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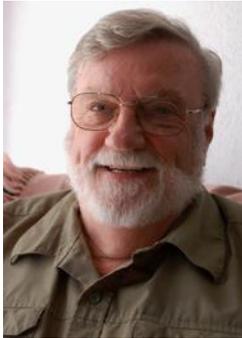
Documents and graphics have long been altered using various techniques and technologies. With the call for more remote oversight and audit procedures, the ability of remote video to be altered becomes an important issue for the profession.

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The move to reporting on sustainability, together with new regulatory requirements, a focus on investor needs, and the possibility of audit requirements are all combining to make companies focus on the process they use to produce such reports. That means they have to address the adequacy of the internal controls in place for such reporting. They are looking to COSO for guidance, but applying COSO to sustainability reporting is not without its issues.

Editorial



Gerald Trites, FCPA, FCA, CISA
Editor-in-Chief

When we started this magazine three years ago, we set out with the idea that we would seek out articles of substance, articles that would generate thought and understanding about the issues that confront us today as financial professionals. And there are many of them. Not just technical ideas like blockchain, big data and analytics. But challenges around mental health, remote working and radical change itself. We observed that, although we are flooded with information every day, too much of that information is inadequately researched, poorly thought out and, too often, simply false.

We have sought to be “The magazine that digs a little deeper.” We feel we have met this challenge with the articles we have published during these few years. We’ve produced writings by senior academics, highly accomplished practitioners, many of them specialists in their field, and some of our best thought leaders.

There is more to come. We hope you enjoy this magazine and find some food for thought in its pages.

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Digitization, Emerging Technology and Data Governance: Is Your Skillset Outdated?

By *Marc-André Paquette and Irene Wiecek*



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Marc-André Paquette, CPA, CA, is a Principal, Corporate Oversight and Governance at CPA Canada. He dedicates his energy and focus on upskilling CPAs on topics related to governance. He shapes the profession by building awareness around emerging topics such as innovation, AI, and sustainability. He values different perspectives on complex issues.

In a world defined by change, how do CPAs stay ahead of the tidal wave of change in order to remain relevant and engender trust? Must the CPA ethical mindset evolve? How do we deal with the mountains of data that are resulting from more and more organizations increasingly turning information into machine-readable form (digitization)? As technological and other innovations continue to have an impact on the way we do things, and as societal views and preferences evolve, these are important questions.

Stakeholders trust CPAs' expertise and ethical mindset. To maintain that trust, however, CPAs must demonstrate that they are ahead of the curve.

CM2.0: A Broader Foundational Common Core and a Changing Mindset for New CPAs

In March 2022, the *CPA Leading the Way: Competency Map 2.0 (CM2.0)*¹ was issued, updating the required skills and competencies for newly certified CPAs. The CPA Competency Map Task Force took a blank-sheet approach to creating the map,

acknowledging the fluid environment within which CPAs work. CM2.0 is a high-level conceptual map that is future-focused and agile. It is framed within a context of “Evergreen Learning” (defined in the map as involving curiosity, a thirst for knowledge and a commitment to continue to learn). The idea behind this is that the accounting body of knowledge is not static (as it continues to evolve to meet the needs of an increasingly broad group of diverse stakeholders) and CPAs must embrace this perspective in order to continue to add value, including fulfilling their duties as professionals.²

Stakeholders trust CPAs’ expertise and ethical mindset. To maintain that trust, however, CPAs must demonstrate that they are ahead of the curve.

CPAs bring a solid foundation of integrity, professionalism and duty of care to the table. While these fundamentals will remain important and valued, much of the technical knowledge that CPAs have learned in past will quickly become outdated in a changing world. Therefore, all CPAs need an Evergreen Learning mindset – a mindset where it is expected that skills and competencies will always be refreshed.

CM2.0 also highlights emerging areas of opportunities for CPAs, including, for instance, data governance, data and information systems, big data/data analytics, non-financial reporting, innovation, human behaviour/bias, sustainability, emerging technologies, indigenous views and systems thinking. These, as well as more traditional areas of accounting (such as assurance, tax, financial reporting and management decision making) form what is referred to as the CM2.0 Foundational Common Core for newly qualified CPAs.

Emerging technologies (including, for instance, process automation, artificial intelligence and machine learning) are changing the way we do things, replacing much of the lower-level cognitive tasks that human beings used to perform. Computers can do things much more quickly and consistently than humans. That means CPAs need to increasingly focus on higher-order cognitive tasks that humans can perform better than machines, including being able to contextualize information and engage in creative problem-solving.

Newly-minted CPAs (under CM2.0) will have this broad and solid foundation from which to launch their careers, in addition to the Evergreen Learning mindset.³ The Evergreen Learning mindset and Foundational Common Core will equip them with the skills, competencies and mindset to move forward and embrace change.

Upskilling CPAs Is Not a One-Size Fits All

A remaining question, however, is how the 220,000 CPAs, who are already practicing, become competent in emerging areas so that they can play a lead role in the ongoing transformation of the business environment and, more broadly, the economy?

Once qualified, CPAs work in many different areas – thus building expertise in a diverse range of practice areas and environments, including for-profit, not-for-profit and the public sectors. Canadian CPAs also work in international environments. Thus, upskilling cannot be viewed as a “one size fits all” process. For example, blockchain and crypto assets are important themes for CPAs working in the financial or banking sector, but they are not typically critical or urgent for the personal tax practitioner (unless the tax practitioner’s clients are investing in or trading crypto assets that is!). Unlike CM2.0 for newly qualified CPAs, it is not possible to have a single competency map for the entire membership.

Some organizations, large and small, have structured learning programs and support the development of their employees.⁴ Other employers leave it to the professionals themselves to identify learning needs. The CPA profession offers opportunities to learn – whether it be through in-person or online structured courses, conferences and/or research/publications. Resources are available but the question is where to start?

Is Continuing Professional Development the Same as Having an Evergreen Learning Mindset?

As noted earlier, CM2.0 introduced the concept of Evergreen Learning for entry-level CPAs. Having said that, the CPA profession already has a strong culture of learning and development. This is part of the role of the profession – to protect the public and act in the public interest. There are regulatory requirements for mandatory professional development, which require a minimum number of continuing education hours per year. CPAs must maintain their professional skills and competence – and this involves staying up to date.

For newly qualified CPAs, it is not possible to have a single competency map for the entire membership.

Many CPAs update themselves in specific areas such as understanding changes in accounting and assurance standards or changes to the Tax Act. But what about keeping up to date in areas such as Artificial Intelligence or Machine Learning? Are these considered to be part of the accounting body of knowledge? Furthermore, is the existing CPA learning culture involving continuing professional development the same as the CM2.0 Evergreen Learning mindset? This is an interesting question. Are all CPAs curious? Do all CPAs embrace change? Are these defining traits of the accounting profession? Are curiosity and embracing change critical in protecting the public and acting in the public interest? And where do things like evolving technology and digitization fit into the accounting body of knowledge? Under CM2.0, these areas are an integral part of the accounting body of knowledge.

The public places its trust in professionals, and expects high-performing *professionals* to use high-performance *technologies*. Keeping up with technology that enhances a CPA’s work is, therefore, an important, if not strategic, cornerstone for any professional.

Demand for qualified professionals is certainly there. Jobs are changing faster than the pipeline of talent can produce upskilled and newly skilled applicants. Organizations, particularly those that are at the forefront of innovation, need qualified individuals so that they can quickly respond to market evolution. Continual upskilling of existing employees must be a priority and it is the responsibility of employers, the profession more broadly and individual CPAs. All stakeholders in the CPA learning system need to continually learn and be curious.

Which Skills to Focus On?

Many organizations have thought about what skills to develop, to remain relevant in a world where increasing amounts of automation are a constant. According to research done by McKinsey & Company⁵:

“The need for manual and physical skills, as well as basic cognitive ones, will decline, but demand for technological, social and emotional, and higher cognitive skills will grow.”

At the World Economic Forum’s 2022 annual meeting in Davos, there were 13 dedicated sessions related to the future of work.⁶ Speakers noted that many of the drivers of change – precipitated by things such as a global movement to reduce greenhouse gas emissions, including a move to electric vehicles, transformation of our energy resources and a migration to a more sustainable economy – involve technology and data. Better information is needed to effect these changes and, therefore, more and better data is key. But humans cannot effectively process the increasing amounts of data. Digitization, as well as enhanced technologies, allow computing power to be harnessed to access and analyze this “big” data. Humans can then use higher-order skills to make optimal decisions – working hand-in-hand with technology.⁷

But which technologies? This depends on the sector in which CPAs work. Having said that, there are some fundamentals that all CPAs should have to keep ahead of the curve and to match the skills and competencies in newly qualified CPAs (who will be accredited under CM2.0). In the context of a tech-forward world, where more and more is being digitized, this article identifies two areas that are particularly important for CPAs right now. These areas include 1) digitization and emerging technologies, and 2) data governance. Both are part of the CM2.0 Foundational Common Core. As an added bonus, if CPAs can gain a basic understanding in these two areas, they can use them as a foundation for delving into other very prominent emerging areas of opportunities, including sustainability.^{8,9,10}

