The power of advanced audit analytics

Everywhere Analytics

By Thomas H. Davenport

5,754 anomalies found in large transaction dataset

Two high-risk manufacturing locations identified

Unusual patterns present in overseas stores
The time has come for external audits to embrace the use of analytics and technology. Analytics and data have transformed other industries from professional sports to retail to financial services and they will transform audits as well.
There are many reasons why external audits are ripe for an analytics-driven transformation. There is more data to examine today in almost every organization. As more financial and operational transactions move online, there are more variables to analyze, more outliers to identify, and more trends and patterns to analyze. Conventional auditing approaches can’t keep up with the growth of available data.

Analytics also allow the possibility of analyzing an entire set of financial transactions, rather than only a sample. The sampling process in audits always had the possibility of leaving out key transactions. Advanced audit analytics have the potential to blow away much of the hay from the haystacks, and just leave a smaller subset of needles for the auditor to evaluate, which can have a significant impact on audit quality as well as the business insights an auditor is able to deliver.

Outside of audits, many companies and their executives are becoming comfortable with the ideas of data and analytics-based decisions. This general familiarity will make it much easier to institute audit analytics, and at some point will undoubtedly lead to an expectation of more analytics and advanced technology in audit processes. In addition, there are new tools in analytics, data management, and artificial intelligence that will make analytics in audits easier both to generate and to interpret.

Finally, there is little doubt that increasing numbers of clients are embracing analytics and related technologies to improve their internal audits and are hence more open to having similar approaches be employed in external audits.
Deloitte’s advanced audit analytics

Deloitte & Touche LLP’s audit practice is aggressively implementing the application of analytics and technologies to external audits and is currently leveraging that capability across its client base. Deloitte is continuing to evolve its audit methodology, which incorporates analytics and artificial intelligence technology on client and external data as appropriate, while seamlessly integrating additional innovations.

In addition to recognizing the importance of delivering high quality audits, Deloitte’s leaders also realize that there is pressure on accounting firms to provide more meaningful and insightful audits to clients, investors, and the capital markets. Joe Ucuzoglu, the Chairman and Chief Executive Officer of Deloitte & Touche LLP, leading Deloitte’s U.S. audit practice, commented on the state of the profession and audit transformation:

- Audit has not historically been at the forefront of innovation. However, that is changing rapidly. We need to be evolving at the same pace as our clients and our clients are making significant investments in advanced technologies. They expect our audits to keep pace.

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Joe Ucuzoglu
Chairman and Chief Executive Officer
Deloitte & Touche LLP
Deloitte’s advanced audit analytics

• It is incredibly important that auditing firms compete in a vibrant market and find ways to differentiate the value of the service we provide. We want prospective clients to be able to choose an auditor on the basis of key criteria, including the quality of our service and, increasingly, innovation.

• This is an exciting time for the profession; innovation is enabling us to demonstrate the significant value we provide. And it’s exciting for new professionals to have an opportunity to transform the way an audit is performed.

Regulatory views about the use of sophisticated technology and analytics in audits also seem to be changing. Martin Baumann, the chief auditor and director of professional standards at the Public Company Accounting Oversight Board, commented in a video interview for the Journal of Accountancy that:

• We wouldn’t want auditing standards to be an inhibitor that might otherwise allow technological audit achievements to move ahead.

Advanced audit analytics have already been applied by Deloitte around the world and Deloitte’s clients see substantial value in the use of analytics (see the story on the next page).

“At Deloitte we’re investing several hundred million dollars in data analytics and artificial intelligence with some cutting-edge applications that we really believe differentiate us and our audit approach.”

Joe Ucuzoglu
Chairman and Chief Executive Officer
Deloitte & Touche LLP
Deloitte has deployed advanced analytics in connection with the audit of H&R Block, a large consumer tax services provider.

Deloitte applied advanced audit analytics to H&R Block’s revenue information. Brown notes that it was an ideal area to apply analytics because of the breadth of metrics and data that H&R Block had available that could be correlated to expected revenue outcomes.

Brown comments that while it took an investment of time to extract and provide the relevant data for the audit, he believes it will pay off in the long run. A large amount of data is required for analytics and it must be formatted, validated, and reconciled to financial statements.

Analytics helped the H&R Block audit team find data points that fell outside of hypotheses. Brown sees the primary benefit as higher audit quality, with potential secondary benefits involving more meaningful insights. It’s also a benefit to subject the entire population of transactions to some type of examination, rather than just a sample.

