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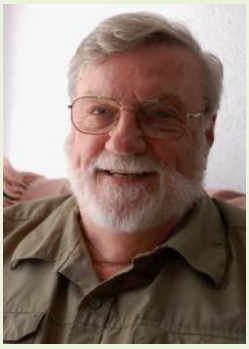

Gerald Trites, FCPA, FCA, CISA
Editor-in-Chief

A lot has been happening these past few months. Paramount among the events of note was the release of the first two standards of the International Sustainability Standards Board (ISSB). These new standards represent a major new international initiative to bring better consistency and reliability to sustainability reporting. They, and the standards to follow, will have a massive impact on corporate reporting. We asked Alan Willis, a frequent contributor, and a globally recognized expert on sustainability reporting, to write an article for us on the new ISSB standards. He came through with a thorough treatise on the subject, which is included in this issue.

These new standards focus on standards for disclosures about sustainability issues that, now or in future, may have material financial implications. Because of their proximity to financial reporting, they have raised the level of interest in the question of assurance on sustainability information. So, we also approached some partners of KPMG to write on this subject and they came through with a fine article which is featured in this issue. It's the quality content provided by top level professionals such as these that make us proud to be associated with this magazine. Somewhat relevant to sustainability reporting and assurance is the topic of Gregory Shields' article on continuous automated external reporting and audit of KPIs, since KPIs are so critical to that field of reporting.

Finally, the new generative AI is continuing to rock the profession and the world and Eric Cohen has contributed a short but incisive blog entry on this topic.

And last but certainly not least, Our Managing Editor, Gundi Jeffrey, has provided an interview article to address how AI is affecting the assurance engagements of two of the profession's prominent firms. This is also a topic of growing and pervasive interest to us all. /GDT

The Journey to ESG Assurance

By Bill Murphy, Prachi Patel and Dave Power

Bill Murphy is the founder of KPMG Canada's ESG Practice. He has over 40 years of experience serving major corporations and financial institutions in the fields of governance, finance, risk and sustainability as an advisor and assurance provider, and is a recognized thought leader in these subjects.

Prachi Patel is a Manager in KPMG Canada's Accounting Advisory Services (AAS) Practice, with experience delivering various types of financial and non-financial engagements including assurance readiness, limited assurance, and reasonable assurance. Prachi works with clients in multiple industries under various ESG reporting frameworks.

Dave Power is an audit partner at KPMG in Canada serving clients in the Consumer and Industrial markets sectors, and is KPMG's ESG Assurance Leader in the Greater Toronto Area. Dave works closely with his clients to develop audit and assurance plans aligned with corporate reporting objectives and regulatory requirements, sharing leading practices on the implementation of accounting and ESG regulatory changes.

The ESG (Environmental, Social, and Governance) reporting landscape is rapidly evolving. Stakeholders and organizations see the value in aligning financial and sustainability reporting. Aligned disclosures will allow for better decision making by investors and other stakeholders. Sustainability and climate reports, the mechanisms through which sustainability information is currently communicated to stakeholders, not only allow investors to make better current state assessments, but also better understand the potential impact of ESG risks and opportunities on an organization's financial position, results and cash flows in the short, medium and longer terms.

More than 96% of the G250 – the 250 largest companies globally by revenue based on Fortune 500 rankings – report on sustainability.[1] This trend is expected to expand to include most businesses, driven by significant incoming standards and regulations.

Despite a stated objective of convergence, standard setters and regulators around the world are continually adding to the alphabet soup of ESG disclosure requirements that have been released or proposed. These include the Taskforce on Climate-related Financial Disclosures (TCFD) Recommendations, the International Sustainability Standards Board (ISSB) disclosure standards S1 and S2, the European Sustainability Reporting Standards (ESRS), the Canadian Office of the Superintendent of Financial Institutions (OSFI) Guideline B-15, the Canadian Securities Administrators' Climate Disclosure Proposal and the U.S. SEC's Climate Disclosure Proposal. These standards and regulations, many of which will have effective dates

[1] Big shifts, small steps (kpmg.com).

commencing as early as 2024, are likely to have a significant impact on a company's reporting burden, depending on its jurisdictions of operation.

The Demand Is Growing

Investors are now demanding that companies disclose consistent, comparable and verifiable ESG information. Gone are the days of marketing-oriented sustainability reports. Concerns about corporate 'greenwashing' have become so prevalent that, on November 3, 2022, the Canadian Securities Administrators published CSA Staff Notice 51-364 – *Continuous Disclosure Review Program Activities for the fiscal years ended March 31, 2022 and March 31, 2021*. In the notice the CSA stated:

> "We have observed an increase in issuers making potentially misleading, unsubstantiated or otherwise incomplete claims about business operations or the sustainability of a product or service being offered, conveying a false impression commonly referred to as 'greenwashing'."[2]

This observation is not limited to CSA-regulated companies but has also been observed globally.

To achieve the objectives of consistency, comparability and verifiability, third-party assurance over a company's sustainability reporting will often be necessary; it is already a requirement with ESRS in the EU, and is expected to be required in certain jurisdictions that adopt the ISSB disclosures standards as well as in the SEC's final regulations expected later in 2023.

To serve the public interest, assurance over sustainability reporting needs to be of the same high quality as is applied to financial reporting.

Introduction to Assurance Standards

Assurance over ESG disclosures has already been voluntarily adopted by many of the world's largest companies. The KPMG Survey of Sustainability Reporting 2022 found that 63% of the G250 companies obtained some form of independent external assurance over sustainability reporting information. Similarly, the International Federation of Accountants (IFAC)'s recent study of 1,350 companies in 15 jurisdictions found that, in 2021, 64% were obtaining assurance over at least some of their ESG information; in 57% of these cases, the assurance was obtained from an audit or audit-affiliated firm (70% of these used their statutory auditors).[3]

The era of mandatory assurance over ESG disclosures is coming, and the EU provides a live example of how assurance mandates can be applied by a phased-in approach through 2028 – moving from limited assurance to reasonable assurance. We expect that some jurisdictions and regulators that adopt the ISSB standards will require assurance over disclosures for public-interest entities (generally those listed on stock exchanges), although it remains uncertain whether that assurance will be at the limited or reasonable level. The SEC's initial 2022 proposal[4] included a requirement for assurance over Scope 1 and Scope 2 greenhouse gas (GHG) emissions disclosures.

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[2] https://www.osc.ca/sites/default/files/2022-11/csa_20221103_51-364_continuous-disclosure-review.pdf.

[3] High-quality ESG reporting depends on high-quality assu - KPMG Global.

[4] Proposed Rule: The Enhancement and Standardization of Climate-Related Disclosures for Investors (sec.gov).

To serve the public interest, assurance over sustainability reporting needs to be of the same high quality as is applied to financial reporting. Standards governing assurance engagements are in a state of evolution. Standards used today, for example, International Standard on Assurance Engagements (ISAE – Canadian equivalent "CSAE") 3000 *Attestation engagements other than audits or reviews of historical financial information*, were designed to govern all assurance engagements, not specifically those related to ESG.

In June 2023, the International Auditing and Assurance Standards Board (IAASB), recognizing this limitation in ISAE 3000, approved a draft for consultation of International Standard on Sustainability Assurance (ISSA) 5000 *General requirements for sustainability assurance engagements*. This standard is designed to be a "comprehensive, stand-alone standard suitable for limited and reasonable sustainability assurance engagements [that] will apply to sustainability information reported across any sustainability topic and prepared under multiple frameworks."[5]

Some individual jurisdictions are mirroring the IAASB's initiative, such as Canada's Auditing and Accounting Standards Board (AASB), which has approved a project to adopt ISSA 5000 concurrently in Canada as CSSA 5000.[6] Approval of the final ISSA 5000 standard is anticipated in September 2024.[7]

To ensure that assurance remains relevant to sustainability reporting in advance of adoption of ISSA 5000, guidance has been provided to bridge the gap. In 2020, IAASB and AASB released Non-Authoritative Guidance on Applying ISAE/CSAE 3000 to Sustainability and Other Extended External Reporting (EER) Assurance Engagements. According to the Internal Federation of Accountants (IFAC), the EER guidance "help[s] assurance practitioners apply the Standard in sustainability-related and integrated reporting engagements (among other extended external reporting)."[8] These developments should further increase stakeholder confidence in the relevance and reliability of assurance reports over non-financial information.

Who should be providing assurance?

There are various views on who is best placed to provide assurance, and currently there exists no uniform approach. Over time, sustainability assurance providers will need the same deep understanding of a company's business processes required for financial audits if they are to play their part in bringing sustainability-related information to the same quality as financial information. Without that, the assurance can be essentially limited to metric verification.[9]

Under the evolving reporting ecosystem, sustainability and financial information is expected to be increasingly integrated – in fact, often drawing from the same systems and processes, subject to similar internal controls, and with oversight by the same bodies charged with

[5] Proposed International Standard on Sustainability Assurance 5000 Approved for Public Consultation by Unanimous Vote | IAASB.
[6] Sustainability Assurance (frascanada.ca).
[7] Sustainability Assurance | IAASB.
[8] https://www.ifac.org/knowledge-gateway/supporting-international-standards/publications/using-isae-3000-revised-sustainability-assurance-engagements.
[9] High-quality ESG reporting depends on high-quality assurance - KPMG Global.

governance. ESG and sustainability information will increasingly need to be managed on a formal, structured basis, in contrast to today where much of it is aggregated through informal and unstructured approaches such as spreadsheets and emails. Assurance over sustainability reporting and financial statements will ultimately need to be of the same exacting quality – something that the audit profession is well-placed to provide.[9]

Benefits for companies to use their statutory auditors for ESG assurance include avoiding duplication of testing of the controls, processes and systems used in ESG reporting that are already known to the financial statement auditor. Ensuring that an established profession is responsible for assurance over both forms of reporting, working to globally consistent standards and under a robust system of oversight and inspections, will limit the risk of greenwashing.[10]

There is no one-size-fits-all solution, as many organizations are at different stages of the journey.

Given the growing need for diverse skills to support assurance over a wide range of ESG subject matters (e.g., from climate change to human rights to supply chain risk management), there will clearly be an important role for subject matter specialists to work in conjunction with traditional auditors in applying the above assurance standards.

Getting Ready for Reporting

Given that the ESG reporting and assurance ecosystems are rapidly evolving, organizations are now addressing the changes required to be compliant with the upcoming frameworks and regulations. The extent of preparation is, however, not as far along in many cases as it could be, as reflected in the following survey results:

Results of a KPMG survey of 246 financial reporting executives from companies representing a broad cross-section of industries and revenues, including both public and private organizations[11]

[10] High-quality ESG reporting depends on high-quality assurance - KPMG Global.
[11] 22122-esg-reporting-final.pdf (kpmg.us).

Source: 22122-esg-reporting-final.pdf (kpmg.us)

The above companies were surveyed by KPMG in the United States to identify the extent to which each had an established ESG reporting strategy. The responses were widely distributed, with only 30% of the companies having a well-established strategy. Of those surveyed, 57% noted that their companies faced challenges in capacity and expertise of resources, while 48% of those surveyed noted challenges presented by the expanding range of ESG reporting frameworks and standards.

The journey to ESG reporting and assurance maturity is a multi-activity process. There is no one-size-fits-all solution, as many organizations are at different stages of the journey and each organization has its own unique challenges. KPMG has worked closely with many organizations to lead them through a structured approach to ESG reporting maturity, covering six key activities:

- **Establish** – Understand and define ESG reporting objectives and requirements, and establish ESG governance structure and leadership.
- **Assess** – Assess the current state of ESG reporting processes, controls and technology enablement.

- **Design** – Develop a target state operating model, including processes and controls, people and culture, service delivery model, technology and data to meet anticipated ESG disclosure requirements.
- **Implement** – Apply effective project and change management principles to implement the target state operating model and publish ESG disclosures in line with relevant requirements and leading practices.
- **Sustain** – Continuously monitor external ESG regulatory developments and assess ongoing operating effectiveness of controls.
  Assure – Obtain an external assessment of readiness for assurance in the year before assurance will begin, and implement the assessment's recommendations in preparation for future assurance over ESG metrics and narratives.

ESG Reporting Frameworks: A Closer Look

We take a closer look below at certain of the leading frameworks that currently exist or are planned for release later this year. While there is an element of convergence around the TCFD Recommendations in these frameworks and standards, each has its own unique requirements that need to be carefully analyzed.

TCFD

The TCFD was established to help capital markets understand the opportunities, impacts and risks associated with climate change. The TCFD released its Final Report: Recommendations of the Task Force on Climate-Related Financial Disclosures in June 2017. This report set out 11 recommendations across four pillars: (i) governance; (ii) strategy; (iii) risk management; and (iv) metrics and targets.

ISSB

The ISSB published its first two standards on June 26, 2023:

- IFRS S1 *General Requirements for Disclosure of Sustainability-related Financial Information*
- IFRS S2 *Climate-related Disclosures*

IFRS S1 builds on the TCFD pillars discussed above and is a general sustainability disclosure standard. IFRS S2 provides specific guidance on climate-related risks and opportunities. The ISSB is expected to release further standards for other ESG-related topics, but organizations should apply IFRS S1 concepts to report on other ESG topics in the meantime.[12] The effective date for the S1 and S2 standards is January 1, 2024, but adoption and related timelines will be influenced by local jurisdictions. Canada is in the process of establishing a Canadian Sustainability Standards Board, which will recommend national timelines. Note that these standards will become fully mandatory only if incorporated within laws and regulations.

[12] ISSB Standards are now live! - KPMG Global.

OSFI

OSFI released Guideline B-15: Climate Risk Management in March 2023, establishing expectations related to a federally regulated financial institution's management and related disclosures of climate-related risks.[13]

CSRD

The European Corporate Sustainability Reporting Directive (CSRD) has been effective since January 2023. Currently under development are the European Sustainability Reporting Standards (ESRS), which follow the guidelines set out in the CSRD. CSRD is planning to publish 12 ESRS. Although ESRS 2 is currently the only standard that is mandatory, organizations will be required to perform a materiality assessment to determine if they need to disclose under the other 11 standards. The ESRS are expected to be adopted by August 2023, with the effective date for the first phase of in-scope entities being January 1, 2024.[14]

CSA Climate Disclosure Proposal

The original draft CSA disclosure proposal[15] was released in October 2021. CSA staff intend to conduct further consultations to adopt disclosure standards based on the ISSB Standards, with modifications considered necessary and appropriate in the Canadian context. A further market update from the CSA will follow in the coming months.

