ThinkTWENTY20

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The Magazine for Financial Professionals

How Accounting Firms are Using AI – Interviews With Deloitte and MNP

Will Blockchain Make Auditors Obsolete?

Adapting Corporate Reporting to the Information Age

Plus Other Features

Twenty-Twenty Vision

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Editorial

By Gerald Trites, Editor in Chief

How Accounting Firms Are using AI

By Gundi Jeffrey, Managing Editor

– em to share their

- 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.

> "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: 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.

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 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.

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

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 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.

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

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

> "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."

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.thinktwenty20.com for:

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

Will Blockchain Make Auditors Obsolete?

By Eric E. Cohen

Eric is a prolific author, engaged in virtually every effort to standardize accounting and audit data, a national expert on a wide variety of standards efforts, and co-founder of XBRL.

He is a contributing editor to *ThinkTWENTY20*.

"Auditors," some say, "will be out of work very soon, thanks to The Blockchain – the trustworthy, global, immutable audit trail of commerce which lets anyone automatically check the results of any organization without the need of intermediaries. Who needs the auditors?," they continue, "as The Blockchain is inherently self-auditing."[1]

Is there any truth to these warnings? Do accountants and auditors have anything to fear or are there essential changes (other than ongoing education) they need to be making now?

A trustworthy, accessible, timely and consumable audit trail is the *beginning* of the audit, not the *end* of it. This is not to demean blockchain, cryptocurrencies or their objective supporters, nor to stifle open, honest and objective discussion on how the audit profession might adapt and enhance their capabilities with blockchain, artificial intelligence (AI) or any other emerging technology. Many of the challenges and opportunities of automated audit processes need to be evaluated to facilitate real-time assurance on real-time reporting, where trade-offs and compromises may be necessary to meet a new need.

Where Did It All Start?

As the cryptocurrency Bitcoin began its climb into the mainstream – from the earliest days when it took 10,000 Bitcoins to purchase a couple of pizzas,[2] through Bitcoin-to-dollar conversions of hundreds, thousands and tens of thousands of dollars (at this time of writing,[3] approximately $5,000 CAD = $3,800 USD = 1 Bitcoin) – it led to the claim that the technology underlying blockchain and cryptocurrencies (cryptographically-supported, append-only chains of blocks creating a decentralized, seamless, trustworthy, complete and public audit trail that anyone can query automatically for balances at any time) would make auditors obsolete.

> "There are claims that – despite the audit profession's claims to the contrary – the market has decided that financial statements and the related financial audit are obsolete."

It should be noted that there are many related claims, including the opinion that coins and currency as we know them (often referred to as *fiat currency,* such as the Canadian or US dollar) are inherently evil, will be obsolete within five years and everyone will be using some form of cryptocurrency instead.[4] For what it's worth, I'm not ready to give up my loonies and toonies yet. Also there are claims that – despite

the audit profession's claims to the contrary[5] – the market has decided that financial statements and the related financial audit are obsolete, with the proof that investors have been throwing billions of dollars at new blockchain-related companies based solely on a fancy web site, a convincing team of contributors and a complex white paper, leading the US Securities and Exchange Commission to set up a web site[6] to counter that trend.

Does The Blockchain Make Auditors Obsolete?

Does "The Blockchain" (as the technology or the Bitcoin blockchain are sometimes referred to) make auditors (and accountants) obsolete? What aspects of blockchain and distributed ledger technologies (B/DLT) can contribute to higher quality audits or alternatives to today's periodic audit, and what other technologies/methodologies must be in place? Under what conditions does B/DLT have the potential to facilitate, rather than exacerbate, the audit process?

Check out Eric's Blog at http://www.thinktwenty20.com/index.php/blog

The profession has gone on record to say that blockchain may bring many changes to the profession. CPA Canada and the AICPA (American Institute of CPAs), for example, note:[7]

> *"Blockchain technology has the potential to impact all recordkeeping processes, including the way transactions are initiated, processed, authorized, recorded and reported.*
>
> *"Both the role and skill sets of CPA auditors may change as new blockchain-based techniques and procedures emerge.*
>
> *"While traditional audit and assurance services will remain important, a CPA auditor's approach may change.*
>
> *"[B]lockchain technology may also have a significant impact on the way auditors execute their engagements."*

But the profession has not (yet) accepted that blockchain will be the end of the audit profession as we know it. To understand the claim, we need to begin the discussion with some background. A wide variety of philosophical and political goals, technical advances and circumstance have led us to where we are today.

Impact of an Events Approach to Reporting – 1960s

During the 1960s, Professor George H. Sorter proposed the idea that business reporting could be improved by reporting disaggregated business events rather than having management summarize business position and activities by value.[8] At the time, the means of facilitating a

"Both the role and skill sets of CPA auditors may change as new blockchain-based techniques and procedures emerge."

process where users, rather than the accountants, can receive sufficiently detailed information for them to aggregate, assign their own weights and values and then use them in their own forecasts and utility functions seemed far off. With today's Internet, however, data standardization, mobile platforms and emerging B/DLT are removing most of the technical barriers to Sorter's events-based reporting. B/DLT may be a key to the appropriate exposure of the detailed events.

The availability of detailed events data on a blockchain (whether the right kind of evidence is available or not) is part of the claim that blockchain may be the conduit to easily summarizable events data.

Need For Privacy-enabled Electronic Payment Method – 1980s – 1990s

The need for electronic communications and payments that preserve the privacy of the parties involved can be traced back to the 1980s, if not before, more than 20 years before Satoshi Nakamoto's Bitcoin whitepaper.[9] Back in 1985, for example, David Chaum wrote about "a personal 'card computer' to handle all your payments and other transactions. It can protect your security and privacy in new ways, while benefitting organizations and society at large."[10]

Activists, such as the Cypherpunks, also wrote and promoted anonymous payment systems, "defending our privacy with cryptography, with anonymous mail forwarding systems, with digital signatures, and with electronic money."[11]

Foundation For Blockchain – 1991 - 1995

> "What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party."

Not for supporting private payments, but to prove the integrity and timing of digital documents, Stuart Haber and Scott Stornetta developed an electronic time-stamping methodology, which was put into practical use in what is arguably the first practical blockchain, from Surety.com. Since January 1995, every Sunday the *New York Times* classifieds have published a series of cryptographic hashes representing new blocks of data being added to their existing chain of blocks. The research and work of Messrs Haber and Stornetta is recognized in the Bitcoin whitepaper itself, where three of the eight references provided by the author are references to their work.

