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## **Request for Input - *Exploring the Growing Use of Technology in the Audit, with a Focus on Data Analytics***

Dear Mr. Waldron

Ernst & Young Global Limited, the central coordinating entity of the global EY organization, welcomes the opportunity to offer its views on the Request for Input, *Exploring the Growing Use of Technology in the Audit, with a Focus on Data Analytics*, (the *Request for Input*) issued by the Data Analytics Working Group (the Working Group) of the International Auditing and Assurance Standards Board (IAASB) in September 2016.

We agree that the rapid pace of technological change and the increasing focus on the use of data in the financial statement audit present both opportunities and challenges to the audit profession. We are actively addressing these challenges and exploring changes to our own audit methodology to embrace these opportunities and respond to the challenges. Understanding that many firms are proceeding down this same path, we believe that independently-developed solutions are likely to vary and there will be inconsistencies in the approaches to data analytics within the audit profession, which could contribute to audit regulators having varying views on data analytics and cause stakeholder confusion. Further, while many agree that data analytics can enhance audit quality, there does not appear to be consensus as to the use of data analytics as an alternative to traditional audit techniques. It is not in the public interest to have redundancy in audit procedures that lead to unnecessary increases in the cost of an audit, which could be the result if the use of data analytics is viewed as only a supplemental audit technique. In our view, it is time to fully consider new ways of achieving the principles in the ISAs through the use of data analytics.

Because we believe the use of data analytics will change the way we audit and have a meaningful effect on audit quality, we support the IAASB moving forward its initiative on data analytics on a priority basis. In particular, we believe the IAASB can facilitate reaching and promoting a common understanding of the use of data analytics in the audit for all stakeholders.

We support the Working Group's efforts through its *Request for Input* to obtain stakeholder input and perspective on whether all of the considerations relevant to the use of data analytics in a financial statement audit have been identified. Fundamentally, we do not believe that the current International Standards on Auditing (ISAs) are "broken" (that is, fundamentally flawed) with regard to the ability of auditors to apply new or innovative approaches to achieving the principles of the requirements. However, in our experience, the manner in which the requirements are worded, in certain cases, and the current lack of relevant application material, give rise to perceived or actual barriers to the application of data analytics within the audit. In order to break through these barriers, we support and recommend explicit acknowledgement of, and incorporation of relevant guidance related to, data analytic techniques in the ISAs.

We recognize that any clarifications or changes to standards may be best addressed as particular ISAs are under revision, and therefore, we support the IAASB's intention to specifically consider data analytics in context of the standard-setting projects on its current work plan. Furthermore, we believe that a more comprehensive analysis of the ISAs is necessary to develop a cohesive approach to, and IAASB views on, improvements and clarifications to the ISAs as well as to identify challenges that may be best addressed through supplemental guidance. This analysis may take the form of the Discussion Paper that the Working Group is planning to develop.

Although we do agree that appropriate information must be gathered to proceed with standard-setting, we believe that the IAASB should consider what other more immediate actions it can take to communicate its initial views to support auditors in achieving the requirements within the ISAs when using data analytics within the audit.

In the Appendix of this letter, we respond to the specific questions asked in the Request for Input by explaining the considerations, clarifications and additional guidance we believe are necessary to support the use and application of data analytics in practice.

We would be pleased to discuss our comments with members of the IAASB or its staff. If you wish to do so, please contact Bob Landwehr, Global Deputy Vice Chair, Global Professional Practice ([bob.landwehr@uk.ey.com](mailto:bob.landwehr@uk.ey.com)).

Yours sincerely

*Ernst + Young Global Limited*

## Appendix

**(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?***

We acknowledge that the use of data analytics in the audit of financial statements is at an early stage. Auditors are expanding the areas of use of data analytics in audits, and audit regulators and oversight bodies are just beginning to see the effect of this use through inspection activity. We also have experienced management requests for information on how data analytics are or will be used in the audit. Requests for such information as part of requests for proposal on audits are becoming commonplace, and they are often accompanied by requests for demonstrations of firm-developed solutions.