SEC Climate Disclosure Proposal

The original draft SEC climate disclosure proposal[16] was released in March 2022, and was considerably more onerous than the original CSA proposal. A revised proposal is expected later in 2023, with the U.S. political and litigation environment likely to have an impact on the extent of modifications made to the original proposal. Canadian SEC registrants currently exempt from SEC disclosure requirements under the Multijurisdictional Disclosure System (MJDS) are monitoring the CSA and SEC developments closely, to ensure that the MJDS exemption will apply to climate disclosures.

Affected and interested parties of the standards want them to be scalable, clear and concise, relevant to current and future needs and issues, and easy to implement consistently.

GHG Emissions Reporting

The ISSB, CSRD, CSA, SEC and OSFI B-15 will all require organizations to report on some combination of Scope 1, 2, and 3 GHG emissions. Although many organizations are reporting or beginning to report on Scope 1 and 2 emissions related to their own operations, it is much more challenging for organizations to collect, aggregate and report on Scope 3 emissions, which represent indirect emissions from across an organization's value chain.[17] There are 15

[13] https://www.osfi-bsif.gc.ca/Eng/Docs/b15-dft.pdf.
[14] https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2022/07/talkbook-get-ready-for-esrs.pdf.
[15] Canadian securities regulators seek comment on climate-related disclosure requirements - Canadian Securities Administrators (securities-administrators.ca).
[16] Proposed Rule: The Enhancement and Standardization of Climate-Related Disclosures for Investors (sec.gov).
[17] https://kpmg.com/xx/en/home/insights/2022/12/issb-ghg-scope3-emissions.html.

categories of Scope 3 emissions for various upstream and downstream activities undertaken by an organization's suppliers, customers and investees. As a result, many of the reporting standards discussed above take a phased approach to requiring Scope 3 reporting.

Assurance Standards: A Closer Look

The IAASB and AASB's development of ISSA/CSSA 5000 is a major step toward ensuring that assurance over sustainability metrics provides the same value to the capital markets that today's auditor's financial statement opinions. Specifically, ISSA 5000 is intended to be:

- Responsive to the public interest need for a timely standard that supports the consistent performance of quality sustainability assurance engagements.
- Suitable across all sustainability topics and information disclosed about those topics, under multiple reporting frameworks.
- Implementable by all assurance practitioners (i.e., professional accountants and other professionals performing assurance engagements).[18]

Affected and interested parties of the standards want them to be scalable, clear and concise, relevant to current and future needs and issues, and easy to implement consistently across the globe.[19] The ISSA 5000 scope will be comprehensive to allow for ease of adoption and execution, addressing, among other topics:

- Facets of sustainability disclosures.
- Reporting boundaries.
- Information that will be required to be assured.
- Applicable standards.

More specifically, we expect that ISSA 5000 will provide clarity on areas such as the level of work required for a limited versus reasonable assurance engagement, the applicable reporting areas, scope of work, the type of evidence needed for assurance, internal controls, and materiality. This will allow for consistency in the application of these standards when performing assurance engagements and help strengthen the credibility of ESG assurance reports.

Many organizations are already obtaining assurance over their climate and/or sustainability reports. While ISSA and CSSA 5000 are in their developmental stages, assurance providers are currently applying ISAE/CSAE 3000, *Attestation Engagements Other than Audits or Review of Historical Financial Information* when performing these types of engagements. To bridge the gap until ISSA/CSSA 5000 is adopted, the IAASB's and AASB's Non-Authoritative Guidance on Applying ISAE/CSAE 3000 to Sustainability and Other EER Assurance Engagements provides a useful resource for assurance providers, including:

- Engagement acceptance considerations (e.g., team competence and capabilities, determining preconditions).
- Assessing a company's reporting parameters (process to identify reporting topics, determining the suitability and availability of criteria).
- Processes and controls.

[18] https://www.iaasb.org/consultations-projects/sustainability-assurance.
[19] https://www.iaasb.org/consultations-projects/sustainability-assurance.

- Assertions, audit evidence and quality of information.
- Addressing future oriented EER information.
- Completion and communication matters (materiality of misstatements, assurance reporting).[20]

Financial statement audit considerations

Separate from ESG reporting and assurance is the need for companies and auditors to consider the impact of ESG and climate-related risks in preparing and auditing the financial statements. These considerations will further increase in visibility when ESG reporting is released at the same time as the financial statements, which is a requirement of the final and proposed climate disclosure standards under the EU, ISSB and SEC.

The IAASB's Staff Audit Practice Alert, *The Consideration of Climate-related Risks in an Audit of Financial Statements,* issued in October 2020, reminds management that it is tasked with considering the importance of climate-related risks to investor decision making when preparing the financial statements, in addition to its reporting in other documents such as sustainability reports.[21] Such risks could include, for example, impairment of assets that will need to be replaced or upgraded to meet emissions legislation or ESG commitments the entity has made that rise to the level of provisions to be recorded. Similarly, auditors need to consider and ensure that the accounts under audit reflect appropriate amounts and disclosures, including appropriateness of estimates and completeness of provisions, which may be required to be made in relation to the impacts of climate risks on an organization.[22]

The Road Ahead[23]

As we have discussed throughout this article, it is clear that the evolution towards assurance over ESG reporting is in full swing. As jurisdictions and regulators increasingly require assurance over this information, companies will need to prepare. There are actions for every organization to take to get ready for mandatory assurance, from those that have yet to report on ESG information to those that have already been obtaining some form of ESG assurance voluntarily.

Where companies are only starting on their ESG reporting and assurance journey, involving your advisors and assurance providers in the six key activity areas previously highlighted will help ensure all parties are aligned on the determination of metrics to be reported, the processes and controls to measure and report these metrics, and the evidence that will be acceptable as support for assurance. Performing an assurance readiness assessment during the year before formal assurance is planned will identify potential gaps and help set up the organization for success.

Given the pace of change in ESG reporting and assurance requirements, and these requirements gaining equal importance to financial reporting, the time to take action is now.

[20] Non-Authoritative Guidance on Applying ISAE 3000 (Revised) to Sustainability and Other Extended External Reporting Assurance Engagements | IAASB.
[21] The Consideration of Climate-Related Risks in an Audit of Financial Statements | IAASB.
[22] The Consideration of Climate-Related Risks in an Audit of Financial Statement | IAASB.
[23] 22122-esg-reporting-final.pdf (kpmg.us).

The ISSB Standards – June 2023: An Incomplete Guide to the Future of Sustainability Reporting

By Alan Willis, FCPA, FCA

Alan Willis, FCPA, FCA, a former partner in one of the Big Four accounting firms, has since 1991 been an independent researcher, writer and advisor on corporate reporting and performance measurement beyond the scope of financial statements alone, and the implications of such reporting for corporate governance, internal control and assurance. He became an early pioneer in the concept, development and practice of sustainability reporting and later of integrated reporting.

Landmark News Headline and Some Key Messages

Monday, June 26, 2023, marked a rare and unforgettable milestone – a landmark in the evolution of corporate financial reporting, comparable to the adoption of International Financial Reporting Standards (IFRS) for financial statements by the International Accounting Standards Board (IASB) in 2001, and the SEC's 1980 introduction of the MD&A (Management's Discussion and Analysis).

On June 26, 2023 the International Financial Reporting Standards Foundation's International Sustainability Standards Board (ISSB) published its first two standards: "IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information" and "IFRS S2 Climate Related Disclosures – achieved after less than two years' work by the ISSB, established in November, 2021. This is unprecedented speed in the world of financial standards setting!

Context

These two standards were developed in response to increasing calls, especially by investors, for a single global baseline of standards for reliable, comparable and timely disclosures about sustainability issues, risks and opportunities that affect or may in future affect a company's prospects – its cash flows, access to or cost of financial capital.

In June, the ISSB) published its first two standards – achieved after less than two years' work by the ISSB. This is unprecedented speed in the world of financial standards setting!

Over the last decade or more, large investors have increasingly sought decision-useful sustainability and climate change-related information in corporate financial reporting. Like companies as report preparers, investors as report users had been becoming increasingly frustrated by the alphabet soup of standards, guidelines and recommendations about a company's sustainability-related disclosures. The ISSB Standards are the response by the International Financial Reporting Standards Foundation (IFRS Foundation) to these calls for convergence among the leading sets of sustainability-related financial disclosure standards, guidelines and proposals,

each with distinct but sometimes overlapping objectives and features – a confusing and inefficient landscape for report users and prepares alike.[1]

Target Report Users

Unlike sustainability-related disclosures to stakeholders in general, many of whom are typically most interested in a company's current and anticipated future impacts on people and the planet, information disclosed in accordance with the requirements of IFRS S1 and S2 is specifically intended to be useful to primary users of a company's financial reporting package, along with its financial statements and other components such as the MD&A in the US and Canada. Such users are typically investors, as well as lenders and creditors, i.e., providers of financial capital (plus debt rating agencies and financial analysts).

Many well-meaning sustainability advocates appear not to realize that these standards DO NOT (and are not intended to) guide disclosures of interest to broader stakeholder categories or society in general about the current and likely future impacts on the planet and people caused by a company, its supply chain and its products or services. Since 2000, sustainability reporting of this type, already widespread among large public companies around the world, has been guided principally by the GRI Standards (originally GRI Sustainability Reporting Guidelines). These were never intended or designed to satisfy the particular decision-making information needs of investors. Indeed, typical sustainability reports – lengthy and laden with a wide range of detailed disclosures – are not investor-friendly in presenting the information most useful to primary users of financial reporting.

Mandatory, Not Voluntary

The IFRS S1 and S2 standards have not yet been officially adopted and made mandatory in any national or regional jurisdiction (e.g., by changes to company law, securities regulation or stock exchange listing rules), but they are designed to be followed by all public companies worldwide for sustainability-related financial disclosures that are expected will soon be required alongside the financial statements in a public company's annual financial reporting package. This is the package sent to shareholders and filed with capital market regulators or called for by stock exchange listing requirements.

Hitherto, any reporting by companies about sustainability and climate change has been largely voluntary (except in the EU, since the 2014 Non-Financial Reporting Directive[2]). But there has been increasing use by companies of the GRI Standards for sustainability reporting to stakeholders and society in general, and use of one or more sets of widely accepted investor-focused standards, guidelines or recommendations such as those of the SASB, the TCFD and the IIRC for the benefit of providers of financial capital. Such reporting has not been a component of periodic mandatory financial reporting; it has typically occurred separate from and at a much later date than publication of a company's financial statements. Therefore, even if subjected to some degree of external assurance, this reporting has not been subject to monitoring and enforcement by any regulatory authority (unless the reported information has been located in a company's MD&A).

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[1] The need for such convergence was foreseen in my summer 2019 article for *ThinkTWENTY20*, see https://thinktwenty20.com/docs/Enhancing_Relevance_IFAC.pdf.

[2] The NFRD is being replaced by the Corporate Sustainability Reporting Directive and accompanying disclosure standards, see https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en.

Get Started Now

A key message to all companies is to "get started now" in preparing to make the sustainability-related disclosures called for by IFRS S1 and S2 an integral part of their regular annual financial reporting package. For companies that are already regular sustainability and/or climate change reporters – especially those that already use the TCFD Recommendations – application of and compliance with the ISSB standards will be less challenging than for others that, for example, may not yet have well-established data collection systems and controls.

A recent consultancy blog recommended: "Organizations should begin evaluating their internal systems and processes for collecting, aggregating, and validating sustainability-related information across the company and its value chain. The priority should initially be on climate-related data and information, in particular the calculation and reporting of greenhouse gas (GHG) emissions. Given the IFRS Sustainability Standards are intended to be auditable, it is important that organizations invest time and resources to establish robust systems and controls to gather and report their climate-related metrics and targets."[3]

No Mention of ESG!

It's important not to delay or be distracted on account of all the current "noise" and push-back in jurisdictions like the US about the widespread but ill-defined acronym "ESG." This originated in 2004 in reference to three aspects of corporate performance deemed to be of special interest to investors, namely environmental and social performance and the quality of governance related thereto. But since ESG is not mentioned anywhere in IFRS S1 or S2, or in the several guidance sources referred to in the standards, it is not mentioned again in this article!

In short, the advent of global standards for mandatory financially-relevant sustainability disclosures expressly for the benefit of investors and other capital market actors alongside financial statements in annual corporate reporting is, by any measure, a landmark event.

The advent of global standards for mandatory financially-relevant sustainability disclosures expressly for the benefit of investors and other capital market actors is, by any measure, a landmark event.

About This Article

Since June 26, 2023, many summaries and commentaries on IFRS S1 and S2 have been published, especially by law firms, the major accounting firms and several consultancies and think-tanks.[4] This article does not attempt to duplicate this existing broad literature, but instead examines more closely the objectives of IFRS S1 and IFRS S2 and some key concepts and definitions in the standard, such as identification of sustainability-related risks and opportunities, materiality and material information, use of the TCFD four-pillar architecture for disclosure content requirements, how the standards are expected to become mandatory, interoperability and some other practical implementation requirements.

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[3] https://www.esgglobaladvisors.com/news-views/a-new-era-for-climate-governance-3-steps-boards-can-take-to-prepare-for-the-new-ifrs-sustainability-disclosure-standards/.

[4] The ISSB itself published a very informative and helpful Project Summary in June 2023, providing an overview of the requirements in both Standards. See https://www.ifrs.org/content/dam/ifrs/project/general-sustainability-related-disclosures/project-summary.pdf.

The article also flags two other important considerations, namely company oversight of ISSB-based disclosures in financial reporting (including audit committee review and CEO/CFO certifications), and data reliability, internal control and assurance implications.

