CPA CHARTERED PROFESSIONAL ACCOUNTANTS CANADA

Mindset and enabling skills of professional accountants – a competence paradigm shift

PAPER 4

The fourth in a four part series discussing ethical leadership in an era of complexity and digital change.

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Chartered Professional Accountants of Canada (CPA Canada) works collaboratively with the provincial, territorial and Bermudian CPA bodies, as it represents the Canadian accounting profession, both nationally and internationally. This collaboration allows the Canadian profession to champion best practices that benefit business and society, as well as prepare its members for an ever-evolving operating environment featuring unprecedented change. Representing more than 220,000 members, CPA Canada is one of the largest national accounting bodies worldwide. cpacanada.ca

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Over four decades, IFAC has represented the global profession and supported the development, adoption, and implementation of international standards that underpin the contributions of today's global accountancy profession. IFAC has maintained a long-term approach to building and strengthening a global accountancy profession that supports transparent, accountable, and sustainable organizations, financial markets, and economies. ifac.org

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The IESBA is an independent standard-setting board that develops, in the public interest, high-quality ethics standards and other pronouncements for professional accountants worldwide. This includes the *International Code of Ethics for Professional Accountants (including International Independence Standards)*, which establishes ethics requirements for professional accountants.

The board also supports adoption and implementation, promotes good ethical practices globally, and fosters international debate on ethics issues faced by accountants. ethicsboard.org

Background and acknowledgements

This paper completes the series of four thought leadership pieces developed by Chartered Professional Accountants of Canada (CPA Canada) to build on a collaborative exploratory paper and global roundtable event held jointly with the Institute of Chartered Accountants of Scotland (ICAS) and the International Federation of Accountants (IFAC), entitled *Ethical Leadership in an Era of Complexity and Digital Change*.

The exploratory paper, a summary of the event, and an on-demand recording are available on the IFAC Knowledge Gateway and on the International Ethics Standards Board for Accountants (IESBA) technology initiative's focus page. The paper was also informed by diverse stakeholder views gathered through the IESBA's broader technology initiative.

This post-event series of papers more fully investigates the key themes presented in the exploratory work, and leverages the event delegate discussions and recommendations, to offer practical guidance for professional accountants (PAs), professional accountancy organizations (PAOs), and other interested stakeholders, as our profession evolves to address changing stakeholder needs while continuing to meet our public interest responsibilities. The series contributes to the work being undertaken throughout the profession to re-think the role of PAs as ethical leaders in this era of complexity and digital change.

The other papers in the series, released throughout 2021 and 2022, cover the following interconnected, but distinct, topics:

- complexity and the professional accountant
- technology is a double-edged sword with both opportunities and challenges for the accountancy profession
- identifying and mitigating bias and mis- and disinformation

Mindset and Enabling Skills – A Competence Paradigm Shift was authored by CPA Canada members Brian Friedrich (IESBA member and chair of IESBA's Technology Working Group) and Laura Friedrich (IESBA technical advisor) under the direction of Gord Beal, vice-president, Research, Guidance and Support, at CPA Canada; and with valuable insights provided by James Barbour, director, policy leadership at ICAS and member of IESBA's Technology Task Force; Christopher Arnold, head of SME/SMP and research at IFAC; and Ken Siong, program and senior director at IESBA. Greg Owens, International Panel on Accountancy Education (IPAE) member; Irene Wiecek,

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Feedback and comments are enthusiastically welcomed – please send to foresight@cpacanada.ca.

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Part I: Why a paradigm shift?

> In times of change, learners inherit the earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists.[1]

As the landscape in which PAs work continues to evolve, the profession needs to focus on encouraging and supporting PAs to be learners in broader ranges of technical competence than have been historically undertaken, while also channelling professional skills in new contexts. In addition, as technology continues to disrupt organizational norms, there is a greater need than ever for PAs to cultivate their human skills and values such as curiosity, creativity, and resilience. This requires a shift in mindset to be more agile and adaptable and to demonstrate a commitment to lifelong learning,[2] while at the same time continuing to be staunch advocates of ethical decision-making.

1 Eric Hoffer, cited in J Charles Rich, "In times of change learners inherit the earth" (1997) 87:5, J Neurosurg, online: <https://doi.org/10.3171/jns.1997.87.5.0659> at 659.

2 IFAC, *Handbook of International Education Pronouncements* (2019), IES 3 (2021), online: <https://www.ifac.org/system/files/publications/files/Handbook-of-International-Education-Standards-2019.pdf> at 133, Table A (c), (i).

This paper advocates the need for the profession to fundamentally shift its focus to thrive and stay relevant as the world changes. Rather than continuing to emphasize the core traditional technical areas that most PAs train in, the profession's evolution should include broad technological literacy, and hone the professional and human skills that set us apart from the machines we will work collaboratively with. This shift is underway in some organizations and jurisdictions, but significant opportunities remain throughout the profession as a whole.

Competence is driven by stakeholder needs, which are shifting in the current environment

Professional competence and due care is a fundamental principle of ethics for professional accountants.[3] Sufficient competence is required to meet their ethical obligations of due care, objectivity and acting in the public interest, but what exactly is professional competence? The *International Education Standards (IESs)* define professional competence as "the ability to perform a role to a defined standard."[4] The standards are defined in the IESs by way of learning outcomes, competence areas and proficiency levels that call on the broad range of professional standards such as International Financial Reporting Standards, International Standards on Auditing, the International Code of Ethics for Professional Accountants (including International Independence Standards), tax regulations, and other relevant standards within the PA's jurisdiction. The IESs reflect the extensive role of PAs:

3 See, for example, International Federation of Accountants (IFAC), 2021 *Handbook of the International Code of Ethics for Professional Accountants* (New York: IFAC) [IESBA Code] at section 113 (https://eis.international-standards.org/standards/iesba/2021); Chartered Professional Accountants of British Columbia (CPABC), *Code of Professional Conduct* (Vancouver: CPABC, October 2020) [CPABC Code], Preamble at 6 (https://www.bccpa.ca/member-practice-regulation/act-bylaws-code-of-professional-conduct; the concepts of professional competence and due care are associated with different principles in Canada); and Institute of Chartered Accountants of Scotland (ICAS), *ICAS Code of Ethics (including International Independence Standards)* [*ICAS Code*] at section 113 (https://www.icas.com/professional-resources/ethics/icas-code-of-ethics). Note that the professions in Canada are provincially regulated, so the Code of one of the larger jurisdictions is referenced for illustration. The Codes of other provincial bodies are substantially equivalent with respect to the elements referred to.

