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Dear Sirs,

Re: Technological resources: using technology to enhance audit quality

We appreciate the opportunity to comment on the above consultation document issued by the FRC.

Our responses to the specific questions raised in the consultation paper are as follows:

Technological innovation and audit quality

Q1. Do you agree that the increasing use of technological resources, including AI and other advanced tools, enhances the quality of audits, beyond the benefits derived from efficiency gains? If so, what are the indicators of enhanced quality?

Yes, the increasing use of technological resources, when deployed appropriately, does enhance the quality of audits. As an example, and where appropriate, the ability to analyse all transactions in a population provides a basis for better risk assessment, helps to reduce sampling risk and allows auditors to focus testing efforts on the more unusual and therefore higher risk transactions. Some indicators of enhanced quality include:

- better risk assessment and understanding of transaction flows;
- identification of transactions that have not followed normal patterns or processes; and
- the ability to test 100% of the population.

In addition, technological resources can also provide auditors with the ability to simultaneously model large numbers of potential scenarios, including the ability to use external data sources, to support the challenge of management and the assessment of appropriateness of estimates and judgements made by management.

Q2. Do you believe that challenger firms are currently at a disadvantage in the use of new technology? If so, what remedies would you suggest?

As new technology emerges there will usually be a period of time where the new technology will be expensive to develop and use; the smaller size of some challenger firms may prohibit their own investment in proprietary technology and the ability to take advantage of new technology as it first emerges. This may put some challenger firms at a disadvantage in respect of newly available technology.

However, recent advancements in technology have significantly increased the number of technology enablers that are available off-the-shelf at a reasonable cost and there has been an increase in the third-party solutions available to audit firms. As a result of the increasing availability of technology at more reasonable prices and third-party solutions, the scale of the disadvantage reduces.

Q3. Other than investment, what do you believe are the key challenges auditors face in the increasing utilisation of automated tools and techniques within the audit process? Again, what remedies would you suggest to overcome these challenges?

The key challenges faced by auditors in increasing utilisation of automated tools and techniques are:

- The variability of data structures and systems within companies is a barrier to entry – see response to Q9 for further considerations and suggested remedies;
- Training and awareness of the automated tools & techniques available to auditors (including knowing which tools are approved for use – see response to Q5 and Q6 for further considerations and suggested remedies; and
- Confidence in the appropriateness of the audit evidence the technology provides – see response to Q4 for further considerations and suggested remedies.

Q4. Does the current assurance model or the auditing standards represent an obstacle to technological innovation? If yes, then what specific standards, objectives or guidance cause practitioners particular difficulties?

Whilst the current assurance model and auditing standards do not represent an obstacle we believe they do need to be updated to take account of the new methods of testing. The lack of clear, practical consideration in the current standards does provide a challenge to auditors increasing the utilisation of available technologies and to ultimately improving audit quality through the appropriate use of available technology.

Examples where clarification would be helpful include:

- The concept of reasonable assurance doesn't provide explicit guidelines on the nature and extent of the evidence that one should obtain, leading to varied and inconsistent use of technology despite the fact that technology would in most cases improve the quality of the assurance work compared to traditional audit procedures. Providing clarification on what is considered reliable audit evidence when using automated tools and technology would help address this matter.
- Certain audit tests enabled by technology may contain characteristics of both a test of details and a substantive analytical procedure, leading to inconsistent interpretation of the audit evidence provided. Providing clarity on how to classify the nature of such audit tests in line with the current audit standards, or updating the standard to introduce new categories or audit tests would be helpful in driving the consistent use of audit technology.
- In certain scenarios in an audit the testing of controls is required under the current auditing standards. When auditors can test 100% of a population the value obtained by testing the controls is sometimes limited. Providing clarity on whether the testing of controls is required when 100% of a population can be tested would help drive the consistency and increased use of such audit tests.

Q5. Do you believe the current level of training given to auditors – both trainees and experienced staff – is sufficient to allow them to understand and deploy the technological resources being made available?

The current level of training across the accounting profession e.g. as part of the accountancy qualification is not sufficient to help increase the utilisation of technological resources available to auditors; this applies to both trainees and experienced staff once they have qualified.