The case for understanding digitization and emerging technologies

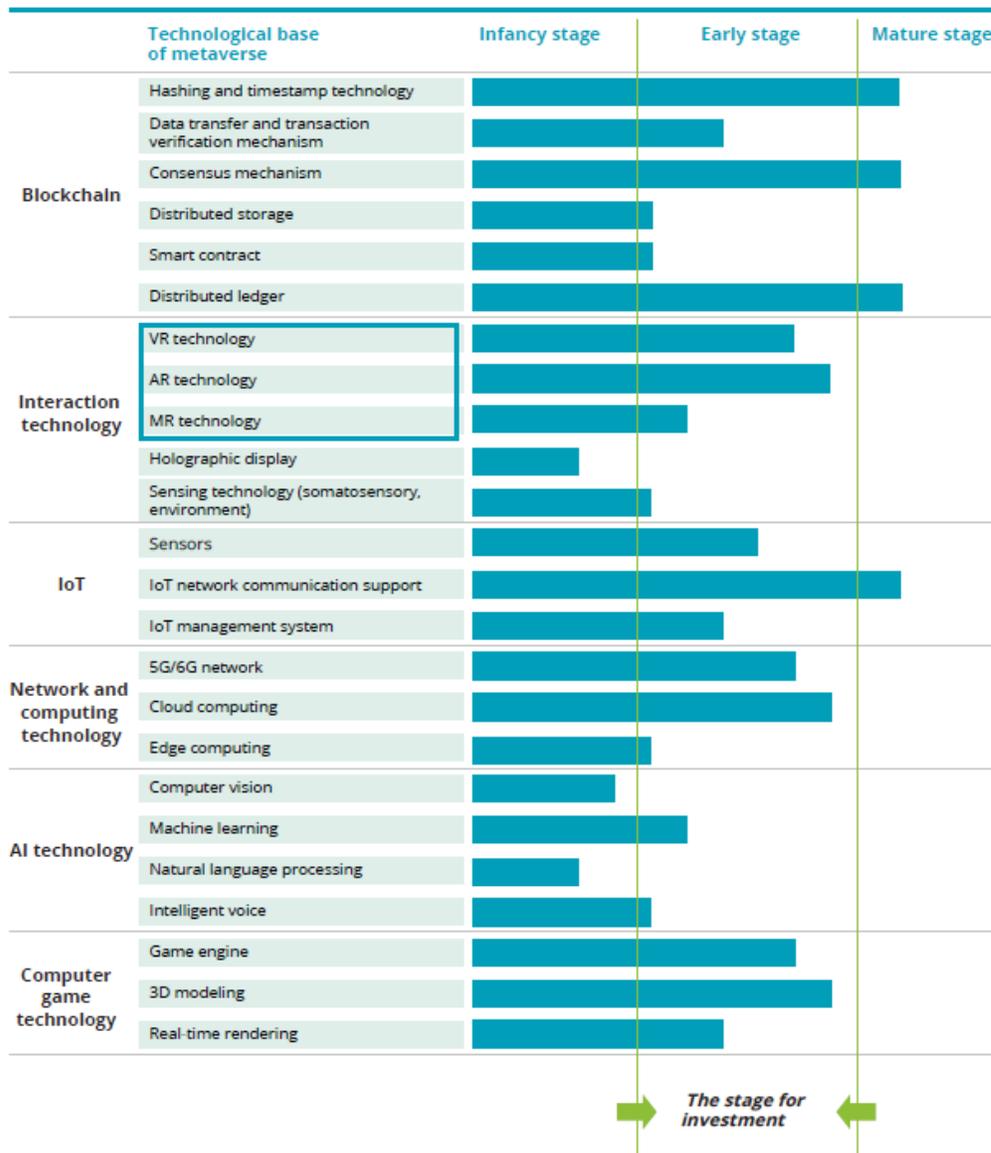
Understanding that a fair bit of technology exists to capture, process, share and store very large amounts of data, begs the question: how much data and what type of data is needed to make and effect good decisions? Is there information out there that is not being incorporated into decision making because it is not yet being captured and digitized? We are fast approaching the space where it may be considered negligent if sufficient and relevant data are not considered.¹¹ The sufficiency/relevance benchmark

is moving higher – especially since costs associated with dealing with large amounts of data are decreasing.

In addition, how are our information and data systems being affected by these newer technologies? Can we still rely on the systems? Do we understand enough about them to conclude that we can rely on the information that they generate?

New technologies developed in recent years have been quickly taken up in the business world. Figure 1 illustrates the development stage of various technologies. As noted in the diagram, many technologies are either in the mature stage or approaching that stage of development.

Figure 1: Development Stage of Various Technologies¹²



Source: Gartner; Metaverse Token; Deloitte Research and analysis

CPAs should understand these new technologies, at least at a conceptual level, in order to determine how they might have an impact on their organizations and the organizations of their clients. They need to be comfortable with the underlying systems designs and operations so that they can assure stakeholders that all is fine and the systems and information generated is trustworthy. Otherwise, opportunities might be missed and, even worse, there may be significant risk.¹³ Without at least a foundational understanding of emerging technologies, CPAs will not be able to act as agents of change and will need to rely on other professionals to lead transformation projects. On the risk side, how can CPAs provide trust if the technologies are a “black box”? How can they rely on other professionals if they do not have at least a baseline understanding of risks associated with specific technologies? How can CPAs even decide whether they can rely on other professionals in the first place?

How much data and what type of data is needed to make and effect good decisions?

CPAs don’t need to become technical experts in all technologies. For instance, they do not necessarily need to be able to create algorithms or blockchains. However, they must understand enough to determine where and how these technologies can improve different types of processes and business models and they need to understand how certain technologies may be exposing them (and organizations) to more risk – and they must apply an ethical lens. They must understand enough that they can collaborate effectively with other professionals (such as computer and data scientists) on whom they may rely, including speaking the language and understanding basic concepts. They must be able to translate technical risks and opportunities into understandable and transparent inputs for business decisions.¹⁴

As a core value add, CPAs provide assurance over information and processes relating to measuring and managing performance.¹⁵ This is central to what CPAs do and must be preserved.

The case for data governance

CPAs have always been involved in the area of governance – that is, making sure that an organization’s resources are being appropriately utilized and deployed to sustain and create value for stakeholders.¹⁶ The accounting ecosystem is central in any good governance system. Historically, accounting has been dominated by the use of mechanisms, such as a general and other ledgers, as well as internal management information systems, which capture all transactions in a controlled environment with extremely restricted access (i.e., access is allowed only by an organization’s employees, such as accountants, who are presumably capable and qualified). A large amount of information captured and used for decision making has historically been financial.

But, as we move into a data dominated world, our accounting ecosystems have changed. More and more relevant data is not necessarily financial data, and not all data

lives within the organization (and especially not in the general ledger or management information system). Increasingly, relevant data is non-financial (including for instance customer reactions to products, clicks on a website, weather patterns that may affect production, supply chain details that may affect distribution and others) and much is generated externally (i.e., outside the organization). This data may be captured and stored through shared ledgers (for instance, using distributed ledger technologies), stored outside the organization (using cloud technologies) and it may be captured and shared directly using machines (through the internet of things).

As noted in the earlier section, understanding digitization and emerging technologies are pretty foundational requirements and are a jumping off point for discussing the related area of data governance.

We know the role of CPAs in corporate governance but what is the CPA's role in data governance? CPA Canada and IFAC published a Discussion Paper on the accountants' role in data.¹⁷ In the publication, the authors note:

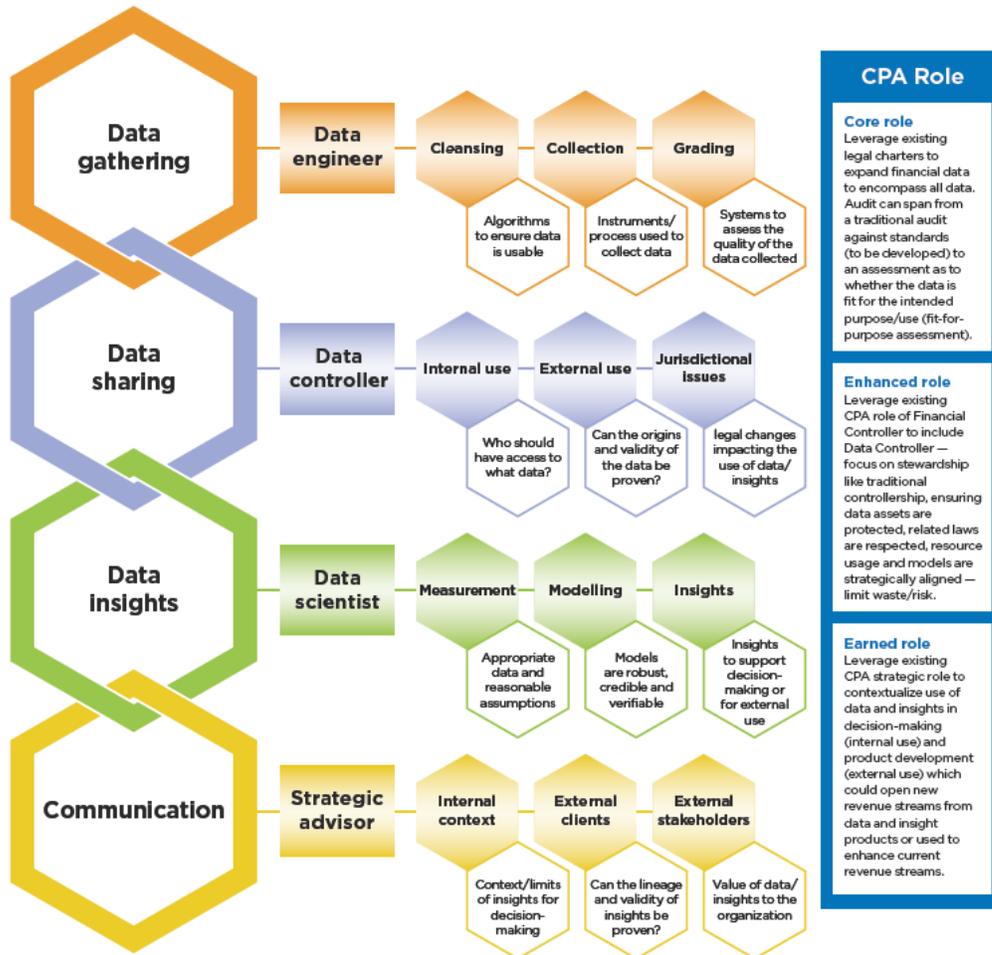
“Professional accountants, in their many roles, are uniquely positioned to meet the challenges of disruption. They need to support organizations as they navigate the uncertainty that accompanies this technological and economic transformation. By building upon core competences and expanding skills and knowledge to fulfill key roles in the data management value chain, not only can accountants secure a strong and vibrant future for themselves in the digital economy, but we can shepherd organizations across sectors and industries to adapt and even forge new paths with integrity and longevity. This report outlines our way forward.”

The publication also sets out what the authors refer to as the “data management value chain.” Figure 2 captures the value chain.

The diagram illustrates the various stages in the value chain – from data gathering, to communication – and it shows the potential roles for CPAs through each stage. One of the roles is “data controller” which involves being accountable for access to the data, ensuring provenance and jurisdictional issues relating to use of the data and related insights.

Data confidentiality and privacy are critical, as is the threat of a data (or systems) breach. The more data collected/transmitted, the more risk to the organization, should a breach occur. Responsibility for cybersecurity rests not only with those in charge of the information technology infrastructure, but also with accountants. Managing cyber risks is part of the broader discussion of business risks, an area in which the CPA has a predominant role. The CPA is already committed to safeguarding the assets of the organization, and digital assets are no different. Who better to trust with your data and data systems than a CPA?

Figure 2: Data Management Value Chain



How To Move Forward?

