How AI Will Make Accounting and Auditing More Interesting: In Their Own Words

By Gundi Jeffrey

Gundi Jeffrey is an award-winning business journalist specializing in writing about the accounting profession for various publications in Canada and England. In 1985, she co-founded The Bottom Line, Canada's only independent publication for the accounting and financial professions, serving as its executive editor.

According to a post by Brandon Malekie on the webpage of #Flocast, "bringing artificial intelligence, or AI, into accounting and audit will make that work more fun and provide the deeper insights that businesses crave. For the first time in the history of accounting, accountants will get a break from the boring tasks that bots and AI can do faster and more accurately, and they'll get to do more of the work that actually requires a CPA. That's happening today in accounting firms and in accounting teams in industry that are implementing AI technology."

But today's AI has advanced beyond simple rote memorization of tasks to learn on its own. Machine learning, or ML, uses AI algorithms applied to large datasets to identify patterns and make predictions or decisions with limited human guidance. This type of AI gets better as it processes more data, and may apply natural language processing to interpret spoken or written language. The datasets here may be structured, such as a set of accounting transactions, or they may consist of unstructured data, which can include satellite images, email messages, and audio or video files — basically anything under the sun that can be digitized.

Because bots never get bored and perform their tasks flawlessly and quickly, AI is especially useful for the repetitive, error-prone manual processes that have defined the work of accountants and auditors for centuries. Now, thanks to new technologies being implemented by forward-thinking accountancy firms and accounting professionals in industry, accountants will have the time and energy to provide the higher-value consultative work that actually helps organizations achieve their goals.

There has, however, been considerable recent blowback to AI development, especially to ChatGPT, which offers many benefits but has also been criticized for being developed too quickly and tends to be error prone.

As a follow-up article to one we published in Spring 2019, the use of AI at two of Canada's major accounting firms MNP and Deloitte – which detailed where and how they were applying AI – we went back to two firms to see how their use of AI has evolved. This time, we spoke to

MNP Partner Darryl Humphrey, PhD, PMP, Assurance Innovation, and Bryant Ramdoo, Partner and National Audit and Assurance Innovation Leader, KPMG Canada.

ThinkTWENTY20: *Times have changed in recent years. AI has now evolved into different branches, with ChatGPT and its rivals being only one of the new technologies that has found rapid uptake. What major changes have you seen in AI technology?*

Bryant Ramdoo: There has been an acceleration in the number of organizations developing and investing in AI technologies, which was exacerbated by the global pandemic, supply chain issues, and the skills shortage in many fields. In fact, a recent KPMG Canada survey found that 37 per cent of Canadian companies and 72 per cent of those in the US are already using Chat GPT in their operations. The sophistication of AI has advanced rapidly in generative AI, including natural language processing (NLP) and computer vision, which uses text, audio, video and image files to create new content. While there have been many advancements, we know it's critical to have responsible and explainable AI with safeguards that ensure data integrity and best outcomes to support the highest audit quality.

KPMG in Canada has been at the forefront of implementing AI technology for some time. We've been working in collaboration with a world leading, Canadian-based technology firm MindBridge for many years to harness the power of AI. Building on this early and multi-year collaboration in Canada, KPMG recently announced a new global strategic alliance with MindBridge that will further embed trusted, advanced AI capabilities into KPMG's smart audit platform, KPMG Clara, responsibly and consistently to our digital audits around the world.

Darryl Humphrey: The major changes in AI technology have happened in the past 4-5 months. The public availability of generative AI tools such as ChatGPT and DALL-E (algorithms that create new digital content, such as images, video, audio, text, or code, based on existing content) has been a watershed moment. The speed at which these tools are being adopted is unprecedented and additional applications are being announced daily. The AI innovations are coming from the big players (Microsoft, Google, Meta, Amazon, etc.), from niche players (e.g., Databricks), and numerous startups.

Within the O365 ecosystem, Microsoft's Co-pilot promises to greatly reduce the friction in two key capabilities that every business needs: a) data access and synthesis and b) intelligent workflow. ChatGPT's Application Programming Interface (API) extends this benefit beyond the Microsoft application portfolio. They are definitely changing how we interact with information and produce knowledge-based work products.