The Surety.com chain of blocks has technically much in common with the Bitcoin blockchain from a cryptographic point of view. That early chain did not, however, include cryptocurrency

or other digital assets, it was not decentralized, and there was no need for mining or consensus mechanisms or incentives for third parties to verify the transactions. Yet the publication of the hashes publicly removed the ability of a centralized service provider to change the underlying records without others knowing about it.

The Concept of "Triple Entry Accounting" – 2000s

In 2005, a financial cryptographer published a paper on Triple Entry Accounting.[12] To be distinguished from Ijiri's different effort using a similar name,[13] Grigg's Triple Entry Accounting focused on cryptographically-supported business activities, integrated payments, pseudonymity, and largely mirrored entries.

This idea lent itself naturally to the Bitcoin, and, later, other blockchains, where each transaction represented the exchange of Bitcoin from one party to another – more accurately, from one Bitcoin address to another, where the party behind the address is not itself part of the ecosystem. It appeared that triple entry accounting promised that all business trade activity will automatically result in reliable accounting, as all major revenue and costs of sales activity will be a natural by-product of B/DLT activity. Enthusiasts call on that promise to support the notion that all reporting will be a natural by-product of the related transactional activity. I believe there are environments where triple entry accounting can be a very powerful tool; I do not believe it is a panacea.

Bitcoin (and Beyond) Blockchains – 2008 and On

As mentioned previously, the 2008 Bitcoin paper[14] brought together work in time-stamped, cryptographically supported chains of blocks and digital currency. The focus was on a new peer-to-peer environment for exchanging payments without the need to rely on a financial institution. There was a strong focus on the "double-spending" problem, minimizing the risks that someone would try to spend the same value in two or more places. As noted in the paper:

> *"What is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party. Transactions that are computationally impractical to reverse would protect sellers from fraud, and routine escrow mechanisms could easily be implemented to protect buyers. In this paper, we propose a solution to the double-spending problem using a peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions."*

"I have found that few of the people who say that blockchain will make auditors obsolete understand the role that external auditors play in the first place."

Another blockchain, the Ethereum blockchain,[15] added the ability to engage autonomous programs, known as smart contracts, to act on

the users' behalf. Many people felt that this self-running programmable environment would take the blockchain one step closer to removing accountants from the operational process and – as users could now examine the smart contracts as "easily" as they can examine the detailed transactions – not needing auditors.

Looking at a Bitcoin record in a blockchain explorer,[16] it is clear that very little "business" information is captured. There is no documentation on the identities of the exchange partners, the reason for the exchange or if any goods or services were exchanged along with the Bitcoin. Other blockchains and distributed ledgers soon joined Bitcoin in the market, but few were designed to capture all of the information that might be found in an enterprise resource planning (ERP) system for a particular transaction. While verification might take place to ensure that there was sufficient Bitcoin for the exchange, that the signatures were appropriate to authorize the exchange and a few other requirements, the lack of context beyond "party A has authorized the exchange to party B" means that many of the audit's requirements are not captured. And there is no way to verify that transactions are arms-length, to deal with collusion or other challenges.

So, to start on our exploration:

1. There is no "The Blockchain." There are many blockchains, among them the Bitcoin blockchain and the Ethereum blockchain. The Bitcoin blockchain has spawned many others, such as Bitcoin Cash, Bitcoin SV and Bitcoin Gold. Many of the other 2,000 plus[17] coins run on their own blockchains. There are "blockchains" with no digital assets, which are restricted in use and perhaps not decentralized or public. When someone asks if "blockchain" makes auditors obsolete, it is important to know what that person means by saying "blockchain."
2. Blockchain – especially the Bitcoin blockchain – is focused on privacy and pseudonymity. There are no mechanisms to ensure a user can find all of the Bitcoin addresses for a person or organization, and therefore identify all activities for that identity. A blockchain environment can be developed that will make it easy to find the identity of the users and to help aggregate all of the holdings, but that isn't common today, and there is no cross-chain ability either.
3. Some of the currencies are tied to some physical, logical or fiat currency asset, often to provide some stability. Tether, which is on the Ethereum blockchain, is "100% backed by Tether's reserves."[18] With no automated means of proving that, for every electronic Tether, there is an equal and opposite dollar in reserves, the market recognizes the need of an independent confirmer (auditor) to provide comfort that Tether is living up to its promise.
4. Part of the promise of automation deals with smart contracts. While many environments expose the smart contract code publicly, most of the investing public must rely on some third party to understand if the code is appropriate and well designed.

5. Whether it is a cryptocurrency exchange or any other intermediary, the market wants trusted parties to evaluate the controls and operations.
6. I have found that few of the people who say that blockchain will make auditors obsolete understand the role that external auditors play in the first place. One critic said that "The main work of the auditor is to verify and justify the audit trail."[19] The *Wall Street Journal* recently published an article[20] stating that emerging technologies help management to choose to bifurcate the external audit so that external audits analyze only the data that management has had another party provide for them. Even a rudimentary reading of ISA 500 *Audit Evidence*[21] makes it clear that auditors do a lot more than show that the numbers in reports are agreed to the detail.
7. I have also found that few people who say that blockchain will make accountants, auditors and management obsolete understand accrual accounting, the difference between cash, accrual, encumbrance or other methods even between two trading partners (journal entries are not always mirrored) and the impact on mirrored activities. Nor do they have a clear understanding of the role of estimates, valuation or judgment in accounting and reporting. Blockchain accounting does not cover most internal activities (e.g., depreciation), nor does it cover commitments and contingencies (the need for legal representations doesn't immediately go away).
8. I have found that few people who say blockchain will make auditors obsolete understand that subsequent activities, such as payments of an invoice, may bring new information about that invoice, or why auditors perform three-way matches to look for issues.

So, for every claim that blockchain means the end of audits, there are multiple cries for an experienced, knowledgeable, accounting and controls savvy party to take an expanded role.

Higher Quality Audits Or Alternatives

What aspects of blockchain and distributed ledger technologies (B/DLT) can contribute to higher quality audits or alternatives to today's periodic audit, and what other technologies/methodologies must be in place?

Although I have also done my own analysis, ACCA Global presented[22] a useful evaluation of how B/DLT fares related to providing evidence for different management assertions. I use the mnemonic "Velociraptor" to remember those assertions:

- **V**aluation
- **E**xistence
- A**l**location
- **O**ccurrence
- **C**ompleteness
- Class**I**fication
- Unde**R**standability

- **A**ccuracy
- **P**resentation
- Cu**T**off
- **O**bligations
- **R**ights

The ACCA evaluation largely agrees with mine, and makes it clear that B/DLT alone does not inherently provide a direct benefit to most of these assertions. I will have solid evidence that something happened (occurrence). But, without help, the rest begins to fall apart. There is a difference between possession and ownership; there is a difference between a record of a physical asset and that physical asset; there is a difference between reporting of an activity and the accounting period relevance of that activity.