4 *Supra* note 2 at 204.

> "The accountancy profession serves the financial and, in some circumstances, the non-financial information needs of a broad range of decision makers including, but not limited to (a) the public, (b) present and potential investors, (c) management and employees within organizations, (d) suppliers and creditors, (e) customers and (f) government authorities. The accountancy profession's ability to satisfy users' information needs contributes to an efficient economy that creates value to society."[5]

The IESs further explain that professional competence "goes beyond knowledge of principles, standards, concepts, facts and procedures; it is the integration and application of (a) technical competence, (b) professional skills and (c) professional values, ethics, and attitudes."[6]

The Glossary to the IESs[7] includes the following definitions:

Technical competence – Technical competence is defined as the ability to apply professional knowledge to perform a role to a defined standard.

Professional skills – Intellectual, interpersonal and communication, personal, and organizational skills that a professional accountant integrates with technical competence and professional values, ethics and attitudes to demonstrate professional competence.

Professional values, ethics, and attitudes – The characteristics that identify professional accountants as members of a profession. They include the principles of conduct (e.g., ethical principles) generally associated with and considered essential in defining the distinctive characteristics of, professional behaviour.

5 *Ibid* at 7.

6 *Ibid* at 10.

7 *Ibid* at 205 and 206.

It is noteworthy that the IESs frame the PA's role in terms of information, rather than specific skills. In today's business environment, information has taken on an increasingly important position, as the explosion of data creates new opportunities to gain insights through data analytics. To harness this potential, organizations are increasingly turning to automation and autonomous and intelligent systems. At the same time, the drive toward environmental, social and governance (ESG) initiatives has broadened the scope of information that stakeholders are demanding from organizations. Both of these trends are fundamentally shifting the competence needed by PAs to deliver value through information – and at each step along the data-to-decision value chain.

Roles and skills of the future

Within the financial services sector (which includes accountants and auditors), the government and public services sector, and the professional services sector, the World Economic Forum (WEF) *Future of Jobs Report 2020* identified emerging job roles that focus largely on analyzing, using and securing data and information, as well as on strategy, risk management and business development.[8] The top ten emerging job roles in financial services are:

1. data analysts and scientists
2. big data specialists
3. digital marketing and strategy specialists
4. AI and machine learning specialists
5. digital transformation specialists
6. information security analysts
7. database and network professionals
8. business development professionals
9. fintech engineers
10. cyber security specialists

These reflect the growing trend towards reliance on data and human-machine collaboration. Prof. Irene Wiecek, a member of the International Panel on Accountancy Education (IPAE), notes the hyper-connected nature of today's world: "Not only are we connected to each other; we are connected to machines and the machines are connected to machines. That's the big picture."[9]

8 World Economic Forum, *The Future of Jobs Report 2020* (October 2020), online: <http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf> at 134, 136, and 146.

9 Irene Wiecek, as quoted in Michelle Singerman, "How tech savvy do you need to be as a CPA?" (January 13, 2022), online CPA Canada <https://www.cpacanada.ca/en/news/accounting/the-profession/2022-01-13-cpa-technology-skills>.

The WEF *Future of Jobs 2020* report also notes that "Companies need to invest in better metrics of human and social capital through adoption of environmental, social and governance (ESG) metrics and matched with renewed measures of human capital accounting."[10] This growing area reflects new information needs that require insightful application of technology to produce results coupled with an understanding of business measurement and fair reporting principles, especially until generally accepted ESG standards are agreed upon.

Innovators in business share similar perspectives. In addition to core skill sets such as leadership, problem-solving and analytics, JoAnn Stonier, chief data officer (CDO) of MasterCard, emphasizes the importance of being able to translate between business and technical concepts: "If you think about it, that's kind of the moment that we're in right now – [we need] the ability to be fluid in translating concepts from one domain into another."[11] She also considers the ability to derive *meaning* from outputs – whether from a dashboard or a report – as an essential business skill.[12]

Stonier further highlights the importance of being able to bring context to information when data is being used to train AI systems or otherwise as part of analysis:

> "I use this example all the time: If you go back to the 1910 voter rolls in the United States, that's a valid data set. You may use that for whatever purpose you may have for evaluating something that happened in 1910 or 1911. But you need to know that inherently, that data set is going to miss women, it's going to be missing people of color, it's going to be missing parts of society. As long as you know that, then you can design an inquiry that is fit for purpose."[13]

Through an equity, diversity and inclusion lens, it's certainly difficult to imagine an inquiry being 'fit for purpose' when it is missing representation from several key parts of society, but if the inquiry is one that relates specifically to white males in the early 1900s, the data set Stonier is referring to makes abundant sense. The ability to contextualize data sets in this way can help organizations identify, evaluate and mitigate bias in data and systems, to ensure fitness for use in decision-making. Equally important is having the judgment to ensure

10 *Supra* note 8 at 6.

11 JoAnn Stonier in MIT Sloan Management Review "Me, Myself, and AI" podcast, online: <https://sloanreview.mit.edu/audio/designing-a-better-future-mastercards-joann-stonier/>.

12 *Ibid.*

13 *Ibid.*

that the inputs are appropriate and the outputs from the dashboard or report are trustworthy. These skills support the PA's demonstration of having an inquiring mind, as discussed in the third paper of this series that considered the impact of bias and mis- and disinformation.[14]

With respect to securing data and information, it's cybersecurity skills that hold the spotlight. Verizon's *2021 Data Breach Investigations Report* found that 85 per cent of breaches involved the human element, whereas only three per cent of breaches involved exploiting a system vulnerability.[15] Clinton Firth, EY's global cybersecurity lead for energy, puts the task of maintaining security in perspective, explaining that "those trying to protect data in the organization have to be right all the time, while the hacker trying to breach the organization's security only has to be right once."[16] Taken together, this underscores the importance of human-focused internal controls in addition to systems-focused controls. Once again this creates both opportunities and responsibilities for PAs as organizational security is a team activity.

