plans for implementation.

The study confirmed what this former IT audit specialist always knew: While CM has some of its roots in continuous assurance monitoring, it is expanding at a rapid pace in many organizations.

The key findings of the FERG research are:³

- **CM deployment**—Leading companies recognize the importance of monitoring, and are



Do you have something to say about this article?

Visit the *Journal* pages of the ISACA web site (www.isaca.org/journal), find the article, and choose the Comments tab to share your thoughts.

Go directly to the article:



effectively deploying CM across functions and departments. They recognize how CM can be a precondition for achieving superior corporate performance, as well as governance outcomes.

- **Resourcing CM initiatives**—CM programs require a company focus and a commitment of resources. Some companies mentioned the need for return on investment (ROI) estimates, but others look beyond monetary justifications and focus instead on operational effectiveness and risk reduction.
- **Need for CM champion**—CM programs need a champion, preferably at a senior executive level, because resources will be required.
- **Internal audit as evangelist**—Although CM is a business operations issue, internal audit (IA), due to its familiarity with continuous auditing (CA), often becomes the champion of CM programs.
- **CM of payment streams**—CM is often initiated in payment-related areas, such as accounts payable and claim payments, in which, due to cash recoveries, the ROI can be estimated.
- **CM software and tools**—There are many new CM software products available that have improved capabilities and lowered the cost of using CM.
- **Expanding applications**—For all of the companies that launched a CM initiative, there was a keen desire to expand the application beyond the initial sponsoring department or division, as well as to move up the maturity curve.
- **Benchmarking**—Each company in the sample was curious to learn more about how CM is deployed in other environments and industries, with a view toward improving its own processes. This was also a prime reason for each company's participation in this research.

Let's look at a few of the key findings.

FROM CONTINUOUS AUDITING TO CONTINUOUS MONITORING

The use of automated monitoring by independent auditors, internal or external, is referred to as continuous auditing, or CA. In many ways, CA uses the same monitoring techniques, deployed independently, as a check on management systems and controls. Our research shows that while many companies have seen, and still see today, CM initiatives coming from base CA projects from IA, there is an emerging trend to get CM into operations. Only in operations can CM reach its full potential, become scalable and leverage the already-massive investment in IT, with continuous transaction analytics for big data.

Enjoying this article?

- Read *Monitoring Internal Control Systems and IT*.
www.isaca.org/monitoring
- Discuss and collaborate on continuous monitoring/auditing in the Knowledge Center.
www.isaca.org/topic-continuous-monitoring-auditing

ASSURANCE PROFESSIONALS AS THE CHAMPIONS OF CM

In a 2010 article titled “Internal Audit’s Role in Continuous Monitoring,”⁴ I stated: “Continuous monitoring is a business operational issue swirling around in auditing and accounting practices!” The rationale for this statement stems from the role auditors played in establishing the concept of automated monitoring and the extensive published guidance. However, as seen from the 2011 Financial Executives International (FEI) research, the real benefit comes from these assurance professionals recommending and facilitating building CM into operations.

That said, while CM is predominantly a business operations issue, it can also add to the internal control system and, therefore, most times it affects audit coverage through audit scope reductions. For example, COSO⁵ has always included monitoring in its *Internal Control—Integrated Framework*, and recently released a comprehensive guidance on monitoring, called *Guidance on Monitoring Internal Control Systems*. IT security professionals and IT managers who look to automated solutions have embraced CM software for monitoring many IT controls and security applications.

However, I like to say that internal control improvement is the tail, not the dog. First, you have to have a business function, then you need internal control.

The FERF research shows many good examples of IA leading the way on design and recommending CM. Just look at the IBM, Wells Fargo, American Electric Power and J.C. Penney examples in the study. IA should be keenly focused on making operations management aware of these new, automated CM systems to improve efficiencies and effectiveness of the operations to be audited.

In my time as a CAE, I looked for ways to go beyond audit and add to the control infrastructure of the business. I call

these *positive deliverables* and recommended this approach in my book *Managing the Audit Function*, now in a third edition.⁶ Recommending CM is a classic example of a positive deliverable.

PAYMENT SYSTEMS—CASH RECOVERIES ROI

Not surprisingly, many astute financial executives in major companies have begun to use CM as an extra arrow in their expenditure-controls quiver. Here, CM can be structured to reduce duplicate payments, so it is an added control and, hence, part of the expanded internal control (IC) system. Why is this so popular? The cash recoveries often exceed the cost of the software and implementation. What is not to love when your cash recoveries can easily exceed your incremental software and comparatively mild implementation costs?

For example, from the FERF research: “[United Technology Corporation’s] Center of Excellence launched an initiative to reduce or even eliminate duplicate payments. [The organization] identified the Oversight Systems’ procure-to-pay (P2P) module as a viable tool to use for this initiative. The P2P module provides 110 predefined, customizable integrity checks from which UTC could choose for this initiative.”

