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International Auditing and Assurance Standards Board
International Federation of Accountants
585 Fifth Avenue – 14th Floor
New York, NY 10017
U.S.A.

Re: *Exploring the growing use of technology in the audit, with a focus on data analytics*

To the Members of the International Auditing and Assurance Standards Board (IAASB) and its Data Analytics Working Group (DAWG):

The Chartered Professional Accountants of Canada (CPA Canada) is pleased to provide its comments to the IAASB and its DAWG, regarding the Request for Input (RFI): *Exploring the Growing Use of Technology in the Audit, with a Focus on Data Analytics*.

CPA Canada is a progressive and forward-thinking organization whose members bring a convergence of shared values, diverse business skills, exceptional talents, management disciplines and innovative thinking to the accounting field. The new Canadian designation, Chartered Professional Accountant (CPA), is now used by Canada's accounting profession across the country. The profession's national body, CPA Canada, is one of the largest in the world with more than 200,000 members, both at home and abroad. The Canadian CPA was created with the unification of three legacy accounting designations (CA, CGA and CMA). CPAs are valued for their financial and tax expertise, strategic thinking, business insight, management skills and leadership. CPA Canada conducts research into current and emerging business issues and supports the setting of accounting, auditing and assurance standards for business, not-for-profit organizations and government. CPA Canada also issues guidance and thought leadership on a variety of technical matters, publishes professional literature and develops education and professional certification programs. We are pleased to have the opportunity to respond to your request for feedback given that technology, including data analytics and its impact on audit and assurance, is a key area of focus for CPA Canada's Research, Guidance and Support Group (RGS).

CPA Canada Audit Data Analytics Committee

Our response has been prepared based on input received from CPA Canada's Audit Data Analytics Committee ("the Committee"). The Committee is comprised of professionals with expertise, experience



and an interest in audit data analytics, including members from accounting firms, private and public sector, and academia. The Committee's mandate is to assist the Canadian auditing profession in using audit data analytics (ADAs) to continue to improve audit efficiency and effectiveness in a rapidly evolving audit environment. Major activities of the Committee include, for example, sponsoring research, creating thought leadership and non-authoritative audit guidance, and responding to and participating in, when appropriate, international developments.

Basis on Which Our Response Has Been Developed

We developed this response from an auditing and assurance perspective, contemplating the effect of increased use of ADAs on the audits of Canadian entities, of all sizes and types (public, private, not-for-profit and government). For the purposes of this letter, 'standards' refers to auditing standards.

The term "ADAs" is used throughout our response. In its initiatives to date, our Committee has used the definition of ADAs developed by the American Institute of Certified Public Accountants (AICPA). It defines ADAs as: the science and art of discovering and analyzing patterns, identifying anomalies, and extracting other useful information in data underlying or related to the subject matter of an audit through analysis, modeling, and visualization for the purpose of planning or performing the audit.

In our response, we have also included, where relevant, statistics from a survey we conducted in the summer of 2016 to understand how Canadian auditors¹ are using ADAs. We received responses from 394 auditors, 49% of whom were Partner level. We expect to publish our survey results within the next few months.

This response letter is organized into two sections: overall comments and responses to specific questions raised in the RFI.

OVERALL COMMENTS

CPA Canada congratulates the IAASB and its DAWG on the completion of the RFI on this vital topic. We fully support the IAASB's initiatives and ongoing work to explore the growing use of technology (and more specifically, data analytics) in the audit. We agree with the IAASB's analysis, including that technological advancements and developments in data analytics challenge everyone, but with challenge also comes opportunity. We feel this topic is urgent, given the exponential pace of

¹ The term auditor refers to CPA auditor and is used throughout our letter.



technological innovation and disruption with related impacts on business operating models to which the audit profession is not immune. Significant action is required by the public accounting profession, and the IAASB has an important role to play. This action needs to be timely in order to be relevant. Many clients are demanding increased use of ADAs and audit regulators and auditors need to respond accordingly. We have summarized our overall comments into three general themes revolving around the need for:

- (1) A comprehensive review of basic concepts underlying International Standards on Auditing,
- (2) ISAs to promote consistent application of ADAs in the audit to encourage support from regulators, and
- (3) Education and Training to build the knowledge and skillsets of auditors.