Based on our experiences, we agree with how the Working Group has framed the challenges in the current business environment, including, in particular, data acquisition, legal and regulatory challenges, and resource availability. However, we have the following additional observations for the Working Group's further consideration:

- ▶ We would strongly support a coordinated interaction between IAASB and the International Ethics Standards Board (IESBA) as mentioned in the Request for Input, in particular to encourage the IESBA to address any ethics and independence issues that might be created through the increased use of data analytics in the financial reporting and auditing process. As part of this interaction, we would request that consideration be given specifically to situations that we are encountering in practice in which management of an entity under audit is interested in a firm's data analytics technology for their own use.
- ▶ We understand that analysts are increasingly using non-financial data points to assess financial information and evaluate performance. Although we recognize that the *Request for Input* is focused on the use of data analytics in audits, we also recognize that there may be increasing demand for other assurance engagements related to such performance metrics (for example, as entities pursue integrated reporting) and we encourage the IAASB to consider the role of data analytics in such engagements.

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

We agree with the standard-setting challenges that the Working Group has identified and confirm that these are relevant challenges encountered by the auditor when making use of data analytics in a financial statement audit. In addition to the challenges that the Working Group has identified, we set forth below additional topics for the Working Group's consideration, acknowledging that the challenges encountered are likely to continue to evolve as firms continue their data analytics implementation efforts.

- ▶ **Nature and extent of audit evidence obtained from data analytics** - While the nature of evidence obtained from data analytics is discussed in the challenges, we note that the challenge of determining how data analytics fits within the types of audit procedures to obtain evidence is not specifically discussed (i.e., addressing the issue presented in the graphic on page 10 of the *Request for Input*). We believe that "data analytics" should be incorporated into ISA 500, *Audit Evidence*, as a specific procedure to obtain audit evidence and mitigate detection risk. (Please refer to our response to question (c) in the *Nature of substantive audit evidence* section for our further views).

- ▶ **Materiality considerations** - The application of performance materiality in determining the nature, timing and extent of audit procedures in circumstances when audit procedures are applied to financial information that is disaggregated into sub-populations of an account balance is an existing auditing challenge. However, this challenge is more routinely encountered when using data analytics techniques that facilitate analyzing populations at a more granular level than perhaps many traditional audit techniques.
- ▶ **Selecting items for testing to obtain audit evidence** - ISA 500 sets forth three means of selecting items for testing - selecting all items (100% examination), selecting specific items and audit sampling. Although all three remain viable options using data analytics techniques, the guidance in paragraphs A52-A55 related to each of these three means of testing is outdated from the perspective that advances in audit technology have led to new and different relevant considerations for the auditor in selecting the appropriate means for testing. In particular, data analytics can provide the ability to evaluate or test large or even entire populations of data, which may lead to higher quality audit evidence that is free from bias and sampling risk. However, the guidance related to a testing approach that involves selecting all items (100% examination) presumes that such examination is only possible in limited circumstances. Additionally, the guidance related to selecting specific items for testing does not contemplate the use of data analytics to assist the auditor in performing improved risk-focused selections, considering quantitative and qualitative factors to stratify and filter data (for example, beyond use of a monetary amount or a single characteristic). We believe that employing data analytics can assist the auditor in designing procedures that can be more effective and efficient in addressing the risks of material misstatement than a traditional approach of performing tests of controls and tests of details using traditional sampling or selection strategies. There is a change management challenge in moving to data-analytics embedded audits without acknowledgement of the appropriateness of these techniques in the ISAs along with supporting guidance.
- ▶ **Understanding and testing controls**
  - Data analytics can be especially useful in assisting auditors in understanding the information systems component of internal control and identifying the paths that transactions actually take from initiation to reporting. In our view, this understanding of the information system will often have enough breadth and depth in order for auditors to identify and assess the risks of material misstatement and effectively design substantive procedures to address the accounts and assertions affected by these risks. The substantive procedures developed also can be performed using data analytics (and often concurrently with risk assessment procedures on the same data set) and may provide persuasive evidence, e.g., a highly precise substantive analytical procedure covering 100% of a data set or reperformance of a complete set of transactions. When such an approach can be utilized, understanding control activities and testing them may not be necessary or the most effective audit strategy, and therefore, in our view, should not be required in such cases. Accordingly, auditors are challenged in determining the effect the planned use of data analytics may have on the controls relevant to the audit.
  - When a strategy to rely on controls is taken by an auditor, we believe that data analytics can be a valuable technique for tests of controls. However, data analytics are most commonly seen to be of use only in reperforming fully automated controls. Due to increasingly sophisticated and intelligent technology solutions being adopted by many companies, we encourage the Working Group to further explore the application of data analytics in testing controls other than fully automated controls.