Brown notes that analytics bring focus to the audit, helping to identify outliers and unexpected trends in data, and visualize areas of risk that sampling methods couldn’t do. Since Brown was an auditor early in his career, he can appreciate the value technology enables in the audit process.

“We were focused on expanding our use of analytics in Internal Audit. That work made me sympathetic to the idea of analytics being applied to our external audits. I see a lot of potential for data analytics in the audit space, both internally and externally, going forward.”

Jeff Brown
Chief Accounting and Risk Officer
H&R Block
Benefits

There are two key benefits that result from the use of advanced analytics in audits. One relates to the core audit process and the other involves ancillary value for management and board decision-making, or insights.

Evidentiary benefits in core audit processes include the ability to analyze entire sets of transactions rather than samples, the ability to rapidly identify outliers in transaction data, and eventually even to automate some aspects of the identification and assessment of material misstatement risks. There is little doubt that these capabilities will lead to a higher quality audit overall and will streamline the audit process.

Some of the changes to evidentiary processes will involve the use of artificial intelligence (AI) tools as well as advanced analytics. Jon Raphael, who is Deloitte & Touche LLP’s Audit Chief Innovation Officer, foresees a variety of AI applications in audit. Writing in CFO Magazine, he describes tools that can extract key terms and provisions from contracts, visualize populations and findings, and scan financial statements to suggest areas of risk.

In fact, Deloitte auditors are already leveraging many of these capabilities with various tools. Argus, Deloitte’s first cognitive audit application, “learns” from every human interaction and leverages advanced machine learning techniques and natural language processing to automatically identify and extract key accounting information from any type of electronic document. Document review powered by cognitive technologies can now take a fraction of the time it used to. Leveraging artificial intelligence, auditors can review and assess larger samples—even up to 100% of the documents.

Audit Innovation of the Year

Just recently, Deloitte won International Accounting Bulletin’s prestigious “Audit Innovation of the Year” award for its demonstrated dedication to innovation and the development of leading-edge tools to transform audit service delivery.
However, even with exponential tools like this, no one at Deloitte sees the elimination of human auditors in the firm’s future. In fact, these types of benefits will improve auditor productivity and make the job more rewarding. As Raphael put it:

*Auditors can be liberated to focus on enhancing quality by evaluating advanced analytics, spending more time exercising their professional judgment, and providing greater insights.*

Although Deloitte is pursuing advanced, cutting edge applications aggressively, as it relates to the profession some argue that analytics-based evidentiary benefits will be “table stakes”—eventually used by the entire profession. More distinctive offerings from audit analytics derived from the audit may involve better management and board information—insights about how the business is performing under different circumstances, a second benefit. This, of course, is the primary purpose for which analytics have been applied in most organizations but advanced analytical audits may provide new sources of data.

As Lara Abrash, Deloitte & Touche LLP’s National Managing Partner for Audit Innovation and Client Service Delivery, put it:

*Our audit professionals will be able to discuss the business with client executives in a much more meaningful way. They’ll be able to point out where we are seeing trends in customer behavior, operations, and other key business factors. We’re building industry specific advanced audit analytics for our audits that teams can apply to client data. Over time, we can consistently provide differentiated insights and benchmarking observations to benefit our entire audit delivery process.*

“*We’re building industry-specific advanced audit analytics for our audits that teams can apply to client data.*”

Lara Abrash
National Managing Partner, Audit Innovation and Client Service Delivery
Deloitte & Touche LLP
Implementing audit analytics

It’s no surprise that audit analytics require major investments in implementation capabilities. Since audits utilize data from an organization’s transaction systems, significant effort is required to extract and integrate client data. Data extraction and integration capabilities need to be employed on engagements.

Deloitte’s investments in integrated data extraction, staging and preparation innovations, and audit transparency and coordination technologies are already delivering benefits by making it easier for clients to prepare for and manage the audit process.

Auditors will also need to develop skills with a new set of tools. Most auditors are familiar with spreadsheets but many are not as skilled with sufficiently robust technology for advanced audit analytics at scale. Some of the new technologies will include statistical packages, visual analytics systems, workflow automation, and artificial intelligence tools. Not only numbers, but text will need to be analyzed.