The need for a comprehensive review of basic concepts underlying International Standards on Auditing

In our view, the extant ISAs are largely based on the concept that the use of sampling will pervade a financial statement audit. That is, the ISAs are largely based on a premise that, in most cases, it is not practicable for an auditor to examine 100% of data in populations relevant to the audit. That premise is no longer the case as a result of advances in ADAs. Therefore, going forward, there is a need for the IAASB to undertake a comprehensive review of basic concepts underlying the ISAs, given the advances in technology and, more specifically, ADAs. Examples include the following:

- The audit risk model, including:
 - (a) whether, and if so how, aspects of the application of the audit risk model could or should change significantly when ADAs are used to examine 100% of data in populations relevant to the audit. For example, consideration should be given as to whether existing distinctions among risk assessment procedures, tests of controls and substantive procedures might be replaced with a concept focused on determining how the ADAs used by the auditor contribute, overall, to obtaining sufficient appropriate evidence.
 - (b) the application of the concept of materiality in determining the nature, and particularly the extent, of audit procedures to be performed, and if this concept would still apply.
 - (c) the identification and resolution of potential misstatements detected, in particular how large numbers of items detected or flagged through an ADA, that may not in fact relate to misstatements, can be properly and efficiently addressed.
 - (d) how use of ADAs addresses the detection of fraud.
- Audit evidence, including the level of assurance that may be associated with evidence obtained through examining 100% of data, compared to, for example, the use of sampling.
- Audit documentation, given the potentially vast amounts of data that will be analyzed and tested as part of the audit.



- Audit quality control, particularly the experience and skillsets regarding use of ADAs that members of the engagement team, including the engagement partner, should be expected to possess or acquire.
- For integrated audits where the auditor is engaged to report on both the entity's financial statements and the operating effectiveness of internal control, whether evidence obtained by examining 100% of data provides evidence regarding both of these overall objectives.

We recognize that such pervasive changes take time and contemplating the possibilities requires vision. As set out in our more detailed comments, in our view the IAASB should take an approach that involves developing a framework on which the evolution of ISAs would be based. This initiative would involve identifying aspects of the standards that can be changed in the near term to provide a clear, authoritative basis to enable auditors to use ADAs, and those aspects of standards that can be changed over a longer period.

The need for ISAs to promote consistent application of ADAs in the audit to encourage support from regulators

Auditors are less likely to make increased use of ADAs if they fear such use will not be accepted by audit regulators. Ultimately, auditors need to be able to point to auditing standards that clearly support the use of ADAs as an appropriate means of obtaining sufficient appropriate audit evidence in the various phases of the audit. Auditing standards would need to provide greater clarity, for example, regarding how ADAs are expected to be used in conjunction with other methods of obtaining evidence, such as sampling. The revised standards should clarify when appropriately designed and performed ADAs may replace the use of more traditional audit approaches. ADAs seem unlikely to be widely adopted by auditors if audit regulators were to take a position, for example, that ADAs may only be used as "add-ons" to existing procedures. It will be important for the IAASB to engage in open dialogue with the International Forum of Independent Audit Regulators (IFIAR) on ADAs so that auditors are not precluded from using ADAs in a way that improves audit quality and effectiveness (without sacrificing efficiency).