"Get-ahead" Opportunities for a Beyond-Compliance Mindset

Finally, this article suggests that the required process for identifying sustainability-related risks and opportunities and reference to the guidance sources called for by the ISSB standards can, if executed with a creative, long-term, beyond-compliance mindset, lead to recognition of two significant opportunities to get ahead of the curve and the competition:

1. A company might identify ways to mitigate or eliminate some of its disclosable sustainability-related risks through actions to enhance its business model so as to reduce negative environmental and social impacts, and thus improve reputation, prospects and investor attractiveness - actions and innovations that might otherwise be overlooked.

2. A company might take pre-emptive actions that reduce adverse impacts on society and the environment (perhaps even lead to positive ones) in order to lessen the possibility that an environmental or social issue that today is not viewed as a material sustainability-related risk could become one tomorrow, perhaps due to new future regulation or tax measures. Such actions would no doubt also be beneficial to stakeholder relations and enhancement of "social license to operate."

These two opportunities represent a potential creative, competitive upside to what otherwise could be just a tedious, time-consuming compliance process.

Objectives of IFRS S1 and IFRS S2

At the outset, it is essential to understand the purpose of the ISSB standards – what they aim to achieve and what they do not. Yet, in the world of sustainability professionals, business executives, boards of directors and even perhaps some financial and accounting professionals, there is still some confusion about the objectives of these standards.

For example, they are not standards for measuring, assessing or reporting on a company's sustainability, whatever that might mean. They are not standards for measuring and reporting a

company's impacts on the planet and society – that is the realm of the GRI and its sustainability reporting standards. They are not standards for monetizing or quantifying and reporting a company's environmental or social externalities. They are not standards for forecasting or predicting future financial condition or the acceptability of future sustainability performance. And they are not standards applicable to financial statements – those are the IFRS issued by the IASB under the IFRS Foundation umbrella (or FASB's standards in the US).

The standards aim simply to enable a company to assess and report to stakeholders, in particular investors, on how environmental and social issues and risks, whether attributable to its own actions or to external causes, could impact future financial performance prospects and the financial condition portrayed in its financial statements – like an extension of what useful information in an MD&A aims to do.

The objectives of the first two ISSB Standards are reproduced in the box below:

> "The objective of IFRS S1, General Requirements for Disclosure of Sustainability-related Financial Information, is to require an entity to disclose information about its sustainability-related risks and opportunities that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity."
>
> "The objective of IFRS S2, Climate-related Disclosures, is to require an entity to disclose information about its climate-related risks and opportunities that is useful to primary users of general purpose financial reports in making decisions relating to providing resources to the entity."

IFRS S1 is basically an overarching standard that sets out broad requirements for a company's disclosures of information useful to primary users of its financial reports (investors, lenders and creditors) about the sustainability-related risks and opportunities that are specific to the company in question, other than those that, like climate change, are addressed in greater detail in a separate standard, such as IFRS S2.

The term "sustainability-related risks and opportunities" is not defined as such, but its meaning can readily be derived from the following text in Paragraph 2 of the S1 Standard, which is based on the "capitals" and "value creation" concepts found in the IIRC Integrated Reporting Framework[5]:

> "Information about sustainability-related risks and opportunities is useful to primary users because an entity's ability to generate cash flows over the short, medium and long term is inextricably linked to the interactions between the entity and its stakeholders, society, the economy and the natural environment throughout the entity's value chain. Together, the entity and the resources relationships throughout its value chain form an interdependent system in which the entity operates. **The entity's dependencies on those resources and relationships and its impacts on those resources and relationships give rise to sustainability-related risks and opportunities for the entity."** (emphasis added)

This description of "sustainability-related risks and opportunities" clearly recognizes how a company interacts with the external world in which it functions and on which it depends. To the

[5] https://www.integratedreporting.org/news/integrated-reporting-concepts-are-embedded-in-the-issbs-inaugural-global-standards/.

extent that those interactions result in impacts (negative or positive) or present risks sooner or later to a company's cash flows, financial performance and prospects, investors need the information called for by IFRS S1 (and, regarding climate change, S2) to help understand those impacts and their financial implications. This is sometimes referred to as in "outside-in" reporting perspective.

Companies need to identify the sustainability aspects related to their business and its value chain that may give rise to disclosable risks and opportunities.

To the extent those interactions result in impacts by the company on its stakeholders, society, the economy and the natural environment, a company may also voluntarily choose to make disclosures about them and how they are managed. Typically, they do this in a separate sustainability report prepared and presented in accordance with the GRI Standards, or perhaps in an Integrated Report inspired by the IIRC Framework, though the latter was developed with the needs of "providers of financial capital" primarily in mind. This is sometimes referred to as an "inside-out" reporting perspective.

In other words, "sustainability-related risks and opportunities" are defined to be those "that could reasonably be expected to affect the entity's cash flows, its access to finance or cost of capital over the short, medium or long term," i.e., that could reasonably be expected to affect an entity's business and financial prospects.

IFRS S2 is a standard that specifically addresses the risks and opportunities related to the impacts on a company associated with climate change, the transition to a low carbon economy, and the greenhouse gas emissions of a company across its full value chain, that could reasonably be expected to affect its cash flows, its access to finance or cost of capital over the short, medium or long term. IFRS S2 largely embodies the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), so will be readily familiar to companies that provide information in accordance with the TCFD Recommendations.

Readers who seek more detailed explanations and background to the ISSB's process and deliberations for creating IFRS S1 and S2 are strongly recommended to read not only the actual standards but also the Basis for Conclusions for each standard.[6]

Identification of Sustainability-related Risks and Opportunities

To make the disclosures called for in IFRS S1 about Sustainability-related Risks and Opportunities, i.e., those likely to be of interest to investors, it logically follows that companies need first to identify the sustainability aspects or topics related to their business and its value chain (both upstream suppliers and downstream users of its products and services) that may give rise to disclosable risks and opportunities.

As stated in Paragraph 11 of IFRS S1, "A complete set of sustainability-related financial disclosures shall present fairly all sustainability-related risks and opportunities that could reasonably be expected to affect an entity's prospects."

So How Is a Company to Achieve This?

For a sustainability aspect or topic for which a specific ISSB Sustainability Standard already exists, such as "Climate Change," a company would apply the specific standard, such as IFRS S2,

[6] See for example https://www.ifrs.org/content/dam/ifrs/publications/amendments/english/2023/issb-2023-c-basis-for-conclusions-on-ifrs-s1-general-requirements-for-disclosure-of-sustainability-related-financial-information-part-c.pdf.

to identify its sustainability-related risks and opportunities, step one in determining what disclosures it must make.

In the absence of such a specific standard, the company is **required** first to look to the disclosure topics in the SASB Standards and apply the metrics associated with those topics in making disclosures of material information (see below for discussion about "Materiality"). SASB disclosure standards are available for 77 industry sectors.

If this does not suffice in identifying company-relevant sustainability-related risks and opportunities, and determining appropriate disclosures relative to sustainability aspects and topics, then the company **may** look to and consider the appropriateness and applicability of other specified sources for guidance on the sustainability-related disclosures that are to be provided. Such sources include the CDSB Framework Application Guidance, the GRI Standards and the European Sustainability Reporting Standards.

IFRS S1 provides in Appendix B extensive, comprehensive practical guidance about applying the standard, including the process of identifying sustainability-related risks and opportunities and deciding what disclosures of material information about them are required.

An important practical provision in Appendix B states:

"An entity need not undertake an exhaustive search for information to identify sustainability-related risks and opportunities that could reasonably be expected to affect the entity's prospects. The assessment of what constitutes undue cost or effort depends on the entity's specific circumstances and requires a balanced consideration of the costs and efforts for the entity and the benefits of the resulting information for primary users. That assessment can change over time as circumstances change."

Therefore, companies are expected to do no more than is reasonable in their circumstances to identify the sustainability-related risks and opportunities relevant to them for which disclosures are required.

Materiality and Material Information

A key concept in financial reporting is materiality. IFRS S1 and S2 apply, with appropriate but slight modification, the same concept and definition of materiality as is used in the IASB IFRS for financial statements. The ISSB standards state: "An entity shall disclose material information about the sustainability-related risks and opportunities that could reasonably be expected to affect the entity's prospects." (paragraph 17)

And go on to state: "In the context of sustainability-related financial disclosures, information is material if omitting, misstating or obscuring that information could reasonably be expected to influence decisions that primary users of general purpose financial reports make on the basis of those reports, which include financial statements and sustainability-related financial disclosures and which provide information about a specific reporting entity." (paragraph 18)

Securities regulators in Canada and the US use a very similar concept and definition for required disclosures in financial reporting and related filings with securities regulators – familiar to all financial officers and corporate counsel who prepare financial statements and other financial filings.

This concept and definition of materiality is sometimes referred to as "financial materiality." It is of special importance for "outside-in" reporting by a company in order to decide what

information about its sustainability-related risks and opportunities could reasonably be expected to influence report users' decisions.

The financial reporting definition is in contrast to that used in "inside-out" sustainability reporting to stakeholders and the public, where, in the GRI Universal Standard, "material topics," for which disclosures are called for, are defined as topics that represent an organization's most significant impacts on the economy, environment and people, including impacts on their human rights.

It is noteworthy that, in addition to the two different materiality concepts applied in "outside-in" financial reporting and in "inside-out" sustainability reporting, the EU's CSRD and its ESRS[7] adopt an approach called "double materiality," under which a company must report both on how its business is affected by sustainability issues ("outside in") and how their activities impact society and the environment ("inside out").

TCFD-based Four Pillar Architecture

The disclosures required by both IFRS S1 and S2 (and presumably for any future ISSB standards for specific sustainability-related topics) are set out under the same four main pillars or headings as the 2017 Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), namely:

- *Governance*
- *Strategy*
- *Risk Management*
- *Metrics and Targets*

This is significant for at least two reasons. First, the TCFD comprised recognized experts from a range of relevant backgrounds, including data users (e.g., investors), data preparers (e.g., companies), "Big Four" accounting firms, debt-rating and corporate sustainability rating services, and capital market regulation. These were drawn from G20 countries and reflect the fact that the TCFD was established by the G20's Financial Stability Board, chaired by Mark Carney when he was Governor of the Bank of England. In other words, the TCFD, which was chaired by Michael Bloomberg, had very strong capital market-oriented credentials.

Second, the four-pillar framework, adopted following a public consultation and feedback process, represented a clear consensus as to the principal categories of climate-related information most sought by capital market actors, especially investors, as being material to financially-driven decision making.

The ISSB was directed from the outset by the IFRS Foundation, based on public feedback on its 2020 Consultation paper, to build its standards as much as possible off existing sets of investor-

[7] Corporate Sustainability Reporting Directive's European Sustainability Reporting Standards.

relevant disclosure standards and frameworks. The leading ones of these have since been brought under the IFRS Foundation umbrella, namely those of SASB, the CDSB, the IIRC and, most recently, the TCFD. Further, the ISSB was directed to make a climate-related financial disclosure standard its first priority.

Early on it must have become apparent that the four pillar TCFD framework for climate-related financial disclosures would be equally appropriate for standards related to any other type of sustainability topic and, indeed, for the overarching general standard for disclosure of sustainability-related information, which is now IFRS S1.

The result, as stated in paragraph 25 of IFRS S1 concerning Core Content disclosure requirements, is the following directive: "Unless another IFRS Sustainability Disclosure Standard permits or requires otherwise in specified circumstances, an entity shall provide disclosures about:

> (a) governance – the governance processes, controls and procedures the entity uses to monitor and manage sustainability-related risks and opportunities;
>
> (b) strategy – the approach the entity uses to manage sustainability-related risks and opportunities;
>
> (c) risk management – the processes the entity uses to identify, assess, prioritize and monitor sustainability-related risks and opportunities; and
>
> (d) metrics and targets – the entity's performance in relation to sustainability-related risks and opportunities, including progress towards any targets the entity has set or is required to meet by law or regulation."

IFRS S1 then provides extensive detailed requirements and guidance as to what is called for under each of these four headings – modelled closely on what is called for in the TCFD Recommendations. Similarly, IFRS S2 provides clear guidance on what is expected for climate-related disclosures. Companies already applying the TCFD Recommendations in their climate-related reporting will be at a clear advantage in applying both IFRS S2 and perhaps, more broadly, IFRS S1.[8]

It is important to note that under Metrics and Targets, IFRS S2 requires disclosure of Scope 3 GHG emissions, a challenging requirement for many companies, and the use of scenario analysis in preparing disclosures about the resilience of strategy regarding climate change.

The IFRS Foundation has established a Jurisdictional Working Group to consider how best to promote and achieve uptake of the ISSB standards in their respective jurisdictions.

Business Model and Value Chain

Further, to grasp fully the intended meaning and implications of the disclosures called for in particular under Strategy and Metrics, but also under Governance and Risk Management, it is

[8] In July 2023, the IFRS Foundation released a comparison of IFRS S2 with TCFD Recommendations: https://www.ifrs.org/news-and-events/news/2023/07/ifrs-foundation-publishes-comparison-of-ifrs-s2-with-the-tcfd-recommendations/.

helpful to keep in mind the definitions of two terms that are probably new to most financial reporting lexicons – "business model" and "value chain."

According to the definitions in Appendix A of IFRS S1, "Business Model" is "An entity's system of transforming inputs through its activities into outputs and outcomes that aims to fulfil the entity's strategic purposes and create value for the entity and hence generate cash flows over the short, medium and long term."

"Value Chain" is "the full range of interactions, resources and relationships related to a reporting entity's business model and the external environment in which it operates. A value chain encompasses the interactions, resources and relationships an entity uses and depends on to create its products or services from conception to delivery, consumption and end-of-life, including interactions, resources and relationships in the entity's operations, such as human resources; those along its supply, marketing and distribution channels, such as materials and service sourcing, and product and service sale and delivery; and the financing, geographical, geopolitical and regulatory environments in which the entity operates."

These two terms, unheard of in IFRS for financial statements, are essential for understanding the concept of sustainability and how sustainability-related risks and opportunities arise from the inputs, outputs and impacts associated with a company's business when viewed through a full life cycle lens. They are also helpful terms for understanding the IIRC Integrated Reporting Framework and a company's impacts on the six "capitals" on which business models and value creation depend.[9]

Adoption in Global Reporting Jurisdictions

Like the IFRS developed and issued by the IASB, the ISSB's sustainability-related financial disclosure standards, such as IFRS S1 and S2, will be useful to intended users only to the extent that they become mandatory for application in jurisdictions around the world. Decisions, rules, regulations, directives or legislation to achieve this are outside the powers of the ISSB and the IFRS Foundation.