The accountancy qualifications need to become more technology focused; whilst we are aware the main accountancy bodies are starting to make improvements in this area more change is required. This will also help smaller firms have access to readily skilled resources rather than having to invest in training themselves, which larger firms are able to do.

We recognise there are challenges in the time taken to realise the benefit of changes to the core syllabus within the accountancy qualifications, for example a change to a syllabus today will not land in audit firms until approximately 4 years later, after a year to implement a change to the syllabus and then three years of training for trainees. Such changes to the core syllabus would also not have any impact on experienced staff who are members of the accountancy bodies.

As a result, more frequent training on new and emerging technologies applicable to audit is required for both trainees and experienced staff in addition to changes required to the core syllabus of the accountancy qualifications.

As a result of sufficient training not being provided as part of accountancy qualifications the onus is on the individual audit firms to provide appropriate training to auditors. Significant time and effort is spent training both the core audit teams to help them understand and deploy the technological resources available, for example as part of the KPMG Audit University, as well as the specialist technology teams supporting deployment. For example, KPMG have developed a Masters Degree in Applied Data Science in conjunction with a University provider which a number of audit professionals complete each year.

Artificial Intelligence, Machine Learning and Natural Language Processing

Q6. What firm-wide controls do you believe are appropriate to ensure that new technology is deployed appropriately and consistently with the requirements of the auditing standards, and provides high quality assurance which the firm can assure and replicate more widely?

Ensuring that new technology is used appropriately, and that the use is in line with auditing standards and provides high quality assurance can be managed by ensuring the audit firm has entity level controls defined to approve and monitor how, where and by whom new technologies are to be used. This allows investment in technology and skilled staff who can perform the procedures with due awareness of relevant auditing standards as well as data analytic techniques, data extraction and data protection requirements.

Such process enables dedicated teams and solutions to be developed, with detailed guidance produced and allowing validation of prescribed procedural, documentation and review requirements to be introduced. The development of such solutions requires audit firms to invest in both recruitment and technology that have not been traditional in audit.

Equally important is the messaging and training provided to audit staff about the availability of analytical solutions, giving clarity on any limitations of non-specialist audit staff performing self-styled solutions that have not been centrally approved with due methodology consideration. This does not eliminate the use of excel and self-service solutions, but the placement of these low complexity analytics is firmly focussed in areas of low audit risk and directed towards key guidance such as assessing the relevance and reliability of information.

The willingness of entities to release data to allow such procedures is a key step and has been addressed by both educational and technology enhancements by auditors.

Clear approval of extraction tools and readily available guidance of how data will be used, limiting data extracted to only relevant portions of data tables and clear data security in technology has been essential. Ensuring that data used in any data analytics based audit procedure is complete and reliable is critical, as poor quality data used will result in poor quality output. The use of the dedicated data analytics accredited staff for complex solutions has ensured that conversations with audited entities at both planning and communications to those charged with governance meets all needs.

Limiting development and usage of complex data analytics tools, including those used by specialists, to only those individuals or teams with advanced training and experience, with senior oversight and monitoring, ensures that the solutions are produced with clear governance throughout. This allows time and costs to both acquire and maintain the required hardware and that any duplicated or inferior extraction projects are not authorised or discontinued.

Having an accreditation process for technological resources to be used in audits ensures that developments are independently challenged in both technological and methodology before approval for development, solutions. These are then able to be independently tested and documented before deployment and training developed for defined user groups. Limiting access to approved solutions and removing alternative solutions from the wider audit function ensures only approved protocols are applied.

It is important that accreditation is not limited to launching a new tool but also in the continued review and independent validation over the life of the tool to ensure continued compliance, for example ensuring guidance is reassessed for enhancements to auditing standards, firm policies or technology enhancements.

Q7. Are you aware of the use of new technologies in analysing and interpreting information provided by auditors – including, for example, auditor’s reports? If yes, then do you foresee implications for the form and content of auditor’s reports?

We are aware of using certain technologies, such as Natural Language Processing, that can be used to analyse the wording used in auditor’s reports, to analyse the language used, the readability of the language applied and the sentiment of the report.