So how do CPAs move forward to learn more about opportunities and risks associated with digitization, emerging technologies and data governance? Continuous and Evergreen Learning is the key and there are a lot of resources available. Think about digitization, emerging technology and data governance in the context of your particular role in the organization and industry that you work for. Where are the opportunities to add value? Where are the risks and how might they be managed? You might even engage your team or other teams within the organization about opportunities and risks they see with increased digitization, emerging technology and data governance. As you move forward in your learning journey, here are some things to think about.

Reduce the opacity of new technologies

With the right knowledge and understanding, CPAs can help reduce the opaqueness of decision making when it involves technology. They can explain how new, powerful tools support optimal decisions – all the while questioning assumptions made, risks associated with the technology and bias introduced (whether these be introduced by

humans or machines¹⁸). In public practice, CPAs can provide external assurance that the technology is doing what the organization needs it to do and that the organization has a risk management processes in place to manage related risk.

Consider developing a network of high-level professionals, able to assess the risks and opportunities of new technologies

While upskilling in key foundational areas is critical, it is not possible to have all the skills needed to support the organization but CPAs can learn a lot by working with others with differing skill sets and perspectives.

CPAs might consider building a network of professionals with expertise in their respective (and often “non-accounting”) fields, who can augment the CPAs’ skills and competencies and help them see things from differing perspectives. The CPA’s value will rest in part on the ability to create and draw on this network.

Without at least a foundational understanding of emerging technologies, CPAs will not be able to act as agents of change.

Think of digitization, emerging technologies and data governance as a strategic consideration

Technology and increasing amounts of data are rapidly changing the way organizations create and sustain value. New technologies and data should be at the heart of the organization’s business strategy because they not only support current operations, but also make accessible business opportunities that were hitherto unavailable. Data is more than an operational by-product. In a context where the best decision is based on comprehensive analysis, timely access to quality data is critical for successful companies. Consideration of financial and non-financial data, generated internally or collected externally and from reliable but different sources, will be a differentiating factor in a competitive industry. Learn from what others in the industry are doing.

Balance opportunities created by digitization and technology with associated risks

While the collection and use of data can create exciting opportunities, it can also create new risks, including those related to maintaining confidentiality of personal data and the reliability of external information sources. Data governance is becoming more and more important in all organizations.

Consider human impacts relating to change

CPAs have always led change in business, whether it be the introduction of a new financial reporting system, the integration of an acquired business or dealing with new reporting standards. Without sound change management, the benefits of these

powerful tools may not be realized, or may be completely undermined if there is reluctance to change.

Change is not easy. Work with the users in the accounting and other organizational ecosystems to ensure that people are supported appropriately through the change process. It is humans who effect change and not technology – so remember the human side of things.

In conclusion, staying ahead of the curve is critical for all CPAs in order to continue to engender trust. CPAs have a real opportunity to become leaders and agents of change.

¹ www.cpaleadstheaway.ca.

² For instance, it is more important for new CPAs to understand how accounting standards such as IFRS and regulations such as the Tax Act are created and updated, and the research, concepts and language that underpin them (as opposed to learning every standard). Then, when standards and regulations (new or changed) are issued, CPAs can immediately access and apply them.

³ CM2.0 outlines the skills and competencies of newly qualified CPAs in Canada. A new project team (Certification 2.0) is now studying where, when and how the skills and competencies outlined in CM2.0 will be learned and assessed. The new CPA education program, which will encompass all this, will launch in 2024/2025.

⁴ PwC and other employers are investing significantly in upskilling. See <https://www.reuters.com/business/sustainable-business/pwc-planning-hire-100000-over-five-years-major-esg-push-2021-06-15/>.

⁵ <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/defining-the-skills-citizens-will-need-in-the-future-world-of-work>.

⁶ <https://www.weforum.org/agenda/2022/05/future-work-jobs-davos-experts/>.

⁷ This is often referred to as intelligence augmentation.

⁸ The IFRS Foundation announced the creation of the International Sustainability Standards Board in November of 2021. The new board has already issued two proposed new standards as exposure drafts for comment. See www.ifrs.org. This is creating significant opportunities for CPAs. As organizations move to adopt these standards and other frameworks relating to sustainability, there will be growing opportunities for CPA to 1) rethink how organizations add value, 2) develop and report on related performance metrics and 3) provide assurance on all this. Technology will play a big part in how accountants capture data (in order to digitize it) and how they create information systems that will produce relevant and reliable information.

⁹ Trillions of dollars are flowing into the sustainability space – especially on the environmental side as organizations start to articulate their plans to move to net-zero greenhouse gas emissions. See “[Asset managers commit \\$16 trillion of assets to net-zero target](#)”.

¹⁰ See <https://sdg-action.org/a-digital-revolution-to-tackle-climate-change/#:~:text=Digital%20technology%20itself%20has%20the,significant%20contribution%20to%20climate%20action>.

¹¹ As an example, note that IFRS 9.5.5.17 (c) states that measurement of expected credit losses on loans should reflect various things and should be based on “reasonable and supportable information that is available without undue cost or effort.” When is that threshold met? We need to think more carefully about what is meant by “undue costs or effort,” especially given the fact that more and more data is indeed available and at increasingly lower costs. Note also that, as we continue to move forward with reporting increasing amounts of information relating to sustainability, it is important to identify the different types of data we need to collect (including non-financial data) and how much data is sufficient in order to engender trust.

¹² <https://www2.deloitte.com/cn/en/pages/technology-media-and-telecommunications/articles/metaverse-whitepaper.html>.

¹³ IFAC, ICAS, CPA Canada and IESBA have authored a four-part series dealing with ethical leadership in an era of complexity. Paper 2 of this series entitled “[Technology is a double-edged sword, with both opportunities and challenges for the accountancy profession](#)” provides a focus on technology and risk.

¹⁴ CPA Canada has some good publications dealing with digital transformation, ensuring trust in data ecosystems and risk management in this area. See <https://www.cpacanada.ca/en/foresight-initiative/data-governance/mastering-data>.

¹⁵ CM2.0 notes, in the CPA Ethical Mindset – that CPAs “.....create and sustain value for stakeholders by bringing logic, structure and trust to information as well as to the process of measuring and managing performance.”

¹⁶ See <https://www.cpacanada.ca/en/business-and-accounting-resources/strategy-risk-and-governance/corporate-governance/publications/corporate-oversight-and-governance-resource-guide>.

¹⁷ <https://www.cpacanada.ca/en/foresight-initiative/data-governance/role-professional-accountants-in-data>.

¹⁸ As an example, as more and more artificial intelligence is being used in more and more environments, are there ethical issues relating to the way algorithms are created and deployed? Are algorithms, which are created using historic and therefore perhaps biased information, fair? IFAC, ICAS, CPA Canada and IESBA issued a four-part series dealing with ethical leadership in an era of complexity and digital change, which discusses the issues in the context of ethics and duty. See <https://www.ifac.org/knowledge-gateway/preparing-future-ready-professionals/publications/professional-accountants-role-data>.

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New Initiative to Streamline Climate Data Will Transform Compliance & Investment Decision Making: In Their Own Words...

By Gundi Jeffrey, Managing Editor



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

The US Securities and Exchange Commission is estimating the cost for public companies worldwide to comply with the new climate disclosure rules could reach more than \$10.2 billion. But, without global standardization and comparability of climate change disclosures, these costs could increase even further for all stakeholders creating and using ESG data for decision making – including future human capital, cybersecurity and other global reporting issues.

As a result, efforts are underway with both global and national securities regulators, standard-setting bodies, technology firms and professional associations to create open, new, freely available standardized technologies. These will drive comparability of disclosed ESG/climate change data which in turn will expedite climate finance to tackle global warming. In addition, there are new, standardized compliance technology solutions that companies will be able to utilize to bring costs down – especially helping SMEs and emerging countries most at risk to comply.

The initiative includes creating a ground-breaking global baseline of sustainability-related disclosure standards, which will result in agreed ESG/climate data metrics and methodologies. The taxonomy initiative, led by XBRL International, has involved the creation of a new special interest group (SIG) made up of regulators and standard setters – uniquely bringing together the International Financial Reporting Standards Foundation (IFRSF), the International Sustainability Standards Board (ISSB) and European Financial Reporting Advisory Group (EFRAG).

It also includes establishing a new Digitization Sustainability Data Lab (DSD Lab, using technology to expedite worldwide comparable ESG data for “apples to apples” comparison of key climate metrics so investors and the public can make better decision-making. The data lab and global blueprint will help align climate disclosure mandates from over 100 countries, helping regulators and standard setters bridge the gap between net zero commitments and the global economy.

But how will all this be accomplished? This interview with John Turner, CEO of XBRL International, will offer some enlightening answers. Editor-In-Chief Gerald Trites and Managing Editor Gundi Jeffrey conducted the interview jointly.

ThinkTWENTY20: *The world of sustainability reporting has been plagued by too many bodies issuing standards, which often differ from each other. Should the digitization process focus on all of them or just one or two, like the ISSB and perhaps EFRAG?*



John Turner: It's important to remember that the XBRL standard is simply a uniform alphabet and grammar for representing business reports of any kind in digital form. It can be used by anyone for just about anything. Today it's used in nearly 200 regulatory mandates in around 60 countries for everything from financial disclosures to tax, real estate and energy. It's used to shift reporting from a paper paradigm to a digital one and provides all the benefits of standardization in terms of interoperability, lower costs of production, lower barriers to entry and a large ecosystem of innovation built up around a single standard.

ESG reporting is a new kind of mandate and certainly the question of comparability is, and should be, at the top of everyone's list of questions about the shift from voluntary to mandatory sustainability disclosures.

To bring digital reporting to life, regulators and standards setters need to construct dictionaries of the terms that they want to see reported using just the letters in the digital alphabet and following the digital rules of grammar. These XBRL dictionaries are a digital representation of the disclosure rules that operate within a specific domain.

Companies can then report using the words in the dictionaries. Those reports and the dictionaries they are using must use the letters in the alphabet and follow the rules of grammar set down within the XBRL specifications. When these three layers: (1) alphabet and grammar; (2) dictionaries that follow them; and (3) reports that use the words in the dictionaries, the letters in the alphabet *and* the rules of grammar, are all in place then digital reports that can be prepared, published, consumed and analyzed are the result.

Reports that use the same dictionaries are comparable. Comparing reports that use different dictionaries from different domains is not nearly so simple and requires expert knowledge of the rules that govern each reporting environment in order to determine what can be compared and what can't be.