> "Events accounting – where events are reported and aggregation is left as an exercise to the stakeholder – turns today's reporting and assurance model upside down."

Nevertheless, these are not reasons to ignore the potential benefits of a global, public, transparent, standardized, seamless, cryptographically supported audit trail. If I have seemed negative so far about B/DLT, that has not been my intention – I only want to push back on the wrong expectations about it. In fact, I have been calling for such a solution for more than 15 years, and much of my work has been to support collaboration in the areas of data standardization (in particular, XBRL GL, but also other audit data standards representations), digital signatures and encryption, continuous auditing, and other "legs" to the "stool." In the 2005 paper "The Need for and Issues Surrounding the Seamless Audit Trail,"[23] I wrote about the necessity for a new seamless audit trail repository, with standardized transactions being hashed and added to a write-only medium. Blockchain has the potential to be that medium. But it is not blockchain alone. It also needs, amongst other things:

1. Data standardization, open data and other interoperability tools

Thousands of different blockchains mean thousands of different ways to represent the same type of data. If the world doesn't converge onto one "The Blockchain," finding and using any detailed information will be challenging, even for the most technically adept. Encouraging the use of standards such as XBRL GL[24] will facilitate the design of audit-ready blockchains, the design, review and upkeep of smart contracts, and the use of automated advanced audit data analytics tools. Other aspects of interoperability are being studied by groups such as ISO/TC 307.[25]

As auditors are not limited to a client's books and records, data from internal sources (logs for process mining, non-financial information) and exogenous data sources are also very important.

It is also important to remember that much of the detail you'd find in an ERP system is not meant to be on a blockchain. Making that additional detail as trustworthy, accessible and reusable as the posting to the blockchain is vital to this process.

2. Standardized and approved rules (including smart contract), collaboration and certification

Smart contracts, as the cynics note, are neither "smart" nor "contracts." They are programs that can run autonomously on a chain, and programs are written by people who are fallible and cannot predict every possible error condition or edge case. Where smart contracts are executing accounting tasks, there has to be confidence in those smart contracts. One way to gain that confidence is for those smart contracts to be developed publicly and collaboratively and for them to receive some certification.

3. Artificial intelligence (AI)

AI has the potential to monitor transactions, identify patterns, fill in gaps, and provide feedback where human interaction is necessary. AI solutions in bookkeeping[26] and audit[27] are already becoming mainstream.

4. Tokenization

Although blockchain is heavily associated with cryptocurrency or even cryptocollectibles,[28] tokens can be used to represent inventory, physical assets, voting rights, securities and many other tangible and intangible items. The use of tokens as proxies for real-world assets and services, for rights (e.g., rental agreements) and anything else that can be tracked can be incredibly useful for reconciliation and tracking purposes.

5. Continuous (data, controls) audit and advanced audit data analytical techniques and guidance

The AICPA illustrates the potential power of audit data standards and automated data analytical techniques with an "Audit Data Analytics to Traditional Processes Mapping Document."[29] The tool illustrates how, leveraging a knowledge of assertions, industry practices and standardized data references and the processes of performing analytics and testing – currently highly manual – can be automated.

6. Internet of Things (IoT)

Minimizing the need for human "feet on the ground," the Internet of Things can be used for monitoring, recording and acting on behalf of the auditor. The Internet of Things, or IoT, is a system of interrelated computing devices, mechanical and digital machines that have unique identifiers and the ability to transfer data over a network without requiring human-to-human or

human-to-computer interaction. IoT devices can be used for automating the collection of information necessary for record-keeping and decision making, with the additional potential benefit of facilitating the capture of increased amounts of information (more detail, more often). At the same time, they can reduce manual errors, as well as reduce the time lapse between an event and its recording, permitting more timely decision making and facilitating assessment of process-driven activities. IoT can be both a facilitator of human involvement (drones, virtual/augmented reality, virtual presence, wearable tech) and a facilitator of automated processes to maximize human involvement (RF ID, advanced analytics, use of exogenous data, AI, Tokenization, autonomous vehicles).

7. A complete change of mindset

The seemingly simple act of "confirming" that the value of a single Bitcoin address should contribute to a company's balance sheet is completely non-trivial.

Events accounting – where events are reported and aggregation is left as an exercise to the stakeholder – turns today's reporting and assurance model upside down. Regulators have previously bristled against providing more information for the market to work through, likening it to drinking through a fire hose, with the concern that additional information makes it easier to hide problems in plain sight.

Under what conditions does B/DLT have the potential to facilitate, rather than exacerbate, the audit process?

Many auditors are concerned about the impact of blockchain on the audit. It was designed to promote pseudonymity, and financial and tax auditors alike are frustrated by not always understanding who possesses what and who owes what. Company management may say that they have $10 million dollars' worth of cryptocurrency and provide the addresses representing cryptocurrency and currency translation values. Proving that the company is actually the owner of the digital assets at that address and that the values should contribute to a company's balance sheet is not, however, as simple as sending a bank confirmation today. The seemingly simple act of "confirming" that the value of a single Bitcoin address should contribute to a company's balance sheet is completely non-trivial.

Further, in the electronic environment, the accounting profession has bemoaned the loss of the traditional paper audit trail. A 2012 survey conducted by the AICPA Auditing Standards Board confirmed this by noting that, "the second greatest source of emerging audit or attestation risk identified by respondents was auditing in an electronic environment where all the entity's transactions are electronic and there is no paper trail."

Properly designed, B/DLT has the potential to be the tool to overcome that loss and bring audit trails into the 2020s. But, until someone can show me how blockchain could have prevented frauds from A to Z (AIG to ZZZZ Best) and everything in between (including my home town

fraud, Stirling-Homex Corporation) from occurring, I will not believe that blockchain inherently solves anything.

It's Not The End

Blockchain and distributed ledger technologies are an instant success that have actually been around for more than 25 years. Many groups with conflicting goals and philosophies have brought blockchain to where it is today, and the hype and confusion around it is magnified as people became instant millionaires and billionaires thanks to cryptocurrencies. Self-proclaimed spokespeople have promised the moon and some have predicted the end of the audit profession. Few of these acolytes, however, understand the role of the external auditor, how financial statements come together or, indeed, what blockchain does or doesn't do.