The need for education and training to build the knowledge and skillsets of auditors

For auditors to effectively and efficiently apply ADAs, there is a need for training to build up their skillset and confidence in using the tools. Based on our survey results, only a small portion (23%) of auditors in Canada agree that they have access to training in the use of ADAs, even among larger firms. Respondents stated that a lack of technical knowledge (64%), statistical knowledge (60%) and related training (59%) are the biggest impediments to widespread use of ADAs. We encourage the IAASB to update the ISAs for integrated use of ADAs, which would create a ripple effect. That is, if the standards



change, auditors are highly likely to attend professional development courses, which would include content about the integrated use of ADAs, in order to meet their annual professional development requirements. The ADA learning will assist auditors in performing the ADAs and the audits in accordance with the ISAs. We suggest the IAASB consider working with the International Federation of Accountant's (IFAC's) education group to create online learning for auditors. Online learning allows auditors to obtain professional development when time permits and attend the courses multiple times. The IAASB may also wish to seek strategic alliances with universities who have online data analytics courses / libraries. For example, Rutgers University in New Jersey, USA and the University of Waterloo in Ontario, Canada both have online libraries, with courses on data analytics (directed at accounting students) available at no cost.

RESPONSES TO QUESTIONS

Our responses to the specific questions set out in the RFI are set out below.

(a) Have we considered all circumstances and factors that exist in the current business environment that impact the use of data analytics in a financial statement audit?

Response

We feel the DAWG has provided a fairly comprehensive list of matters likely to significantly affect the use of ADAs in auditing. Many of these matters are consistent with the transition issues we identified in CPA Canada's *Audit Data Analytics Alert: Keeping Up with the Pace of Change*, published in June 2016. We would add the following matters to those identified by the DAWG:

Data reliability

- Paragraph 19 (c) of the RFI notes issues regarding establishing the reliability and relevance of external data. However, there are significant issues to be addressed regarding both internal and external data used in performing ADAs. These issues relate, for example, to the factors to be taken into account in determining what is an appropriate level of reliability for data to be used in an ADA, and the nature, timing and extent of audit procedures required to determine whether the appropriate level of data reliability exists. One key factor regarding data reliability is whether the ADA is being performed to assess risks, to help in assessing the design or operating effectiveness of internal control, as a substantive procedure or to help form an overall conclusion from the audit. However, going forward, it seems likely that use of ADAs that involve analyzing or examining 100% of the data in a population will blur, or perhaps even make irrelevant, the distinction between these various phases of the audit. Another key factor in determining if data has an appropriate level of

reliability is whether an ADA is meant to be the primary source of audit evidence regarding an account and relevant assertions, or whether it is intended to only supplement evidence obtained from other procedures. In addition, in many circumstances, it seems likely that establishing the reliability of data might be done simultaneously with the performance of the ADA. These are complex matters that are only partly addressed in existing ISAs, such as ISA 500 *Audit Evidence*, and ISA 520, *Analytical Procedures*. These types of matters warrant clearer and more robust discussion in the ISAs.

Data Accessibility

- Paragraph 18 (a) of the RFI briefly mentions matters related to data acquisition. This is a major hurdle currently faced by auditors and the issues may become more complex as increasingly diverse data sets (both internal and external, financial and non-financial) are used in performing ADAs. Detailed matters include:
 - (a) Ease of access
 - (b) Timing and frequency of access
 - (c) Data formatting and cleaning issues.

It is not likely practicable to deal with these matters on a detailed basis in the ISAs. However, the IAASB may be able to influence key stakeholders such as IFAC and other accounting bodies, working along with, for example, providers of audit software and ERP vendors, to deal with the matters to help ensure efficient and effective use of ADAs.