Bloomberg has shown how companies can implement bespoke versions of these tools in their own environments and apply them against their proprietary data sets (Introducing BloombergGPT). Open-source options are also available from several sources (e.g., Hugging Face, Meta, CollosalAI) lowering the barriers to adoption for all. These transformative capabilities can be leveraged by businesses of any size.

ThinkTWENTY20: *How is the increasing use of AI technology affecting the way you run your business?*

Ramdoo: Audit quality is our highest priority and leveraging technology such as AI in the audit is critical to our ability to identify areas of greatest risk, especially over larger and more complex sets of data. By responsibly harnessing the power of AI, we're able to transform the audit to better serve and protect the growing needs of Canadian businesses, investors, and audit professionals. It means being able to see all the needles in a field of haystacks, and we're excited to further advance these efforts globally.

We aren't just pulling a tool off the shelf. KPMG Clara, our smart and intuitive technology platform was developed to be a foundational technology platform for KPMG to deliver audit quality. KPMG Clara evolves to embed new technologies, including artificial intelligence, blockchain, and other cognitive capabilities. Responsible AI requires a careful and measured approach, and we invested the time and resources to get it right at every step of the way creating bespoke, customized tools with some of the leading partners in the industry. That's a key differentiator for us. We are big believers in making AI available for everyone, processing data faster and with greater insights, and thereby revolutionizing the audit experience for our clients and our people.

Humphrey: We definitely believe that adopting AI in a systematic way provides a competitive advantage. To date, AI technology has primarily allowed us to do the same scope of work faster and at a higher level of quality. In some use cases such as journal entry testing, we are completing a larger scope by analyzing all transactions in the ledger. The increased capacity for analysis and knowledge synthesis has created the opportunity to evolve our audit methodology, to directly incorporate AI-enabled audit procedures. Our practitioners are better able to provide what we have termed Insight Driven Assure: *Informed decision making that exists at the intersection of professional judgement and data.*

We are expanding the AI value proposition with the initial steps for integrating the use of AI in the performance of review engagements as well. As these engagements focus on analytics and discussion, we are expecting to realize considerable efficiency and quality gains in review engagements.

ThinkTWENTY20: *What new AI tools have you added to your arsenal of late?*

Ramdoo: We are constantly looking in the market for the right tools and the best collaborations. Our new global alliance with MindBridge advances years of work we started right here in Canada to the global stage. By embedding MindBridge's advanced statistical, machine learning, and analytics technology into KPMG Clara, digital audit can analyze all of our client's financial transactions on a more granular level. Rather than relying on a sample of data, transparent or "explainable" AI-based analysis will enable auditors to evaluate the entire

population of financial transactions and identify higher-risk anomalies for further analysis and investigation.

Through the use of tools such as Alteryx, our teams can build customized client-focused bots, to quickly extract data from multiple sources and automatically cleanse, transform, and analyze it reducing human time and effort. It can also automate repetitive tasks and complex calculations helping auditors to identify trends in large datasets more efficiently and enhance overall audit quality.

We also utilize Microsoft Azure's cognitive capabilities for image and text recognition to automate many tasks our auditors historically performed manually, from vouching invoices to ensuring financial statements are mathematically accurate.

These kinds of tools have been a game changer. They offer low-code/no-code solutions to harness the power of AI directly in the hands of all our people. This helps improve our ability to focus our investigations and identify areas of greatest risk. We're not automating the audit— we're augmenting it and investing in tools that provide our people with added lens for better insights, better conversations, and better audit quality.

Humphrey: Adopting AI tools is a journey best taken in measured steps. We are definitely on our way, taking the time to incorporate what we learned in our initial deployments to our recent efforts. We have expanded our use of MindBridge to cover our entire audit practice. DataSnipper has been adopted across the firm. We are continuing to prototype ways of incorporating Natural Language Processing (NLP) tools into our workflows. Efforts are underway to understand how to gain the benefits of adding generative AI and to manage any possible risk to our clients and our firm.

ThinkTWENTY20: In what areas are you finding AI the most beneficial and how are they helping your firm?

Ramdoo: By employing AI responsibly into our audits, auditors are able to identify potential risks and errors in financial statements at a greater scale. AI can identify patterns and anomalies in data that may be difficult for humans to detect, providing auditors with more in-depth insights into the financial health of an organization.