While some say that blockchain is a solution looking for a problem, I have – for more than 15 years – spoken about the potential role that a public, transparent, cryptographically-supported, standardized audit trail could play in accounting, reporting and auditing. A reliable and usable audit trail is, however, only the beginning of the audit, and not the end. In an environment requiring judgment, actuarial estimates, valuations and fair value assessments, recognition of unrealized gains/losses, percentage of completion activities, accruals and prepaids, impacts of regulatory, market or customer/vendor issues, the processes involved will not become completely automated, mirrored or anticipated, and the blockchain only report will come up short.

Endnotes:

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[25] https://www.iso.org/committee/6266604.html.
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[27] For example, https://www.mindbridge.ai/
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Adapting Corporate Reporting to the Information Age

By Gerald Trites, FCPA, FCA, CISA

Jerry is a retired partner of KPMG, and a former Professor of Accounting and Information Systems at a Canadian university. He also served for twelve years as Director of XBRL Canada. He has published 12 books and numerous articles and papers and is presently Editor in Chief of *ThinkTWENTY20*.

A 1999 survey showed that many of the companies listed on Canadian and American stock exchanges did not yet have a website. And, of those that did, only about 50% included financial information, which often was quite sketchy and incomplete. These were the main findings of a research study commissioned by the Canadian Institute of Chartered Accountants on *The Impact of Technology on Financial and Business Reporting*.[1] The aim of the survey was to learn the extent to which listed companies were offering financial reporting on what was then called the World Wide Web. The survey encompassed 370 companies drawn from the 10,000 companies listed on the Toronto Stock Exchange, the New York Stock Exchange and Nasdaq.

A lot has changed in the 20 years since that survey in 1999. Now, all listed companies have websites. Almost all of them include comprehensive financial information on those websites – often under the heading of “Investor Relations” or simply “Investors” or “Investor Information” – and this disclosure is widely acknowledged as a (perhaps the) major source of information for corporate stakeholders. The websites don’t replace the traditional information, like financial statements, MD&A and news releases; rather, they incorporate this information in a different communications vehicle.

But one very important thing has not changed. We as accountants have not yet broken out of the paper paradigm way of thinking. It’s amazing when you think about it – that this is still the case after 20 years – but the evidence is conclusive.

The Old Feeds The New

The content of websites is still based on a variety of paper reports – financial statements, annual reports, MD&A, President’s Report, etc. At one time, people would receive these reports in the mail, open them at their desk or kitchen table and read them from cover to cover, making notes along the way and then following up on any unanswered questions. If they wanted to compare a particular item, say sales revenue in the income statement, to what another report might say, such as the MD&A, they would make a note of the item, look it up in the MD&A and then read about it there, again making notes as necessary.

In the age of technology, people are less likely to read this way. More often, they will read in a non-linear fashion, following particular items and ideas across the various reports, using hyperlinks and search engines. In the age of technology, information should be presented so as to facilitate this approach.

Most corporate websites usually present their content using the PDF Format, which was designed to preserve the format and content of paper reports. They are intended to be read in the same way as paper reports were always read. They can accommodate hyperlinks, but there is very little hyperlinking of information in practice.

There is also very little presentation of interactive data, i.e., data in HTML, XBRL, or other markup languages. Only sometimes are the financial statements presented in these languages. Some use HTML. And XBRL is required by the US Securities and Exchange Commission. But, again, when the information is presented, it is usually based on the same format as the old paper reports. The emphasis is on the individual reports, not on the data or information they actually contain.

> "We as accountants have not yet broken out of the paper paradigm way of thinking."

To further aggravate the situation, very few companies have adopted Integrated Reporting. At present, companies typically present financial reports and ESG (Environmental, Social and Governance) reports separately. In addition, the governance reports and, sometimes, the social reports are presented separately from the environmental reports.

The International Integrated Reporting Council (IIRC), a global coalition of regulators, investors, companies, standard setters, the accounting profession and various non-governmental organizations (NGOs) has been promoting the idea of Integrated Reporting (IR) for many years. They have made a lot of progress, but IR is still not generally accepted. IR involves combining the financial and ESG reports into one report. It also means that the information in those reports would be presented in such a way that all aspects of a particular item or issue can be quickly absorbed by the readers. As the IIRC puts it, "an integrated report is a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value in the short, medium and long term."[2]

Website Presentation

In *The Future of Corporate Reporting – Creating the Dynamics for Change*,[3] a study published by The Federation of European Accountants, makes the following point:

"The corporate reporting of the future should take full account of changes in technology. Developments in the model for future corporate reporting should be flexible and able to adapt

to changes in technology which affect the way people interact with an entity and which significantly affect the delivery of the information itself."[4]

Taking full advantage of technology means, in part, moving away from the paper paradigm way of thinking, using the features offered by technology. With websites, those features include interactivity, hyperlinking, multimedia, availability and the ability to report on a real-time basis. Of course, technology extends beyond websites. Most listed companies make some use of social media, although this varies widely in terms of the coverage of information and the specific social media outlets used. All the same, companies have been experimenting with social media. Companies have also been experimenting with the use of apps for conveying their financial and business information.

Apps are used primarily in tablets and smartphones, and are downloaded and installed on the user's device. They are very powerful in terms of the information they can provide. Examples of available apps are those offered by Walmart, Shell, Bank of Montreal and Canadian Tire. All present a wide variety of investor-related information, often similar to that available on their websites.

> "An integrated report is a concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value in the short, medium and long term."

"Most people would agree that technology has changed their way of working and living significantly. Current developments in technology and social media already bring an unprecedented level of immediacy and sharing of information. Accessibility of corporate reporting has extended to stakeholders well beyond the investment community that represents its historical target. Information published on websites and through other digital means is instantly available to global audiences."[5]

Core & More

The Future of Corporate Reporting – Creating the Dynamics for Change suggested a new approach to corporate reporting, called CORE & MORE. This approach is based on a "building block" or a "layered" approach. Financial reporting, according to this new model could, have two distinct parts: a CORE Report and MORE additional information provided and referenced from the CORE report to the supplementary layers of reporting.[6]

In concept, the CORE & MORE approach is quite simple. The CORE Report could be, for example, a short summary of the major events during a reporting period, along with the key performance indicators. That would give a reader an instant picture of the company's financial and business status at a very high level. Most companies already provide a summary like this on

their Investor Relations webpage, under a heading such as “Highlights” or “Key Performance Indicators,” although they do not use it as a CORE Report.

The MORE reports would come up through hyperlinks to the items in the CORE Report. For example, one key indicator would likely be Net Income, which would be in the CORE Report and hyperlinked to the MORE reports, which might include, say, the income statement and/or the operating results section of the MD&A. Or there could be all kinds of variations on this structure. The point is that the pyramid would start at a high-level report and then progress down to more and more detailed reports, perhaps even to basic data levels, although this is seldom done at present.