IOSCO (International Organization of Securities Commissions) has since 2020 indicated its strong support for the creation of the ISSB, the development and release of its standards for disclosure of sustainability-related financial disclosures and the adoption of these as mandatory requirements in securities jurisdictions around the world – the global baseline to meet the needs of capital markets. IOSCO's endorsement of the first two ISSB standards, announced on July 25, 2023,[10] was a crucial step in promoting their uptake in reporting jurisdictions worldwide.

A key objective of the ISSB is to reduce the complexity associated with various sustainability disclosure frameworks and standards, to address the reporting burden for companies and improve the efficiency of the reporting system.

The IFRS Foundation has established a Jurisdictional Working Group (JWG) to consult with major jurisdictions in Europe, Asia and North America and consider how best to promote and achieve uptake of the ISSB standards in their respective jurisdictions.

[9] https://www.integratedreporting.org/news/integrated-reporting-concepts-are-embedded-in-the-issbs-inaugural-global-standards/.

[10] https://www.iosco.org/news/pdf/IOSCONEWS703.pdf.

In the meantime, the SEC in the US is expected to release in October 2023, or at least in the Fall of 2023, its own new rule ("The Enhancement and Standardization of Climate-Related Disclosures for Investors") regarding financial statement and other 10K disclosures of climate-related financial information, incorporating where possible the recommendations of the TCFD. In the EU, starting in 2024, the ESRS under the CSRD are expected to embody the double-materiality disclosure standards developed by EFRAG,[11] including those relating to climate change.

In Canada, the CSA appear to be playing "wait and see" regarding their proposed climate-related disclosure instrument NI 51-107, "Disclosure of Climate Related Matters," issued in October 2021, and the adoption of the ISSB Standards. On July 5, 2023, the CSA issued a statement welcoming the new ISSB standards,[12] and indicated that "CSA staff intend to conduct further consultations to adopt disclosure standards based on ISSB Standards, with modifications considered necessary and appropriate in the Canadian context." It remains to be seen what influence Canada's recently established Canadian Sustainability Standards Board will have on what Canadian regulators (CSA) eventually put in place to enforce the ISSB standards, with or without modification, to reflect Canadian circumstances.

It is not known how soon the ISSB standards, or even just IFRS S2 regarding climate change, will be adopted and become mandatory in various jurisdictions. It looks likely that, in the near future, despite calls for convergence among the leading, recognized standards for sustainability-related financial disclosures, there will continue to co-exist the ISSB standards, the EU's ESRS standards and, for climate-related disclosures, the new SEC rules. Not a perfect scenario, but at least a step in the right direction. It may not be until 2025 before ISSB-based disclosures (for the 2024 financial reporting period) appear in mandatory annual filings.

Interoperability

The ISSB seems to be very aware of the need to avoid duplication and overlap among sustainability-related disclosure standards as adopted in different jurisdictions, both to minimize confusion between them and to enhance efficiency for companies in collecting and processing data for a given sustainability issue or disclosure topic called for under multiple standards. The quest is, therefore, in progress for "interoperability," so that there can be some degree of alignment between disclosure standards and related data and presentation requirements.

As the IFRS Project Summary explains:

"A key objective of the ISSB is to reduce the complexity associated with various sustainability disclosure frameworks and standards, to address the reporting burden for companies and improve the efficiency of the reporting system.

"The ISSB is working with jurisdictional representatives through the Jurisdictional Working Group and with organizations, including the European Commission, the European Financial Reporting Advisory Group (EFRAG) and the Global Reporting Initiative (GRI) to help achieve this objective.

"An important priority has been to establish interoperability between IFRS S1 and IFRS S2 and the European Sustainability Reporting Standards (ESRS), the GRI Standards and other major

[11] European Financial Reporting Advisory Group.

[12] https://www.newswire.ca/news-releases/canadian-securities-administrators-statement-on-proposed-climate-related-disclosure-requirements-816779906.html.

jurisdictional requirements. For example, efforts have been made to identify common disclosures in ESRS and IFRS S2, and ensure the requirements are aligned wherever possible, to prevent duplicative reporting."

It is significant that the GRI and its reporting standards are involved in this effort because, in many companies that have long-established systems for collecting sustainability-related data needed for internal management purposes and/or for disclosures in their sustainability reporting under the GRI Standards, the same or similar data and systems may well be called for under ISSB, the EU or SEC disclosure requirements.

This involvement also acknowledges the reality that the GRI Standards are an ISSB-referenced resource (in IFRS S1, Appendix C) to help companies in their identification of sustainability-related risks and opportunities.

Some Implementation Practicalities

IFRS S1 addresses several important practicalities, four of which are noted here. These considerations help to bring to sustainability-related financial reporting the rigour associated with presentation of financial statements in accordance with IFRS (or other GAAP, such as FASB standards).

1. Location of Disclosures

A company is required to present the required disclosures as a part of its normal financial reporting package, such as in its MD&A or similar report that is required to accompany the financial statements for the reporting period in question. This requirement has important implications for oversight and approval policies and processes, including, in certain jurisdictions, CEO/CFO certification of financial filings and audit committee review.

2. Timing of Reporting

IFRS S1 provides that a company's sustainability-related financial disclosures be published at the same time as its financial statements, and for the same reporting period. This may be challenging for companies that have been accustomed to issuing separate sustainability reports or climate-related reports at a much later date than issue and filing of general-purpose financial reports.

In the first year of application of the standards, Appendix E of IFRS S1 states that a company is permitted to comply only with IFRS S2, i.e., provide only climate-related disclosures to accompany financial statements and provide the full sustainability-related financial disclosures called for by IFRS S1 no later than nine months from the end of the prior financial reporting period. This helpful relief may be subject to amendment by a regulatory body in any jurisdiction that adopts the standards.

3. Comparative Information and Initial Application of the Standards

IFRS S1 states that "Unless another IFRS Sustainability Disclosure Standard permits or requires otherwise, an entity shall disclose comparative information in respect of the preceding period for all amounts disclosed in the reporting period. If such information would be useful for an understanding of the sustainability-related financial disclosures for the reporting period, the entity shall also disclose comparative information for narrative and descriptive sustainability-related financial information."

Appendix B provides detailed implementation guidance about comparatives.

Regarding initial application of the standards, Appendix E provides two reliefs: first, in the first year of applying IFRS S1 companies will only be required to address and provide disclosures related to climate related risks and opportunities; and second, companies will not be required to provide comparatives in the first annual reporting period in which they apply the standards, addressing only climate-related disclosures, nor in the second annual reporting period after which it applies IFRS S1(except for climate-related disclosures, for which in the second year comparatives will be required).

4. Statement of Compliance
This requirement is self-explanatory, but noteworthy because it provides for two allowed disclosure exemptions.

To quote from IFRS S1: "An entity whose sustainability-related financial disclosures comply with all the requirements of IFRS Sustainability Disclosure Standards shall make an explicit and unreserved statement of compliance.

"An entity shall not describe sustainability-related financial disclosures as complying with IFRS Sustainability Disclosure Standards unless they comply with all the requirements of IFRS Sustainability Disclosure Standards. This Standard relieves an entity from disclosing information otherwise required by an IFRS Sustainability Disclosure Standard if law or regulation prohibits the entity from disclosing that information….

"This Standard also relieves an entity from disclosing information about a sustainability-related opportunity otherwise required by an IFRS Sustainability Disclosure Standard if that information is commercially sensitive as described in this Standard….

"An entity using these exemptions is not prevented from asserting compliance with IFRS Sustainability Disclosure Standards."

Many believe new ways are needed to hold corporations accountable for their impacts on the well-being of the planet and society.

What is deemed to be "commercially sensitive" is an issue that may cause some controversy, however. Appendix B (34-37) provides some clarity of what may be considered "commercially sensitive" and how use of this exemption is to be disclosed.

IFRS S1 does not specify who is to sign or approve the statement of compliance. This might, therefore, be a designated officer, such as the company's CEO or CFO, or a director, such as chair of the board or the audit committee. Oversight and approval of disclosures is discussed below.

There are two further topics of importance that are not part of the ISSB standards but which are important implementation practicalities and merit some comment: oversight and approval of disclosures, and data and systems integrity, internal control and assurance.

Oversight and Approval of Disclosures
In the US and Canada, financial reporting by public companies is subject to various degrees of oversight and approval. Besides mandatory CEO and CFO certifications as to the fairness of financial reporting,[13] audit committees are required to review a company's financial statements

[13] https://www.osc.ca/en/securities-law/instruments-rules-policies/5/52-109.

and related MD&A. This raises the question as to whether, in addition to being financially literate (as required by securities regulators), audit committee members also need to be "sustainability" literate, or at least "climate change" literate.

The question also arises as to whether, in Canada and the US, CEOs and CFOs, certifying the fairness of a company's financial reporting, will in future be required to certify the fairness of sustainability-related or climate-related financial disclosures included as components of financial reporting that, like MD&As, accompany the financial statements.

Data & Systems Integrity, Internal Control and Assurance

In the US and Canada, and in other jurisdictions, financial reporting calls for integrity of the supporting data and the systems for capturing and processing it and, and its use in preparing financial statements in accordance with IFRS (or other GAAP).

There are already well-established regulatory provisions in the US and Canada to ensure and report on the adequacy of internal controls over financial reporting (ICFR) and of disclosure controls and procedures (DC&P). It must now be asked whether these concepts and regulatory provisions – including those for related CEO and CFO certifications of controls – will now also apply to the sustainability-related financial disclosures that in future are to be regarded as part of companies' annual financial reports and regulatory filings. And, in March 2023, COSO published new guidance for effective internal control over sustainability reporting.[14]

Prudence would suggest that companies should assume that such requirements will be introduced by regulators sooner or later, and therefore take the necessary steps to extend controls over reporting so as to protect officers and directors from the risk of a company providing material sustainability-related financial information that turns out to be misstated or misleading – a risk that in Canada at least, if proven, can result in liability for directors and officers under provincial securities law.

Companies need to consider and report to investors how sustainability-related issues and risks may have an impact on a company's prospects for future value creation.

Internal and external auditors, too, play important roles regarding the integrity of data and reporting systems and controls. As a reporting standard, IFRS S1 is silent as to the need for independent assurance about sustainability-related financial disclosures, but the recent issue by the IAASB of a draft standard, ISSA 5000,[15] for assurance regarding sustainability reporting suggests that, as called for by many investors and other report users, independent assurance, whether limited or reasonable, will increasingly be called for.

Further, IFRS S1 embodies the qualitative characteristic of verifiability so that it could be referred to by independent assurance providers seeking suitable criteria for auditing sustainability disclosures asserted to have been prepared and presented in compliance therewith.

[14] https://www.coso.org/Shared%20Documents/COSO-ICSR-Press-Release.pdf.

[15] "The IAASB is excited to announce that it has approved, by unanimous vote, the draft International Standard on Sustainability Assurance (ISSA) 5000, *General Requirements for Sustainability Assurance Engagements*, for public consultation. The consultation will be open from early August until early December 2023." June 28, 2023.

Preserving Our Planet for the Future

Sustainability is about preserving the planet for the benefit of future generations.[16] Taking care of the well-being and rights of people today and tomorrow is essential too.

Corporations were originally created to harness private capital to meet societal needs and desires, but were held legally accountable only to shareholders for stewardship of their invested funds and promoting the best interests of the corporation[17]. Many believe new ways are needed to hold corporations accountable for their impacts on the well-being of the planet and society. Part of the answer is to enhance the annual financial reporting by companies to those who entrust or are considering entrusting their financial capital to them, and thereby provide a wider spectrum of decision-useful information to capital markets.

Providers of financial capital need more than just financial statements to be able to satisfactorily evaluate a company's performance and prospects, the short- and long-term risks to its business model for value creation, its strategy and risk management and the adequacy of its governance processes and controls. Companies need to consider and report to investors how sustainability-related issues and risks, broadly defined, may have an impact on a company's prospects for future value creation.

Demand for reliable information for investors (not just greenwash) about the current and possible future business and financial effects of entity-relevant sustainability-related issues has been mounting for more than a decade. Twenty years ago, the advent of IFRS was a landmark in achieving worldwide comparability and reliability in financial statements. Since then, the same types of globally-recognized standards have become essential for reporting decision-useful sustainability-related information to investors alongside financial statements as an element of financial reporting. Such reporting needs to be in tandem with what the GRI Standards require for reporting to stakeholders and the public about a company's impacts on the planet and society.

The ISSB standards are not intended to guide sustainability disclosures about entity impacts on the planet and people, but they are at least a timely step in a useful direction for information needed in capital markets.

Could all this be a catalyst for new insights into value creation, planetary resources and social justice?

Companies will now be **required** to identify and think about their sustainability impacts as business risks or opportunities as the first step in deciding what disclosures to make to investors about those likely to have material financial impacts, explain what they are doing to manage them, and their implications for future financial prospects.

Could this, in turn, be a catalyst for new C-suite insights into value creation, planetary resource limits and social justice? Opening the door to new, enlightened and future-looking conversations in capital markets about the purpose of a company, its business model, its

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[16] In 1987, the United Nations Brundtland Commission defined sustainable development (now shortened to sustainability) as "meeting the needs of the present without compromising the ability of future generations to meet their own needs."

[17] Section 122 (1) of the Canada Business Corporations Act now provides that when acting with a view to the best interests of the corporation the directors and officers of the corporation may, consider, but are not limited to, the following factors: (a) the interests of i) shareholders, (ii) employees, (iii) retirees and pensioners, (iv) creditors, (v) consumers, (vi) governments, and (b) the environment.

governance, the resources and relationships on which it depends for value creation, perhaps even its accountabilities?[18] In the next decade or two, capital markets will hopefully move into a new era of alignment with sustainability principles and imperatives, and allocation of capital needed for the achievement of global sustainability goals.