So, to put your question somewhat differently: how big is each ESG domain? Will we see lots of country-specific ESG disclosure regimes, like there were in the days before IFRS for accounting? Will we see large geographic and economic blocks of rules (IFRS v US GAAP *redux*)? Is there any

chance that things will come together in this field so that there is just one international set of disclosure standards?

Well, the good news is that over the past 12 months we've gone from alphabet soup to a much more concentrated bouillon. I think most people are familiar with the very significant number of national, regional and industry sustainability standards and sustainability frameworks that exist, some addressing just specific aspects of sustainability, while others are more comprehensive. In some places, the resulting reporting was done voluntarily while, in others, it was mandated. But, overall, everybody understands that sustainability reporting has been extremely fragmented.

Then came a really concerted effort by a group called the Impact Management Project, which included the leaders of all the sustainability efforts and the main accounting groups working together to find a way forward. So far, we have gone from about 200 groups down to, arguably, a couple plus one. So, the alphabet soup is now a more concentrated and soon, mandatory, kind of broth.

The ISSB announced from the very beginning, with support from all kinds of groups, including [IOSCO](#), that it should be digital from the outset.

It's worth understanding what has happened. To a certain extent, this is all a question of timing. Two new sustainability standards-making efforts have emerged simultaneously. The European Parliament and the EU Commission's Green Deal Agenda – which was their Number 1 policy priority – made it very clear that having vastly better information, particularly climate related, but also on other ESG measures, coming directly from corporations are vitally important. They directed that the European Financial Reporting Advisory Group (or "[EFRAG](#)") which has until now provided advice to the EU on the IFRS financial standards, should itself develop a comprehensive set of standards, to construct the European Sustainability Reporting Standards ("or [ESRSs](#)").

More or less at the same time, the IFRS Foundation, which had maintained for several years that it wouldn't be involved as a sustainability standard setter, started to change its tune. The Trustees formed a group to help determine what could be done, leading up to an announcement of a new body, the International Sustainability Standards Board or "ISSB" at last year's COP26. The ISSB will be the sister standards setter to the IASB within the IFRS Foundation. There has been a considerable amount of collaboration behind the scenes to try to bring together a number of sustainability bodies, including the [SASB](#)'s merger with the [International Integrated Reporting Council](#) to create the Value Reporting Foundation ("[VRF](#)"), followed swiftly by the ISSB's creation, where it was also announced that both the newly formed VRF and the Carbon Disclosure Standards Board or "CDSB" would transfer their standards, activities and staff to the new ISSB.

Actually, the formation of the ISSB happened at lightspeed in IFRS terms – IFRSs take a long time to develop as they impact a huge number of people and organizations right around the world and in contrast, the formation of the ISSB happened extremely quickly. Nevertheless, Europe was already looking at the idea that they could introduce, on a very rapid timetable, a range of sustainability standards to be developed as new ESRS for the new Corporate Sustainability Reporting Directive (CSRD). The CSRD is legislation that will oblige some 50,000 companies to make sustainability disclosures at the same time as their financial disclosures. As I've already mentioned, that initiative was pulled together quickly and announced some months before the ISSB was created.

We've seen formal announcements from several major economies (including the UK) that they intend to use the ISSB standards as soon as they are available. Europe will follow the ESRSs. That leaves the United States.

The SEC was quiet for quite a long time while a new Commission was trying to work out how to address these requirements. Of course, it turns out that their March proposals – that have recently been out for consultation – turned out to be pretty substantive and link climate related disclosures to financial statements explicitly.

Importantly, the ISSB announced from the very beginning, with support from all kinds of groups, including [IOSCO](#), that it should be digital from the outset. Furthermore, the CSRD legislation in Europe proposed that all of the disclosures that companies would be making should be digital. The SEC *also* included a requirement that these disclosures be digital in all respects.

So, in markets large and small right around the world, we are seeing a shift – from a largely voluntary set of arrangements using disparate standards and frameworks for sustainability reporting to a world in which regulators intend to make them not only mandatory, but also to make them subject to independent assurance, which is a very important aspect of those policies. And further, to make them digital, meaning to expand existing Inline XBRL arrangements to go beyond financial disclosures to cover sustainability.

If you think about this from the perspective of corporations, this is a seismic shift. They are going to need to ensure that they have the people, the policies, the processes and systems all in order to be able to establish controls around the way they collect this information in order to allow it to be audited.

This is a very substantial change for companies, many of whom will have, until now, been viewing sustainability reporting as a communication function rather than as something that is a core part of corporate reporting compliance. Of course, it will need to continue to be an important communication function – but, going forward, it will be a regulated one. It remains to be seen how exactly how this will shake out in a number of areas. And it leaves us with a very significant number of questions around comparability.

Just a word about the SEC. Europe is going its own way in terms of setting its own standards – at least for the moment, but the ISSB – which is getting a very significant amount of support from governments around the world – Canada included – is looking to develop an additional set of complementary IFRS standards for ESG that can be used by companies everywhere. The US is in a different situation.

At present, they can't delegate the creation of US ESG disclosures to an independent standards setter. That's true whether it would be the FASB, (which sets the US GAAP accounting standards), or the ISSB, which would be a larger step. They might consider it for the future but, right now, it seems that they don't have that legislative power. Therefore, they have developed their own set of climate related disclosure rules in-house as the SEC can, and does, make rules surrounding disclosure.

That means we have three ingredients in our bouillion – EFRAG's European Sustainability Reporting Standards (ESRS), the IFRS ISSB and the SEC – not necessarily with completely comparable disclosures. Each have somewhat different requirements and timing. That said, there is goodwill between all of those bodies to try and ensure that there is comparable information where possible and (hopefully) more cohesion going forward. We've gone from an alphabet soup to a more concentrated broth with a smaller number of letters in it! How will users around the world find this new recipe? We wait to see.

There almost certainly will need to be changes going forward and there will be a period of fairly rapid consolidation as we understand what can and can't be provided by companies.

ThinkTWENTY20: *What about digital reporting?*

Turner: I think people should understand that the linkages in sustainability disclosures are somewhat different from those in the financial reporting sphere. There are two headlines to that. One has to do with what I'll call "extraterritorial reality" and the other has to do with the need to synthesize the information that is provided by companies and use it for other kinds of disclosures, particularly in funds management.

Right now, the extraterritorial aspect is particularly important to substantial companies domiciled outside of Europe that have material operations in Europe. Because, if they do, they will almost certainly have a reporting obligation under the CSRD about their activities, using the European (EFRAG ESRS) standards.

In addition, there is a regulation in Europe that obliges asset managers to disclose information about their fund offerings, in terms of their sustainability. That process is being helped by the ratings agencies and others, but the policy intention was always that the information would flow from the corporate disclosures through to funds management disclosures. The only way for that to happen is to have *a digital* information supply chain.

That's another small complexity in this exercise. I think it is also worth noting that those companies that might not have any activities in Europe, but whose *securities* are part of the portfolio of a fund manager in Europe, may also have reporting obligations under the [SFDR](#). So, this whole process is quite connected and, the more that the information can be consistent, and the faster it can accurately flow from point to point, the better.

ThinkTWENTY20: *Do you see XBRL International as a coordinator of those different standards?*

Turner: The preparation of digital disclosures for sustainability has some nuances that are quite different from financial reporting. For example, there is a lot of narrative disclosure in sustainability disclosures. There have been a significant amount of cross referencing and linking between documents in sustainability disclosures in the voluntary era and these raise technical questions that need to be addressed consistently. There are a number of other, smaller complexities, such as new units of measure for various things. Those kinds of issues need to be worked through in order to ensure that digital reporting goes smoothly in this field. It would really be desirable if all the standard setters and regulators involved would be doing that in a consistent fashion – which is possible.

XBRL International is certainly involved in these discussions and will continue to work to ensure that, at a *technical digital* level, ESG disclosures work the same way. We are not the rule makers though: getting definitional consistency requires agreement amongst the ISSB, EFRAG and SEC. XBRL International is just trying to make sure that the rail gauge is the same and that the signaling works consistently: we don't have any say on what runs on the rails.

That said, there are any number of areas across those three groups where the information they are trying to get across is identical. There are examples of that in the climate disclosures about greenhouse gas emissions, as well as risks and opportunities that organizations face in that field. The [TCFD](#) framework is being closely followed within the [SEC](#) environment, in the ISSB environment and in the EFRAG environment too. So, this should result in information that is comparable – right?

Except that computers are dumb. If you have a disclosure called "SEC: Scope 1 Emissions" and you are trying to compare that with something else that says "EFRAG: Scope 1 Emissions" and *even if* the documentation about Scope 1 Emissions is identical in both environments, computers *still* don't understand that those are the same. You may need a mechanism to create comparability above and beyond what is possible at the moment.

With some help from the Impact Management Project, we've been running a special interest group which is just for the standard setters and regulators that are involved in this exercise (SIG). It meets twice a month and the idea is to identify the challenges in this field and propose solutions. We are about to publish the first round of those proposals. These proposals will now need to be considered by the standard setters and by XBRL International's own Standards Board and Best Practices Board to determine whether or not to adopt them.

The ongoing dialogue among these agencies and standard setters about digital disclosure is a very positive effort.

No doubt, in a few years, we might say that it would have been better if we could wave a magic wand and have just one ESG standard. Who knows? Maybe we will get there. The reality is that is not quite where we are, for perfectly reasonable reasons – because perfectly reasonable policy decisions are taken in different parts of the world, taking account of perfectly reasonable different legal situations at slightly different times. Efforts around bringing those groups together to enhance comparability will ensure that the utilization of this information can happen very quickly and that the quality of the information around the world will also be high. So, just trying to coordinate our efforts among these different groups is all we're doing at the moment.

ThinkTWENTY20: *And they are all using XBRL, right?*

Turner: Yes, and that does help, mostly because of the communications aspect. This might be helpful as an example. The first voluntary public company report containing XBRL tagged climate risk information that we have come across is the recent [UK FCA filing by Aviva](#). With that digital representation of this information we were able to construct a [very simple report](#) about that entity. It's pretty trivial to produce your own analytics when you have digital disclosures prepared in XBRL.

Once there are thousands of these reports, it's really important to try to ensure that there is as much consistency as possible. Some of that work is just the standard setters getting together, and there was an announcement from the ISSB recently about their intention to work much more closely with the other standard setters to try to overcome what could be issues with comparability.

I think the other thing that is worth noticing is that this is going to be a field where there will be a lot of change. For those of us familiar with financial reporting, while there have been some significant changes within financial reporting, it's taken decades and we are pretty clear about the way all that works around the world.