We believe the future form and content of the auditor’s report will be driven by evolution of our profession rather than the ability of technology to analyse the information provided. For example any additional content (either qualitative or quantitative) that is included will be to provide value to the users of the reports, the fact technology may be used to analyse or interpret the report should not be a driving factor in the consideration of whether to include the information or not.

Q8. What do you see as being the main ethical implications arising from the greater use of technology and analytics in audit?

In Sir Donald Brydon's report *Assess, Assure and Inform: Improving Audit Quality and Effectiveness* published in December 2019 he identified one of the obstacles to the further widespread use of technological resources being the willingness of companies to allow access to all of their data. The context behind this barrier, and the subsequent recommendation in the report was an awareness that certain firms used audit data to assess value of cross-selling opportunities and also to "train" machine learning tools.

The perception that audit firms may use data for this purpose (rather than to enhance audit quality) and the need to refrain from unethically exploiting the commercial value of the data received and analysed as part of an audit does potentially create an ethical implication which must be considered. However, we note that it is our view that standard terms and conditions, internal policies and ultimately the FRC Ethical Standard would prohibit audit firms from using data to evaluate cross-selling opportunities.

There is also an ethical risk in respect of using client data for personal gain, i.e. fraud by an individual auditor, rather than at an audit firm level; this is also prohibited by the FRC Ethical Standard.

The ethical implications of ensuring continued independence (of fact and perception) are also magnified through the use of technological resources, for example with automated audit tests auditors have the ability to extract and analyse data at multiple times in the year, and may indirectly have the ability to analyse additional or associated data that is not directly relevant to support the audit opinion. In these cases, ensuring that the audit firm does not become, or is seen to become, part of management's control environment, internal audit function or other business information activity is critical. Refer to response to Q10 for further consideration of this point.

Whilst not specifically an ethical implication, appropriate processes and controls are required to ensure that data protection, security and retention measures are in place to address the data obtained, for example personal data will require different considerations.

Data Standards and Extraction issues

Q9. Do you believe there is value in the UK having consistent data standards to support high quality audit, similar to that developed in the US?

Yes, data standards would reduce the barriers faced by auditors in obtaining and processing the data, thus enabling auditors to increase the use of quality enhancing technology on a wider basis. This would also reduce the barriers to entry for smaller audit firms.

A significant amount of time is spent by audit firms on data extraction and the manipulation of data into standard formats to then perform the audit analytic routines to support the audit. Having a consistently applied data standard would reduce the time spent on these activities and allow the focus of the effort to be on the analysis of the data increasing the value to the audit and helping to facilitate the increased application of data analytic audit routines to a wider number of audit engagements. This would also have wider benefits outside the audit industry as other professional services also spend a significant amount of time, e.g. other regulatory work, tax, investigations, legal services.

The key challenge is the consistent adoption of any data standards on a global basis, for example many of the companies audited from the UK also have subsidiaries and affiliates in other countries, with the ability to extract and analyse data across a whole group which is now often done. Therefore, we would need the consistent data standard to apply across all components of the group for this to be of benefit in these situations. In a process led by the ICAEW, KPMG, other audit firms and other companies are working together with Engine B to address this challenge. Engine B is a consortium created by the Professional Services industry, supported by investment from the ICAEW, Innovate UK and Microsoft, to standardise how firms use client data in auditing and beyond.

Q10. Do you agree that threats to auditor independence may arise through the provision of wider business insights (not as part of the audit itself) drawn from the interrogation of company data? If so, what measures could mitigate this risk from crystallising?

We recognise there could be a perceived risk that threats to auditor independence may arise if business insights are obtained as a result of performing data analytics procedures not related to the audit. For example, if the audit firm were to interrogate data purely for the purpose of identifying insights, rather than as part of the audit, then providing these business insights to management would not form part of the audit engagement and could therefore potentially be seen to lead to a breach in auditor independence.

Ensuring that auditors have appropriate guidance on what analysis and interrogation to perform and for the scope of this work to be driven by the audit plan and identified audit risks is important to ensure that unrelated analysis is not performed.