Conceptual challenges

- The RFI briefly refers to conceptual challenges that will result from auditors using ADAs that are different from what clients are used to. In our view, key challenges of this nature, from an audit engagement team perspective and a client perspective, include the following:
 - Additional audit engagement team challenges*
 - At least initially, audit engagement teams are likely to struggle with how ADAs can be used in the audit engagement to obtain audit evidence without just being an add-on to existing audit procedures. For example, an auditor may use an insightful ADA, but may not take appropriate credit for its use due to the lack of clarity from audit regulators on how they view the use of ADAs in obtaining audit evidence. It often may not be clear to auditors how best to integrate an ADA into an audit program and perhaps replace some existing procedures with the ADA. The auditor may continue to perform the audit as if no ADAs were performed. ADAs used solely as “add-ons” seem likely to be abandoned if they are perceived as adding more costs than benefits.
 - Auditors may struggle with how to effectively articulate to clients why and how ADAs are

being used, and how to explain the benefits to obtain client buy-in.

- These challenges may often result in resistance to change by firms and individual auditors. Often, the costs (e.g., software acquisition, training) are relatively easy to estimate. On the other hand, potential benefits (e.g., improved audit quality by having an increased focus on higher risk areas of the audit, attractiveness of the profession to students/ potential auditors, work satisfaction among staff, potential increased efficiencies over the near-to-longer term) are less tangible and harder to estimate and may therefore tend to be given less weight.

Audit client challenges

- Some audit clients are likely to perceive that they lack the ability and time required to make available to their auditors expanded and more varied data sets than have been requested in previous years. Some clients have the “it’s not broken so why fix it” mentality when it comes to their openness to changes in the audit of the financial statements, especially if it will not translate into lower costs. This may impact their willingness to cooperate in the use of ADAs, especially if the auditor is not able to articulate or show any value as a result.

These matters might be addressed to a limited extent in standards. For example, the IAASB might make useful additions to application and explanatory guidance in ISA 210, *Agreeing the Terms of Audit Engagements*, or ISA 300, *Planning an Audit of Financial Statements*, regarding obtaining an understanding with clients regarding access to data, in appropriate formats, to enable the effective and efficient performance of ADAs. In addition, non-authoritative guidance should be developed to cover, in an appropriate amount of detail, practical matters related to data accessibility, perhaps linked to training materials available regarding this topic.

Legal and regulatory challenges

- Although we realize the IAASB does not have a primary responsibility regarding legal liability issues for auditors, we have raised some additional considerations related to challenges to the public accounting profession in this area:
 - When referring to concerns regarding data security and privacy, we would add that these concerns relate to both accessing client data and storage of that data by the auditor during and after use, including transfer of data across borders.
 - In addition to concerns regarding data security and privacy, there are also concerns related to confidentiality regarding who has access to the client’s data.
 - Many entities, especially small- and medium-sized entities, are increasingly storing their data in the Cloud. This increases the risk over data security and may pose further

challenges for auditors with respect to data accessibility and reliability.

- There is a risk that legal issues could arise related to the auditor retaining extraneous data in the audit file. For example, a scenario may arise whereby the auditor retains data in the audit file that was not used to support the audit opinion, but has been retained for potential use in performing trend analysis ADAs in future audits.

Resource availability

- Paragraph 18 (d) of the RFI states “a model that may be used by auditors utilizing data analytics in the audit may require skilled centralized resources supporting engagement teams.” We feel the primary issue is not the availability of “centralized resources”. The real issue relates to the varying levels of skillsets that all auditors should currently possess, and acquire in the future, so that the auditing profession will be well positioned to continue to adapt to changes in the environment in which audits are performed.
- There are, and will continue to be, instances where use of the work of technical specialists, including data scientists, is required. However, many of the tools and solutions available, including new technologies that are being released, are meant to be, and should be, used by all members of the engagement team in appropriate ways. This depends, for example, on their levels of expertise and experience and the objectives of the ADAs they are performing. The IAASB may play a role in making auditors aware of what ADA tools and sources of information are available for auditors.

Regulator and audit oversight authority challenges

- If the ISAs are vague or non-existent regarding the use of ADAs, there is a risk that audit regulators may develop their own, perhaps inappropriate, interpretations regarding the use of ADAs.
- Auditors may have different levels of knowledge and experience in using ADAs. If there are different skillsets and levels of sophistication being applied between different firms and/or countries, this may create a challenge for group auditors to demonstrate to audit regulators that ADA techniques are applied consistently by the group auditor and component auditors to obtain sufficient appropriate audit evidence.