For our audit professionals, that means spending time where it matters – most focused on areas of relevant risk, which can drive new insights into our clients' business and better conversations that challenge management.

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Humphrey: Audit analytics was the first AI use case we pursued, journal entry testing to be specific. We are continually working with assurance engagement teams to identify audit tests that can be better executed by incorporating AI for one or more components of the work. We are in our first year of expanding the types of analytics we produce with the AI tools to better

align with the needs of review engagements. Using generative AI to draft the initial work product is a use case we are exploring.

Our ease bookkeeping service line employs a suite of SaaS packages that incorporate AI-assisted workflows to provide a completely digital experience for our ease clients.

Our consulting teams are very active helping clients improve their businesses with AI-assisted workflow improvements and insight generation from analyses that would have been difficult to execute a few years ago.

ThinkTWENTY20: Is it used for auditing, accounting, data analytics, consulting and internal management?

Ramdoo: AI is transforming and revolutionizing the way we do business in all functions. Using AI in datasets lets us identify anomalies and areas of greatest risk with speed and precision. The variety, volume, and velocity of the data generated and stored today is creating a greater need for data integrity, bringing opportunities for data and technology assurance.

AI can help our professionals with assurance and compliance with acceptable standards and regulations. We have a vision of continuous audit, in which our AI tools are constantly running through the audit. And there are a lot of small use cases for daily functions, such as auto-filling an Excel formula or email, that can speed up our professionals' day. Those seconds add up, allowing us to concentrate on value-added services and raise the bar on expectations of the market.

ThinkTWENTY20: Have you been using the increasingly popular ChatGPT? If so, how do you use it and how does it benefit your firm? What issues does it raise and how are you dealing with them?

Ramdoo: We are continuously exploring many other use cases for applying AI within our audit practice, including in communications to clients. But we have to be careful of the information that any tool is providing, the outputs and potential security issues. As an AI model, natural language processing tools require access to large amounts of data to function effectively, and this data may contain sensitive information. There is also the risk of the model being trained on biased data, leading to biased results. Additionally, there is the risk of the model being hacked or compromised, leading to unauthorized access to sensitive information.

We are watching it closely, and carefully managing associated risks. While we're interested in co-pilot tools that autofill and augment, and speed up how our professionals work, it's imperative that we be guardians of client data by ensuring proper data security and policies are in place, and that any efforts serve to enhance public trust.

Humphrey: Team members have been using ChatGPT to quickly generate draft versions of internal communications, Excel formulas and code snippets. The emphasis is on using the tool for research or the compilation of draft content. ChatGPT is not yet used to generate audit findings or to provide assurance on an engagement. It has seen use for internal tasks and professional judgment is always required to completely tailor the work product to the need. We are very careful to not use tools like ChatGPT with client information of any sort.

The need to protect client data and our own intellectual property means our Assurance Innovation team has been tracking the maturation of large language model (LLMs) and knowledge graph tools for some time with an eye to creating a suite of domain-specific GPT tools (e.g., tax, audits, reviews). With services like Azure OpenAI becoming generally available, we will be able to build powerful generative models for ourselves and for our clients. Databrick's recent release of Dolly provides another option for developing firm-specific applications that run in our own environment using our data to build the knowledge graph.

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ThinkTWENTY20: Has data analytics evolved with the new technologies now at hand?

Ramdoo: The usage of data analytics has evolved significantly over the years within audit. Previously, we were limited by compute power and often the need for a deeper understanding of coding to develop discreet analytics. Now, with the use of next-generation tools such as Alteryx, Azure Power Platform and others, you can develop machine learning algorithms, big data analytics, and customized bots to automate tasks all in a user-friendly interface — no coding required. We are now starting to see enhanced adoption in real time with increased ease of use. It's a low-code, no-code revolution.

Humphrey: Data analytics hasn't fundamentally changed with the new technologies. The statistical and algorithms underpinning the analytics are not that different today than a few years ago. What has changed is that it is much easier to access analytical tools. We are seeing the first wave of the democratization of analytics functionality. The low-code/no-code tools are more capable today, allowing a greater portion of our team members the opportunity to focus on applying their business and client knowledge to the analytics and not get bogged down in coding.

ThinkTWENTY20: Any drawbacks? Challenges?