The sustainability space will almost certainly involve fairly significant changes over a much more rapid period. For example, when it comes to climate disclosure, there is obviously a lot of urgency from the perspective of policy makers. There will be changes and those changes will impact companies, and, as a result, will impact the ESG standards and the resulting (digital) disclosures in this area.

ThinkTWENTY20: *We see all this as being tied in with integrated reporting. This has been around for the last 10 or 15 years. The thinking behind it is quite well developed. But then we start getting into sustainability and ESG reporting, and people are saying that we have to do that for investors and other stakeholders. That would bring the objectives of sustainability*

reporting and financial reporting a bit more in line. But people seem to be falling short in some place in talking about fully integrated reporting.

Turner: I think the jury is out about what is going to happen there. There has been a huge amount of really positive work within the integrated reporting community. And you mentioned “thinking.” With integrated reporting, that is the most important aspect. It’s a way of approaching and connecting every aspect of a business with all of its stakeholders, with a view to ensuring the sustainability – the healthy long-term operations – of that firm. There is already very positive work being done by the IFRS Foundation in this field as they work to fuse Integrated Reporting into their operations as part of the merger between the Value Reporting Foundation and the IFRS Foundation. Exactly what that integration looks like – well I think it is just a little bit too early to understand.

From an XBRL perspective we see machine executable data quality rules as a very important part of reporting in every environment: a mainstay in good digital practice.

ThinkTWENTY20: *I spent about 20 years of my career heavily involved in financial reporting standard setting. It boggles my mind as to how the standard setters will grapple with all of this. Frankly, they have been slow to adapt just in the financial world.*

Turner: The thing that everybody should understand is that all those involved in this process – whether it’s standard setting or policy making – thinks that this is really an extraordinary package of changes and worry that there will be parts that are skipped or that miss the mark. There almost certainly will need to be changes going forward and there will be a period of fairly rapid consolidation as we understand what can and can’t be provided by companies, which tend to offer boilerplate reporting rather than something that is really helpful where sourcing is too difficult, or impractical, or where companies have concerns about future litigation. Reaching high quality and consistent ESG standards will be a challenge and one that involves a period of intensive change. Standards setters and regulators have no choice: they will need to rise to that challenge.

One of the things that companies all around the world are grappling with is that reputation risk is something that historically they have spent very little time on. Today, there are any number of sustainability questions that can impact reputation risk in truly material ways.

Therefore, these questions will always be on board agendas going forward. Whether it’s working conditions in suppliers’ environments or the carbon emissions created in the production of products, there are many, many more stakeholders looking at what used to be “boring” corporate reports in way they haven’t been looked at in the past. That’s just a new reality for companies of all sizes.

Looked at from a different angle, the number of investors that use ESG factors in their decision making continues to grow extremely quickly. With voluntary and largely unregulated ESG disclosures, the way that ESG factors are taken into account has been extremely hit and miss, with so called “greenwashing” a real issue. By providing a new basis for mandatory, comparable, audited and digital disclosures the regulators are doing what they are supposed to be doing: they are levelling the playing field. No matter your perspective on ESG factors, that level playing field is a necessity going forward.

I’m very interested in what is going to happen in terms of the systems landscape within companies because, arguably, this is the area where there should be significant standardization inside corporations: the steps involved in sourcing, checking and preparing sustainability disclosures. That, to a large extent, is more a function of markets than policy. Which isn’t to say that voluntary standards in this field couldn’t have a significant impact. This is an area which is changing just as rapidly as the standards themselves. And there are a lot of established players in corporate reporting that are looking for opportunities for helping their existing clients through sustainability reporting.

We don’t have a crystal ball in that field. I think this is an area where there could be some significant innovations and hopefully, significant collaboration. There’s work being done to examine what could happen in terms of controlled vocabularies and appropriate information governance. It is just a little too early to understand exactly what it will look like – a consistent framework for figuring out this process would make it simpler for corporations who need to comply. And, for many of them, this is brand new.

For all of these reasons (and no doubt many that we’ve not seen yet) you are exactly right. This is a challenge for disclosure standards setters. Equally, it is one that they can, will and must rise to.

ThinkTWENTY20: *One of the other questions we had is talking about the costs involved. The US Securities and Exchange Commission is estimating that the cost of public companies worldwide complying with the new climate disclosure rules could reach more than \$10.2 billion. What I would like to know is how would digitization reduce these costs?*

Turner: I think it’s worth stepping back for a minute and think about that policy landscape. Policy makers around the world are reacting to what investors are asking for: much more information, particularly around climate, and (depending on location and the societies they serve) a range of other metrics around sustainability. Also, they want to know the strategies that companies have for quantifying and mitigating risk in this area. Policy makers know, and indeed they acknowledge, that there will be some costs associated with these implementations. I think we can look with favour at what’s happened in the financial reporting sphere to be confident that standardization will also assist with sustainability reporting.

The United States has had, for some time now, a very thorough mechanism, for digitizing financial statements. The costs associated with that were, at first, relatively high. Competition

did its usual thing and pushed those prices down. But, also, people started to think about how to manage their processes for producing external reports. If you look at some of the integrated disclosure management reporting mechanisms, companies use a number of tools to collaborate on the creation of both internal and external reports and to ensure that the workflow associated with that doesn't miss any steps. They also want to ensure that all of the processes for reviewing and consulting internally on what is being reported and the way that things are designed are digitized, with digital workflows becoming much more important to companies than the traditional and manually intensive approach. This has created more consistent, better controlled and hopefully higher-quality reports, with much better workflows around them. These newer systems have replaced older approaches, which involved an astonishing amount of manual effort for many financial professionals, which most will be happy to leave behind.

It's worth noticing that costs in Europe have been significantly cheaper than the costs in the US, partially because of scope but also partially because of competition. There are more than a dozen fiercely competitive groups that are working in that space.

ThinkTWENTY20: *A new Digitization Sustainability Data Lab (DSD Lab) was recently announced to bring together multiple national regulators and climate disclosure mandates in one manner for the first time. The new lab appears to have a huge mandate. The data lab and global blueprint will help align climate disclosure mandates from over 100 countries, helping regulators and standard setters bridge the gap between net zero commitments and the global economy. Will this mandate be achievable given the large number of players involved?*

Turner: The DSD Lab is an effort to bring together a number of groups under a pretty broad umbrella. I would highlight not just the work we are doing. It's really an effort to try and ensure that the standard setters, regulators and others will coordinate the specific standards of digital disclosure that they are imposing in different markets around the world. We hope that it can expand to provide support to issuers and to users so that they quickly come to grips with what all of this means for them. And we are very optimistic that the DSD Lab Framework will free up the resources to make that possible.

There are a number of other efforts that are focused on much broader questions of digitization, for example, looking at the way that you move information throughout the supply chain. With some of this information – whether it is carbon reporting or whether it is the sustainability of fisheries, or any number of other sustainability priorities – the supply chain is what it really important. So, there is a group that is looking at ways that digitization can assist in that field, as well as the efforts that are focused on the necessary controls and governance mechanisms needed to assist organizations inside their own environments before they start to do their external reporting. The idea is to produce high-quality information that can feed regulatory reporting but also statistical reporting at a national level. There is some very good thinking in that space, but it's very early days before we see exactly how all that pans out. Stay tuned.

ThinkTWENTY20: *What they have been working towards is gradually merging various taxonomies?*

Turner: “Taxonomies” is a badly misused term. Lots of taxonomies in this space are classification schemes. Europe is using a “taxonomy” that just classifies industries in terms of their carbon intensity. There are other mechanisms. I think the linkage between these various data sets is what is really important and that is likely to be a key focus as we move forward

ThinkTWENTY20: *How will quality be maintained and monitored with the new digitization standards?*

Turner: Regulators say that they want consistent disclosure made by companies across a country or region or internationally. They also say that they want to ensure that the information is auditable and then audited, and that it needs to be disclosed in a digital manner using the Inline XBRL standard. That gives you a much better and faster lens with which to focus on quality.

For example, everyone will have seen that an emphasis on quality and minimizing greenwashing is important for many involved in this process. That’s one aspect of quality. There are other, more mundane aspects of quality – ensuring that we measure things with the same units of measure, ensuring that the processes used to consolidate organizations – all of the different parts of an enterprise and its ESG activities. Those are all very important and why the audit function has a very relevant part to play.

From an XBRL perspective we see machine executable data quality rules as a very important part of reporting in every environment: a mainstay in good digital practice. You produce digital dictionaries, you publish them. You also publish publicly accessible accompanying quality rules to ensure that you minimize “garbage in” and, thereby, minimize “garbage out”.

So, between enforcement, audit, high-quality standards and, indeed, machine executable business rules, there will be a unified quality process surrounding these disclosures as they start to bed down.

All of these present challenges, but that can and will be overcome by the standards setters, regulators, auditors, companies and users that form the reporting ecosystem. The XBRL standard has its own small part to play and we are working toward helping to ensure that there are high-quality, comparable and easy to use disclosures in the ESG field.



When Audit Evidence (and Our Eyes) Lie to Us

By Eric E. Cohen, CPA



Eric E. Cohen, CPA, is a technologist with a passion for collaboration toward the goal that “a piece of business information, once entered into any system, anywhere, never needs to be retyped as it moved through the business reporting supply chain.” He’s also prolific author, engaged in virtually every effort to standardize accounting and audit data, a national expert to a wide variety of standards efforts, and co-founder of XBRL.

On June 7, 2022, on the television series “America’s Got Talent,” some mind-bending technology was used to wow the audience. A world leading expert in the space with whom we consulted has said this demonstration has taken the technology to a next, important stage. While the ramifications to entertainment were made obvious, the potential to complicate controls and the audit process are also important to consider.

This article deals with an area of manipulated media known as “deepfakes.” Deepfakes are synthetic media where a person in an image or video is swapped with another’s likeness – it makes it look like a person is doing and saying things they never did. As the audit profession has been challenged with the traditional paper document for decades, and is still working to develop better guidance related to text-based computerized records, the threat of manipulated graphical and video media important as audit evidence is one where we need help to cope with it... and that help is being offered, if we can contribute to the cause. The call here is for the Profession to engage with the stakeholder community to help control the risks deepfakes and related technologies may bring.

Technology Advances (But Sometimes Takes Us with It)

It is no secret that technology has advanced rapidly over the last 40 years, with major impact on accounting and operations. Arguably, we can look at the introduction of the IBM PC, in August 1981, of Lotus 1-2-3 in January 1983, and small business accounting software product Quickbooks later that year, along with the ripples of related products as milestones in the move from paper to electronic records.