Investment in re-training and re-skilling auditors

- Firms will need to invest significant resources in making auditors aware of what analytical tools and techniques are available, and training them to use those tools and techniques effectively. Initially, professional bodies may also have to play a role in convincing auditors of the need for change and generating interest in obtaining new skillsets. Over the longer-term, re-skilling should be based on a revised competency map for the future auditor.



- We agree that a significant amount of training is needed for those in small and medium-sized practices. Our recent survey indicates that firms in this category are not likely to invest in what they consider to be costly training unless the use of ADAs can be strongly linked to enhanced audit quality.

(b) Is our list of standard-setting challenges accurate and complete?

Response

We agree with the standard-setting challenges outlined in the RFI. The following are some specific points for the DAWG to consider in moving forward with the ADA initiative:

Nature and extent of audit work on population items that are not identified as exceptions

- Paragraph 19 (g) discusses the appropriate level of work effort for exceptions identified. We believe that there will also need to be guidance on what the appropriate level of work effort is for the items in the population subjected to the ADA that are not identified as exceptions. For example, an ADA used as a substantive procedure regarding the valuation of inventory may identify exceptions which require investigation (i.e., more in-depth audit work). However, audit evidence must still be obtained regarding the valuation of the remaining items in the population. This key matter relates to how ADAs can be effectively and efficiently integrated into other audit procedures in the audit program to achieve the auditor's objectives. This can be a complex matter and should be addressed in standards and supporting guidance.

Risk assessment

- Paragraph 19 (h) talks about risk measurement and the ability to more effectively and efficiently analyze large populations of data to inform the auditor's risk assessment by using ADAs. Because the auditor using an ADA often will be analyzing or testing the entire population for the relevant account and related assertions, this may enable the auditor to be more refined and detailed in assessing the relevant risks. For example, certain items in the population may be assessed as having a high risk of material misstatement, others a moderate risk and still others, a low risk. That is, there might be a spectrum of risks for the population analyzed using an ADA.

Effect of identified misstatements on the audit of the prior year

- In some cases, the use of ADAs for the first time may reveal misstatements of a type that might also have been detected in the prior year's audit, had the ADA been applied. It appears that paragraph 8 of ISA 710, for example, would require a re-audit of the financial statements of the prior year. That paragraph states "If the auditor becomes aware of a possible material misstatement in the comparative information while performing the current period audit, the auditor shall perform

such additional audit procedures as are necessary in the circumstances to obtain sufficient appropriate audit evidence to determine whether a material misstatement exists.” To perform a re-audit would place a significant and inappropriate burden on the auditor. This would be a strong impediment to the increased use of ADAs, or indeed to any significant advancement in audit procedures designed to improve audit quality. The words “aware of a possible material misstatement” seem far too broad. This is one aspect of standards that may require attention in the short term.

Clear definition of ADAs

- The ISAs contain several references to the use of computer assisted audit techniques (CAATs). It is not clear whether there is any difference between a CAAT and an ADA and if so, what the differences are. Similarly, some auditors perceive there to be significant overlaps between analytical procedures and ADAs. There are specific requirements in the standards regarding the use of analytical procedures. Therefore, in our view, there is a need to clarify the nature and extent of similarities and differences in these audit techniques in the short term.

Extent of testing of software obtained from vendors

- Some testing of ADA software for use in the audit may be required. Requirements for such testing set out in standards should not be overly rigid. Factors to consider include, for example, the nature and extent to which the software is being used by the auditing profession, and the reputation of the supplier. For example, Excel would not require testing but perhaps some testing would be required for in-house technologies.