The ISSB standards, like IASB financial statement standards (IFRS), will of course be dynamic, not static – subject to a process of continuous refinement and expansion to reflect evolving understanding of investor needs, corporate accountability and sustainability-related risks and opportunities.

At current unprecedented rates of standard-setting progress, a two-pillar package of global sustainability reporting standards from both the inside-out (GRI) and outside-in (ISSB) perspectives should be achievable before too long, and before it's too late.

Finally, boards of directors, CEOs and CFOs can ensure that the process for complying with IFRS S1 in financial reporting can, if undertaken with a creative, innovative mindset, lead a company to fresh insights and opportunities about ways to reduce sustainability impacts and risks, adjust its business model and enhance value creation.

Isn't all this a promising new step in the right direction – not just a landmark in corporate reporting, but perhaps even another step in embedding new concepts of corporate purpose, accountability and transparency necessary to preserve our planet for the future?

[18] Delaware has recently enacted new legislation for the incorporation of Public Benefit Corporations – see https://www.mondaq.com/unitedstates/shareholders/1346894/delaware-public-benefit-corporations.

Continuous Automated External Reporting and Audit of KPIs

By Gregory Shields, CPA, CA

Greg is a member of the board of directors of the University of Waterloo Centre for Information Integrity and Information Systems Assurance (UWCISA). Before retiring, he was CPA Canada Director, Auditing and Assurance Standards. He has since undertaken numerous projects to develop non-authoritative auditing guidance on various topics, such as data analytics and audit of accounting estimates. Earlier in his career, he provided technical support to the CICA/AICPA continuous auditing study group, and drafted the research report.

To remain relevant, auditors need to provide assurance on entity data delivered at interim dates and ultimately continuously. [1] This assertion by auditing visionaries led the CICA (a predecessor of CPA Canada) and the AICPA to develop their 1999 research report *Continuous Auditing*. Decades later, auditors still focus primarily on examining annual historical financial statements. However, remarkable advances in IT, including cloud computing, Robotic Process Automation (RPA) and AI have overcome technical barriers to continuous reporting and auditing. Key Performance Indicators (KPIs) reported and audited continuously would provide external stakeholders with more credible, timely insights into how well an entity is being managed. Some public accounting firms seem ready, willing and able to perform the audit work. The only big barrier remaining seems to be convincing management that the potential added value would significantly outweigh related costs.

How Continuous Automated Reporting and Audit of KPIS Might Work

Consistent with the concept described in the CICA/AICPA research report, continuous reporting and audit of KPIs would occur when:

- An entity continuously reports KPIs simultaneously with, or very soon after, the occurrence of underlying events or change in circumstances or conditions affecting those KPIs.
- The auditor issues an auditor's report simultaneously with the reporting of the entity's continuous KPI report, based on having continuously obtained sufficient appropriate audit evidence to support the auditor's opinion.[2]

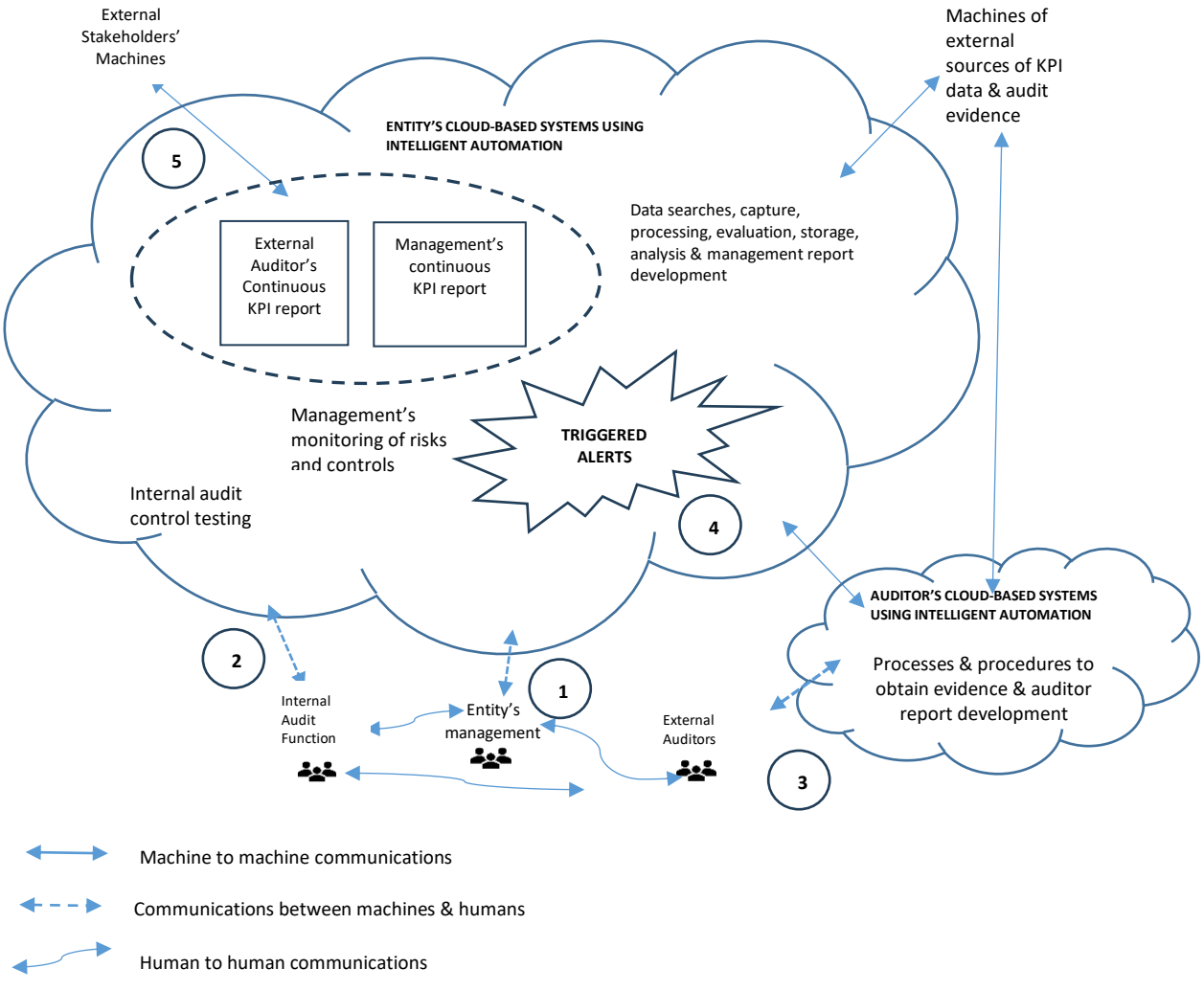
Figure 1 provides a high-level conceptual overview of how continuous reporting and audit of KPIs might work.

1. An entity's management (under board oversight) decides what KPIs (with desirable characteristics) will be continuously reported and audited. Management designs and implements a system to capture, process, store, analyze relevant data and report the resulting information. Management also designs and implements relevant controls, as well as risk management and control monitoring processes. All of these are based on use of cloud technology, and intelligent automation (Robotic Process Automation (RPA) and AI.
2. Internal audit designs and implements automated procedures to test controls over continuous reporting of KPIs.
3. External auditors design and implement automated audit procedures to obtain sufficient appropriate audit evidence to support their continuous audit report on the entity's

continuously reported KPIs. Most evidence will be obtained from the entity's processes and data, but some may be obtained from external sources. The external auditors use their own cloud computing infrastructure, platform and applications, including the use of RPA and AI. They also use the work of internal audit, as appropriate.

4. An automated system of alerts advises management, internal audit or external auditors (or all three, as appropriate) to deviations from controls and other matters indicating possible misstatements of the KPIs. Alert levels depend on predefined materiality and risk factors related to the nature and urgency of matters detected. Most alerts are addressed automatically using AI. A few will, however, require human attention, resulting in the need for communications among management, internal auditors and external auditors.
5. A portal in the entity's cloud service provides external stakeholders access to the continuous KPI reports by management and the auditors.

Figure 1 – Conceptual Overview of Continuous Automated KPI Reporting and Auditing



Characteristics of KPIs Affecting Their Likelihood of Being Continuously Reported and Audited
A number of accounting bodies have suggested that, to be useful to stakeholders, KPIs reported quarterly and annually should be relevant, reliable, unbiased, complete, consistent, comparable (to those of other entities in the same industry) and transparent. These characteristics are consistent with suitable criteria required for KPIs to be audited.[3] KPIs reported quarterly and annually are the most likely candidates for continuous reporting, since management is already comfortable disclosing them to outsiders.

Continuously reported KPIs would supplement and compliment, not replace, historical financial reporting.

The relevance characteristic perhaps warrants explanation. A KPI is relevant when it can be linked to one or more significant risks an entity faces and the strategies implemented by management to address those risks. Table 1 shows a few examples of risks, areas of strategic focus and related KPIs often disclosed by major hotel chains. With the design and implementation of effective controls, these KPIs could also have the other desired characteristics that would make them likely candidates for continuous reporting and audit.

Table 1 – Examples of Hotel Chain KPIs More Likely To Be Continuously Reported and Audited

RISKS	Strategic Focus	KPIs
Inability to effectively compete	• Room pricing and occupancy • Revenue optimization by property type	• Average Daily Rate (ADR) • Average Rate Index (ARI) (the hotel chain's ADR compared with that of set of competitors with the same target market) • Occupancy Rate (OR) • Market penetration index (MPI) • Loyalty program membership growth rate
	• Cost control	• Cost Per Occupied Room (CPOR) • Average length of stay (LOS)
	• Sustainability strategy	• Water and power usage rates • Food wastage rate

Table 2 shows examples of KPIs that seem less likely to be continuously reported and audited. For example, customer ratings from various sources are relevant, but likely to be biased and unreliable. Bad reviews (often emotional, unprompted and meant to warn others against negative experiences) outnumber good reviews.[4] Also, the sources of the reviews may be difficult to identify, and be open to manipulation. On the other hand, a hotel chain could use AI to search and analyze vast quantities of unstructured data directly or indirectly relating to customer satisfaction, including to identify specific reasons for ratings and typical characteristics of those providing ratings. The results obtained could be reported to help refute false information coming from various online sites negatively affecting the chain's reputation.

Arguably, the hotel's process and results would not be auditable, and therefore might not be trusted.

Also, it seems unlikely that management would externally report KPIs used internally to evaluate how its various systems are performing. For example, management would use KPIs to measure how well its tactics, techniques and procedures are working to prevent and detect cyber attacks. Disclosure of these KPIs would be too granular to be useful to most outsiders, and might, for example, attract more or stronger cyber attacks.

Table 2 – Examples of Hotel Chains Less Likely to Be Continuously Reported and Audited

RISKS	Strategic Focus	KPIs
Deterioration of reputation/brands due to: • Problems re accessibility, timeliness and accuracy of reservation system • Unauthorized access to customer data, including private information • Health and safety incidents involving customers • Poor sustainability reputation	• High service quality from time of booking request to time of check out, including use of up-to-date technology • Customer retention, growth	• Post-stay customer ratings (survey-based) • On-line review ratings (hotel site) • On-line review ratings (third party sites) • IT systems KPIs (e.g., systems breach statistics; system downtime; bug fix rate) • Earnings before interest, taxes depreciation and amortization (EBITDA) • KPIs related to an entity's ability to continue as a going concern (e.g., key financial ratios; timing of payments to creditors)

In addition, it is unlikely that non-GAAP financial KPIs, such as EBITDA, would be continuously reported and audited. Concerns have been raised that such KPIs have the potential to be misleading. Also, it would not be practicable, at least in the near term, to reliably calculate and audit earnings on a continuous basis because of the breadth and depth of data, assumptions, calculation methods and judgments (potentially biased) involved. Human intervention would almost certainly be required that would greatly hinder the process. That could change if (perhaps when) AI eventually takes over the determination and reporting of earnings and other elements of historical financial statements. Then, continuous reporting of most types of information, regardless of complexity, may become practicable.

For external auditors, any alerts relating to their reports (such as unauthorized changes) would require urgent human action.

Finally, KPIs related to an entity's ability to continue as a going concern would be highly relevant to outsiders, who have often expressed dismay at the inability of both management and auditors to provide earlier warnings of an entity's potential collapse. But for reasons similar to those noted above for earnings-related KPIs, it often could be difficult, at present, to reliably determine going concern KPIs on a continuous basis, although that could change with advances in AI.[5] In addition, there are many counterbalancing factors that may affect an entity's ability to continue as a going concern. Therefore, it may be difficult to identify which performance indicators are truly "key" and explain continuous changes in their interrelationships.

Form and Content of Management's Report

Management's continuous report of KPIs should be designed to make the KPIs transparent to stakeholders. The form and content could be as follows:

- A section showing the KPIs. The information in this section would change, for example, daily, weekly, or monthly, depending on the reporting period(s) chosen by management. Comparative information would also be shown covering an appropriate number of previous periods and, if appropriate and available, industry averages for comparative purposes.
- Another section (linked to that above) containing semi-permanent information. This would include:
  - *Management's methods of preparing the KPIs disclosed*. This would show, for each KPI, the nature, extent and sources of data used, how the KPIs were calculated, and, when applicable, underlying assumptions and estimates.
  - *Management's rationale in choosing each KPI reported.* There would be a description of the desirable characteristics of each KPI.

The report would describe any material changes, such as ways in which KPIs have been developed, or the use of new KPIs, and the reasons for the changes. If practicable, management would consider making conforming changes to comparative amounts for affected KPIs.

This approach to continuous KPI disclosure is consistent with that required by regulators for KPIs contained in quarterly and annual reports.[6] The annual and quarterly values of continuously reported KPIs, and related analysis, would be included in, or linked to, management's discussion of risks and strategies, and to appropriate elements of the historical financial statements when appropriate. Continuously reported KPIs would therefore supplement and compliment, not replace, historical financial reporting.

Continuously reported and audited KPIs would clearly provide more timely, reliable and useful insights to stakeholders about decisions made by management and the possible future direction of an entity.