Deepfakes are synthetic media where a person in an image or video is swapped with another’s likeness – it makes it look like a person is doing and saying things they never did.

How well the profession has responded to this move is another question. Some may say it has purely reacted to the changes, at best being “fast followers,” rather than helping craft the future. Some of that may be laid on the shoulders of the regulators.

For example, the US PCAOB to this day speaks to the superiority of “original documents” over (their capture as) electronic records,¹ while noting that auditors are *not expected to be an expert in document authentication* but note that *if conditions indicate that a document may not be authentic ... the auditor should modify the planned audit procedures or perform additional audit procedures to respond to the conditions.*² The PCAOB also continues to use terminology that assumes audit documentation to be a *written record*,³ where writing would exclude graphical (including video) and audit records.



The IAASB seems to have recognized that we have moved beyond paper documents and that *audit evidence in documentary form, whether paper, **electronic, or other media**, is more reliable than oral evidence*⁴ but again uses similar terms about “original” documents compared with those later transformed into electronic format.

At the same time, the community is calling for those with responsibilities over the design and testing of internal controls, as well as of internal and external audit, to consider working with more types of audit

evidence, beyond trade transactions and internal activities marked with trade/business documents and other activities within the typical ERP system to other sources, including Big and Open Data sources. While much of this exogenous data remains written information, a number of audit procedures – especially in the post-pandemic era – are conducted remotely, and such audit procedures as inspection and observation, in particular, and even inquiry, may involve the use of remote video.

With the call for more remote oversight and audit procedures, the ability of remote video to be altered becomes an important issue for the profession.

CGI, Deepfakes and Other Tomfoolery

With the call for more remote oversight and audit procedures, the ability of remote video to be altered becomes an important issue for the profession. While audio and image manipulation have a long history, the advances – as evidence by “America’s Got Talent” – are growing.

¹ *Audit Evidence*, AS 1105.08.

² *Audit Evidence*, AS 1105.09.

³ *Audit Documentation*, AS 1215.02.

⁴ *Audit Evidence*, ISA 500.A31.

Many people love the movies, and special effects can be a special treat. Special effects are not new and, 120 years ago, George Méliès's 1902 film, *Le Voyage Dans La Lune (A Trip to the Moon)*, extensively used techniques such as the substitution splice to wow audiences. In the 1970s, we began to see the use of computer-generated imagery (CGI) to create fantastic and impossible in films such as *Westworld*, *Star Wars*, and *Tron*.

Documents and graphics have long been altered using various techniques; alteration of photos has a long and sordid history. The more recent use of Adobe Photoshop to alter images is so well known that “to Photoshop” something is among the top 10 brand names that have passed into general use as a generic term for altering content (like *Xeroxing* something rather than making a photostatic copy, or *Googling* something instead of doing an Internet search).

English writer and photographer Virginia Woolf noted in her 1938 book, *The Three Guineas*, that “Photographs, of course, are not arguments addressed to the reason; they are simply statements of fact addressed to the eye.” Just the next year, for example, Canadian Prime Minister William Lyon Mackenzie was said to have altered a photograph of himself with Queen Elizabeth and King George VI, perhaps to elevate his own importance.⁵ While audit evidence should be factual, any alteration may result in an alteration of the facts.

And the technology moved forward. As one example, in 2016, The Mill Design Studios created a “car” called the Blackbird. With the Blackbird, you could create a movie, television show or advertisement when you are ready to do so, and not when the car you wished to include was ready. You could shoot and repurpose the video without needing the car you wish to show, so you could film ahead of the target vehicle’s availability, or even change the car you wanted to show with photorealism.

As the impact of deepfakes is felt in the business reporting environment, enterprises will need to put controls into place to deal with the risks.

That photorealism divides between the real-time effects that you might find on an application such as Snapchat, with its “lenses” that use augmented reality to transform the way things look and today’s deepfake tech. The Zoom chat that turned an attorney into an unintended social media star and “broke the Internet” back in February 2021 proved that not all effects are lifelike, however humorous: Lawyer Cat. In that chat, an attorney named Rod Ponton made an appearance before the 394th Judicial District Court of Texas, inadvertently using a filter that turned him into a cat onscreen. Hearing the attorney apologize and note that “I’m here live ... I’m not a cat.” Oddly enough, Ponton may have been a victim of the default settings of his webcam!⁶

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https://www.researchgate.net/publication/339663072_ImageVideo_Forensics_Theoretical_Backgrounds_Methods_and_Best_Practices_-_Part_one_can_we_trust_Images_and_Videos/figures?lo=1,
<https://www.dailystar.co.uk/pics/pictures/gallery/original-photoshop-historys-most-famous-18760557>.

⁶ <https://www.youtube.com/watch?v=iJMJKVoruA>.

More relevant, perhaps, is the true deepfake, if that makes sense. As noted previously, deepfakes are synthetic media where a person in an image or video is swapped with another's likeness. Certainly, imposters and impersonators have been used to try to fool or entertain people in the past, but the use of artificial intelligence is key to today's trend. Over the last three or four years, more examples of deepfake videos have emerged, most often to showcase the technological advance, but sometimes for more nefarious purposes, such as being part of a misinformation campaign meant to show Ukraine's Volodymyr Zelenskiy asking citizens to put down their arms.⁷ YouTube's terms of service recognize and prohibit the posting of manipulated content meant to mislead users.⁸ Deepfakes, however, make it seem like people are saying things they never said, with video to support the audio and make it seem that much more authentic.

Next Step in Deepfake Technology

That brings us back to the beginning of this article and *America's Got Talent*. On June 6, a singer named Daniel Emmet walked on stage, supported by representatives of a company called Metaphysic, which uses AI to create hyperreal content. A large camera was rolled on the stage. When Emmet started to sing, it was not Emmet's image that appeared on the big screen; it was that of AGT judge Simon Cowell.⁹ The judges gasped and the audience were instantly amazed. Judge Sofia Vergara noted that she would have thought it was Simon ... if he wasn't sitting right beside her.

I sought feedback from a colleague who leads various ISO digital media efforts, holds more than a dozen patents in the space, and leads a business that commercializes scientific breakthroughs in AI-powered computational vision. Dr. Touradj Ebrahimi is a professor at the Swiss Federal Institute of Technology Lausanne (EPFL – École polytechnique fédérale de Lausanne) and my primary mentor in static and moving images. His reaction was that this was indeed something special; although similar performance may have been demonstrated before, it was not in real time and in the difficult environment of a live television show.

Remote interactions, continuous monitoring and the future of the audit rely on automated (and selective manual) assessment of more types of media.

React ... or Act

There may be many other rapid advances in deepfake technology, and these can have a major impact on a profession already seeking to respond to, and itself exploit, technological advancements. Some technology advocates believe that artificial intelligence and blockchain will make the profession obsolete, ironically by both doing the work of the profession and by making the work of the profession much more difficult. Recognizing that this technology is coming and may bring new risks is important, and one piece of good news is that there are experts ready to help.

⁷ <https://www.youtube.com/watch?v=X17yrEV5sl4>.

⁸ <https://support.google.com/youtube/answer/10834785?hl=en>.

⁹ <https://www.youtube.com/watch?v=mPU0WNUzsBo>.

The Joint Photographic Experts Group (JPEG) Committee¹⁰ has begun serious consideration of what they call “JPEG Fake Media.”¹¹ They note that there are risks that counter the creative uses in entertainment and art. These include “copyright infringements, social unrest, spread of rumours for political gain or encouraging hate crimes.” To that, we can add the creation of misleading audit information and new ways of circumventing controls that rely on video and audio proof.

To work to remediate the risk, the group is “exploring if a JPEG standard can facilitate a secure and reliable annotation of media modifications, both in good faith and malicious usage scenarios.” And to solicit more information, they have issued a call for input related to that work.

For the profession to get ahead of the challenge requires action now. Acting is difficult, requiring investment, consideration and expertise; reacting may be more difficult and expensive in the long run, but is an approach that delays investment.

Controls, Prevention, or Both?

As the impact of deepfakes is felt in the business reporting environment, enterprises will need to put controls into place to deal with the risks. In a future article, we may have more opportunity to deal with the issue; the current post-pandemic environment may be a transition back to more in-person activities and less reliance on remote observation and other off-site interactions. The advantages of remote activities may, however, lead to more opportunities to leverage deepfake technology for fraud or other malevolent activities.

However, they (“they” perhaps being American statesman and all-around polymath Benjamin Franklin) say “an ounce of prevention is worth a pound of cure” (28 grams of prevention is worth .45 kg of cure?). As such, developing a series of principles of “No deception by design,” in the manner of *Privacy by Design*,¹² may be an important foundation for development. A deepfake company seeking to provide “responsible deepfake creation services” calls it “Imperfection by design.”¹³

Copying with impunity from the principles of “Privacy by design,” a straw person draft of principles for “No deception by design” might include:

1. Proactive not Reactive; Preventative not Remedial
2. Imperfection as the Default
3. Imperfection/Identification Embedded into Design
4. End-to-End Lifecycle Protection
5. Visibility and Transparency
6. Consideration of User's Planned Usage

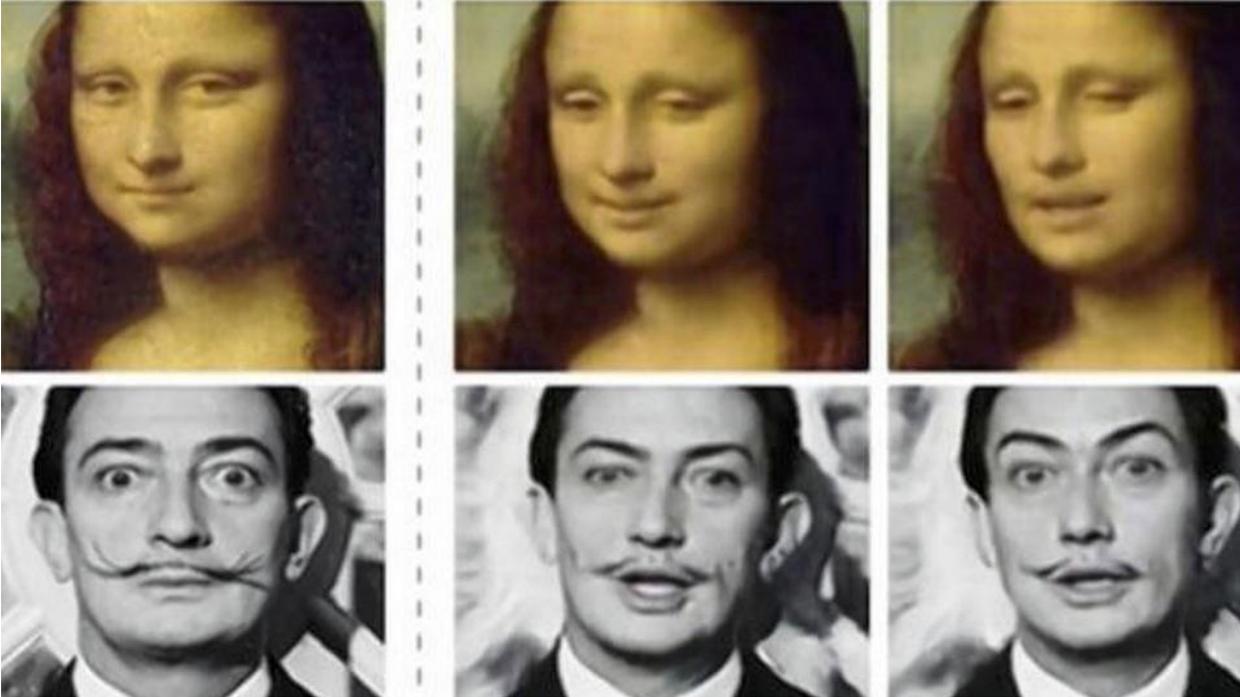
¹⁰ JPEG.org.