The accounting profession is not immune to disruption, and is in the process of being transformed

So what do these shifts mean for the accounting profession? Research warns of a significant impact of automation and AI on the profession. For example, a Bloomberg report from 2017 predicted that U.S. accountant and auditor jobs were 94 per cent likely to be impacted by automation.[17] More recently, the WEF *Future of Jobs Report 2020* ranked accountants and auditors near the top of the list of the roles that are set to be increasingly redundant by 2025.[18] As professionals, we need to heed these warnings and adapt accordingly. David Autor, an economist at MIT who studies the labour effects of automation bluntly states: "A lot of professional work combines some element of routine information processing with an element of judgment and discretion. That's where software has always fallen short. But with A.I., that type of work

14 CPA Canada, ICAS, IFAC & IESBA, *Identifying and Mitigating Bias and Mis- and Disinformation* (Toronto: CPA Canada, February 2022), online: <https://www.cpacanada.ca/en/foresight-initiative/trust-and-ethics/identifying-mitigating-bias-mis-disinformation>.

15 Verizon, *2021 Data Breach Investigations Report*, online: <https://www.verizon.com/business/resources/reports/2021/2021-data-breach-investigations-report.pdf> Figure 7 at 7.

16 Clinton M Firth, "IESBA Cybersecurity presentation" (November 9, 2021) to the IESBA's Technology Working Group, online: <https://youtu.be/EJmgG1OLbEM>.

17 Mark Whitehouse & Mira Rojanasakul, "Find Out If Your Job Will Be Automated" (July 2017), online Bloomberg: <https://www.bloomberg.com/graphics/2017-job-risk/>.

18 *Supra* note 8 at 30.

is much more in the kill path."[19] Moreover, Malik Datardina, governance, risk and compliance strategist for Auvenir, warns "CPAs are not just competing with AI but with other professionals with a shared skillset, such as data scientists, so having an understanding of data handling, extraction and analysis will help them remain relevant and competitive. That's the baseline of what they need to understand."[20]

At the same time, however, we also hear a more positive prediction within the profession, that our jobs won't be replaced, but will instead be shifted to providing more higher-value activities, such as interpretation and strategic planning.[21] Implementation guidance related to the IESs notes,

> "The automation of more routine, repetitive tasks is enabling the accounting and finance team to focus on performing higher value-added activities. This, combined with the adoption of a more strategic outlook, is enabling [professional accountants in business] to increasingly contribute to significant enterprise value creation, and assume the role of a strategic business partner within their organization."[22]

Similarly, IFAC's *Practice Transformation Action Plan* notes that technology adoption and automation are driving a shift from firms providing transaction services to strategic ones. It notes "The accountant's role (as adviser, mentor and coach) is to work as a 'business partner' and trusted business adviser" and advocates for broadening the range of services offered to stay competitive.[23]

Significant opportunities for business brought about by emerging technologies are all around us, particularly as we learn to work with machines in new ways. The WEF predicts that "by 2025, the time spent on current tasks at work by humans and machines will be equal."[24] This trend is apparent in the words of Dave Johnson, Moderna's chief data and AI officer, who explains:

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19 Kevin Roose, "The Robots are Coming for Phil in Accounting" (March 6, 2021), New York Times, online: <https://www.nytimes.com/2021/03/06/business/the-robots-are-coming-for-phil-in-accounting.html>.

20 *Supra* note 9.

21 See, for example, Michael Higgins, "The Future of Accounting: How Will Digital Transformation Impact Accountants?" (May 19, 2021), online Forbes: <https://www.forbes.com/sites/forbestechcouncil/2021/05/19/the-future-of-accounting-how-will-digital-transformation-impact-accountants/>.

22 IAESB, "Implementation Guidance: Developing Professional Accountants in Business (PAIBs) for the Strategic Business Partner's Role" (October 2019), online IFAC: <https://www.ifac.org/system/files/publications/files/IAESB-Implementation-Guidance-Accountants-in-Business.pdf> at 1.

23 IFAC, *Practice Transformation Action Plan: A Roadmap to the Future* (New York: IFAC, 2020), online: <https://www.ifac.org/publications/practice-transformation-action-plan-6>.

24 *Supra* note 8 at 5.

> "[At Moderna,] we don't think about AI in the context of replacing humans. We always think about it in terms of this human-machine collaboration, because they're good at different things. Humans are really good at creativity and flexibility and insight, whereas machines are really good at precision and giving the exact same result every single time and doing it at scale and speed. What we find [to be] the most successful projects are where we kind of put the two together – have the machine do the parts of the job that it's good at [and] let the humans take over for the rest."[25]

But Johnson also explains that, although humans aren't being replaced, the size of the team is being decreased in the longer term by not needing to hire as many staff.[26]

What does this era of change mean for new and aspiring PAs? In a recent ACCA and IFAC report on the aspirations of Gen Z, IFAC CEO, Kevin Dancey, remarked "Whereas previous generations have seen the profession gradually shift, Generation Z accountancy professionals will see a transformation of the role and value of the accountancy profession."[27]

The report found that:

- Digital natives are "unsurprisingly comfortable with technology and see a future world of work that is connected and transformed through it, mostly on the upside."[28]
- Most Gen Z respondents "expect technology to impact entry level roles in accountancy but also see the benefits to the accountancy profession to focusing on higher value work. They understand that smart technology will continue to change what type of work is done, where it is done, and how it is delivered."[29]
- Young PAs and those aspiring to join the profession are primed for life-long learning and ranked opportunities for continually acquiring new capabilities as the top factor attracting them to prospective employers.[30]

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25 Dave Johnson, in MIT Sloan Management Review "Me, Myself, and AI" podcast, online: <https://sloanreview.mit.edu/audio/ai-and-the-covid-19-vaccine-modernas-dave-johnson/>.