Management might consider putting more information in its continuous KPI reports than suggested above. That could be a mistake. For example, research done by Smith and van der Heijden showed that financial analysts did not see value in management providing explicit forecasts on KPIs because of the many factors beyond management's control that could result in targets not being achieved.[7] Also while analysts would like to be provided with KPIs showing more disaggregated information (such as changes in prices and sales volumes by entity location), they also recognize the risk that this detail could result in revealing sensitive information to competitors.[8] Further, some analysts do not want KPIs to be standardized by some authorized body because each company has some unique features, and analysts feel they add value to the marketplace by recalculating KPIs using their own standards.[9]

Form And Content of Auditor's Report

The auditor's report would contain an opinion on whether the KPIs were prepared, in all material respects, in accordance with management's method of preparation as disclosed in its report. This method of preparation would need to have the characteristics of suitable criteria referred to earlier, for the KPIs to be auditable. In addition to the auditor's opinion, the report

would refer to all matters required by applicable assurance standards.[10] Except for the period covered, the form and content of the auditor's report would not change over time, unless management makes changes to the KPIs reported. Qualified audit opinions would not likely be issued: matters would be resolved or the entity would decide not to report.

The auditor's opinion would not likely extend to management's description of its rationales in choosing each KPI reported. The various factors considered by management would be highly subjective (reflecting management's mindset) and, therefore, not be readily verifiable. The auditor would, however, read management's descriptions to identify and address any material inconsistencies with reported KPIs or any other misstatement of fact of which the auditor becomes aware.[11]

Use of Cloud Technology, RPA And AI

Cloud computing, combined with intelligent automation (AI and RPA), can enable continuous reporting and audit of KPIs, with minimal human involvement. This is particularly important for the use of automated alert triggers when problems are detected.

Automated alert triggers have been around a long time. The1999 research report refers to alerts (alarms) and related concepts that would still apply today. For example, automated alerts would have varying levels of urgency from low to high. These levels would be predefined by management, using parameters such as materiality (significance) and levels and type of risk associated with various occurrences and conditions.[12] For example, a hotel chain's occupancy rate (OC) KPI for the latest reporting period (day, week, month) may be misstated because of missing data for one or more hotels, errors in dates used for the reporting period, use of definitions of "rooms available for occupancy" that do not comply with the chain's standard definitions, or more significant deficiencies in relevant controls or override of controls by a hotel manager.

Key Performance Indicators (KPIs) reported and audited continuously would provide external stakeholders with more credible, timely insights into how well an entity is being managed.

The 1999 research reported contemplated that most alerts would require human intervention. The role and seniority of the persons responsible for responding to an alert, the nature of the actions required and their timing, would depend on the level urgency of the alerts. Those responses could be relatively slow, and the continuous process might often have to stop to allow time to investigate the root cause of an alert, decide on appropriate actions to take and then take them.[13]

In today's world, however, RPA is being used to automate controls and improve precision, while AI is allowing organizations to continuously monitor and visualize enterprise risks in real time and propose actions.[14] As a result of constantly improving AI algorithms, a lot of IT-related work may be completed without the direct involvement of a human.[15] For example, one AI-based data security service alerts organizations to indications that sensitive customer data in a cloud is being accessed or moved in an unusual fashion, with the alert being sent for automated remediation and tracking in the customer's security ticketing system.[16] And, AI-powered

security solutions can help businesses stay ahead of emerging threats by detecting and responding to attacks in real-time.

When might human involvement be needed? Examples would include instances of deliberate misstatement of OC rates by management of a hotel, warranting disciplinary action. Control deviations relating to sensitive client or operating data would require urgent human communications to stakeholders about significant consequences of the occurrence, and oversight of remediation. For external auditors, any alerts relating to their reports (such as unauthorized changes) would require urgent human action. And, overall, the function of AI would need some human monitoring to avoid overreliance on AI, especially in the early stages of its use.

Fewer Threats to External Auditor Objectivity

The 1999 research report referred to the external auditor's use of tools such as embedded audit modules and digital agents. These would be highly integrated with the entity's systems and could not be implemented without extensive assistance from internal audit and management. The external auditor's objectivity could therefore be impaired, in fact or perception, because it would be difficult to clearly distinguish between the entity's internal control processes and performance of the external audit. This concern was identified as a topic for future research. [17]

Now, through use of cloud technology, auditors can readily obtain continuous authorized access to the client's data without interfering with the entity's processes and internal controls. Websites for the big four firms describe how they already make use of cloud technology, combined with RPA and AI, in performing financial statement audits. Also, suppliers of cloud-based audit technology refer to it being used to efficiently obtain client data down to the transactional level, store it securely in the cloud, and apply analytics against the data to identify risks, including potential fraud risk. Auditors can also more easily benchmark their clients' business metrics against other similar businesses, and provide key insights to help clients run their businesses more effectively.[18]

In addition, it may often be efficient for external auditors to use the work of internal auditors when performing continuous audits. This would not impair external auditor objectivity provided the relevant requirements in assurance standards regarding such use are met.[19] Many internal auditors have embraced continuous performance of tests of controls. The Rutgers University Continuous Auditing and Reporting Symposia (CARS) website provides references to years of research and presentations, much of which relates to internal audit.[20]

Management's Decision on Whether To Continuously Report KPIs

Management would likely decide to continuously report KPIs to external stakeholders if it perceives that significant benefits in doing so would exceed related costs. This decision would fall within the realm of Voluntary Disclosure Theory (VDT), based on elements of signalling theory and agency theory, with many complex factors coming into play.[21] These factors may relate, for example, to the entity's disclosure position, external norms and opportunities,

disclosure structures and other internal and external mediators such as consultants and auditors.[22]

Strong stakeholder demand for more continuous information would be a signal that it has high value. A survey in 2020 by McKinsey showed that corporate management is under increasing pressure to prioritize more effective engagement with external stakeholders, because growing evidence shows that addressing societal issues and stakeholders' priorities creates long-term value.[23] And, timely communication seems more important than ever. As noted by the Institute of Chartered Accountants of Scotland (ICAS), disruptive technologies and 24/7 communication are among the factors challenging external perceptions and expectations of the role of business in the 21st century and how success should be measured.[24]

Not all stakeholder groups will necessarily agree, however, on what they want or need, so the value versus cost proposition to management may not be clear. For example, when the US Securities and Exchange Commission (SEC) issued its proposed climate risk disclosure rules in March 2022, environmentalists said they did not go far enough. On the other hand, companies kicked and screamed that the SEC proposals went too far and were too expensive to comply with, and investors cheered that position.[25]

The arguments for continuous disclosure of KPIs seem more persuasive than most. As shown by the hotel chain examples noted earlier, KPIs are continuously used by management (hourly, daily, monthly) in making decisions that affect many important aspects of an entity's business. They can provide clear and concise means of reducing information asymmetry between management and outsiders. Only a few stakeholders would likely have the time, competencies and money to convert more detailed and voluminous continuous disclosures into usable knowledge.[26] On the cost side, management has already implemented systems to search for, capture, process, store and analyze relevant data, and report KPIs used internally. Added costs to incurred to enable some KPIs to be reported externally might not be onerous, although that is not certain.

Management's Decision on Whether To Have Continuously Reported KPIs Audited

Accounting bodies and firms have provided sound reasons for why audits of KPIs in annual financial and sustainability reports would be a good idea. These would also apply to audits of continuously reported KPIs:

- Management needs to question how accurate the KPIs are that their organization and stakeholders, including key customers, business partners and, importantly, investors rely on. Decisions are being based on unassured data that has not been through the rigor of traditional financial reporting processes. The traditional financial reporting model is no longer all that investors need. The world has changed and assurance needs to respond.[27]

- The more that non-financial information becomes integrated into companies' decision-making processes, and their external reporting, the greater the need for users to place trust in these KPIs when making informed decisions, and the greater the likelihood that the level of comfort obtained by management over them might be questioned.[28]
- Management does not fully appreciate the lack of trust in unaudited information that corporations provide. For example, a 2022 Deloitte survey shows that 57% of Canadian consumers do not believe most green claims brands make, suspecting greenwashing. Consumers are confused and frustrated by the proliferation of sustainability claims, while business leaders think the public has a significant (71%) or moderate level of trust in the authenticity of those claims.[29]
- Corporations are increasingly subject to false information attacks. These may include misinformation (unintentional mistakes), disinformation (intentionally fabricated misleading information) or malinformation (e.g., publication of private information or deliberate changes of context, date or time of genuine information).[30] The increased trust in reported KPIs that an audit would provide could help counter, to some extent, false claims about a corporation's performance.

Efforts to have KPIs in annual reports audited have largely failed. So, even if management were to decide to continuously report KPIs, they might still not choose to have them audited. Although stakeholders would be the beneficiaries of such audits, there does not yet appear to be any groundswell of demand that might persuade management to go in that direction.

Conclusion

Technology roadblocks to continuous automated external reporting and audit of KPIs that once existed are gone. We are in an age when much more rapid communication has become the norm. Continuously reported and audited KPIs would clearly provide more timely, reliable and useful insights to stakeholders about decisions made by management and the possible future direction of an entity. Auditors are ready to do the work. Yet, the key ingredient, widespread demand among stakeholders, seems to be missing. Therefore, management will not be easily persuaded that the value of continuous external reporting and auditing of KPIs would outweigh related costs. The traditional approach of quarterly and annual reporting will continue.

Visionaries have long advocated continuous external reporting and audit of information. It seems inevitable that, particularly with advances in use of AI, these will eventually become the norm. But, "between the wish and the thing, the world lies waiting."[31]

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1 CICA/AICPA, *Continuous Auditing*, The Canadian Institute of Chartered Accountants, 1999, pg. 2, para. 3.

2 This definition is based on that CICA/AICPA *ibid*., pg. 5.

3 See, for example, Institute of Chartered Accountants of Scotland (ICAS), *Assurance on KPIs: A Practical Guide for Audit Committees and Boards*, June, 2015 Towards-Transparency.pdf (icas.com); CPA Canada CPA Canada KPI Tool; and Institute of Chartered Accountants in England and Wales (ICAEW) ICAEW KPI Assurance. Suitable criteria required for an auditor to provide assurance on a subject matter are described in ISAE/CSAE 3000, *Attestation Engagements Other Than Audits or Reviews of Historical Financial Information,* para. 24 (b)ii.

[4] Lubag, J., *Why are Bad Reviews More Likely Online*?, Rize, February 2, 2023, Rize, On line reviews.

[5] ISA/CAS 570, *Going Concern*, para. A3 provides a useful list of events and conditions that may cast doubt on an entity's ability to continue as a going concern. These could provide the basis for determining useful KPIs.

[6] Moss Adams*, SEC Issues Guidance on Key Performance Indicators and Metrics,* March 4, 2020. Moss Adams - SEC disclosures.

[7] Smith, S. and van der Heijden, H., *Analysts' Evaluation of KPI Usefulness, Standardization and Assurance*, *Journal of Applied Accounting Research*, February, 2017, pg. 14. Smith et al.

[8] Smith et al. *ibid*. pg. 10.

[9] Smith et al. *ibid*., pg. 41.

[10] ISAE/CSAE 3000, para. 69 sets out the minimum basic elements to be included in an auditor's report.

[11] ISAE/CSAE 3000, para. 62.

[12] *Ibid*, CICA/AICPA, pgs. 31-35.

[13] *Ibid*, CICA/AICPA, pgs. 31-32.

[14] PWC, *Reinventing Internal Controls in the Digital Age*, April, 2019, pg. 6. PWC Digital Ag.

[15] Eliacik, E., "The Ultimate Combination of Success: AI and IT," *Dataconomy*, August 22 2022, Dataconomy AI and IT.

[16] Ibid. PWC, pg. 13.

[17] CICA/AICPA *ibid*, pgs.53-58.

[18] Thomson Reuters blog, "Harnessing the Power of Audit Automation," January 12, 2023. thomsonreuters.com.

[19] CSAE/ISAE 3000, para. 55.

[20] Professor Miklos Vasarhelyi at Rutgers has long been the guru of continuous auditing and reporting. References sources can be found at http://raw.rutgers.edu/wcars.html and linked sites.

[21] Smith et al ibid., pg. 4.

[22] Gibbins, M, Richardson A. and Waterhouse, J., "The Management of Corporate Financial Disclosure: Opportunism, Ritualism, Policies, and Processes," *Journal of Accounting Research*, Vol. 28, No. 1 (Spring, 1990), Gibbons et al.

[23] McKinsey, "The Pivotal Factors for Effective External Engagement," May 26, 2020, [23] https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/the-pivotal-factors-for-effective-external-engagement.

[24] ICAS *ibid*. pg. 1. ICAS Assurance on KPIs.

[25] Michelson, J., "Pushback on the SEC's Proposed Climate Risk Disclosure Rules is a Good Sign**,"** *Forbes*, Feb. 8, 2023. Michelson, SEC disclosure pushback.

[26] Farvaque, E., Refait-Alexandre, Saidane, D., "Corporate Disclosure: A Review of its (Direct and Indirect) Benefits and Costs, Economie Internationale," 2011, No. 128. Farvaque, Disclosure Benefits & Costs.

[27] Bradley, L, *Assurance over Key Performance Indicators*, KPMG, June 12, 2016 KPMG KPI assurance.

[28] ICAS, *Ibid*, pg.3.

[29] Deloitte Press Release, *While brands think they have consumer trust, most Canadians are skeptical about sustainability claims, Toronto June 22, 2023.*

[30] PwC, *Disinformation Attacks Have Arrived in the Corporate Sector. Are You Ready?,* February 9, 2021, PwC Disinformation Attacks.

[31] McCarthy, Cormac, *All the Pretty Horses,* Alfred A. Knopf, 1992.

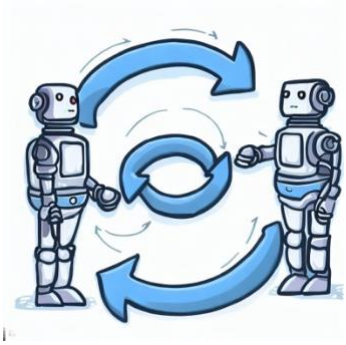
Regenerative AI? Regurgitating AI? CHATGentropyT?

By Eric E. Cohen

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 a 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.