Still, many companies use contingency firms to monitor payments, and the success of these contingency firms proves the need to monitor. However, is giving away 45 percent of the recovery really a positive deliverable?

At the beginning of this article, I mentioned an example related to Pfizer’s use of CM when facing the loss of its patent protection on Lipitor. When a company is facing the loss of a major product, it actually does many things, including using CM of travel and entertainment expenses to lower costs. Pfizer Inc. launched an innovative strategy to retain sales of Lipitor, while also launching a CM strategy to innovatively control expenditures, with big data analytics and business process optimization.

According to Loretta Cangialosi, controller at Pfizer: “With CM systems for our travel and entertainment process and three employees, we can review and act on discrepancies identified by continuously monitoring thousands of transactions in a way that would have required at least 30 employees using traditional auditing methods.”

In this case, the CM champion was the controller, but it could be you!

CM SOFTWARE AND TOOLS

Financial executives understand that when there is a business case, investment money will flow into the development of products. One of the best examples of the coming of age of CM is the emergence of new software companies, funded in many cases by private equity investment funds.

The FERF research reported that “there are many new CM software products available that have improved capabilities and lowered the cost of using CM.” As mentioned, CM software uses specialized monitoring techniques such as analytics, inference, weighting and artificial intelligence. Some call this the CM “secret sauce.” Whatever it is called, the point is: Large investments have been made in specialized software technology by companies who have dedicated their computer scientists to advances in CM. Many of the companies interviewed are taking advantage of this available CM software. Why reinvent the wheel? I suggest that you review the CM software tools appendix in the research.

SAP and other enterprise resource planning (ERP) vendors have built in some aspects of CM. However, there are gaps, especially related to continuous transaction analytics for big data. SAP has recognized the need for expanded CM by, for example, naming Oversight Systems as an endorsed business partner.

SME MONITORING—CM TOOLS AVAILABILITY

Our research focused on larger entities; however, there are tools well within the reach of smaller companies, as listed in the software tools appendix in the research. In fact, while

“The time is right to become a champion of CM.”

CFO of Etienne Aigner, a small cap, we used Caseware’s Idea software, which I had been using in internal audit and public accounting. The product was easy to use and low in cost.

We are all becoming more aware of and comfortable with monitoring in general. It is all around us and facilitates our lives in many ways. The connection between assurance and CM knowledge is clear—the time is right to become a champion of CM. Those of us who focus on technology will come to embrace the movement of CM as a foundation technology for business performance improvement, and a solution to address big data, turning them into a useful source of business analytics. Mr. Li

Ka-shing, a post-80-year-old, semi-retired billionaire investor, who now backs tech start-ups such as Facebook, proclaims: “A person investing in technology will feel younger.”⁷

I enjoy seeing the explosive growth of CM, within the continued evolution of technology in general. I really enjoy seeing technology make business and people’s lives better and better every day. Like Mr. Li, my pursuit of technology, like CM, provides an intellectual challenge, a rewarding career step and keeps me young at heart.

ENDNOTES

¹ Author George Orwell (1903–1960) was an English novelist and journalist who wrote about invasion of personal privacy by government surveillance, among many other issues, in his novel *Nineteen Eighty-Four*.

² Ramamoorti, Sridhar; Michael P. Cangemi; William M. Sinnett; “The Benefits of Continuous Monitoring,” Financial Executives Research Foundation (FERF), 2011, www.ferf.org or www.canco.us

³ *Ibid.*

⁴ Cangemi, Michael P.; “Internal Audit Role in Continuous Monitoring,” *EDPACS*, 2010, www.canco.us

⁵ The Committee of Sponsoring Organizations of the Treadway Committee (COSO) was formed in part to help define internal control after the passage of the Foreign Corrupt Practices Act in the US.

⁶ Cangemi, Michael P.; Tommie Singleton; *Managing the Audit Function, 3rd Edition*, John Wiley & Sons, www.canco.us

⁷ Flannery, Russell; “Li Ka-shing’s Midas Touch,” *Forbes*, 2012, www.forbes.com/sites/russellflannery/2012/03/07/li-ka-shing-midas-touch/



COBIT 5 Courses Are Here! Don't Delay, Register Today!

The **Introduction to COBIT 5 Workshop** provides a high-level overview of COBIT 5, ISACA's new governance framework. This course provides existing practitioners and new COBIT users insight into the new framework and explains the differences between COBIT 4.1 and COBIT 5.

2012 dates include:

- **Chicago—6 or 7 August**
- **San Francisco—10 or 11 September**
- **Orlando—1 or 2 October**
- **New York City—5 or 6 November**
- **Las Vegas—10 or 11 December**
- Pre- and post-conference workshops:
 - Latin America CACS/ISRM **30 September, 4 October; Bogotá, Colombia**
 - EuroCACS/ISRM **9 and 13 September; Munich, Germany**
 - North America ISRM/ITGRC **13 November; Las Vegas, Nevada, USA**

Register or learn more by going to
www.isaca.org/COBIT5Courses

