

# How Accounting Firms Are using AI

By Gundi Jeffrey, Managing Editor

It has been said, written and foretold that artificial intelligence (AI) will soon be used in every industry, profession and virtually every job. This technology is being incorporated into more of the tools we use every day for both work and play. How has Canada's accounting profession taken to the tools AI provides? Is it making their working lives more efficient and effective? More profitable? Just how are the big accounting firms using AI in their assignments – both audit and consulting – and their work spaces? *ThinkTWENTY20* decided to ask two of them to share their experiences with this emerging technology and how it is transforming the way they go about their business.



Gundi Jeffrey is an award-winning business journalist specializing in writing about the accounting profession for various publications in Canada and England.

*ThinkTWENTY20* spoke to leaders in two of the largest firms in the country, Deloitte LLP and MNP LLP, about what AI means to them and their colleagues. Deloitte offered the expertise of Richard Olfert, Partner, Risk Management, while MNP's Partner and VP, Assurance, Michelle Balmer, spoke on behalf of her firm.



Richard Olfert



Michelle Balmer

***ThinkTWENTY20:*** *Accounting firms have been relying on traditional data sources for audits – financial systems, databases, etc. – for many steps in the traditional audit process. How has the use of company data changed over the last 10 years?*

**Deloitte:** The companies we audit have more of their records and information in electronic format than ever. For example, clients are now more willing to provide data stored in a data warehouse. Or we might get electronic

copies of a population of text documents – for example, all contracts of a particular type executed by the company during the audit period. And much information is available in Excel spreadsheets. Or we receive entire data files, such as a complete copy of all journal entries posted by a company during the year or all the transactions posted to a certain account during a period.

Consequently, we almost always access the data for our audits in their electronic format and then determine whether to apply our various data and AI tools to it. This includes both financial, quantitative records and qualitative/text data.

The challenge when electronic data is received is that, before we use any of our tools, we need to be sure that the data is “clean” (it is what we expect) and that it has “integrity” (making sure it is what it is asserted to be. For example, how do we know that we are seeing 100% of the journal entries in a year or whether a company has omitted certain questionable items). If we cannot establish that the data is clean and has integrity, we need to work with the company to fix the data set or abandon our testing plans. Once we are satisfied with the data, we can turn to any one of a number of tools, including:

- Argus – an artificial intelligence application that allows us to query a group of documents.
- Excel analytics – an enhanced set of excel functionalities that allows us to conduct a wide variety of data analytics.
- Spotlight – a proprietary Deloitte enquiry tool that allows us to query, test and assess transaction data after the data is worked into a format that can be read by the software.

**MNP:** MNP is frequently responding to requests from clients to use new data sets, new systems and new techniques to provide high value insight from data. More data is produced in a day than was produced in an entire year not that long ago. The key is to surface, and then focus on, the data that provides the greatest value and insight. For example, AI tools can be used to examine every transaction, finding patterns or anomalies that might indicate that further audit work is necessary. This would not have been practical, or even possible, a decade ago. AI tools are also allowing auditors to analyze the massive amounts of industry data that have become available in the last several years and develop better insight into their clients’ critical success factors.

“We almost always access the data for our audits in their electronic format and then determine whether to apply our various data and AI tools to it. This includes both financial, quantitative records and qualitative/text data.”

MNP expects that there will continuously be new data sources that clients will want us to leverage. Every day new technology is being launched that creates vast amounts of data that can be leveraged for a variety of uses. Drones can collect and store data to be used as evidence to meet compliance standards – for example, drones are being used for counts of agricultural inventories, like cattle and vegetable crops.

**ThinkTWENTY20:** *How has AI augmented your data analysis? That is, as the tools for gathering and using "big data" are improved, how are they being incorporated into today's audits?*

**Deloitte:** Electronic records, data analytics and AI create all kinds of possibilities. These range from using AI to review a large group of contracts for unusual terms, to identifying the most suspicious journal entries in a company’s complete set of entries for an entire year, to using visualization to more graphically identify the outliers in an analysis.

**MNP:** MNP is partnering with thought leaders in AI. Some of our audit teams are using MindBridge’s Ai Auditor tool to identify anomalies in 100% of the client’s transactions, and spotlight entries which have greater audit risk. Teams are also using Diligen, a contract review software, to search the client’s convertible debt agreements for certain terms, in order to ensure the contracts are accounted for appropriately.

AI tools will, without a doubt, have a role to play in enhancing how services are provided; however, the depth of that role is still being determined. We do expect continuous improvement in insight, automation and value. As the integrity and accuracy of the data increases through enhanced cataloguing tools, there will naturally be more confidence and reliance on the outputs from AI systems.

“More data is produced in a day than was produced in an entire year not that long ago.”

**ThinkTWENTY20:** *Do you have to rely on other new tools to be able to use AI? If so, what are they and what purpose do they serve? Have you developed these or purchased them?*

**Deloitte:** When people say “AI,” they can mean many different things. From our point of view, AI is part of a collection of technology tools that we use to do our work with and for clients more effectively. We also use these tools to manage our business better. These tools include data analytics, visualization, machine learning, natural language processing and AI.