Large accounting firms, including Deloitte, all have substantial consulting and advisory capabilities in system development and integration. Deloitte’s multidisciplinary model has been instrumental in the development of its advanced analytics technologies. Audit practices will need to further develop and refine their implementation capabilities and technologies and Deloitte is already hiring professionals with STEM (science, technology, engineering, and mathematics) backgrounds directly into audit to serve this need.
New skills and university relationships

A new kind of audit requires a new kind of auditor. It will still be essential for auditors to have a solid foundation in the fundamentals. However, as the auditor’s role becomes more strategic and insightful, audit professionals will need a variety of enhanced skills including strong capabilities and experience with data analytics.

Neither university accounting programs nor post-hire training programs have fully developed curricula to teach statistics, data management, cognitive technologies, and other necessary components of advanced audit analytics. Deloitte is actively working with select universities to incorporate these skills into accounting training curricula as well as into their own learning programs, culture, and capability.

Firms that plan to move toward advanced audit analytics need to hire or develop staff with advanced analytical capabilities. One approach would be to employ a group of dedicated specialists who only operate in the analytics field and have limited knowledge of the auditing process. An alternative school of thought believes that these skills will need to be embedded within each audit professional to be successful. The ultimate solution will lie somewhere between these two extremes.

Deloitte is actively hiring non-CPAs with expertise in data analytics to support the audit but also plans to evolve its training programs for CPAs to ensure all of our professionals are equipped to deliver the audit of the future. To accelerate the process, Deloitte plans to both teach auditors advanced analytical skills and teach non-CPA professionals audit processes. And as an additional resource, Deloitte already has a substantial analytics practice in its advisory and consulting businesses and it is leveraging these professionals as catalysts for advanced analytical skills in audit.
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For example, Deloitte has a predictive analytics tool that analyzes publicly available financial information to predict and assess scores for fraud, going concern, and restatement potential. To continuously recalibrate, refine, and improve the models, Deloitte leverages data scientists from its consulting business to challenge the correlations and expand the inputs to develop a leading edge predictive model.

However, as with any new processes and tools, the development of advanced audit analytics will also necessitate a considerable degree of change management activities. They will include not only offering new initial and ongoing training but also revising approaches to deploying staff to engagements, developing centers of excellence, and advising clients on changes to the audit process and outcomes.

“No longer is the audit limited to preliminary, final, and substantive analytics—that is yesterday. Today, forward-thinking firms are leveraging the power of external data to predict outcomes, challenge assumptions, and provide insights. This is the potential of the audit of the future.”

Jon Raphael
Audit Chief Innovation Officer
Deloitte & Touche LLP
Analytics and the audit of the future

We are entering a period of wholesale transformation in auditing. The use of analytics for evidentiary and information benefits is only the beginning. These new technologies will lead to dramatic changes in how audits are performed and the value clients receive from them.

Leading academics in accounting, for example, have argued that audits should be a continuous rather than annual process. Analytics, artificial intelligence, and direct linkages to transaction systems will allow audit processes to uncover anomalies in real time, all the time. Material misstatements and financial irregularities can be uncovered as they occur. This will, of course, change not only audits but also investing and regulatory processes.

Audits will also be substantially more automated in the future. There will still be human auditors, but they will play substantially different roles. Some will engage closely with advanced audit analytics and automation systems, monitoring and tuning their performance. Some will look over the high-level outcomes of automated and semi-automated audit processes. Still others will help to develop new automated audit systems. And of course, auditors will continue to evaluate key assumptions and estimates in critical accounting and audit matters, appropriately challenging conclusions with professional skepticism and adding value to the overall financial reporting process.
And looking into the future, one can foresee a world where audits will be much more value-added and comparative. Will auditors be able to tell their clients—based on anonymized data, of course—how they compare to similar companies on key metrics and benchmarks? In addition to uncovering business risks, will audits also uncover potential business opportunities?

These questions call for an informed dialogue among stakeholders to determine how audit standards and practices will need to evolve to continue enhancing the relevance and value of the audit. Ultimately, the investing public will be the beneficiary of higher quality, more insightful audits fueled by big data analysis across clients and industries.

These benefits and transformations will not be achieved easily, but they will surely happen. They are possible with today’s technology, and no feasible innovation remains unachieved for long. Deloitte has made a steadfast commitment to transforming audit service delivery and the firm’s initiatives and investments will have a major impact on the audit profession, the companies that it audits, capital markets, and investors.
For more information

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