Guidance with respect to testing 100% of the population

- It is currently not clear whether the auditor is encouraged to test 100% of a given population using ADAs. Guidance in this area from the IAASB would be helpful. For example, is 100% testing of a population encouraged and if so, why? What are the implications to the audit if 100% of a given population is tested? Would controls still need to be tested? Are there litigation matters to consider if 100% testing of a population could be done but the auditor chose to perform more traditional techniques? How does the auditor follow up on exceptions when 100% of the population is examined?

Use of ADAs by public sector auditors

- The audit of public sector entities in some jurisdictions is not subject to regulatory inspection. As a result, some public sector auditors make more liberal use of various types of ADAs than many auditors in the private sector. These public sector auditors may therefore be a useful source of information for the IAASB and may be able to offer examples of ADAs that can be used efficiently and effectively in audits in the private sector.

(c) To assist the DAWG in its ongoing work, what are your views on possible solutions to the standard-setting challenges?

Response

Timing of actions by IAASB

As highlighted in our overall comments, we feel that for the audit profession to remain relevant, a comprehensive review and subsequent amendment of the auditing standards is needed.

The IAASB would first need to consider how the audit needs to be reengineered, including, for example assessing where the standards are today regarding auditing in environments with pervasive use of IT, and what is needed for the audit moving forward. Making changes to standards is a multi-year initiative. However, there is a need for urgent action. Therefore, a key step to take in the near future would be to identify “low hanging fruit” representing standards that can be more easily clarified in the shorter term but with potential significant positive effects on the use of ADAs. Other changes to standards could be made over the longer term.

As described in our overall comments, in our view, the fundamental concepts underlying the ISAs which require a comprehensive review by the IAASB include:

- The audit risk model
- Audit evidence
- Audit documentation
- Audit quality control
- Integrated audits

Regarding the audit risk model, during its comprehensive review, the IAASB may need to consider how the audit risk model would best be applied given that ADAs enable auditors to analyze or examine 100% of the data. Auditors are now in a world where they are able to navigate much larger data sets much faster than was previously possible. The audit risk model and the assumptions about sampling on which it is based may, in practice, be inhibiting innovation and preventing a higher quality audit, improved audit efficiency and enhanced value to clients.

Envisioning the future of the audit is difficult given the challenges resulting from rapid changes in technology, including, for example, increased use of Big Data². The audit should be positioned in a manner that allows flexibility that can accommodate changes in technology. Although use of ADAs is one important consideration, the complexity of ADAs and other audit techniques will continue to evolve. For example, it seems likely that machine learning will eventually be integrated into the audit. Audit practice may continue to evolve at a faster pace than the standards, in response to pressures in the marketplace. Therefore, it is essential that the standards have rigour but still allow appropriate room for use of professional judgment. This would help ensure that the standards remain relevant over the long-term, while providing appropriate direction and guidelines to support the appropriate use of professional judgment. This will also help reduce the risk of inhibiting innovation.

Taking a fresh look at the overall objectives of the audit and how audits are fundamentally structured and performed will help the auditing profession determine the path forward. The evolution of standards will be vital to support continued high quality audits. In light of the advances in technology and tools, it may be a good opportunity for the IAASB to revisit the value proposition of the audit, as well as prepare for potential disruptions from non-traditional competitors. Given the extent and importance of the comprehensive review, additional resources may be required to move forward with this undertaking. We encourage the IAASB to collaborate internationally on this initiative.

Possible changes to specific standards

Although the extant standards are not meant to inhibit or enable the use of ADAs, some auditors may feel that the standards unintentionally discourage such use. For example, there are no specific standards related to use of ADAs that auditors can point to in discussions with audit regulators regarding the appropriateness of using ADAs. Since the implementation of the ISAs, technology has become more integrated into organizations, with more extensive data populations available for use by auditors. There may be ways to amend some standards in the near-term to help promote use of ADAs. Our suggestions are set out below:

ISA 230, Audit Documentation

- Providing clarity in the documentation requirements when applying ADAs
 - We feel that knowing what to include in the audit file when applying ADAs is one of the biggest concerns of auditors. Clear requirements in this area are likely to encourage more widespread use and will support consistency in complying with the documentation standard.