26 *Ibid.*

27 IFAC and ACCA, *Groundbreakers: Gen Z and the Future of Accountancy* (ACCA: London, 2021), online: <https://www.ifac.org/knowledge-gateway/developing-accountancy-profession/publications/groundbreakers-gen-z-and-future-accountancy> at 5.

28 *Ibid* at 12.

29 *Ibid.*

30 *Ibid* at 47.

Regardless of whether technology is seen as an opportunity, an existential threat, or some combination of the two, most agree that the way PAs perform their roles will be very different in the future. This isn't being alarmist – although PAs have always been relied on to bring trust to information and inform decision-making, consider how achieving this has changed since the days of the paper ledger. Looking ahead, Dancey believes "The coming years will bring with them the promise of accountancy professionals as trusted business advisors, stewards of sustainable management, and experts in data and technology."[31] With data and disruption becoming increasingly prevalent, it's time to redefine our value proposition once again, build on our core areas of competence, and look beyond our current boundaries. It's time for a competence paradigm shift.

31 *Ibid* at 5.

Part II: Views from the field

During the roundtable event and other global outreach,[32] a number of key themes on competence and emerging skills and roles were evident in discussions with stakeholders in the context of the accounting profession:

We have a strong foundation to build on

- Professional accountants are often information creators, users, stewards, advisors, and/or assurance providers. In addition, PAs play a large part in creating and sustaining information systems that generate useful information for decision-making. This provides the springboard to new opportunities working with new data sources and types in ways that leverage existing capabilities.
- Providing competent professional service has always required that PAs apply and integrate technical skills with professional skills and ethical decision-making. As autonomous and intelligent systems replace more technical functions, this integration is still essential, and it increasingly falls to PAs to ensure that the skills computers lack – namely professional skills and ethics considerations – are not left out of the process.
- Core areas of competence such as financial reporting, internal control, and assurance remain important, but many of our traditional roles involving financial information are shifting to be augmented by new technology, so PAs need to be comfortable working with those technologies.
- Public perception in some jurisdictions is that PAs are limited in scope to producing or auditing an organization's financial information, yet a scan of the websites of accounting and professional services firms provides a much different picture, with many highlighting much broader information

32 See, for example, IESBA Technology Working Group, *IESBA Technology Initiative Phase 1 Final Report* (New York: IFAC, February 2020), online IFAC: <https://www.ethicsboard.org/publications/iesba-technology-working-groups-phase-1-report>; Brian Friedrich & Laura Friedrich, "Ethical Leadership in an Era of Complexity and Digital Change: Event Highlights" (May 12, 2021) IFAC Knowledge Gateway, online IFAC: <https://www.ifac.org/knowledge-gateway/building-trust-ethics/discussion/ethical-leadership-era-complexity-and-digital-change-event-highlights>.

services, often using emerging technologies. This illustrates the significant actual and potential re-positioning of the profession, particularly through multidisciplinary teams.

Enhanced technological literacy is essential in the information age

- New technical skills are needed to add value in terms of data governance and innovation oversight.
- Although PAs do not need to become data scientists or computer engineers, they do need an understanding of emerging technologies that is sufficient to evaluate risks and benefits and be able to have meaningful discussions, collaborate, and help design appropriate controls.
- The level of competence necessary might be best categorized as "technological literacy." This level corresponds to the way "financial literacy" is expected of those members of an organization in governance roles, but who are not PAs.

A shift in PA education and training is needed to reflect emerging opportunities

- A more multidisciplinary approach will best serve future PAs, combining traditional core competence areas with emerging areas such as sustainability, data science, AI, distributed ledgers, and cybersecurity.
- Traditional core competence areas (such as financial reporting, taxation, or assurance) are easier to define and assess, so there is a tendency to focus on them when we think about the skills needed going forward. In education programs particularly, it can be difficult to help aspiring PAs develop the broader professional skills, values, ethics, and attitudes (such as leadership, exercising professional judgment, having an inquiring mind and, in the case of auditors, exercising professional skepticism). It is equally challenging to accurately and rigorously evaluate this broader demonstration of competence. This needs to be overcome.
- Building professional skills, values, ethics and attitudes should be an increased focus area for professional programs (for example, through experiential learning in the classroom), but it is also essential that they be developed during practical experience, as they are best demonstrated and assessed in work settings.
- Programs often focus on teaching the mechanics of working with historical financial information and the technical skills of the profession. But these mechanics are changing radically, given automation trends. For instance – as noted above – many accounting systems are fully automated. All that needs to happen is that a customer buys something. The system then

captures the revenue, updates the company's bank information, orders new inventory and includes the information in real time reporting with comparatives to prior periods and budget.

- Students in accounting programs often don't see the breadth and bigger-picture value of the profession. More needs to be done to demonstrate the potential for challenging and rewarding careers in the profession beyond traditional roles.
- Automation of transaction-level tasks means that traditional entry-level roles that deal with accounting transactions are not as available. The profession needs to consider how aspiring PAs will develop the experience needed to build a solid technical foundation from which to develop professional judgment if those entry-level roles aren't there. Questions to consider include "What will the new 'entry level' consist of?" Can training needs be met in part through simulations using augmented reality?

Upskilling and "evergreen" learning are more important than ever

- New opportunities are rapidly emerging for PAs working in organizations and for those providing external advisory and assurance roles. These opportunities often stem from the ability of PAs (whether internal to the organization or external) to enhance the trustworthiness of information and/or processes to ensure that the information being used, and related systems, are relevant and reliable. The potential of these opportunities does not yet seem to have reached the everyday conversations among PAs.
- Developing new skills is essential, particularly in the context of emerging services such as ESG, non-financial information reporting, and assuring data integrity.
- As stakeholder needs change, PAs will need to innovate and adapt, including by working with types of data/information with which they were not previously familiar.
- Training in technology and in professional skills should not be seen as a one-off. As with all competence, ongoing developing and updating will be necessary as technology, stakeholder needs, societal demands, and the professional environment evolve.
- The profession and individual PAs should encourage curiosity in themselves and others. PAs should continually be on a quest to determine what to learn next and take advantage of the vast availability of different methods of learning, including iterative and proactive experiential learning as part of employment activities.