The presentation of the CORE Report need not be restricted to the website. It could be placed in social media, complete with hyperlinks, thus making the report more available to the readership. Or it could be the core of an app that would be installed on a mobile device.

> “corporate reporting will, amongst other things, be web-based in the future; meaning that we expect to gradually move away from the traditional paper/PDF format.”

A follow-up paper, published by Accountancy Europe in 2017, documented the responses of various people and organizations. There was general support for the report and the CORE & MORE concept, although the point was made that “the CORE & MORE concept should be clarified, redefined, and further fine-tuned and explained how it relates to integrated reporting.”

This perceived need for clarification came out of the sweeping nature of the “future” report and the application of the CORE & MORE concept. Along with the basic concept, *The Future of Corporate Reporting* stated that traditional financial statements were becoming less important, that non-financial information was becoming more important and needed to be included in the CORE & MORE reports, as should the ESG reports usually given as separate reports.

Of course, this raises a number of issues. It also points to the need for companies to experiment to come up with the best reporting approach. And it points to the clear need for the standards-setting bodies to step up.

Reporting in the Future

Accountancy Europe’s follow-up paper contained the following conclusion: “Respondents and participants anticipate that corporate reporting will, amongst other things, be web-based in the future; meaning that we expect to gradually move away from the traditional paper/PDF format. Technology can enhance both the preparation and presentation of reports. Innovation could, for instance, result

in a better overview of the information (structured reporting) and greater user-friendliness. Technology as such can be both a driver and enabler of change in corporate reporting."[7]

In a speech delivered at an Accountancy Europe event in Brussels in 2017,[8] the chair of the International Accounting Standards Board, Hans Hoogervorst, offered a response to the CORE & MORE reports.

While pointing out that traditional financial statements remain a crucial element of corporate reporting, because of their confirmatory role, nevertheless he acknowledged the need for change. In particular, he pointed to demands for more detail, more subheadings and more data. He also referred to the growing use of the IFRS Taxonomy by regulators and intermediaries. This fact he correctly identified as evidence of the changing manner in which financial statements are being consumed. This goes back to the point that people do not read them sequentially any more but, rather, use them as a vehicle for exploring particular items of interest.

> "Current developments in technology and social media already bring an unprecedented level of immediacy and sharing of information."

On the broader issues of corporate reporting outside of the financial statements, such as the role of non-financial information and ESG reporting, Mr. Hoogervorst acknowledged the importance of integrated reporting and the Integrated Reporting Framework as promulgated by the IIRC. That framework provides guidance on content but leaves a good bit of flexibility in how the Integrated Report is actually compiled. It does not provide answers on how to prepare CORE & MORE reports. Nevertheless, the idea of integrated reports has gained considerable traction and has been used by numerous companies around the world.

With regard to ESG reporting, Mr Hoogervorst stated that: "The CORE & MORE report rightly notes that the world of sustainability reporting does not provide the same kind of global comparability that exists in the world of financial reporting. The report calls for 'decisive leadership' to establish an international standard-setter and even poses the question if the IASB as renowned international standard-setter should provide at least part of that leadership."[9]

He added that: "That ideal world is still far away, I am afraid. In the meantime we will have to make the best of the imperfect world of corporate reporting. The IASB is ready to adapt to the changing world of corporate reporting by increasing the communication effectiveness of the financial statements, facilitating electronic consumption of financial data and by promoting integrated reporting. I hope my contribution of today has made clear what the IASB can and cannot do to create a bit more clarity in this imperfect world."[10]

Some companies have experimented with the CORE & MORE approach, including ABN AMBRO Bank of Amsterdam. The Netherlands is a leader in electronic reporting. Tjeerd Krumpelman, Head of Advisory, Reporting & Engagement for the bank, in replying to a question as to what attracted the bank to CORE & MORE, said the following:

"We saw 3 things increasing: the number of regulatory requirements we had to comply with, the interest level in NFI, or pre-financial indicators as I like to call them from different stakeholder groups beyond investors, which then led to our integrated annual report's volume to rise to over 450 pages.

"We needed a targeted approach to more concisely tell our story and address the interests from different stakeholder groups. We like CORE & MORE because it gives the freedom to tell our true story: who we are and how we create value for stakeholders. It also allows us to do so in a concise, clear and understandable way and in less than 100 pages."[11]

Mr Krumpelman pointed to two key issues in the current model of corporate reporting – the size of the reports and the ability to tell a company's own story independently of regulatory requirements.

> "The IASB is ready to adapt to the changing world of corporate reporting by increasing the communication effectiveness of the financial statements, facilitating electronic consumption of financial data and by promoting integrated reporting."

Massimo Romano, Head of Group Integrated Reporting for Generali, an insurance company based in Trieste, Italy, hit the nail on the head. "CORE & MORE fits in our aim for simpler, faster, and smarter corporate reporting: easier to manage, more effective in delivering and applying integrated thinking. It is really powerful to focus on the value creation story and the strategic information to connect the dots between reports, disclosing specific detailed information and break down siloes."[12]

Also, Mr Romano went on to encourage: ". . . connecting the CORE & MORE concept to other relevant initiatives such as aligning it with the IASB's work on a management commentary framework."[13]

These commentators recognize that, if the aim is to provide understanding among corporate stakeholders, presenting simpler, shorter reports is the way to go. They also recognize that the standard setters should begin work on the disclosure and content standards for CORE & MORE reports. Also, these reports need to be audited, which means the profession should develop appropriate auditing standards and techniques for these reports.

Restructuring the corporate reporting model along these lines is a big job. But it is slowly happening because of the growth of reporting on the web. Gradually, hyperlinks and interactive data are growing in their use, and investors are relying on the information provided. It becomes a question of whether the accounting and auditing profession wants to have some control over the standards around the new form of reporting, or whether it is happy to watch them develop in an *ad hoc* way over the next several years.

[1] Gerald Trites, *The Impact of Technology on Financial and Business Reporting* (Toronto: Canadian Institute of Chartered Accountants, August, 1999).
[2] http://integratedreporting.org
[3] *The Future of Corporate Reporting – Creating the Dynamics for Change* (Brussels: Accountancy Europe, 2016).
[4] *Ibid*, p. 17.
[5] *Ibid*.
[6] *Ibid*, p. 58.
[7] Follow-up paper:-*The Future of Corporate Reporting* (Brusels: Accountancy Europe, March 2017), p. 5.
[8] https://www.ifrs.org/news-and-events/2017/09/iasb-chairmans-speech-the-times-the-are-achangin/
[9] *Ibid*.
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Sustainable Audit Quality Remains A Challenge

By Gundi Jeffrey, Managing Editor

Although Canada's accounting firms have been focusing on increasing their efforts to deliver quality audits, the Canadian Public Accounting Board (CPAB) still believes there is more work to be done. The recent inspection findings in its *2018 Annual Inspection Results* – which more than doubled from the year before – indicate that "sustainable audit quality is still a challenge across the firms. We believe that the strength of a firm's audit quality management systems will be critical to accelerating improvements in the sustainability of high-quality public company audits."