¹¹ <https://jpeg.org/jpegfakemedia/index.html>.

¹² <https://www.ipc.on.ca/wp-content/uploads/resources/7foundationalprinciples.pdf>.

¹³ <https://deepfakesweb.com/>.

Altering media such as documents, photos and videos for fun and profit is not new. The Profession’s reliance on media, however, on a more rapid basis, for more uses, has to grow. Remote interactions, continuous monitoring and the future of the audit rely on automated (and selective manual) assessment of more types of media. The advances in deepfake technology (or more positive AI-driven manipulations) are jumping forward, and the profession should work with the business reporting supply chain and audit community to consider the potential risks and work to remediate them. One way is to actively engage with the JPEG committee in its deliberations.



Corporate Reporting: Quo Vadis?

Paradigm Shifts Shaping the Future of Corporate Reporting: Purpose, Accountability, Value and Sustainability

By Alan Willis, FCPA, FCA

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Purpose, Accountability, Value and Sustainability

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Published by

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The Magazine for Financial Professionals

This is a unique new monograph by Alan Willis, notable authority on ESG and Sustainability Reporting, which of late is merging with traditional corporate reporting. It brings us up to date on the latest developments in Sustainability Corporate Reporting Standards and suggests future directions in the corporate reporting landscape. A must read for anyone interested in these areas.

"....who else could produce such a sweeping, incisive history of non-financial reporting spanning the last three decades? The publication offers a powerful reminder of how far we've come. Your narrative is accessible, engaging and authoritative."

- Dr. Allen White, Co-founder and former CEO, Global Reporting Initiative

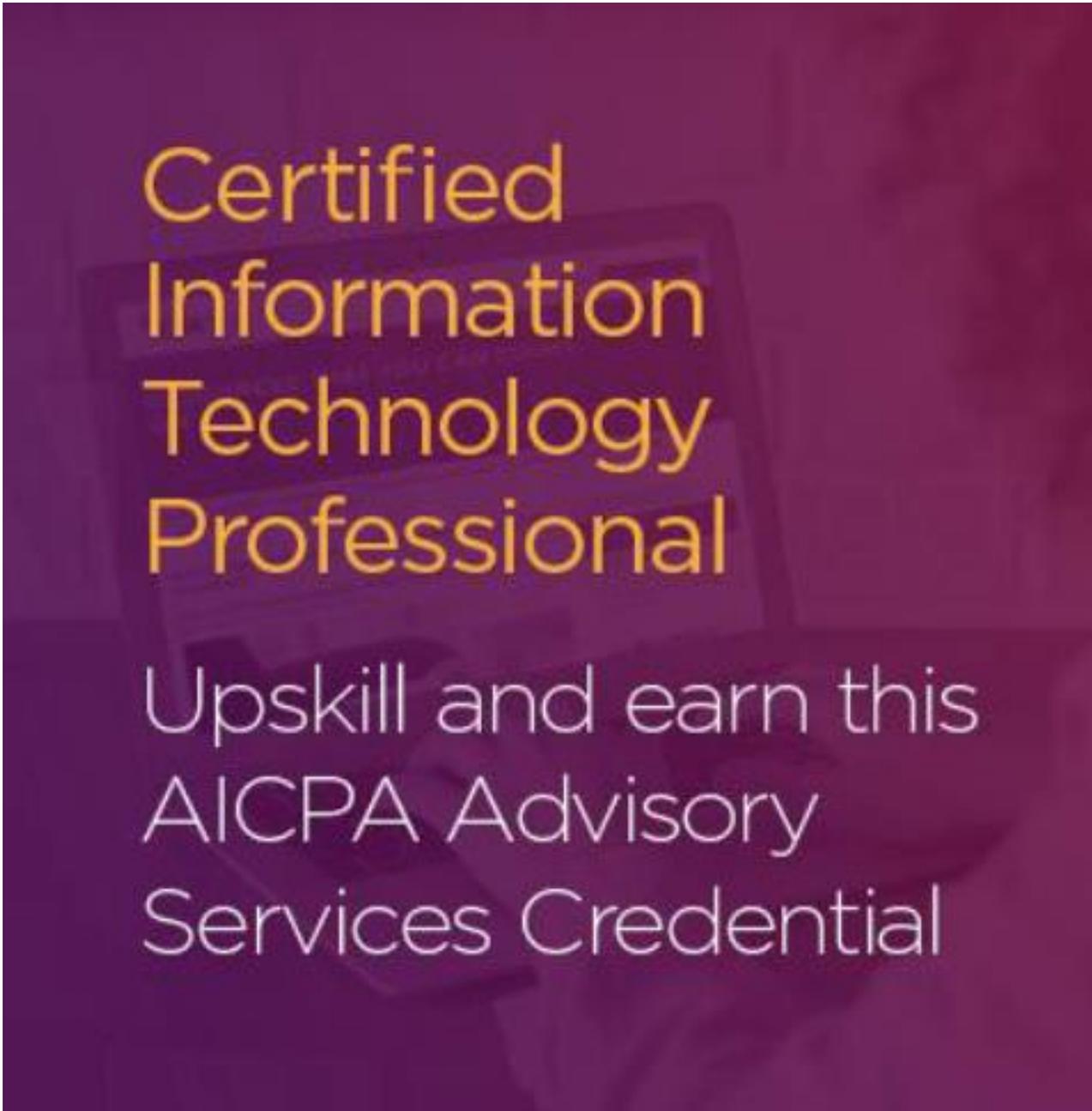
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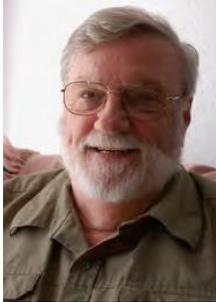
A person is shown from the chest up, sitting at a desk. They are wearing a dark jacket and are looking at a laptop screen. A tablet is also visible on the desk in front of them. The background is a blurred office setting. The entire image has a dark purple overlay.

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Internal Controls for Sustainability Reporting Using COSO

By Gerald Trites, FCA, FCPA, CISA, Editor-in-Chief



Jerry is a CPA with a history of editing, writing and publishing. Most recently he served as Managing Editor of The Antigonish Review, a literary journal with international circulation. He also worked as a partner in KPMG, and as a Professor of Accounting and Information Systems at a Canadian university, where he served as Director of the Schwartz School of Business. He also served for 12 years as Director of XBRL Canada.

With the recent rapid changes taking place, corporate reporting – which was once focused on financial reporting – is now in process of incorporating sustainability reporting, which includes environmental, social and governance matters. While companies had long reported on sustainability, it was focused on informing the general public rather than on investors and their needs. A cynic would say it was often focused on public relations. The move to reporting on sustainability matters of concern to investors was a major shift and was supported by regulators such as the SEC. This is likely to lead to the next step – integrated reporting, under which financial and sustainability reporting are combined and events and issues reported with a full coverage of their implications for both fields of reporting, a product of integrated thinking, that companies are being encouraged to embrace.

Bring in the Auditors?

While not yet required, another next step would be to have the new reports accompanied by assurance reports, either audited or with lesser levels of assurance. Standards need to be developed for this stage to be reached. As well, internal controls over sustainability reporting need to be defined and implemented before assurance can be provided.

Internal controls have long been a requirement for protecting and preserving the integrity and quality of business information. Initially, their chief application was for numerical financial information but, gradually, they increased in scope to include narrative information because there is a lot of narrative in financial reporting, particularly in notes to the financial statements and documents such as the MD&A.

More recently, large companies listed with the SEC have been required to report on the controls in place over their financial reporting process. They are also required to obtain an audit opinion on these controls. And so, the idea of controls over financial reporting has become a very important subset of internal controls generally.

While the advent of assurance on sustainability information may be a few years away, good internal controls are essential to the provision of high-quality, reliable information. So, companies are seeking ways to develop internal controls over sustainability information.

Traditionally, internal controls over financial reporting have been managed in the corporate finance area. At the same time, sustainability reporting has largely been organized under a company's PR and Admin areas. That meant that companies wanting to develop good reliable sustainability information have been looking to bring together their various departments to capitalize on the established expertise that finance has built in developing and administering relevant internal controls.

The move to reporting on sustainability matters of concern to investors was a major shift and was supported by regulators such as the SEC.

COSO Gets Involved

The most common set of standards used for establishing and reporting on internal controls was that issued by The Committee of Sponsoring Organizations of the Treadway Commission (COSO), which published its Internal Control—Integrated Framework (the Framework) in 1992 to provide guidance on the controls appropriate for (mostly) financial reporting. It was then updated and expanded in 2013 to include certain guiding principles.

In the 2013 expansion, the committee said “The Framework has been enhanced by expanding the financial reporting category of objectives to include other important forms of reporting, such as non-financial and internal reporting.” In the view of many people, this reference to non-financial opened the door for sustainability reporting.

The COSO framework sets out internal control objectives in three categories:

- a. **Operations** objectives, which include performance goals and security over company assets, and focus on the effectiveness and efficiency of business operations.
- b. **Reporting** objectives related to both internal and external financial and non - financial reporting, and focus on transparency, timeliness and reliability of the organization's reporting processes.
- c. **Compliance** objectives, which focus on adherence to laws and regulations with which the organization must comply.