Professional skills keep us relevant

- In the current environment of rapid change, professional skills allow PAs to adapt and stay relevant by managing complexity.[33] Stakeholders are placing more value on non-technical professional skills (commonly called "soft skills"), such as critical thinking, communication, collaboration, and professional judgment.
- In times of increasing digitization (of information), and digitalization and automation (of processes), focus should be on the skills and competencies that favour humans over machines, such as demonstrating curiosity and an inquiring mind; understanding situational nuance; displaying empathy and emotional intelligence; contextualizing information; applying creative, intuitive, and strategic thinking; and promoting ethical decision-making. Machines are – or will become – better and faster than humans at most of the transactional, analytic and prediction tasks that humans frequently perform today.
- Asking questions, critically analyzing responses, interpreting information, evaluating risk, building capacity, and prioritizing resources become more important in times of change. Each of these also requires clear communication and professional judgment, as well as an inquiring mind and/or professional skepticism.
- Competence in traditional accounting areas, even at an advanced level, is simply becoming a base foundation for PAs. PAs who can effectively integrate strong professional skills enjoy greater career enhancement. Such skills have always been an important differentiator to succeed in the profession, but as technology transforms traditional ways of doing things, they have become increasingly important for all PAs.

A commitment to ethical decision-making is a key differentiator for the profession. This needs to be consistently recognized, communicated, demonstrated, and supported within the profession. PAs might face pressure to go against professional standards, and moral courage[34] is needed to comply with ethics obligations,[35] especially when the pressure comes from someone who is powerful or influential. Ultimately, professional skills, values, ethics, and attitudes are expected to be the true differentiator between autonomous and intelligent systems and PAs.

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33 CPA Canada, ICAS, IFAC & IESBA, *Complexity and the professional accountant: Practical guidance for ethical decision-making* (Toronto: CPA Canada, June 2021), online: <https://www.cpacanada.ca/en/foresight-initiative/trust-and-ethics/complexity-guidance-ethical-decision-making>.

34 ICAS, *The Power of One: Moral Courage* (Edinburgh: ICAS, 2e, November 2020), online: <https://www.icas.com/professional-resources/ethics/resources-and-support/moral-courage>.

35 See, for example, *IESBA Code and ICAS Code* at para 111.1 A1 and *CPABC Code* in the Preamble, *supra* note 3.

Part III: Where PAs can best add value through technical competence and professional skills, values, ethics and attitudes

There are many opportunities for PAs to apply their competence and ethical leadership in new fields, particularly once greater technological literacy has been achieved. Here are a few:

- The proliferation of unstructured data and information offers nearly endless opportunities to use and manage that data by applying data analytics skills. This goes well beyond financial information to support decision-making in broader business contexts, such as supporting and demonstrating organizational ethics and values from an ESG perspective, based on the ever-broadening set of important criteria for stakeholders.
- The prevalence of, and increasing focus on, data quality issues over a much wider range of subject matter provide a key area for PAs who can develop, monitor, establish trust over and/or provide assurance on internal controls over data quality, applying and transferring existing skills in an updated context.[36]

36 *Supra* note 2, at 122, IES 2 (2021) Table A (f) (v).

- As models to value data evolve, PAs can apply existing valuation skills to help develop and test those models to measure, monitor and report on this new and challenging category of assets in a way that meets their obligations for objectivity, due care and integrity.
- The potential for AI bias has led to a desire (or, in some jurisdictions, a requirement) for an independent audit of systems. For example, New York's City Council has adopted a law requiring audits of algorithms used by employers for hiring or promotion to assess whether those algorithms exhibit bias based on gender, race or ethnicity. The new law lacks specific requirements for who can serve as an "independent auditor" or what standards are to be followed.[37] This emerging practice area is in need of experienced audit professionals who can apply audit quality principles in this hard-to-measure area, as well as rigourous independence standards and their enforcement to drive trust.
- Standard setters within the profession can bring significant expertise, whether that be in respect of developing harmonized ESG reporting standards or other standards related to data gathering, creation, use or reporting.
- Senior management and IT teams in organizations frequently have challenges understanding each other's perspectives, thereby making it difficult to achieve consensus on strategic plans regarding data. PAs can help bridge this gap, once they are sufficiently versed in "speaking the language" of emerging, transformative and disruptive technologies.
- As also noted in the second paper in this series, "ethical leaders are needed to effect a balance between innovation and reasoned controls, especially until [appropriate] regulation is firmly in place. PAs are well-placed to oversee some of the guardrails needed to support progress in the right direction."[38]

37 Khari Johnson, "The Movement to Hold AI Accountable Gains More Steam" (December 2, 2021), online Wired: <https://www.wired.com/story/movement-hold-ai-accountable-gains-steam>.

38 CPA Canada, ICAS, IFAC & IESBA, *Technology is a double-edge sword with both opportunities and challenges for the accountancy profession* (Toronto: CPA Canada, December 2021), online CPA Canada: <https://www.cpacanada.ca/en/foresight-initiative/trust-and-ethics/technology-double-edged-sword> at 15.

Part IV: Mindset matters

Measuring what is important

The adage "you manage what you measure"[39] holds true with respect to competence as well as organizational performance. To develop and maintain relevant professional competence that meets stakeholder demands, the accounting profession needs to shift from a mindset that favours developing and evaluating technical competence to one more reflective of those competencies aligning with our emerging roles. Andrew Hunter, CEO of CPA Australia, insightfully notes that "The enduring features of any mature community of practice are its openness to self-reflection, its ongoing questioning of relevance, and its preparedness for renewal and re-generation."[40]

The WEF *Future of Jobs Report 2020* lists the following top 15 skills for 2025:[41]

- analytical thinking and innovation
- active learning and learning strategies
- complex problem-solving
- critical thinking and analysis
- creativity, originality and initiative
- leadership and social influence
- technology use, monitoring and control
- technology design and programming
- resilience, stress tolerance and flexibility
- reasoning, problem-solving and ideation
- emotional intelligence
- troubleshooting and user experience

39 A quote originally attributed to Scottish mathematician and physicist William Thomson (Lord Kelvin) and popularized by Peter Drucker.