CPAB's CEO Carol Paradine confirms that "although the firms have been steadily improving over the years, the management of audit quality remains a challenge." But, she adds, the world is changing and they have to cope with all sorts of new audit issues. "The findings show some correlation with increased mergers and acquisition activity, and also some emerging businesses areas, such as the cannabis and crypto assets industries, so they may not yet have been able to develop a consistent way to approach the new challenges these issues present."

The report adds that "all participating audit firms must enhance their commitment to continuous improvement at every level of their organization and embed a culture of quality to deliver audits that are of consistently high quality." It points out that 2018 was the first year of CPAB undertaking an enhanced assessment of the quality management systems at the country's four largest public accounting firms and "we found that all firms require improvement."

> **"**We believe that the strength of a firm's audit quality management systems will be critical to accelerating improvements in the sustainability of high-quality public company audits."

And the firms are working on delivering that commitment. According to a statement EY LLP gave *ThinkTWENTY20*, "delivering high-quality audits is central to our purpose of building a better working world and is our top priority. Quality audits are, and always will be, our priority to serve the public interest and promote trust and confidence in financial reporting."

"Innovation, continuous improvement and consistency of execution are key themes in our Assurance practice," the statement adds, "with technology being a catalyst to drive continuous improvements in quality. We continue to be fully committed to the important work that CPAB does through this rigorous and vital inspection process."

Risk Focus

All firms that audit a Canadian public company must register with CPAB and be inspected (273 firms at December 31, 2018). Each year, CPAB inspects all firms that audit 100 or more reporting issuers. There are currently 14 firms in this group, auditing about 7,000 reporting issuers. These firms, and their foreign affiliates, audit approximately 99.5 per cent of all of Canada's reporting issuers. All other audit firms are typically inspected at least once every three years. During 2018, CPAB inspected 32 firms (2017: 45) and 139 engagement files (2017: 154).

The report points out that CPAB's risk-based methodology for choosing files for inspection is biased toward looking at higher-risk audit areas of the more complex public companies or areas where an audit firm may have less expertise, "so there is a greater likelihood of encountering audit quality issues. Our inspections do not look at every aspect of every file and are not designed to identify areas where auditors met or exceeded standards." Results, says CPAB, "should not be extrapolated across the entire audit population, but instead viewed as an indication of how firms address their most challenging situations."

According to the report, the 2017 inspections of the annual firms had the lowest findings in years – a banner year for the firms. This changed significantly in the 2018 inspections. One hundred and twenty two audit files were inspected (2017:128) and significant findings were identified in 34 (2017:15), more than double the year before. The breakdown is as follows:

- Big Four firms: 80 engagement files; 16 with significant findings.
- Four national/network firms: 23 engagement files; 10 with significant findings.
- Six large regional firms: 19 engagement files; 8 with significant findings.

In comparison, for the non-annual firms, CPAB inspected 17 engagement files at 18 firms and came up with eight significant findings.

According to CPAB, most of the significant findings required the firms to carry out additional audit procedures to determine whether the financial statements needed to be restated due to material errors. As for the remaining findings, the firms had to add evidence to the audit files in question to show they had obtained sufficient and appropriate audit evidence for a major balance sheet item or transaction stream. The report adds that, for the 14 firms inspected annually, there have been two restatements to date.

Weaknesses Persist

While most audits inspected comply with the required standards, CPAB found that recurring engagement file inspection themes indicate that weaknesses in quality management systems

persist, leading to inconsistent audit execution. “Firm policies and processes − at both the leadership and engagement team levels − that manage risk and get the right people working on the right things at the right time, all the time, are essential to delivering high quality audits, consistently.”

Adds Paradine, “we ask the firms to undertake a root cause analysis (of our findings) and some of that is under way at the moment. That means looking at things like the culture of the firms, for example, looking at how a firm prioritizes audit quality over other business outcomes of the practice; training – are the auditors receiving the right training at the right time?; supervision – are the partners spending enough time with the less experienced team members?; the timing of the audit work – we have identified that the more work is performed at the last minute, the more the likelihood that the quality of the audit suffers.”

New Methodology

In response to these issues, in 2018 CPAB began to introduce a new methodology to assess existing quality management systems and to help accelerate improvements at the country’s four largest public accounting firms: Deloitte LLP, Ernst & Young LLP, KPMG LLP and PwC LLP. The idea, says Paradine, “was to focus on the audit quality management systems, processes and controls that the firms have in place.”

This new assessment approach requires firms to demonstrate the effectiveness of their quality management systems. It emphasizes the need to systemically embed audit quality processes – preventative and detective – into ongoing operations across the entire assurance portfolio so that audit deficiencies are identified and corrected in real time or, at a minimum, before an audit opinion is released. “Monitoring and inspecting audit quality after the fact is not enough.”

“We expect firms to fully document their firm-wide quality management systems and control processes, including the testing of the effectiveness of each control. And, just like the early days of certification, while progress has been made, we found a lack of robust documentation and formalized self-assessment mechanisms across the firms,” the report says.

“Each firm has made and continues to make a significant effort to improve, better articulate and document its quality management systems and controls, and to link them to CPAB’s five assessment criteria: accountability for audit quality, risk management, talent management, resource management, and oversight. This foundational work was driven by the global network centre in some firms, and by the Canadian firm’s national office in others.” CPAB acknowledges that the firms are “rethinking how they manage their operations to deliver higher audit quality and more consistent execution across offices and practices.”

“The firms are rethinking how they manage their operations to deliver higher audit quality and more consistent execution across offices and practices.”

Common Findings

Business combinations

Deficiencies in auditing fair values in business combinations, impairment of assets and revenue recognition represented approximately half the significant findings in the 2018 inspections cycle. As in prior years, the other half was related to significant but non-complex account balances and transactions streams where basic audit procedures were either not performed (for example, inventory counts not attended) or not performed appropriately (testing of inventory costing was insufficient).

Acquired assets and liabilities must be recorded at their estimated fair values, stresses the report. In 2017 and 2018 a common inspection finding was insufficient work performed to assess the reasonableness of management's financial inputs and assumptions incorporated into the fair value estimate of assets acquired or liabilities assumed. Other examples of significant findings included provisional estimates and arrangements outside a business combination.