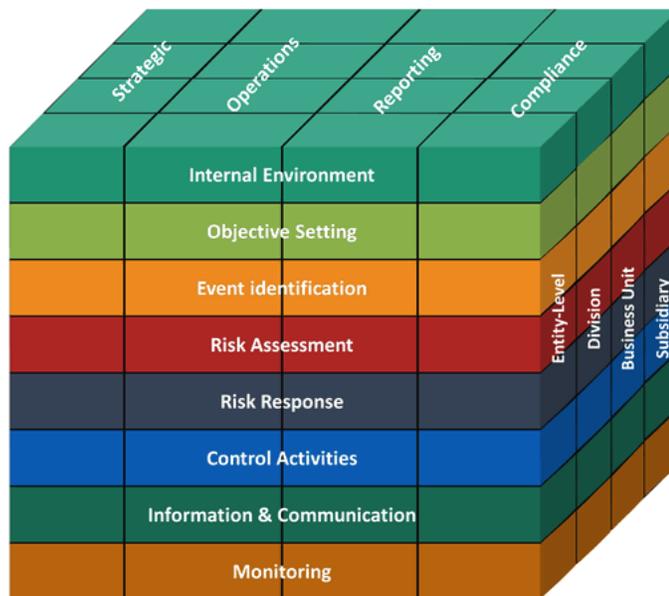
The framework sets out five components to an internal control system, as follows:

1. **Control environment:** the “set of standards, processes, and structures that provide the basis for carrying out internal controls across the organization.” This component includes: Ethical values, Organizational structure, Commitment to employing competent employees and Human resources policies.
2. **Risk assessment:** the organization's analysis of the risks posed by internal and external changes, the ability to establish suitable objectives for the business and the process for weighing perceived risks against risk tolerances.

3. **Control activities:** the tasks and activities involved in operating the internal controls, including such actions as “authorizations, verifications, reconciliations, and business performance reviews.”
4. **Information and communication:** relevant and high-quality information to control functions. These include internal messages emphasizing the importance of control responsibilities, and external messages providing clear communication of expectations with external parties.
5. **Monitoring:** ongoing evaluations of internal controls built into business processes, as well as regular separate evaluations, which will vary based on level of risk, system effectiveness and regulatory requirements.

These objectives and components are illustrated in the COSO Cube included in the Framework, which is shown below. It also illustrates various organizational levels at which the Framework can be implemented.

COSO (CUBE) FRAMEWORK



Application of COSO to Sustainability Reporting

For several years, a great many companies have produced ESG (Environmental, Social and Governance) Reports. In those reports, companies provide information on the impact their activities are having on the environment and the steps they are taking to reduce their negative impact. Mitigative activities, such as reforestation, carbon emissions control and water discharge control, are often featured. The negative impacts are often downplayed.

In more recent standards, the emphasis has shifted to the idea of value creation. For example, “The SASB defines sustainability in the broader context of an organization’s capacity and capability for longer-term value creation across a variety of dimensions, including:

- Environment
- Social capital
- Human capital
- Business model and innovation
- Leadership and governance”¹

As can be seen, not only did modern standards shift to value creation, the SASB also expanded the scope of ESG reporting to include human capital separately, as well as the business model and innovation idea. Arguably, these additional items would have been included in ESG anyway, but the SASB standards do add additional focus on them.

The SASB defines sustainability in the broader context of an organization’s capacity and capability for longer-term value creation across a variety of dimensions.

When one applies COSO to sustainability reporting, recognizing that COSO has largely been used for financial reporting, it is necessary to consider how sustainability reporting differs from financial reporting. Sustainability reporting has several characteristics that are different from financial reporting. Here are a few:

1. The subject matter of the two types of reporting is very different. Financial reporting centers around the traditional financial statements and measures of financial operating results and financial position. Sustainability reporting includes the type of reporting mentioned above – environmental matters, etc.
2. Financial reporting has been the core of reporting to investors and creditors for centuries. Sustainability reporting has existed only for a few decades, and has not traditionally been directed to investors,
3. Financial reporting is primarily numbers based, although the amount of text included in it has grown tremendously in recent years. Sustainability reporting has been largely text, with the use of some metrics. The new emerging standards will encourage the use of more metrics.
4. Financial reporting includes some future-oriented information. Sustainability reporting often includes much more.
5. Financial information is generated from relatively closed and well-established systems with built-in controls. Sustainability information comes from a variety of sources, often with little or no controls built in.

In applying COSO to sustainability reporting, all the COSO objectives would apply. The five components would need to be addressed in the context of the sustainability information streams, which would need to be identified and documented.

¹ Robert H. Herz, Brad J. Monterio and Jeffrey C. Thomson, *Leveraging the COSO Internal Control—Integrated Framework to Improve Confidence in Sustainability Performance Data*, September 2017.



The **Control environment** can be evaluated by reviewing the ethical values, organizational structure, commitment to employing competent employees and human resources policies. Since the control environment for sustainability is not as well established and rigorous, areas for enhancement should be identified and acted upon. **Risk assessment** involves identifying what the risks are and what the tolerance for misstatement would be for the company. In financial reporting, materiality plays an important role in

assessing potential misstatements. Relatively concrete guidelines exist for measuring materiality, such as percentage of net income. For sustainability reporting, because the information is largely non-numerical, such guidelines are not available. The general definition of materiality has, however, always been based on the idea that any misstatement is material if it is likely to influence the decisions of the readers. That same basis would apply to sustainability. But the measurement is more judgmental.

When reporting evolves into integrated reporting, the integration of finance and the relevant non-financial areas will be more complete.

It is in the area of **Control activities** where the most active change needs to take place to apply COSO to sustainability reporting. Actions such as authorizations, verifications, reconciliations and business performance reviews would need to be specifically applied to the identified sustainability information streams. In addition, under the **Information and communication** category, relevant and high-quality information would be directed to control functions, including internal messages emphasizing the importance of control responsibilities, and external messages providing clear communication of expectations with external parties. As with financial controls, **Monitoring**, including evaluations of internal controls built into business processes, is critical for the ongoing effectiveness of controls.

Application of COSO to Integrated Reporting

“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

² *The Role of Internal Audit in Non-financial and Integrated Reporting* (London: Chartered Institute of Internal Auditors), July, 2015.

When reporting evolves into integrated reporting, the integration of finance and the relevant non-financial areas will be more complete. Essentially, the concept of integrated thinking will, if successfully implemented, strive to ensure that all of an organization's efforts to create value will be taken into account in reporting, not just financial value.

Introduction of integrated reporting adds additional focus to applying COSO to financial and sustainability reporting processes because the two sets of processes would be expected to become much more integrated. Along with this level of integration is the idea of integrated thinking, which involves considering all of a company's activities in terms of how they have an impact on its sustainability as well as financial welfare. For example, if a company establishes a factory on the shore of a bay, it would report on the costs of establishing and running the new facility as well as its financial results, but it would also report on the impact of the new factory on the atmosphere, the water and the soil. It would report on matters such as ocean levels and their expected impact on the factory, as this is indeed the essence of sustainability. No more would they report on the financial impacts in one place and the other impacts in another report located someplace else.



Combining Controls and Information Flows

The idea of combining controls and information flows on an integrated basis poses new issues. The objectives of the controls would be restructured to reflect all the various value indicators. But the implementation of controls is always influenced by the nature of the information flows being managed. As previously noted, the information flows for sustainability information tends to be much more often in narrative form than financial information flows. This poses a problem in that narrative is notoriously difficult to work with.

Many people feel that bringing together these flows would be expedited by having them done on a structured basis, such as by using XBRL.

At the reporting level, the US Securities and Exchange Commission (SEC) recently provided support for this idea. At a recent open meeting, the (SEC) put forward landmark new rules on mandatory climate-related disclosures, in proposals described by SEC Chair Gary Gensler as “driven by the needs of investors and issuers.” XBRL US noted that “we are pleased to see that (as expected) these new disclosures would need to be tagged in a structured, machine-

readable data language – namely [Inline XBRL](#).” The digital tagging requirement would extend not only to quantitative facts but also narrative disclosures.³

A study by EY found that, while two-thirds of global investors evaluate non-financial disclosures, only half of this group use a structured process to make their assessments.⁴ With integrated reporting, it is much more feasible to use structured techniques.

There is much work to be done before the use of XBRL can be a reality for disclosures on an integrated basis. While taxonomies exist for financial reporting, and some for sustainability reporting, there are none that are fully integrated. *Ad hoc* solutions are possible, but comparability and quality require that the taxonomies be developed through rigorous programs by recognized bodies. The SEC and FASB need to work together as do EFRAG, ISSB and others for Europe. Other parts of the world have similar issues. So, the road to full integration of structured data may be a long one.

In the meantime, COSO is adaptable to controls over integrated reporting because it has long been used for financial and non-financial reporting and, as a working vehicle for establishing and monitoring controls, should stand up very well.

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⁴ Tomorrow’s investment rules – global survey of institutional investors on non-financial performance, EY, 2014.

Twenty-First Century Corporate Reporting: Effective Use of Technology and the Internet

How and why do corporations use the internet for reporting to their stakeholders? How and why has corporate reporting extended beyond financial reporting to include environmental, social, and governance (ESG) reporting and even integrated reporting. The major drivers of modern reporting have changed, to include data driven decision making, big data, and advanced analytics, as well as the use of electronic representations of data with tools such as XBRL.

Here we explore the various vehicles for using the internet, including social media and blogs as well as corporate websites and the websites of regulators. And we delve into the impact of portable devices, like smartphones and tablets.

Corporate reporting on the internet is changing fast because of changes in technology and stakeholder expectations. Companies are having a hard time keeping up. This book offers a roadmap to follow—a roadmap to start on now. Most importantly, the book lays out a strong case for integrated reporting and shows how reporting on the internet is ideally suited to the creation of integrated reports.

This book is of interest to executives in charge of the reporting function for their companies, students of accounting and management, and to serious investors and others with a strong interest in corporate reporting and the direction in which it is headed.



Gerald Trites is a CPA with a history of writing and publishing and a unique background. He was a partner in KPMG for seventeen years, and a tenured professor of accounting and information systems for ten. He also served for twelve years as director of XBRL Canada. He has published twelve books and numerous articles and papers. He worked as a research associate for the Canadian Institute of Chartered Accountants and served as chair of the Auditing Standards Board. He currently serves as editor-in-chief of ThinkTWENTY20 magazine, a publication he started in 2019 with the objective of publishing well-researched articles of substance.

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