I really enjoy ChatGPT and its friends. As a sole practitioner, its nice to have an (artificial) colleague to run my thoughts past and help me organize them, even if they are just said back to me a slightly different way sometimes. Sadly, I learn more when I teach others than when I am taught, so the experience is fairly natural to me.

But what happens when the output of AI is based on being trained on greater and greater amounts of prior output of AI? When generative AI is responsible for more and more of the content being created, so future AI versions will be trained on the outcome of existing AI output? Is it a problem? Can AI get caught in a feedback loop, and hit "model collapse"?

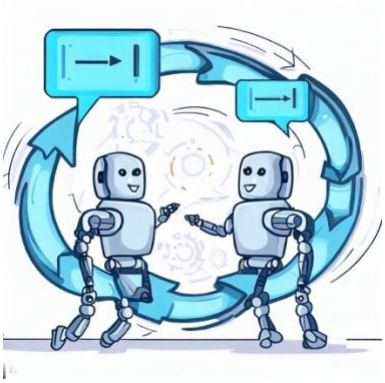


This is a question raised in a recent article from "Venture Beat" found at https://venturebeat.com/ai/the-ai-feedback-loop-researchers-warn-of-model-collapse-as-ai-trains-on-ai-generated-content/. The article notes that, in six months, more people are using and relying on the output of generative AI (ChatGPT, Bard, et al.), leaving less human-generated content on which future AIs might feed. A group of researchers put out their thoughts on "The Curse of Recursion: Training on Generated Data Makes Models Forget." https://arxiv.org/abs/2305.17493v2, https://arxiv.org/pdf/2305.17493v2.pdf.

The journal article is filled with mathematical equations, so I can't easily follow their proofs, but the second law of thermodynamics (closet physics major) speaks to the direction of natural processes, that entropy will always increase over time (changes toward disorder are overwhelming more likely than those toward order).

As a (poor, but enthusiastic) musician, I use technology to take music I hear and capture it as notation. Through a process called quantization, the free and expressive imprecisions in performance are shoved into a grid, made to conform with more regular patterns. Expressiveness can be lost.

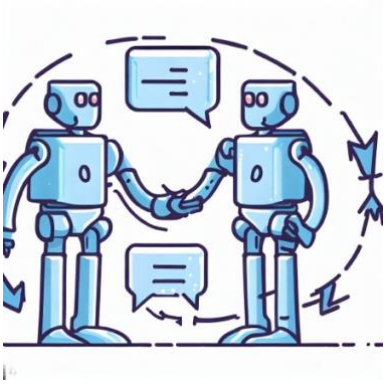
Quantizing isn't just loss in music. The same thing goes with an original goal of XBRL – instead of forcing reporting distinctives into 800 fixed reporting categories, let companies report what they want, and then associate it with known quantities, a process now known as "anchoring."



I can't say whether AI output is "quantized" per se. I can tell you that researchers who asked ChatGPT to tell them a joke 1000 times, it told the same 25 jokes some large portion of the time. "Over 90% of 1,008 generated jokes were the same 25 jokes." https://arstechnica.com/information-technology/2023/06/researchers-discover-that-chatgpt-prefers-repeating-25-jokes-over-and-over/.

But let's look at the original corpus of training material. Some says it is already filled with "noise, bias, and low-quality content." There is the old saw that "The entire realm of human knowledge passes through Internet chat rooms every four days." There's also the old saw that "The average person uses only 10% of their brain. And with the average Internet poster, that seems absolutely obvious."

Is it possible we aren't headed to model collapse … but if humans are adding energy to the system through selecting and (re)publishing the generative AI content, perhaps that's enough energy to stop the collapse.



How AI Is Changing the Audit and The Way Auditors Work: In Their Own Words

By Gundi Jeffrey

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

AI is changing every business and organization, including auditing and how it is performed: automating, accelerating and enhancing business processes, helping to transform at scale and drive value. Today's auditors believe that means delivering even higher-quality audits. For example, AI is expected to help accounting firms to better identify high risk transactions, allowing them to sustain their focus on risk assessment and obtain audit evidence over much larger, more complex sets of data. Also, by removing some of the more time-consuming tasks for auditors, AI will free them up to apply valuable skills in other areas, again enhancing the audit for everyone.

In a recent post on its webpage, PwC Global points out that "generative AI is poised to revolutionize how we work, live and interact. It's clear that we are now at a tipping point. Generative AI will change business models and how work gets done and, in the process, reinvent entire industries.

For example, says Sebastian Stöckle, Head of Innovation, Global Audit, at KPMG International, "in financial services, we are seeing AI promoting greater inclusivity by analyzing broader and larger amounts of data. This could lead to more customers being offered mortgages and that could give a lender a significant competitive advantage."

Stöckle adds that it is critical, therefore, that AI be being built with the most accurate, unbiased and relevant data available. Second, companies often focus their investment in AI on growth strategies, customer focus or frontline operations and often underprioritize the investment in AI support, governance, risk and compliance. There are ethics and resilience issues to consider here too. Guidelines are needed and due to constant change, aspects must be continually monitored and addressed.

A key risk around AI, which is very relevant to audit, is "explainability." This means that we still need to understand and explain why the technology may be highlighting certain items and trends. That's why, says Stöckle, "we believe it's important to have people working alongside AI to prompt deeper thinking and challenge where necessary, rather than removing people from the loop entirely. At the same time, this will help training the AI continuously through human input."

Lastly, he points out, that "as with any new technologies, companies need to think carefully about the skill sets they need within their organization to achieve and to maximize the possibilities, recognizing that it won't be perfect straight away."

ThinkTWENTY20 wanted to learn more about the impacts of AI on audits and how they are performed. So, we went to two differently-sized accounting firms in Canada for information on how they are handling the changes: Peter Hargitai, Partner, National Digital Risk Solutions Leader, PwC, and Anita McOuat, National Assurance Leader, PwC Canada; and Stephanie Pileggi, CPA, CA, Partner, Professional Practice, Crowe Soberman LLP.

ThinkTWENTY20: *There is a lot going on the audit and assurance area and AI these days. How are audit services changing as a result and what new services in this area are most in demand by your clients?*

Stephanie Pileggi: Crowe Soberman's audit and assurance clients expect the performance of high-quality engagements to service their needs. Our services will adapt and evolve alongside the changing needs of our clients, incorporating advanced automated tools and techniques. While AI has not altered the performance of our audit and assurance services, or our service offerings currently, we are in the process of exploring mechanisms to increase our effectiveness and efficiency.

Peter Hargitai: With the help of increasing computing power, machine learning and AI-enabled audit tools, large volumes of data can be analyzed to find exceptions and identify insights, patterns and connections that are not readily apparent to the human brain. This enablement is transforming our audit and assurance practices. However, human involvement is critical to understand the output, to determine if the information represents a true deviation and for related impact assessment.

As clients implement AI-enabled tools into their processes, new offerings for assurance engagements are emerging:

- Assurance over the AI tool, with its algorithm or parameters driving output to establish if any bias exists in the underlying data or the algorithm,
- Assurance over the AI tool, with controls and processes in line with Service Organization reporting standards.
- Assurance over the appropriate use of AI, such as governance and compliance with regulatory or ethical requirements.

With machine learning and AI-enabled audit tools, large volumes of data can be analyzed to identify insights, patterns and connections that are not readily apparent to the human brain

ThinkTWENTY20: *How are you using AI to do audits? What benefits have you gained as a result?*

Hargitai: AI has the potential to drive enhanced quality and efficiencies while recognizing the challenges and considerations of implementing automation within analytics across each phase of the audit, from planning activities through to reporting. It's imperative to gain an

understanding of the tools and applications available for automation and who in the organization has the lead responsibility. Being strategic about the audit leverages opportunities will drive successful outcomes, an ideal place to start is with high-outcome, low-effort opportunities. Processes that lend themselves to automation are consistent and repetitive in nature, for example spreadsheet reviews, filtering and sorting information and manual data entry to the systems of record are typical areas of consideration. Digitizing audit processes has also become a priority practice, where evidence is sourced in electronic format to build fully-electronic audit files.

Pileggi: Like many other mid-size firms, we are in the early stages of our digital transformation journey, looking to incorporate new technologies including AI into our services to provide greater support to our clients.

ThinkTWENTY20: *Does the use of these new tools provide new benefits to clients also? What are they?*

Pileggi: Our clients expect us to understand their businesses and act as trusted advisors. We expect that AI and other technologies will further assist in this respect. It is too early for us to comment on what any new benefits to our clients may be in this area.

Hargitai: AI has proven to drive improved productivity and innovation for businesses. Simplification and automation of tasks that free up employees time to focus on insight-oriented and higher value-adding work is a primary benefit of such technology. Transactional tasks are increasingly being automated, taking advantage of the power of algorithms and their ability to spot insights in data sets, and pinpoint fraud or identify new opportunities such as savings, improved efficiency and profitability, at times leading to new markets, or pivots to market opportunities.

ThinkTWENTY20: *How do the many new requirements for ESG, sustainability and integrated reporting affect how you perform your services? Will you be offering assurance of some type on these services as a result?*

Anita McOuat: We've been providing assurance over sustainability information for over 15 years and, as the investors' use of this information has grown, so has the demand for our assurance services. As auditors, we already have the necessary skills to assess internal controls, data accuracy and completeness, and review disclosures, and we have ESG specialists on our team. As we think about the future of our audits, integrating financial and ESG reporting is where it's heading. We have seen significant calls from the investor community to see credible financial and sustainability information together (and at the same time) as both are being used in their evaluation of companies risks and opportunities. So, we are seeing more and more integration between the two – and the great

news is that our assurance teams are made up of both financial statement and ESG assurance providers, ensuring that we are going to our clients with the right skills in this rapidly evolving environment.

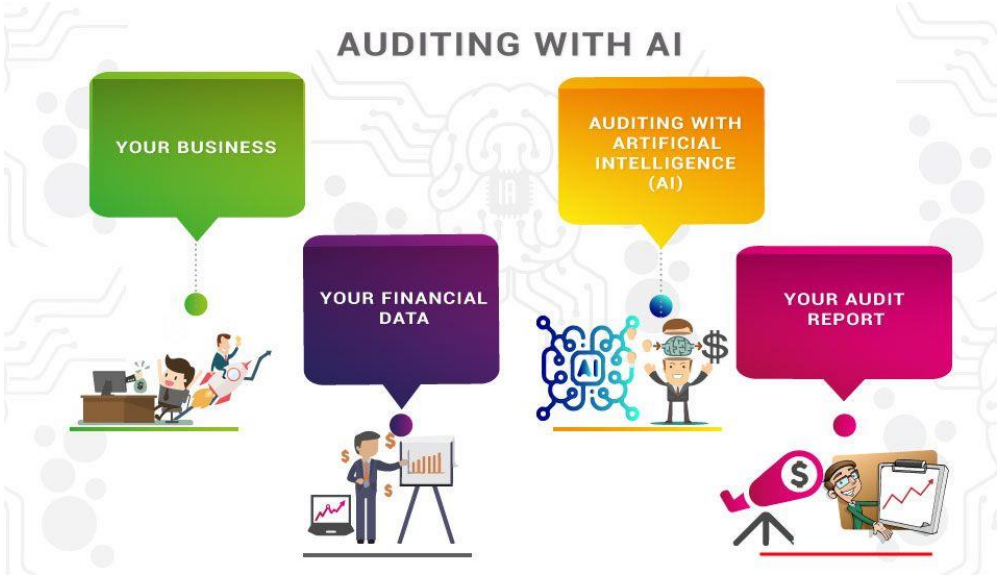
Pileggi: Crowe Soberman will continue to monitor advancements in this area and the impacts they may have on our clients.

ThinkTWENTY20: *Are your auditors having to acquire new skill sets in this changing work sphere? And, if so, specifically what would they be? Are you providing the new training for them?*

Pileggi: For Crowe Soberman, it is early days in the process of identifying new automated tools and techniques to expand our capabilities in delivering high-quality audit and assurance engagements. As always, when we implement new tools, we provide training to ensure that our people are set up for success and equipped with the appropriate skills and resources.

We need to retool ourselves to increase our knowledge and comfort with the disciplines of data science, data management and become familiar with machine learning techniques.

McOuat: Many of our core audit skills are transferable to providing assurance over ESG, AI and other digital risks. If we take ESG as an example, the part that we are layering on is the specific understanding of common climate metrics, which systems the data comes from, and an understanding of all the new standards as they are released. We are providing both classroom and on-the-job training so that our people can add these skills to their toolbox. We've also hired several specialists that don't have traditional accounting backgrounds, and we work together as an integrated team.



ThinkTWENTY20: *Or do you need to hire technical consultants to help the auditors do their work?*

Hargitai: Advanced technologies provide enhanced levels of at times complex information for auditors. It enables them to make appropriate judgments. However, the auditor is still on the hook to conclude and make that judgment. We are seeing changes by moving towards investing in multidisciplinary teams that include a range of CPAs, with varying expertise, and specialists with additional technical background. Audit and assurance professionals need to retool themselves to increase their knowledge and comfort with the disciplines of data science, data management and become familiar with machine learning techniques. We are seeing a high demand for resources that have an understanding of IT, OT, data analysis and capture and cloud-enterprise resource planning systems combined with critical analysis, thinking, and agility.

Pileggi: All options are on the table as we undertake our digital transformation journey. Depending on the complexity of the tools, we decide best suit the needs of our practice and our clients, we may hire technical consultants, as we have in the past, to assist with tasks such as data extraction, validation and cleansing.

ThinkTWENTY20: *I've heard that there's so much more to AI than automating simple tasks like analyzing data. Experts say that AI can support all areas of the audit – from helping auditors to make more insightful judgments to providing a more robust challenge to management too. Would you agree? If so, exactly how does this play out for your auditors?*

Hargitai: Yes. AI deployment in the audit process can be viewed as a lifecycle opportunity to use these techniques in all phases of the audit including planning, risk assessment, execution, reporting. This, in turn, allows us to focus conversations on the high-risk areas and arms auditors. This will provide more focused and timely information, for healthy and challenging conversations with the auditee.