> "We have noticed that the firms are spending an increased amount of time and a great deal of work on their quality systems."

Fair value estimates can be provisional at year end if management is still seeking information regarding the business combination. These amounts may be adjusted before the end of the measurement period in the following year if additional information improves the precision of the estimate. Auditors must, however, perform sufficient procedures to assure the provisional estimates are not materially misstated based on information available at year end. CPAB identified instances where minimal or no audit procedures were performed to understand how management made the estimate and what additional information might be required, or to assess the reasonableness of the underlying assumptions. "As a result, the auditor would not have identified a material misstatement in the assets or liabilities acquired."

When negotiating an acquisition, the parties may also agree to settle previously existing arrangements or enter into new but separate arrangements. Careful consideration of the facts and circumstances is necessary to determine what agreements should be considered part of the business combination and what should be treated separately – failing to do so could result in a material misstatement in the assets and liabilities recognized. CPAB identified instances where the auditors did not have a sufficient understanding of the relationships between the parties to the transaction and the nature of the business arrangements to objectively assess whether the accounting was appropriate.

Impairment of assets

Assets are frequently tested for impairment to determine if they need to be written down to their recoverable amount. There are various acceptable methods for estimating this amount – the most common incorporates a projected discounted cash flow model. Determining

appropriate inputs to this model can be difficult. For example, the conditions that triggered the impairment test are often related to uncertainty about future value and cash flows.

In a number of cases, engagement teams accepted the inputs to management's cash flow model without sufficiently testing if those inputs were reasonable and supportable. If inputs are not reasonable and an impairment loss should have been recognized, the financial statements are misstated. Investor confidence could be compromised if the impairment is not recognized in the appropriate period.

Revenue recognition
A company that earns revenue from the construction of assets in accordance with a contract may recognize that revenue as the work progresses provided key elements can be reliably measured (such as total contract revenue, costs incurred, cost to complete and stage of completion). While understanding management's process for estimating these amounts is a critical first step, inquiry of management alone is not sufficient without corroborating evidence. Engagement teams are often challenged to obtain sufficient audit evidence to support both the measurement and reliability of the key elements. This challenge increases when there are complicating factors like modifications to the contract without formal approval or outstanding claims against the customer for costs related to delays or specifications changes. Errors result in incorrectly recorded revenue, gross margins and earnings, and can have a significant impact on investors' evaluation of company performance.

Auditing in a New Frontier
The report notes that new ways of doing business and changing technology also had an impact on the 2018 inspection results.

CPAB knows that there are approximately 50 Canadian reporting issuers that either hold crypto-assets or are engaged in crypto transactions. So far, it has inspected the audits of three reporting issuers that were active crypto-miners and/or holders of crypto-assets and found significant findings in all three files reviewed. The report notes that the audit firms involved are in the process of remediating the deficiencies. In December 2018, CPAB published *Auditing in the Crypto-asset Sector*, outlining its expectations of auditors across several higher-risk areas. The Board is actively monitoring developments in this emerging industry.

As well, Paradine points out that "we have seen a modest level of activity related to data analytics and other emerging technologies, most of it being in the areas of matching of accounts. We continue to watch the development and implementation of new tools and

procedures and provide our perspective on how they can enable enhanced audit quality. For example, we are assessing procedures performed to ensure the completeness and integrity of client data used in data analytics audit routines."

> "We continue to watch the development and implementation of new tools and procedures and provide our perspective on how they can enable enhanced audit quality."

It advises directors to "consider asking their auditor if changes will be made to the audit approach to incorporate emerging technology tools (data analytics, artificial intelligence, machine learning, etc.) and, if so, what support will be needed, and what are the benefits and challenges. Other points for query could include the purpose of the data analytic, and how company data is stored, secured and validated for accuracy."

"It certainly is a changing world," says Paradine, "but the same problems outside of that changing world persist – audit quality remains a challenge."

Absolutely, the firms are dedicated to fixing this, she adds. "We have noticed they are spending an increased amount of time and a great deal of work on their quality systems." The big firms, in particular, have started a process of monitoring and reporting on their quality management systems in anticipation of new standards in this area. "On a global basis, there are some proposed new standards on quality control systems," Paradine notes.

> "If you have to deal with unusual transactions, or new industries, you may not have been able to develop a consistent way to approach the new challenges."

Paradine is referring to the fact that, last December, the International Auditing and Assurance Standards Board (IAASB) proposed revisions to three of its quality management standards. The revisions would change how firms manage quality and could, if implemented, affect their organizational structures and operations. As well, the revisions would require greater leadership by engagement partners in managing and achieving quality engagements. The IAASB expects to have comments by July 1, this year.

Specific key changes include:

- A new proactive risk-based approach to firms' systems of quality management.
- Modernizing the standards for an evolving and increasingly complex environment, including addressing the impact of technology, networks and use of external service providers.

- Increasing firm leadership responsibilities and accountability, and improving firm governance.
- More rigorous monitoring of quality management systems and remediation of deficiencies.
- Enhancing the engagement partner's responsibility for audit engagement leadership and audit quality.
- Addressing the robustness of engagement quality reviews, including engagement selection, documentation and performance.

Paradine explains that "the firms are anticipating these new standards and getting ahead of their release. They are already working on the implementation of the new standards." If that is the case, she wonders, "why are we still getting those results?" She believes that, "if you have to deal with unusual transactions, or new industries, you may not have been able to develop a consistent way to approach the new challenges. And, sometimes, the standard setters haven't yet released standards on how to approach these situations. But they are working on it – and so are the firms."

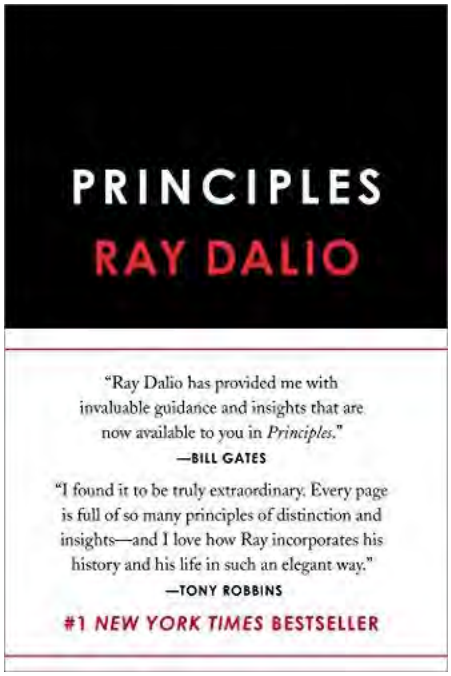
Book Review of *Principles: Life and Work*, Ray Dalio (Simon & Schuster, 2017)

By Jonathan Andrews, CPA

Principles is a remarkable book. At nearly 600 pages (16 hours in the audio version), it is not a fast read. It is, however, an excellent investment of time for those interested in a refreshingly insightful approach to decision making, one that has already proved to be a winner for the author.