Take, for example, data analytics. When information can be received as patterned data, these tools allow automated querying, sorting, analyzing of the data, to achieve not-possible-before quantum and depth of analysis. Where we might have historically selected a sample of shipped transactions to ensure that shipping documents matched billing documents, data analytics would allow an electronic analysis to test 100% of shipments to see whether they had corresponding billings to customers.

Visualization takes the result of data analytics work and plots it in a visual analysis (graph, chart, scatterplot, etc.), which allows immediate identification of items of interest. For example, if a data analytic application assesses the location of a set of borrowers with the loan-to-value ratio of their loans, a visualization application could depict the poor-ratio loans across a map, which would enable a reader to, among other things, factor in which parts of the entire territory were also the most economically depressed. This type of insight would not be possible with the old ways of manually scanning charts of numbers.

With machine learning, natural language processing and AI, you get the software teaching itself to get progressively better in correlating various factors. For example, our Argus application requires a base of documents (such as foreign exchange contracts) to be used for the software to develop a benchmark expectation of what the contracts should contain. Once the software has this basic understanding, we feed in many more contracts that we want assessed, for example, to identify which have terms outside of certain thresholds. The software not only

searches for what we have identified, it also uses what it is reading to refine its understanding of what the contracts contain so that its accuracy in meeting the initial request continues to get better.

In all cases, we need people who are proficient in using the tools and who possess the curiosity to keep pushing the bounds of what is possible. And we need to invest in software and systems to have the computing capability.

**MNP:** For us the answer to this question could be Yes and No, because the input to, and output from, AI systems may require further data manipulation and visualization. For example, we use ETL systems such as Alteryx, and visualization tools such as Tableau. We prefer to use proven systems that have been designed for a specific purpose.

**ThinkTWENTY20:** *How big an impact is AI having on the audit judgments made by your people? Pros and cons?*

**Deloitte:** In some cases, the technology allows us to assess 100% of a population. When that occurs, we no longer need to make judgments on how to project the results from a sample to a full population. For example, if you can use technology to check all loans in a portfolio for interest rates that exceed the maximum posted rate in a year, you have complete certainty on that assessment – judgment is not required. In most cases, however, the technology gives us better, more complete information or more rapid access to audit evidence. But judgment is still required to assess what that audit evidence is saying.

“AI tools will, without a doubt, have a role to play in enhancing how services are provided; however, the depth of that role is still being determined.”



**MNP:** Audit judgments continue to rely heavily on the knowledge and experience of qualified CPAs. We do, however, expect AI to play an important role in many stages of the audit. While we don't see the auditor's application of judgment going away, we believe that, as AI tools continue to improve and provide better quality information, the auditor's judgments will be supported by these additional insights and evidence.

**ThinkTWENTY20:** *How has AI affected the work of your people? Has there been a good balance between AI and people effort?*

**Deloitte:** We have seen the beginnings of shift in how our people work. The speed of the shift

differs in different parts of our business. In the audits we undertake, we are seeing our people spend more time thinking through what they are trying to achieve with a particular work step. They spend more time than they used to on designing how to do the analysis. Technology makes the analysis itself go much faster. And then more time can be devoted to assessing the outcome and concluding what the analysis means.

**MNP:** AI can assist or replace highly predictable and manual work, thereby allowing team members to focus on critical tasks and value-added services. There are many processes, procedures and professional services for which AI tools are being tested, such as accounting and taxes, contract reviews, etc. As AI continues to develop, medium to high-level complex professional services will find a balance using both system intelligence and human intelligence. That said, it's unlikely to ever be a "one size fits all" approach. Clients and their particular circumstances are often unique. At the end of the day, auditors use their professional judgment to determine what tools to apply, when to apply them and how to interpret the results.

**ThinkTWENTY20:** *Is AI making the audit more effective? More efficient?*

**Deloitte:** There is an illusion that AI and other technology tools instantly create process efficiencies and simplify our work. In fact, simplifying and streamlining only occur when you

“With machine learning, natural language processing and AI, you get the software teaching itself to get progressively better in correlating various factors.”

create a successful application. This requires alignment of a “clean” data set with a technology tool that knows exactly what it is taking in. Every time a technology application is deployed, there is an investment in both scrubbing the data to be confident that we know

exactly what we have, and synchronizing the technology to handle the data set. The first time through, this investment can be quite sizable. The real benefit comes with a larger number of repeat uses of that application. So, the ability for technology to have an impact on how a large audit is done depends on how readily the company data aligns with existing technology applications.

Let's take a simple example. Let's say you want to understand a portfolio of investment properties on a number of dimensions, such as tenant vacancy rate, return on investment, and rate per square foot. And you want to be able to plot these various measures on a map, so you can readily see if there are performance trends based on region. The first thing you have to do is gather the information from a company's systems that allow you to do this analysis. This means figuring out where each piece of data is stored and retrieving it. Then you need to assess whether, for example, the full list of properties received matches the listing of properties with tenant vacancies – are the properties identified the same way, that is, can you figure out which property in the vacancy information is the same property in the other sets of data received. And, if you want to map things out, is there postal code information or geo-location data that can be used?