- ▶ **Significant risks** - In light of our views on understanding controls above, we question whether it continues to be necessary in all cases to obtain an understanding of the entity's controls relevant to a significant risk and determine whether they have been implemented. We also believe the ISAs should address whether a test of details is always required to address significant risks in light of the persuasive evidence that can be obtained using data analytics (e.g., a highly precise substantive analytical procedure).
- ▶ **Revenue recognition fraud risks** - Data analytics can be used to identify and evaluate different revenue streams and types of revenue transactions enabling the auditor to focus more specifically on those at higher risk of material misstatement due to fraud (for example, posting activity by user or prevalence of manual journal entries) and identify more precisely the nature of the risks or better document the absence of such risks. In our view, ISA 240, *The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements*, should explicitly indicate how data analytics can be used in support of identifying and assessing risks of fraud in revenue recognition.
- ▶ **Controls surrounding journal entries** - ISA 315, *Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and its Environment*, requires the auditor to understand the controls surrounding journal entries. Data analytic tools can allow the auditor to assess the effect of all journal entries on account balances, in the aggregate or individually. This facilitates a risk-based approach to the selection of journal entries for testing that are of at higher risk of constituting instances of management's override of controls. As such, we question the benefit to the auditor of understanding management's controls surrounding journal entries in all audits.
- ▶ **Use of prior period(s) information** - ISA 520, *Analytical Procedures*, provides limited guidance on analytical procedures involving comparisons of the entity's financial information to prior period information. The detailed understanding of relationships and activity that can be obtained through the analysis of current period financial information using data analytics provides a highly-informed basis from which to determine expectations for the succeeding period's financial information. Accordingly, it would be useful to expand the guidance within ISA 520 to indicate that the auditor can use prior period information (adjusted for expected changes) to form expectations (i.e., prior period information can be an effective indicator of current year activity particularly when the auditor has a detailed understanding of the underlying transactions and activity in the prior period information).
- ▶ **Data standards** - As noted in our response to question (e), the American Institute of Certified Public Accountants (AICPA) has issued Audit Data Standards that are voluntary, recommended data standards for the extraction of information from accounting and financial reporting systems. Because data acquisition is a significant challenge for auditors, we encourage the IAASB to consider whether such standards could be globally applicable. We believe the data standards assist entities in providing data in a standardized format for the auditor, thereby facilitating the auditor's ability to execute analytic applications across a broad range of entities.

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

We recognize that an appropriate standard-setting response to the challenges identified may not always involve updates to the ISAs and that other forms of guidance may be effective to address particular issues and perhaps be more useful to auditors. As a result, we encourage the IAASB to

consider the range of its available standard-setting options to support auditors using data analytics and similar techniques to achieve the objective of the ISAs.

Our views on possible solutions to the standard-setting challenges identified are as follows:

- ▶ **General IT control considerations, including the necessary minimum level of general IT controls testing and the effect of deficiencies** - The relationship between general IT controls and the use of data analytics would benefit from greater recognition and clarification within the ISAs, including further guidance on the nature and extent of testing of general IT controls required. Many of the auditor's considerations when evaluating audit evidence are predicated on its reliability, including its accuracy. With regard to data analytics, the reliability of audit evidence includes the consideration of the integrity of the data to which the data analytics techniques are applied to obtain audit evidence. For example, if the data used is obtained from a specific database or data warehouse of the entity, the general IT controls related to managing access to that database may be relevant. Similarly, if data is provided to the auditor through the use of an entity's report-writing software, the general IT controls relevant to managing program changes to that report-writing software may be relevant.
- ▶ **Information produced by the entity and related testing** - We agree that the ISAs could be expanded to provide greater specificity and guidance to auditors on how to ascertain that the data utilized in performing data analytics is complete and accurate. We have the following suggestions for such guidance:
  - The process undertaken to capture complete sets of data brings unique considerations because there are varying scenarios that can occur whereby the traditional risks related to information produced by the entity may be supplemented with data transformation risks introduced by the auditor. These are risks that the auditor introduces errors into the data during the data extraction process. It is important for the auditor to appropriately identify whether a risk has been introduced by the entity or the auditor, the likelihood and nature of these risks and design an appropriate response to mitigate them.
  - We believe specific considerations for testing both the financial and non-financial data points contained in the data sets used in data analytics would be useful. The financial data points (e.g., invoice amount) can be reconciled to the financial statements and their completeness and accuracy can be proven substantively, whether through the use of data analytics or traditional audit techniques. The non-financial data points (e.g., shipping date), however, cannot be reconciled to the financial statements and will require direct evidence, through test of controls or details, to support their completeness and accuracy.
- ▶ **The relevance and reliability of external data** - We agree that the ISAs need to contemplate the auditor's responsibility to evaluate the completeness and accuracy of external data from third-party sources. We suggest the ISAs recognize the different characteristics of potential sources of external data and how these different sources carry differing risks. We also suggest the ISAs recognize that the auditor may have a higher tolerance for risks related to the reliability of external data used during risk assessment procedures than that used when performing substantive procedures.
- ▶ **The nature of audit evidence obtained through risk assessment** - We agree that the use of data analytics in the risk assessment process is particularly useful and have seen this in practice. We also agree that the audit evidence that is obtained through analytical procedures performed as part of risk assessment procedures, in most instances, without a detailed expectation of the results, does not meet the requirements to be audit evidence from a substantive analytical procedure. Currently, we have positioned the audit evidence gained