Jonathan Andrews is a Chartered Professional Accountant who lives in Victoria, BC. He is the owner of Netlearn.ca, a provider of e-learning content and delivery services.

Ray Dalio is the founder of Bridgewater, the fifth most important company in the US (according to *Fortune*), earning more money for hedge fund investors than any other hedge fund in history (*Bloomberg*). Bridgewater began life in the second bedroom of Dalio's New York apartment in 1975. Forty years later, with a staff of 1,500, it is now managing approximately $160 billion in funds for 350 institutional clients.



In *Principles*, Dalio describes an approach he has developed over time, initially for decision making in investing, including the adoption of computer technology to achieve an optimum balance between the best attributes of both people and computers. He achieved this by developing and refining principles based on everyday reality and systemizing his approach by creating algorithms. A leading tenet of his general approach to business has been to set audacious goals, learn by failure, learn principles, improve and then set more audacious goals.

Part I: "Where I'm coming from," documents Dalio's personal journey in a series of chapters, beginning in 1949 and ending in 2017, his last year with Bridgewater. The description of his early years, learning about the US economy as a rookie investor, introduces us to how he developed his unique approach. He takes pains to draw attention to how and why he made mistakes – his over-confidence, the lack of attention to history and poor timing – and how he recovered.

Computers for Dalio at Bridgewater were among the most valuable assets he acquired, and he admits that Bridgewater would not have been nearly so successful without them. Before taking a decision, he would write down the criteria used and then run historical data through the same criteria to see how the decision would have turned out in the past. Depending on the results, he would modify the criteria accordingly.

By the end of the 1980s, Bridgewater was still only a small company with two dozen employees yet now had many overseas institutional investors. The atmosphere within the company was still that of a small company – "a community of friends who worked hard and played hard." Part of this was the need to "systemize learning from mistakes," ensuring all errors were logged and learned from.

It was the small company environment that encouraged everyone to bring problems and disagreements to the surface, and that included honest feedback for Dalio. By this time, and in no uncertain terms, his employees finally told him he made them feel "incompetent, humiliated, belittled, oppressed, or otherwise bad." Dalio came to realize that the evolving principles he had in mind had to include people dealing with each other, and this also had to be put into writing. At first a surprise, he became clearly aware that principles involved in managing people were no less important than managing money.

Bridgewater continued to expand rapidly, weathering a series of international financial crises. Correctly foreseeing the US financial crisis in 2008, the company had now grown to 738 staff. The period 2011 to 2015 saw consolidation, good returns and the need to prepare for Dalio's transition out of the company. By now, he appreciated that principles had become more important than ever before.

At no point does Dalio suggest that *others* adopt his principles. In keeping with his overall philosophy, he maintains that each principle should be challenged and adapted as necessary. He makes the point that adopting a principle-based approach to life and work is not a "quick fix." The time line he suggests to allow for changes to take effect is 18 months.

The primary focus for Part I of the book, entitled "Where I'm coming from," is the rise of Bridgewater and Dalio's eventful career. Dalio devotes the balance of the book to Part II, "Life Principles" (151 pages) and Part III, "Work Principles" (267 pages). He explains that "Life Principles" is focused on individuals and is intended to prepare the reader for "Work Principles," with its focus on groups and organizations.

Part II: Life Principles focuses on five key areas:

1) *Embracing reality and learning how to deal with it* – understanding how reality works, learning how to deal with it by treating it as a game with a succession of problems that need to be solved. Once they are solved, therein lies the opportunity or "gem" for creating a "principle" that can be used in the future if the same problem occurs again.

2) *A 5-step personal evolutionary process to achieve what you want out of life* – having clear goals, identifying problems, diagnosing root problems, designing plans to get around problems and do what's necessary to reach the results you want. Mistakes – although inevitable (no-one's perfect) – are valuable learning opportunities.

3) *Radical open-mindedness (being clear about what you are doing)* and *radical transparency (being clear to others in what you are doing)* will help to ensure that you are less likely to deceive yourself. Being open avoids so many misunderstandings and acts as an antidote to a person's two biggest barriers – ego and blind spots.

4) *Understanding that people are wired very differently.* Knowing that people respond differently to everyday situations and challenges, Dalio introduced "baseball cards" for each person in Bridgewater. These cards contained a list of personality attributes, based on evaluations that staff made of each other. As the strengths and weaknesses changed, so did the evaluations on the cards. People at Bridgewater were reluctant at first to adopt these kinds of techniques but later came to embrace them wholeheartedly.

5) *Learning how to make effective decisions* by going after what you want, failing and reflecting through radical open mindedness and changing/evolving to become more capable and less fearful. Principles are detailed on how to do this and weigh your options to determine the right path to follow.

It is in this part of the book that that Dalio makes some interesting comments about the strategic use of computers, based on firsthand experience. He makes several cautionary remarks concerning the use of AI.

Part III: Work Principles is the longest, most detailed section in this well laid-out book. It describes how to apply Work Principles in groups, based on the belief that groups can achieve so much more than individuals. The high-level focus for this part of the book is on the organization – "Get the culture right," people – "Get the people right," and systems – "Build and evolve your machine."

1) *Organizations* – Trust in radical truth and radical transparency, cultivate meaningful work and relationships, create a culture in which it's OK to make mistakes but unacceptable not to learn from them, get and stay in sync with others, "believability weight" your decision making and recognize how to get beyond disagreements.

2) *People* – WHO is more important than WHAT. Hire the right people because the penalties are huge for hiring the wrong ones. Constantly train, test, evaluate and sort people.

3) *Systems* – Manage as if you are operating a machine to achieve a goal, perceive and don't tolerate problems, diagnose problems to get to their root cause, design improvements to your machine to get around your problems, do what you set out to do, use tools and protocols to shape how work is done and don't overlook governance.

Much of the content in Part III is recognizable as common sense but it is unlikely that many organizations operate in this way. *Principles* challenges the reader to adopt an open, "meritocratic" approach, with a focus on developing people within the organization for their benefit and for the benefit of the organization.

Principles by Ray Dalio is an extremely well-written book of our times, one that embodies a true understanding of the need to live with reality, learn how to work with it each day, to learn to work with each other and, therefore, for the benefit of all.

Dalio is planning a second volume: *Economic and Investment Principles* – well worth watching out for!

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