² One definition of “Big Data” is “high-volume, high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation.” Gartner IT Glossary: www.gartner.com/it-glossary/big-data



ISA 500, Audit Evidence

- Providing guidance on data reliability in regard to ADAs, with respect to information produced by the entity
 - Information produced by the entity (IPE) is an area of focus for the audit regulators. Based on Canadian Public Accountability Board (CPAB) reports, audit firms appear to struggle with this concept and the related requirements under the current standards. IPE is a very important consideration when implementing and applying ADAs. Auditors would benefit in the near-term if clarity were to be provided with respect to what procedures the auditor is expected to perform to satisfy the requirements over the precision, completeness and accuracy of the information.

- Publishing authoritative guidance on how ADAs can be used by the auditor in specific areas of focus in a financial statement audit
 - This would help to encourage more frequent use of ADAs and assist firms in updating their audit methodologies.
 - For example, one specific area where guidance is needed is on internal control testing when 100% of a population is being tested using ADAs.

In response to the DAWG's question in Paragraph 19 (e), "*In the current risk and response nature of the ISAs, how does an engagement team classify the audit evidence provided by data analytics?*", we feel that the concepts of risk assessment procedures, substantive analytical procedures (SAP), tests of details (TOD) and tests of controls (TOC) should be revised to apply to an audit using ADAs. Although likely part of the longer-term solution, the IAASB cannot lose sight of this fundamental issue. When drafting the Canadian Audit Data Analytics Guide³ (refer to Question (e)), we faced many challenges in regard to how to classify the ADAs in terms of what type of audit test was being performed and the evidence obtained. This confusion inhibits auditors from further integrating and moving forward with ADAs in their audits, given the uncertainty regarding whether the procedure would provide, or otherwise contribute to, sufficient, appropriate audit evidence under existing standards. It also inhibits firms in their innovation efforts and updating their audit methodologies to incorporate use of ADAs.

(d) Is the DAWG's planned involvement in the IAASB projects currently underway appropriate?

Response

³ CPA Canada is currently working on an Audit Data Analytics Guide in collaboration with the AICPA



We agree that the DAWG should be involved in all of the IAASB projects currently underway that are included in the RFI. We feel that such involvement should be considered in light of the fundamental changes we have suggested above. Therefore, in our view, to the extent practicable, the DAWG should be involved in, or at least be able to comment on, all projects.

Additionally, we fully support the DAWG's Education project with linkages to the International Accounting Education Standards Board. Based on the description of the project, we assume that this project would include the DAWG's input on the competency map for future auditors.

We agree that in addition to the active projects that the DAWG plans to be involved with, the DAWG should explore and be involved in other relevant standards that are likely to be impacted by ADAs (as summarized in paragraph 41 of the RFI); for example, ISA 240 (The Auditor's Responsibilities relating to Fraud in an Audit of Financial Statements), ISA 315 (Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and Its Environment), ISA 330 (The Auditor's Responses to Assessed Risks) and ISA 500 (Audit Evidence). Given that ISA 315 is a shorter-term project and is such a foundational standard to the audit, it is important that the DAWG be closely involved in the near-term to ensure consideration for ADAs are taken into account.

Due to the nature and extent of the projects in which the DAWG should be involved, there may be a need for additional resources in order to play the meaningful role required to appropriately advance the use of ADAs. The IAASB should consider the types and quantity of resources available to the DAWG, and how they might best be deployed.

(e) Beyond those initiatives noted in the Additional Resources section of this publication, are there other initiatives of which we are not currently aware of that could further inform the DAWG's work?