40 Andrew Hunter, "The Future for Accounting" (February 10, 2021), online IFAC: <https://www.ifac.org/knowledge-gateway/preparing-future-ready-professionals/discussion/future-accounting>.

41 *Supra* note 8 at 36.

- service orientation
- systems analysis and evaluation
- persuasion and negotiation

These skills fit well with the accounting profession and speak directly to the need to focus on the non-technical, professional skills. They are intertwined with the professional values, ethics and attitudes that are at the heart of our value proposition and aligned with our public interest responsibility.[42]

Stakeholders have noted (see "Views from the Field", above) that the profession has a tendency to focus its training programs on traditional, accounting-related skills, as these are our historic base of competence and are easier to develop and assess than the professional skills. But if the profession is to meet the demands of the future, a shift is needed. The profession needs to see and define itself more in the context of professional and ethical decision-making, rather than principally as 'technical' experts.

At the core of CM2.0 is the CPA Ethical Mindset:

- Who we are: We are ethical, protecting the public and acting in the public interest, with integrity, due care, objectivity and competence. We are innovative, collaborative, agile, curious, creative, resilient, inclusive and technologically savvy as we continue to learn, lead and grow.
- What we do: We create and sustain value for stakeholders by bringing logic, structure and trust to information as well as to the process of measuring and managing performance. We are future-focused, embracing change and technology to foresee opportunities, create and sustain long-term value and manage risk for people, organizations and more broadly, for society and the planet.
- Where we do it: We operate in a global environment that is ever-changing.[43]

An innovative illustration of this re-framing is presented in the Canadian CPA profession's Competency Map 2.0 (CM2.0), which explains the new approach being developed by the profession in Canada to help aspiring and existing CPAs develop the competence needed to thrive in the rapidly changing organizational environment. In CM2.0, the traditional technical areas are still

42 See, for example, IES 3 Initial Professional Development: Professional Skills (2021) and *IES 4 Initial Professional Development: Professional Values, Ethics and Attitudes (2021)*, *supra* note 2.

43 CPA Canada, *CPA: Leading the Way - Competency Map 2.0 (CM2.0)*, (2021), online: <https://www.cpacanada.ca/en/become-a-cpa/why-become-a-cpa/the-cpa-certification-program/the-cpa-competency-map/competency-map-2-0> at 12.

included, but the competency framework is based on consideration of the "Decision Process," a five-step model for making, facilitating and implementing performance-related decisions, with ethics being considered and common core competencies used at every step:[44]

1. Assess the situation and decide what needs to be done.
2. Plan and design the approach.
3. Implement the plan, including measuring and monitoring progress and recalibrating where necessary.
4. Complete (if a discrete project).
5. Reflect and learn.

Thus, the decision process itself becomes the central focus of a CPA's competence. Additional competencies are articulated that reflect items considered to be Foundational Common Core elements within the environment that CPAs create/sustain value and make decisions:[45]

- economics and the underlying areas of quantitative methods and probability
- emerging and transformative technologies (e.g., AI, intelligence augmentation and distributed ledger technology)
- equity, diversity and inclusion (EDI)
- indigenous views/indigeneity
- law and legal forms of business
- organizational behaviour, including human behaviour/bias and change/conflict management
- sustainability, including ESG
- systems thinking and complexity theory

Once again, the ethical mindset is interconnected with these common core elements.

And finally, building on these foundational contexts, a range of specific competencies are listed in CM2.0 that require higher levels of proficiency and are used in an integrated manner in the decision process. Specific competencies include:[46]

- assurance and trust
- big data, data analytics
- ethical decision-making and organizational and data governance (including privacy and security)
- finance

44 *Ibid* at 14.

45 *Ibid* at 18.

46 *Ibid* at 17.

- financial reporting
- management decision-making and information (data) systems/technology
- non-financial reporting
- strategy, risk management and innovation
- tax
- value creation

A cautionary note:

The increasing importance placed on professional skills might inadvertently reinforce unconscious bias, thereby hampering diversity and inclusion. Professional skills define how individuals interact in the workplace. With respect to communication, different cultures have different styles, which can lead to barriers for individuals who don't look and speak the same as the predominant culture in the group.

Lorne Foster, a professor of public policy and human rights at York University, explains "Soft skills have become coded language for white favouritism in hiring practices."[47] Professor Foster points out the flaws in focusing on cultural *fit* and advocates for a focus on cultural *add*, which requires "reframing differences as valuable assets that the existing corporate culture is lacking, rather than hiring and retaining more of those whose backgrounds are consistent with what's already working."[48]

The future requires a multidisciplinary approach… starting now

The opportunities and challenges in an increasingly data-driven and AI-enabled world require collaboration between experts in many domains. When the Institute of Electrical and Electronics Engineers (IEEE) Global Initiative on Ethics of Autonomous and Intelligent Systems created *Ethically Aligned Design,*[49] for example, they pooled the expertise of more than 700 multidisciplinary thinkers from around the world. Kay Firth-Butterfield, head of AI and machine learning at the WEF, is vice chair of the IEEE's committee for Ethical Design of Autonomous and Intelligent Systems. Firth-Butterfield is

47 Sadaf Ahsan, "Why the quest for good soft skills can often be the same as looking for 'whiteness'" (April 9, 2021), online Globe and Mail: <https://www.theglobeandmail.com/business/careers/article-why-the-quest-for-good-soft-skills-can-often-be-the-same-as-looking/>.