through applying data analytics in risk assessment as an opportunity to clearly and more precisely define risks of material misstatement in order to design a focused, risk-based response. We emphasize the improved audit quality that comes with this enhanced understanding and believe that the ISAs could also position the use of data analytics in risk assessment in a similar manner. Nevertheless, we do believe there are opportunities for certain analytical procedures performed during risk assessment to be dual-purpose, and we welcome any clarification in the ISAs that address under what conditions data analytics performed as risk assessment procedures could also be considered substantive audit evidence.

▶ **The current risk and response nature of the ISAs**

- With the ability to access the underlying details of the transactions that data analytics provides, risk assessment and identification can often lead to an immediate audit response that involves accessing and analyzing those details. In this case, there is not a stark transition from assessment to response and, in some cases, the assessment and response can become an iterative process (i.e., involve re-assessments and responses) as the auditor further analyzes the data. A risk assessment and response that occurs in this manner, and how the auditor documents that the objectives of the ISAs have been met, are not currently contemplated by the ISAs and warrants specific guidance, in our view, because of the practical challenges of determining when a data analytic technique has crossed what is often a very arbitrary boundary from assessment to response.
- When risk assessment procedures using data analytics demonstrate that the risk of material misstatement is very low for a material account balance, we do not believe it is necessary for the auditor to design and perform substantive procedures, which is currently required by ISA 330.18. We encourage the Working Group to give specific consideration to this requirement in light of the enhanced risk assessment procedures that can result from the use of data analytics.
- We also believe the question on the role of controls testing is appropriate to raise in the details of this challenge. As we indicate in our response to question (b), we believe that there are circumstances when understanding and testing controls may not be necessary due to the use of data analytics to analyze an entire population.

▶ **The nature of substantive audit evidence**

- In our response to question (b), we highlight the challenge of determining how data analytics fits within the types of audit procedures to obtain evidence. In our view, when a data analytics procedure is applied, it can sometimes be categorized into one of the accepted types of procedures to obtain audit evidence such as reperformance, recalculation or substantive analytical procedures. However, some powerful data analytics procedures do not fit easily into any of these procedure types. Separate recognition of data analytics as a procedure that can be a hybrid of the acceptable procedures would be a beneficial addition to ISA 500, in our view.
- Additionally, while we acknowledge that this is a highly judgmental area, we believe that guidance that specifically addresses considerations for evaluating the persuasiveness of the audit evidence obtained when using data analytics would be very useful.

▶ **Level of work for exceptions identified** - We agree that there is uncertainty regarding the extent of the auditor's work effort on outliers identified to determine whether they are in fact exceptions. The guidance to ISA 530.12 is in fact very limited. In our view, it would be helpful for this guidance to clarify that outliers are not by default exceptions or misstatements and

provide guidance on how to determine whether an exception exists, including through the use of data analytics by, for example applying filtering techniques and evaluating relevant information.