Response

CPA Canada will be publishing a non-authoritative Audit Data Analytics Guide in 2017. The AICPA, in collaboration with CPA Canada, are nearing completion of its work on the development of this comprehensive and foundational Audit Data Analytics Guide. The Guide will be authoritative in the USA, but non-authoritative in Canada.

CPA Canada continues to have an active committee – the CPA Canada Audit Data Analytics Committee – working on ADA initiatives. We are currently in the process of publishing two documents on use of ADAs (one for management and a companion piece for the auditor). Next, we will be looking at other guidance for auditors (and other stakeholders) and preparing the results of our survey.

- (f) In your view, what should the IAASB's and DAWG's next steps be? For example, actions the IAASB and DAWG are currently considering include:**
- (i) Focusing attention on revisions, where appropriate, to ISAs affected by the IAASB's current projects.**
 - (ii) Exploring revisions to ISA 520.**
 - (iii) Hosting one or more conferences with interested stakeholders to collectively explore issues and possible solutions to the identified challenges.**
 - (iv) Continuing the outreach and exploration of issues associated with the use of data analytics in a financial statement audit, with a view towards a formal Discussion Paper consultation in advance of any formal standard-setting activities.**

Response

Please refer to our response in (c) above. Consistent with our comments and based on the DAWG's list of proposed actions, we feel that exploring revisions to ISA 520 is too limited of a scope. In our view, other ISAs, as discussed in (c) above, should also be explored for revisions.

ADAs are still evolving and require significant research and investment to progress further. Although the large accounting firms are investing significant resources into this field, there needs to be a collective effort to address this as a profession. Fear of audit regulators rejecting the work of auditors who use ADAs is a concern of some auditors based on the results of our survey. This may also be a concern globally. In our view, it is critical that audit regulators be included in ADA initiatives. We suggest that standard setters, regulators and auditors be brought together to understand differences of opinion and work together to reach consensus on issues related to the appropriate use of ADAs in an audit. We also suggest involving data analytic experts (e.g., data scientists with a deeper level of expertise in the field) who will have a different viewpoint and would likely promote a greater level of innovation and further advancement of the use of ADAs. Perhaps there is an opportunity for the IAASB to support research in this area to help solve issues auditors are facing.

Additionally, it would be wise to involve leading academics in this field. University programs will need to be modified to include more integrated use of ADAs. Two suggestions for leading academic institutions are noted on page 4.

We feel the DAWG's Education project is essential with respect to preparing future auditors. We suggest the DAWG collaborate closely with the IFAC Education team to provide input to the



competency map for the future auditor and that the working group not be comprised solely of current auditors. Although not the responsibility of the IAASB, it needs to work with the IEASB to build skillsets in this field for auditors to be able to apply these techniques in their audits. When standards are updated (both in the shorter and longer term), auditors need to be trained in order to effectively apply ADAs. Additionally, we recommend that the IAASB encourage global accounting bodies to modify their educational requirements to include learning requirements related to data analytics and ADAs. In our view, an understanding of data science will be a required skillset of the accountant in the future (both in public practice and in business).

CPA Canada has a strategic interest in shaping the future of the audit and assurance profession to help maintain the relevance and value of the CPA Auditor. In our view, the CPA Auditor has a vital role to play in functioning and healthy capital markets. We support the IAASB's focus on ADAs and would be pleased to assist in the development of non-authoritative guidance.

CPA Canada and our Audit Data Analytics Committee feel that there are changes that need to be made to audit standards, both in the near and longer term, to support further integration and adoption of ADAs. These changes will be vital to maintaining the relevance of the CPA Auditor in a world where technology continues to evolve and data continues to grow exponentially. We hope that the IAASB and the DAWG find our comments useful in assisting with your ongoing work in this area. Please do not hesitate to contact me, or Kaylynn Pippo, Principal, Research, Guidance and Support (kpippo@cpacanada.ca) should you wish to discuss any of the matters raised in this letter.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Gordon Beal", written in a cursive style.

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