Ramdoo: Audit quality is paramount and applying technology such as AI responsibly is critical to allow our audits to put continuous focus on areas of greatest risk and what matters to our clients, and the markets and public we serve. A key risk relevant to audit is "explainability." AI technology for audit cannot be a black box. Our auditors need to understand, explain, and document why the technology may be highlighting certain items and trends. That's why we believe it's important to have people working alongside AI to prompt deeper thinking and challenge where necessary. At the same time, that helps train the AI continuously through human input.

Change management is also key as AI adoption ramps up. Technology augments, but it doesn't replace the work of professionals. All new technologies challenge the status quo and require people to challenge previous assumptions. Technology is no longer the domain of specialized IT auditors, all auditors today need to be data and technology savvy, and the human element to train and develop those skills is key focus area.

Humphrey: As always, the quality and appropriateness of the available data is the limiting factor in getting value from analytics. There is a risk that team members will now be able to execute analytics that they don't fully understand how to interpret. Similarly, the outputs of GPT tools are usually quite readable and sometimes hallucinogenic. Applying professional judgement and having a quality control process will always be required. This is in line with our assertion that a human-in-the-loop approach to AI adoption is the best way to get the advantages and managing risk.

It is important to stress the need to take a measured approach to incorporating the use of tools like ChatGPT and advanced analytics. Especially when you have a large work force to train in its appropriate use. The early adopters will usually demonstrate the benefits of a new technology and that user segment should be encouraged. They should also be educated on the risks and actively participate in providing usage feedback to the business stakeholders.

Allowing time for comprehensive change management is critical to long-term success. We have expanded our innovation team to include change management specialist. This facilitates tailoring the messaging and training to each of the user segments (early adopters, early majority, etc.) that make up our assurance practice.

ThinkTWENTY20: How are your client services evolving as a result? How are clients responding in this new environment? Are they up to speed?

Ramdoo: In our CEO Outlook Survey, we found a large majority of CEOs around the world are prioritizing digital transformation, with 72% saying they have an aggressive digital investment strategy. It's exciting that we have the tools to help them in this journey and are rolling them out.

Some clients are more advanced than others in thinking about implementing this type of technology. While it can be a game changer across industries, adopting the technology brings challenges, such as culture change, lack of skilled resources, outdated IT architecture, concerns about security, reliability of the outputs, the rise of blockchain and the increasing emphasis on ESG.

The good news is that we are bringing the highest level of technology across the board, for large and small companies. And we're constantly feature engineering our tools for particular industries that have specific datasets or risks.

Humphrey: As a profession, we are still in the early stages of AI adoption. The impact on client services is just beginning to be felt. We are definitely seeing that our engagement teams are often more efficient. How to translate the new-found availability into additional value for our clients and ourselves is a work in progress.

This is a journey for our clients as well. More and more clients are expecting assurance engagement teams to be using AI, often explicitly requesting it in Request for Proposals (RFPs). For many clients, the AI awareness is there and they expect their professional services

providers to be knowledgeable and using these tools where appropriate. Other clients are not as far along the awareness spectrum. It is important to keep in mind that for some clients to be able to provide information digitally in support of an audit or review would require a substantive transformation of their operations. There is still a lot of paper-based and manual processes, for clients and auditors alike.

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ThinkTWENTY20: What are the competitive pressures to adopt AI?

Ramdoo: In our industry, a large driver is the need for more professionals in assurance and accounting. Part of the solution is adopting AI so that we can remove routine tasks and facilitate the speed in which we can obtain relevant and reliable information, which may also help point them to areas of risk or concern in the file so they can focus their efforts on areas in the audit that truly matter. Increasingly, clients and investors are looking for the level of assurance that can only be provided by employing new technologies.

As technology advances, so do we. Through KPMG Clara, our audit professionals have access to the latest capabilities, are executing audits consistently across the globe, and have a fully digital experience through a data-enabled workflow. That not only helps to enhance the quality of audits across the globe, but it also helps us attract top talent as well.

Humphrey: There is little doubt that the age of AI has arrived and those who first learn to leverage it in their services will have a huge competitive edge. There is truth in the saying that AI is not going to take away an accountant or auditor's job, it will be taken by an accountant or auditor that is leveraging AI. We have seen transformative technologies before. We have never seen one with the adoption rate of generative AI.