48 *Ibid.*

49 Resources on the IEEE's Ethically Aligned Design series are available online: <https://ethicsinaction.ieee.org>.

a human-rights lawyer by profession, and she advocates for the importance of multi-stakeholder teams when developing technology. She also sees "the future of AI, this discussion, as part of ESG. I see the AI ethics discussion moving into that more social realm of the way that companies think about some of the things that they do."[50]

Adopting a multidisciplinary approach also provides opportunities for PAs to call on skills that might be overlooked as unrelated or irrelevant, but that can actually offer unique and innovative perspectives. MasterCard CDO JoAnn Stonier's background is in law and data management, but she also has a degree in interior design. She explains how she integrates all of these skills as follows:

> "Yes, I have a law degree; yes, I'm a data person; but having the design thinking as well really makes you not think of things as problems, but just constraints around which you have to design things, and they will shift over time. So it's no different than, well, the electric is over here and the plumbing is over there, and you only have so much space. So how can you utilize this, right? It's the same thing for, well, I can only use the data in this way when I want to achieve an outcome; how do I do that?"[51]

From this perspective, those PAs who have a diverse set of interests and experience can take advantage of this internal diversity in a more transferable way than before. And, of course, where skill sets are lacking it highlights both the importance of professional development and supplementing teams with members from varying backgrounds.

50 Kay Firth-Butterfield, in MIT Sloan Management Review "Me, Myself, and AI" podcast, online: <https://sloanreview.mit.edu/audio/tech-and-ethics-the-world-economic-forums-kay-firth-butterfield-on-doing-the-right-thing-in-ai/>.

51 *Supra* note 11.

Part V: Practical implications for the profession

The way forward

During the roundtable event and other global outreach,[52] participants offered the following concrete steps that PAOs, accounting educators and/or individual PAs can take to support and build relevant professional competence with a focus on ethical leadership.

For PAOs:

- Develop and maintain a competency framework[53] that is responsive to the changing demands and roles of the profession and encourages curiosity and lifelong learning throughout a PA's career (in alignment with the latest release of the IESs, which were revised to more fully address information and communication technologies).[54]
- Consider accrediting specializations in data analytics, business technology, and ESG-related fields, to attract and support career progression and signal to stakeholders the profession's relevance in these domains.

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52 *Supra* note 32.

53 In addition to the Canadian CPA Profession's Competency Map 2.0, discussed in the "Mindset matters" section of this report, other PAOs are responding to the need for change as well, such as: the AICPA's CPA Evolution <https://www.evolutionofcpa.org/>; the Malaysian Institute of Accountants' *Report on a Study on Emerging Technology Adoption within Accounting Programmes by Higher Learning Institutions in Malaysia* <https://www.mia.org.my/v2/downloads/resources/publications/2021/12/06/Report_on_A_Study_of_Emerging_Technology_Adoption_within_the_Accounting_Programmes_by_the_Higher_Learning_Institutions_in_Malaysia.pdf>; and the Institute of Management Accountants on "Essential Management Accounting Competencies for All Entry-Level Accountants" <https://www.imanet.org/-/media/20fbf4af525644749f09e584c69284cf.ashx>.

54 IPAE, "Revisions to IES 2, 3, 4 and 8" (October 21, 2019), online IFAC: <https://www.iaesb.org/publications/revisions-ies-2-3-4-and-8-1>.

- Ensure that PAs are trained in applying the code of ethics in meeting their public interest responsibility and are held accountable for compliance as a key element of professional competence.
- Provide a means for PAs facing challenging situations (particularly ethics situations) to seek confidential advice, to help them understand their obligations and make appropriate, better-informed, decisions.
- Create a positive narrative, highlighting the stories of PAs who have demonstrated moral courage and integrity in the face of difficult situations that threaten compliance with the fundamental principles of ethics and professional obligations to act in the public interest.
- Communicate the changing expectations and expanding roles of the profession and the value to stakeholders of involving PAs in conversations related to data and technology use, innovation, and strategic direction.

For educators of aspiring and existing PAs (including PAOs and post-secondary institutions):

- Instill and nurture an "evergreen learning mindset"[55] in future PAs, harnessing Gen Z's desire to learn new skills.
- Ensure data analytics is a core element of professional programs, recognizing the need to ask the right questions, use quality input data, evaluate and interpret the outputs, and make decisions with consideration of the limitations of systems.
- Build flexibility in accounting programs to encourage candidates to study technology-related areas, including emerging and transformative technologies. These areas might include basic programming, advanced data analysis, blockchain and its applications, AI and autonomous systems, etc.
- Ensure that accountancy training programs have a meaningful commitment to developing professional skills and instilling candidates with an appreciation of the broader responsibilities and expectations of society for professionals.
- Emphasize professional skepticism and/or an inquiring mind and ensure candidates understand the value they provide.
- Use simulations and role playing to help individuals develop the ability to have conversations about ethics issues, especially with those to whom they report.
- Stay abreast of education trends such as incorporating virtual and augmented reality to provide realistic simulations that support training and competence development.

55 *Supra* note 43 at 26.

- Harness the work of other established groups to enhance ethics training. For example, consider referring to resources such as:
  - ICAS' *Power of One*[56] series
  - IFAC's *Ethics Education Toolkit Study Guides*[57] and accompanying video program
  - IESBA's *Exploring the IESBA Code* series in both PDF and audio learning formats[58]
  - Dr. Mary Gentile's *Giving Voice to Values*[59] curriculum on implementing ethical decision-making.

For individual PAs:

- Evaluate how societal shifts and transformative and disruptive technologies are most likely to impact your role and your employing organization or clients, and focus attention there first.
- Undertake an honest self-evaluation of upskilling needed and develop a plan to achieve it. This is aligned with recent changes to the IESBA Code that indicate the need for PAs to be continually aware of and understand relevant technology-related developments.[60]
- Seek out relevant training and resources (for example, from your PAO, employer, IFAC[61] or other professional groups) on new services, technologies and opportunities, and use these to build new skills.
- Subscribe to relevant content from e-newsletters and resource curators to explore and stay current with trends in areas of interest.
- Adopt an "evergreen learning mindset" which "involves curiosity, a thirst for knowledge and a commitment to continually acquire knowledge and skills especially in an environment that is changing."[62]
- Recognize the value you bring to discussions through professional competence, and actively take part in discussions to bring a professional perspective on business decision-making, even when the subject matter is not financial in nature.

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56 *Supra* note 34.

57 IPAE, *"Ethics Education Toolkit Study Guides"*, online IFAC: <https://www.iaesb.org/publications/ethics-education-toolkit-study-guides-2>.