- ▶ **Risk measurement** - This challenge appears similar to the “current risk and response nature of the ISA” challenge above and addressing that challenge would seem to assist with these issues.
- ▶ **Documentation** -The iterative nature of the data analytics process adds unique challenges to documentation. However, we agree with the statement in the *Request for Input* that the documentation requirements need not be any different when making use of data analytics. That is, the ISAs currently do not require the auditor to retain all of the information used in selecting items for testing, and, in our view, this principle continues to apply when data analytics are used. Data that was used in the performance of data analytics but that is not directly audit evidence on which the auditor has based conclusions is not necessary to retain. As it relates to the scripts or programming used to analyze data, we believe that it would be useful to clarify whether it is necessary to retain such scripts to meet the documentation requirements of the ISAs.
- ▶ **Quality control processes** -We believe that any consideration of quality control processes related to firms’ internally-developed, or externally obtained, audit tools should be considered in the larger context of the IAASB’s quality control project and should involve a firm utilizing a risk-based approach to designing related quality control policies and processes.

**(d) *Is the Working Group’s planned involvement in the IAASB projects currently underway appropriate?***

We agree with the Working Group’s planned level of involvement in the identified projects and initiatives at the same time as actively developing solutions to the data analytic challenges on a broader scale. In regard to the specific projects, we have the following additional observations:

- ▶ **Accounting estimates** - Improvements to guidance in ISA 540 should be specifically considered, in our view, to address the appropriateness of the use of data analytics to obtain evidence over accounting estimates, including as it relates to the entity’s use of data sources (both internal and external, financial and non-financial), facilitating the performance of independent sensitivity analyses, and the application of predictive techniques (through application of algorithms).
- ▶ **Audit evidence** - We understand that the IAASB has proposed adding a project related to audit evidence to its work plan. We believe including such a project will be a large step forward in the IAASB’s ability to address many of the issues that have been raised in this *Request for Input*.
- ▶ Based on our responses to questions (b) and (c), we agree that ISA 240, ISA 320, *Materiality in Planning and Performing an Audit*, and ISA 330, *The Auditor’s Responses to Assessed Risks*, should contemplate the use of data analytics. Recognizing that these are not on the IAASB’s current agenda, we believe the development of interim guidance or initial views should be explored by the Working Group.

We would also add that it is important for the Working Group’s involvement in changes to the ISAs related to data analytics to also include evaluating whether such changes are flexible enough to



accommodate emerging techniques for obtaining audit evidence (such as predictive analytics, clustering, robotics and other techniques).

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

To date, we have identified the following additional initiatives that are considering or have considered the use of data analytics in the financial statement audit:

- ▶ The AICPA working group developing the Audit Data Analytics Guide (<https://www.aicpa.org/interestareas/frc/assuranceadvisoryservices/pages/auditdataanalyticsguide.aspx>)
- ▶ AICPA Audit Data Standards (<https://www.aicpa.org/InterestAreas/FRC/AssuranceAdvisoryServices/Pages/AuditDataStandards.aspx>)
- ▶ Royal NBA, Koninklijke Nederlandse Beroepsorganisatie van Accountants, has a data analytics committee focused on providing guidance to audit teams in the short term (focused on how data analytics can be used with the current standards) and the longer term (what changes are needed in the standards)
- ▶ The Financial Reporting Council (Audit Quality Review team) in the UK has released the output of their thematic review on data analytics in which they highlight best practice and cover key themes. This may be useful input as it is based on the current activity of some of the largest accountancy firms.

**(f) *In your view, what should the IAASB's and the Working Group's next steps be? For example, actions the IAASB and the Working Group 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, Analytical Procedures***
- (iii) *Hosting one or more conferences with interested stakeholders to collectively explore issues and possible solutions to the identified challenges***
- (iv) *Continuing with 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***

Where standards are open for current projects, the IAASB should take the opportunity to consider and explore the use of data analytics in these specific contexts as part of its consultation process on those standards. Furthermore, we believe that the IAASB should move forward to explore revisions to ISA 520 to contemplate the use of data analytics as soon as possible (in conjunction with the recently planned consideration of ISA 500 would be very useful).

We support the hosting of conferences or other events by the IAASB for interested stakeholders to collectively explore the use of data analytics in the financial statement audit. We also believe that it is appropriate for the IAASB to continue exploration of this topic to move towards a formal Discussion Paper.

Although we do agree that appropriate information must be gathered to proceed with standard-setting, we believe that the IAASB should consider what other more immediate actions it can take to communicate its initial views in some form to support auditors in achieving the requirements within the ISAs when using data analytics within the audit.