ThinkTWENTY20: *Does this mean you have to hire more technology-oriented staff or does your accounting staff have sufficient technological knowledge to handle the changes?*

Ramdoo: We took action early on to lead the industry and invest in the skills our auditors would need to meet the needs of a future of auditing. In 2018, we built KPMG Digital Academy in collaboration with Simon Fraser University to upskill our audit professionals in data and analytics, machine learning and AI. Upon successful completion of the 9-month program, auditors can earn a Graduate Certificate in Digital Analytics, with the potential to go on to obtain a Master of Science in Accounting with Cognitive Analytics. And we have embedded data and analytics training into our core learning curriculum for everyone.

We also believe in hiring in specialties that go beyond traditional accounting firms. So, we are not only continuously developing our auditors' knowledge and experience, but also augmenting our teams with professionals who have specialties in software, cloud capabilities, data science and AI, and who can bring industry best practices to our smart audit platform. We can't predict all the new needs of the future, but we are certainly ready to meet them when they arrive.

Humphrey: It is a bit of both. As the AI tools get easier to use, the level of technological knowledge required goes down. In a large assurance practice, there are always a number of

team members that are tech-savvy, the early adopters you need to get momentum. Bringing on the majority of the team members will require increased training in data literacy and the specific tools a firm chooses to adopt.

The required skill set is definitely changing. Prompt engineering was an academic term until very recently. Now it is the hottest skill in the job market. The traditional education system can't adapt fast enough. Firms will have to rely on boutique education providers that are agile enough to quickly develop content and deliver it in a way that fits in with the rhythm of the professional services firm. For firms with sufficient resources, the innovation teams will have to support engagement teams as they learn how to adapt processes to take advantage of the AI tools.

ThinkTWENTY20: Does it really free up professional personnel for more advanced functions?

Ramdoo: Yes. From our experience, AI enables our team to focus on audit work in higher risk areas of a file. Traditionally as auditors, we try to find that needle in the haystack. Now we've developed tech where we're identifying *all* the needles in fields of haystacks. We can pinpoint the areas of greater risk and where significant professional assessment and solutions are needed. Trust and building solutions together are key. AI tools and our collaboration with other leading organizations help us to deliver on these mandates.

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Humphrey: AI tools definitely free up time. At first, the availability gains will be spent reviewing the quality and applicability of the resulting work product. As team members gain a deeper understanding of the appropriate use cases for each AI tool, less review time will be required. This will likely happen at a different rate for each practitioner. As assurance services is a team sport, it will take some time for these efficiency gains to aggregate and their transformational impact to be realized. As the nature of a practitioner's work will change, some of that freed up time will have to be spent gaining the skills and experiences required to perform the more advanced functions.

ThinkTWENTY20: From your current point of view, where is this going in the future, given the rapid advancement of AI into areas unimaginable just a few years ago?

Ramdoo: We know the acceleration of adoption will be enormous and bring new opportunities. Using AI to test historically highly judgmental areas such as future cash flow estimates can be achieved through AI based prediction, models using inputs from disparate sources, reducing audit efforts and drastically increasing quality. Applying AI tools to flag transaction or events in a data-lake, in real-time, will fundamentally change how and when auditors perform their procedures to a continuous audit methodology, which could completely revolutionize the audit of the future.

We have a view that technology, including AI, has the potential to empower auditors to deliver even more value in the audit. It also creates an opportunity for the role of auditors to change as

AI tools continue to augment their work and free up time to provide new services in expanding fields. But we must remain vigilant and help ensure that AI tools are providing relevant and reliable information and that the outputs are explainable, meeting the expectations of regulators, clients, investors, and the public.

Seventeen years ago, I started as a staff with KPMG manually adding trial balances with a calculator and documenting my work on sheets of paper. When I look at what technologies our people have available today, there's certainly never been a more exciting and purposeful time to be an auditor.

Humphrey: There is no question that AI will be pervasive in assurance services by the end of the decade. The opportunities to reduce the practitioner's involvement in non-value-added tasks are just too abundant. The commercial availability of robust AI development environments means that firms will have an option of developing in-house tools that leverage their proprietary data in bespoke workflows. Firms that choose to rely on commercial products/services will have a much greater range of solutions to choose from. These solutions are likely to still be relatively narrow in focus. However, the increase in API-centric architectures will make it easier to have the point solutions work together.

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