Some gaps in expectation have emerged between standards set for an audit vs. what clients and users expect. AI and the use of automation in the audit creates an opportunity to narrow this gap, but could also increase it. AI tools facilitate the effective handling of big data. It creates the opportunity to assess the full population of financially relevant data sets vs. tests using the audit sampling methodology. While this approach increases the opportunity to drive insights during the audit, it also may raise expectations that all errors or missing transactions will be detected. Auditors have to carefully navigate these expectations to drive a balanced approach that delivers a quality, insights driven, risk-based audit while managing the "expectation creep" from reasonable to absolute assurance.

There are additional complexities and risks associated with using AI, such as the ability to rely on and explain the results.

Pileggi: Absolutely – there are many possibilities for the use of AI on audit and assurance engagements. There are, however, additional complexities and risks associated with using AI,

such as the ability to rely on and explain the results. Further, challenges with respect to maintaining client confidentiality must be considered. As a mid-size firm, Crowe Soberman will take a cautious and calculated approach to adopting AI solutions to ensure that our engagement teams are appropriately supported, and client confidentiality is maintained.

ThinkTWENTY20: *Apart from the benefits that AI is expected to offer, are there risks in using it for audits? What have you learned about this so far?*

Pileggi: Further to the risks I mentioned earlier, simply relying on AI to respond accurately all the time can be dangerous. There must be checks and balances in place to ensure that any outputs from an AI-based tool can be relied upon from an audit perspective.

Hargitai: Along with the benefits, there are risks associated with AI. There are three critical areas to highlight:

- The underlying data quality and reliability impacts the effectiveness of the AI tool.
- Designing procedures that govern the quality of data used in these tools become critical. The accuracy of the information generated by these tools depends on it.
- The concept of "garbage in, garbage out" is compounded with these technologies.

In addition, the power of AI is its ability to consume large amounts of data, including confidential data, in order to develop the patterns and apply them to predict an outcome.

Auditors face increased complexities in assessing the risks associated with data and privacy, and will need expert engagement team support to assess the design of security controls.

Furthermore, client management needs to be able to explain and justify AI's results for the audit.

AI tools have the potential to give biased or incorrect predictions if they are trained using biased data. A deep understanding of these protocols is required to manage the risk of overreliance for the audit.

My hope is that AI will help with some of the more audit and assurance routine tasks, to free us up for the more human-led activities.

ThinkTWENTY20: *There has been some fear expressed that AI will replace the jobs that auditors are doing or make some of their work redundant? Do you believe this will be the case?*

McOuat: Like most businesses, I think that we all hope that AI will make us more productive! However, there are parts of an auditor's job that are very dependent on building strong client relationships, coaching and mentoring new staff, and using professional judgment to assess a situation. My hope is that AI will help with some of the more routine tasks, to free us up for these more human-led activities.

Pileggi: I do not believe this to be true. AI will change the way we work, just like the introduction of the computer, internet and cell phones. We will learn to adapt to new technologies that allow us to become more effective and efficient in our tasks.

ThinkTWENTY20: *What other changes do you think will AI bring about in this rapidly evolving sphere of audit work? What will the future for your auditors look like?*

Pileggi: The possibilities are quite broad; however, I believe that the use case needs to make sense for the size of our firm and the needs of our clients. It will be critical for us to take a calculated and steady approach to implementing new technologies, including AI. Our goal will be to increase the effectiveness and efficiency of our auditors using AI and other technologies.

McOuat: One of the best parts about being an auditor is that we get to learn all about our clients' businesses. I'm very excited to see how my clients decide to incorporate AI into their business models and their processes, and I don't think we can predict all of the ingenious ways it might be used. New uses will mean new risks, new disclosures, new accounting, and new skills, which translates to a bright future for auditors.

Propheteering: A Review of *Next: A Brief History of the Future*

By Robert Edison Sandiford

Robert Edison Sandiford is the author of several books, among them the award-winning The Tree of Youth & Other Stories, And Sometimes They Fly *(a novel*) *and* Sand for Snow *(memoir). He has also written graphic novels for NBM Publishing. In 2003, he and the poet Linda M. Deane founded the Barbadian cultural resource ArtsEtc Inc. He has worked as a publisher, teacher and, with Warm Water Productions, producer. His fiction and non-fiction have appeared in journals, magazines and anthologies. Currently working on another novel, his most recent title is Fairfield from DC Books.*

In his recent book, *Next: A Brief History of the Future* (Gefen Publishing House, Paperback, 9789657023754, 236pp, 2022), author Avi Jorisch is a very hopeful man. Maybe as hopeful as any man can be in our present age. He's "optimistic not just about the future but about the ability of technology to make the world a better place." And he comes by this optimism honestly. The starting point for his second book, *Next: A Brief History of the Future*, is March 2020, the first days of the global coronavirus pandemic, which we only just officially emerged from in May this year with the WHO's declaration of the end of COVID-19 as a global health emergency.

As reported by Jorisch, prophet-like, we have reason to feel good about our chances as a species facing all kinds of threats, from the effects of climate change on our ecology and coastal areas and weather patterns, to wars, crime, bigotry, human trafficking, and avarice. Jorisch's writing is easy, almost breezy; journalistic, yes, but his hundreds of interviews and references are harnessed with the appeal of a personal essay. He tells us about his three young sons (who could have been mentioned more throughout the book), and visiting a tech convention in Washington, D.C., with "the kind of stuff small children love." Adults, too, as it so happens.

Mouth-gaping Innovations

We're talking mouth-gaping innovations, head-scratching science fiction made science fact. Innovations we thought were well into our future are clearly possible today.

Jorisch, a Senior Fellow at the American Foreign Policy Council and the author of *Thou Shalt Innovate: How Israeli Ingenuity Repairs the World* (Gefen, 2018), at first tells such stories about human innovation to his kids, Eiden, Oren and Yaniv, to whom the book is dedicated. "Then, as much to satiate my own curiosity as theirs, I found myself looking for more. Who are the most

impressive innovators out there today, shaping the history of the future?" *Next* seeks to answer that question.

Are we "closer than we've ever been to driving ourselves to extinction"? It certainly feels that way on dread days, when the news is less tambourine-shaking good. "But we're also in an era of abundance – and remarkable wealth…." Similar to *Thou Shalt Innovate*, Jorisch's new book "tells the story of thirteen game-changing innovations that are poised to transform our species from a society of takers to a society of givers." A tall claim, the stakes are indeed high.

Humanity's talent for exploitation at the expense of all others (including ourselves in the absence of) is exceptional. So, many of our problems are related to wastage or the poor management of ample resources. And the lack of understanding that "ample" does not mean "inexhaustible." Moore's Law, by Intel cofounder Gordon Moore, "posits that the power of microchips will double roughly every two years while their cost remains about the same, [and it] has held up ever since." But is Jorisch a little *too* optimistic? Have, for instance, "advances in microfinance…helped lift millions out of poverty" and stay that way?

Among inventor-author Ray Kurzweil's several significant predictions for humanity is this one: "We won't experience 100 years of progress in the twenty-first century…it will be more like 20,000 years of progress." Yes and no; his numbers are comparative. Progress takes the time it takes. Sometimes we move quickly, other times slowly or very little or apparently not at all. Progress happens nonetheless, incrementally, over time.

We'll see how many of Kurzweil's predictions materialize. His claims that "[a]rtificial intelligence will [lead us to build] real human computer relationships" strikes a chord of concern. Recent appeals from SpaceX founder Elon Musk, among others involved in AI, have been for us to slow our roll on its wider implementation. The same may be said about the genetic engineering tool CRISPR, "the first technology truly capable of changing the fundamental chemistry of who we are," writes Jorisch.

The question may not be so much are we ready for space-age innovations, rather which are we ready for and when? Musk, and Jeff Bezos' Blue Origins, would say we are undoubtedly ready to push to Mars and beyond in our solar system. Brian Weeden, as director of program planning for Secure World Foundation, advises caution based on the "significant challenges ahead," many we have not yet thought of. Because we may not see the effects of CRISPR for generations, it may be wiser to move at impulse power – easier to shift course and sidestep potentially Titanic crashes.

Two factors propelling our push into risky areas are big business, i.e., the money to be made there (potentially in the trillions), and advances in "rockets, robotics, communications, and 3D printing technologies." Jorisch claims that "space offers us a second chance to change our relationship with nature." But where's the evidence of this so far? According to Christian Sallaberger, the CEO of Canadensys Aerospace Corporation, for "the first time…our species has come together to design things that benefit our entire society and improve the quality of life for all on Earth." Who is benefitting now, and who stands to benefit in the future?

Is There a Catch?

There is always one, or more. Here, it is the massive work ahead of us. "Above all, three megatrends are the driving forces behind the issues tackled in *Next*; the growth of a global middle class, rapid urbanization and increased physical and technological connectivity. By the end of the decade, the world's population will reach 8.5 billion…." Truth is we're already having trouble managing the 8 billion we presently are.

There are "thirteen critical areas outlined by the United Nations as key sustainable Development Goals: space, learning, shelter, the environment, hygiene, medicine, disaster resilience, energy, prosperity, food, water, governance, and security." Current innovators in each area are the subjects of Jorisch's 13 chapters. Despite the remarkable work he highlights, though, we have not kept pace with these goals, which are only a partial list of what we must do.

Funding has been a drawback as well to leaps in progress. Khan Academy, founded by Salman Khan, "opens the world of knowledge to learners of all ages, giving them critical tools and the confidence to learn any subject, anytime they want." Evolved from website to YouTube math tutorials to aid family members, Khan went from ready to give up because of depleted personal finances to a $10,000 donation and then hundreds of millions in months. It took the right connections and input at the right time by the right people, but first a quality product.

Ethan Brown, the founder of Beyond Meat, tells a similar story about getting his plant-based meat substitutes to market: "Eventually, other big players joined in, including Taiwan's Tsai family, Morgan Creek Capital, DNS Capital, and Honest Tea founder Seth Goldman." This was after "Brown had already run through his 401K [pension] and savings accounts, and even sold one of his houses." Money, and lots of it, is always needed to aid society-enhancing ingenuity. Along with it, a mind bent toward sustainability on the ground, continuity, resilience not just easy-access quick fixes – helps the process. Financial officers must be as innovative with their budgets as those being funded.

No less a challenge to our progress is unchecked ego. Some "educators who are critical of Khan's approach" call it simplistic at best and unexamined at worst. Khan, an "ex-hedge-fund guy," is not "the world's teacher," regardless how widely used his platform is. Even he must acknowledge that. And not everyone who and has made contributions to society counted basic math among their skills. Conversely, many excellent mathematicians have contributed their share to the horror of living. The critics are to be heeded when they remind us that we still – and will always – need to look at how we learn and why.

All the math skills in the world, without writing, reading, social studies, vocational knowledge, and so on, give us a less well-rounded individual than we would like. *All* of these human activities affect and influence us, our understanding of how to better our world. Shigeru Ban, seen in "Chapter 7a – Disaster Resilience: The Ring of Fire," developed "easily constructed paper homes…used all over Japan – and around the world – [for] when natural disasters strike." He did this by "integrat[ing] design thinking and innovation, which has already saved an untold number of lives."

The best final analysis of Khan Academy, and other innovations like it, is that it is "a wonderful and important supplement to – though not replacement for – traditional classroom education." The practice of mastering material before moving on to a next level is important to consider. The free access to tutorials makes this possible even when teachers have gone home or, worse, suffered burn out.

Jorisch's goal with his books has been to "give readers hope about our lives. About our future as a species." He's done his research. He's a generous sharer and storyteller, with genuine enthusiasm for his topic and a sense of adventure, of discovery. (We can forgive him the occasional corny punning in his chapters' subheadings.) *Next* is popular in its recounting, rigorous enough in its accounting. I don't think I was aware that "[t]he driving force behind [the International Space Station] is to preserve life on Earth and build colonies in space."

What remains to be faced here, in appreciating our innovations and avoiding their potential pitfalls, is our own past performance and ongoing imperialistic tendencies as peoples.

Why do we never think enough is enough, that so far is far enough, at least for the moment? Why do we, or would we, need to realize all Kurzweil sees us capable of with, say, computers – especially if we're not ready to handle it, or we *know* the potential of certain pursuits to destroy us? Because we can do something doesn't mean we should do it, at least not without serious reflection. And the bigger and more immutable the thing, the longer and deeper the reflection. Given Jorisch's own concession that "our world has also changed at such a rapid pace that we've struggled to adapt, and in the trade-off for progress, we've been all too willing to accept or ignore the more sinister ramifications," the outright caution of futurists like Nick Bostrom seems more advisable.

Is There a Tomorrow?

Yes, always. What role will we continue to play in its expansion or erosion? That seems less clear. *Next* is something of a rallying cry. Look see what these few are doing. Now imagine if more of us were doing the same, buying into the same, taking the long view. Exhibiting, say, the same kind of honour and commitment to cause as the members of Muhammad Yunus' Grameen Bank, "the bank for the poor" that provides microfinancing.

Here we come back to ego, and perception. In "Chapter 3 – Shelter: Let There Be Light," Sivan Yaari's goal through her shrewdly managed Innovation: Africa nonprofit is to bring Israeli solar and water technology to the African continent. Access to safe drinking water is as crucial to a people's development as access to education and electricity. "Approximately half the citizens of Africa are without electricity…." Yet the notion that African poverty is in some way "true" or "representative" poverty skirts caricature.

"Chapter 5 – Hygiene: There Will Be Blood," reminds us how outdated prejudices and taboos, in this case in a contemporary Indian community over sanitary napkins, can impede advances for the larger society. We need to think of our survival and the health of the planet as more than just another "opportunity," business or otherwise, to prove ourselves right. What is demonstrated throughout *Next* and its individual stories is that simple solutions that reflect the realities of an environment *and* its people are often effective.

Innovators don't always set out to innovate. They might not even be aware there's a need to do so. They open doors, for themselves and others, when they open a dialogue about a situation or problem. Simple or not, the path to solutions isn't always straightforward: there is a stumbling toward, multiple trials and errors. Whether with microfinancing, electric cars, sanitary napkins, or plant-based burgers, the story or thrust is the same: reach the masses, make the product accessible to them, and you just might start to make a difference. Technology doesn't make us better. That's our responsibility.

Corporate Reporting: Quo Vadis?

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

By Alan Willis, FCPA, FCA

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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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.