58 IFAC, "Exploring the IESBA Code", online IFAC: <https://www.ifac.org/knowledge-gateway/building-trust-ethics/discussion/exploring-iesba-code> and "Exploring the IESBA Code (in Audio)", online ProDio Audio Learning: <https://prodiolearning.com/course-details.php?course_id=NDE=>.

59 Mary Gentile, "Giving Voice to Values", online University of Virginia: <https://www.darden.virginia.edu/ibis/initiatives/gvv>.

60 See, for example, IESBA Code and ICAS Code at 113.1 A2.

61 See, for example, IFAC's Knowledge Gateway section on "Preparing Future-Ready Professionals", online: <https://www.ifac.org/knowledge-gateway/preparing-future-ready-professionals>.

62 *Supra* note 43 at 26.

- Avoid overconfidence bias: Recognize that saying "I don't know, but let me explore this" is sometimes the best way to demonstrate competence.
- Be a role model by demonstrating ethical leadership and mentoring less experienced staff, especially aspiring and new PAs.
- Recognize the ever-present need for ethical leadership as organizations navigate fast-paced change and disruption, and fulfill this need by consistently promoting and supporting an ethics-based culture in your organization.[63]

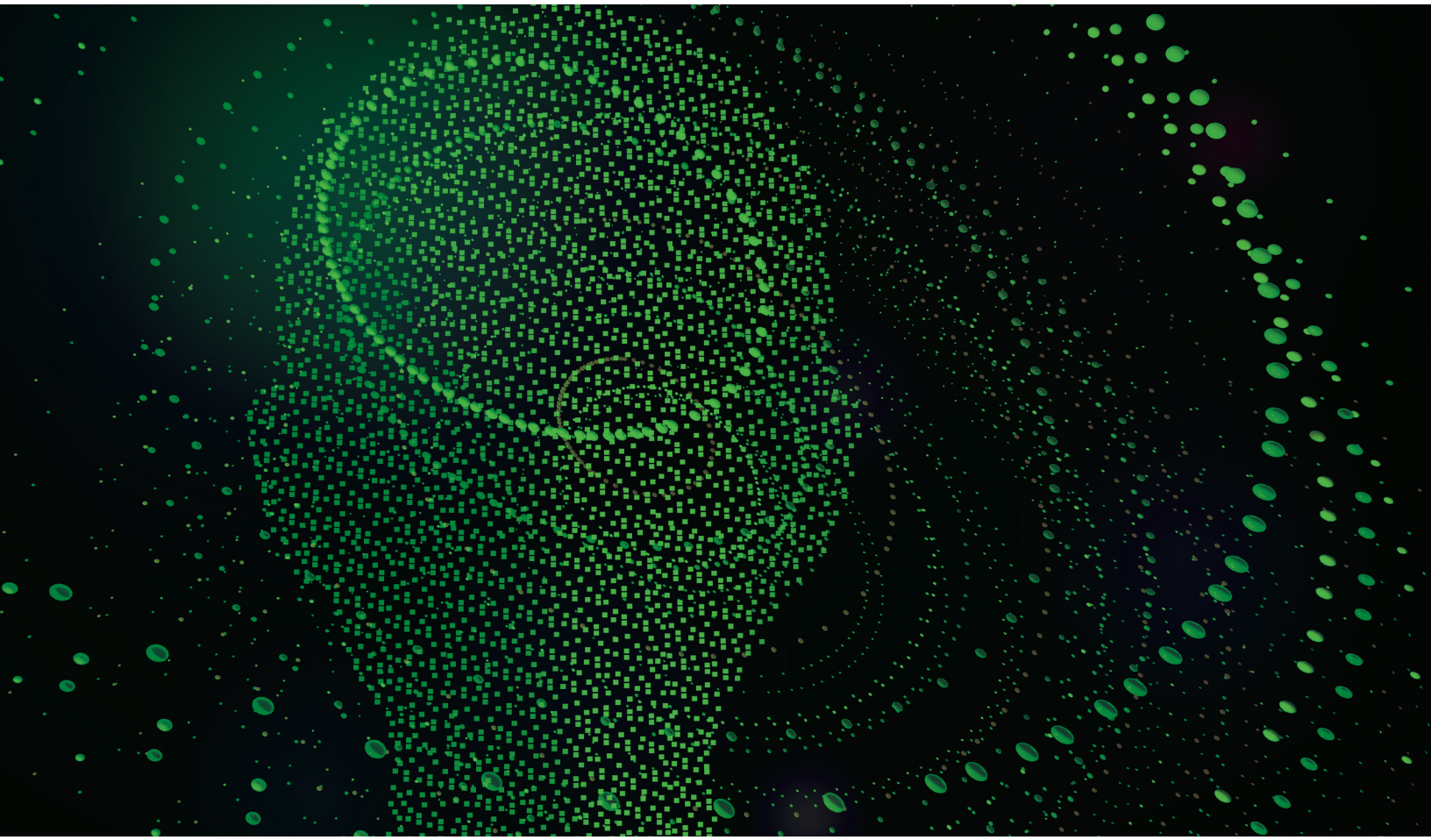
Concluding thoughts

The accounting profession is based on technical competence, professional skills, values, ethics and attitudes that will remain relevant in tomorrow's environment, but to continue to thrive, PAs need to confidently embrace uncertainty and strive for agility and resilience.

PAs need to adopt a mindset that continually challenges and leads to evolution of their skills more rapidly than in the past, because technological advancements and societal demands are changing quickly – some argue exponentially. At the same time, PAs need to maintain their existing mindset of being alert to risks that require managing and continue to bring ethical leadership to all manner of organizational decisions.

As stewards of trust in the digital age, a PA's technical competence will remain essential, albeit concentrated in new areas, and professional skills, values, ethics and attitudes will move to centre stage. It's up to all PAs to rise to the challenges and harness the opportunities of our changing world to ensure our profession meets the needs of society.

63 See, for example, *IESBA Code and ICAS Code* at 200.5 A3 and *CPABC Code* at 5-6, *supra* note 3.



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