It takes a while to get this all figured out, including what fixes or revisions need to be made to the data to get a full set of data that is “clean” and has “integrity.” Then, you need to determine how the data analytic tool will take the data in, read it and analyze it. Once all of that is sorted out, the analytic can be successfully used. The next time you go to use it, you don’t have to do all of that prep work. You know what data to get, how to scrub it and how to aggregate it. And you have confidence that, once you get it into the prescribed format, the data analytic tool will work – so it goes much quicker. Frequently, it is when this speed of analysis is attained that the true value of the new technology based methods is realized.



**MNP:** Yes, in some cases. Advanced analytics can be very powerful in their ability to quickly scan an entire data population and determine anomalies or errors. Humans using systems like Excel to test data samples will never equate to the value of testing 100% of the transactions.

On the other hand, if there are data integrity concerns, the use of AI or data analytics could produce misleading information. Similarly, data is often not received in a format that can be immediately uploaded into an AI tool. If the data is in format that is difficult to work with, the auditor can spend considerable time reformatting the data, and that additional time can significantly reduce the benefits of any potential

“As AI continues to develop, medium to high-level complex professional services will find a balance using both system intelligence and human intelligence.”

automated analysis. It’s really a balancing act that considers a lot of factors with regard to the characteristics of the engagement and information available. Engagements with smaller volumes of transactions aren’t as likely to benefit from AI as much as larger volume transaction engagements with quality data. The auditors consider AI as another tool in their audit tool kit, used when appropriate to the client and the engagement.

Ultimately, as AI systems become more proven and trusted, we expect they will improve the effectiveness and efficiency of audits.

**ThinkTWENTY20:** *Does AI play a major role in the delivery of your consulting services as well? In what service areas is it most useful – and how?*

**Deloitte:** The clients for whom we provide consulting services are all eager to improve how they do things using AI and other technologies. Today, we have more than 400 full-time people in our Omnia business developing AI solutions for clients or assisting them in figuring out how to bring AI and other technology tools to their operations. We are discovering that, as useful as these technologies are to increase productivity, their most powerful uses are when seemingly disparate sets of data are brought together to reveal new insights that can revolutionize a business.

**MNP:** AI is being used extensively to add value in consulting. Today, it is being introduced to many engagements such as fraud risk assessments, continuous monitoring dashboards, internal audits, forensic investigations, etc. It is already helping to improve effectiveness of these engagements. Efficiency improvements are starting to be realized as the incremental time to setup and evaluate the use of AI tools diminishes.

**ThinkTWENTY20:** *Do new auditors and consultants have the skills needed to utilize this advanced technology?*

**Deloitte:** Our newest staff members arrive with more technology savvy than ever before. So they can intuitively capitalize on the technology. And, of course, they all benefit from experience and specific training on the tools.

Optimizing the benefit of new technology requires thoughtful deployment. Testing, pilots, super-users and training are all necessary. What seems to be most different today, though, is the speed with which this must be accomplished. Our thinking has shifted towards more active, live learning, where we learn from our experience in real time, making immediate improvements to get better results the next time.

**MNP:** At MNP, team members have the skills and abilities to utilize the tools, but they are often learned on the job. We are starting to train our employees in using and applying some of the systems that are valued by our clients, such as Tableau and MS Power BI, and we are also

“Our thinking has shifted towards more active, live learning, where we learn from our experience in real time, making immediate improvements to get better results the next time.”

training some of our people on expert systems. But we still find that the best teacher is real life, on-the-job training.

The required skills of the CPA are evolving, and universities are bringing business and government leaders into the classroom to help students connect

the dots between the technology and real-life applications. Educating students in the shared disciplines of data science and accounting/auditing will take time, but we’re encouraged that the profession has identified this as a critical area of focus. In time, we expect students will be well prepared to hit the ground running.



**ThinkTWENTY20:** *How do you foresee the near future unfolding?*

**Deloitte:** We see three primary benefits from these technologies:

(1) things are easier and simpler to do –

in other words, the experience of getting something done is improved.

(2) productivity improves – you can do the same for less effort and cost or you get much more

benefit out of the same effort as before; and  
(3) risk of human error is eliminated because tasks are automated.

**MNP:** We believe AI and machine learning will be leveraged as the solution for many basic tasks, especially tasks that are very manual and predictable, like journal entry testing and completing your personal tax returns. Data and data analysis will only get better, and we'll be able to leverage that information to improve efficiencies and positively impact our clients' engagement experiences. The future will be a shared evolution between clients, technology companies and audit firms.



Check out our website at [www.thinktenty20.com](http://www.thinktenty20.com) for:

- News items
- Standards overview
- Blog entries, and
- An issues forum