The communication of insights directly related to the audit to management is permitted and indeed required to enable the auditor to perform audit fieldwork, provide challenge of management and understand the impact on the audit. However, as noted, in our response to Q8 consideration must be given to the timing of the analysis and the sharing of these insights with management to ensure that management do not seek to rely on output of the audit and the insights received in place of a management control,

internal audit function or other business information activity. For example, ensuring there is an appropriate period of time following the extraction, analysis and providing the audit relevant insights would help to ensure management do not seek to replace a monthly review control with the output from the audit, and limiting the extent of the analysis and insights that are shared to those that are directly relevant to the audit fieldwork to support the audit opinion.

We believe that regulation has a part to play here. Whilst it is vital that auditors do not become part of the entity's control framework it is also equally important that audit teams feel confident in sharing insights arising from data analysis with management. At present teams are very cautious in the insights shared and link this very closely to the results of audit procedures performed. As a result it is likely that some insights that would be valuable to those charged with governance, especially in smaller entities that cannot invest in the tools and techniques developed by audit firms, are not captured or shared for fear of breaching ethical standards.

Audit documentation

Q11. Do you agree that audit documentation can be more challenging when an audit has been conducted with automated tools and techniques? If so, please identify specific areas where there is a problem.

There can be challenges as a result of audit professionals not being clear on the nature and type of audit evidence being provided, for example the challenges outlined in our response to Q4 are also relevant to this question.

A significant challenge is determining what data is required to be retained so that the test could be replicated. For example;

- There are certain scenarios where data from an audited entity cannot be reproduced from a previous point in time. The question therefore arises as to whether the auditor should retain the original data to allow the test to be replicated. Retaining this volume of data could become prohibitively expensive and could result in an increased risk of breaches in confidentiality.
- Upgrades to technological resources used in audits can result in different outcomes when a new version is used. Are audit firms required to retain previous versions of the software used to be able to replicate the original test; this is not possible in some cases without significant costs (e.g. running two versions of the software on different infrastructure) and in some cases is not possible at all (e.g. changes to operating systems mean that old versions of software are no longer supported).

This challenge increases as the use of technology such as Artificial Intelligence emerges, technology now exists that will not produce the same results each time it is applied, the same way it is not guaranteed a human would give exactly the same results each time they look at something, as the past knowledge and experience is

taken into account each time they look at a problem or a set of data. The replication of a point in time test therefore may become increasingly difficult.

There is also a consideration as to what information should be stored on the audit file and what should be retained centrally, e.g. past records of software used. Separate considerations relevant to this question are also required when third-party technology vendors are used, refer to answers to Q13 and Q14 for further consideration.

Data analytic exceptions

Q12. Have you encountered challenges in dealing with the volume of ‘exceptions’ arising from the use of more complex or comprehensive data analytic procedures?

Yes, we have found that when auditors first adopt the use of data analytic based audit tests there is often a concern that analysing large populations of data could lead to a higher volume of ‘exceptions’ and auditors question how this would be dealt with by the audit team and by management of the company being audited.

If the volume of exceptions are excessive then there is a need to decide whether the test has been set up correctly, whether the process at the company being audited is fully understood or whether this is a major issue at the company. We encourage a “dry run” of any new data analytic based audit test to identify if any of these situations are relevant and take steps to address them before the final testing is initiated.

We have developed a clear process for dealing with exceptions within our audit methodology to ensure that audit teams have clear guidance of how to respond to exceptions, regardless of the volume.

It would be helpful if auditing standards recognised the complexity of transitioning from traditional auditing techniques to technology enabled approaches. Often audit teams will parallel run the old and new approaches for a period as, unless dry-runs can be performed, there may be some uncertainty over how effective the technology solution will be and what level of ‘exceptions’ are generated. The deployment of technology is probably slowed due to concern over how these ‘exceptions’ are expected to be addressed and whether the concept of refining the routines within an audit cycle could be considered an appropriate response to such exceptions in some cases.

Use of third-party technology providers

Q13. Do you agree that the use of third-party technology vendors raises potential ethical challenges for auditors and, if so, which potential safeguards would you see as effective in reducing this threat to an acceptable level?

There is an ethical challenge relating to third-party vendors having access to, and the ability to use, data from the companies we audit. If the third-party vendor were to have control over the data, or the ability to retain/ use this data for other purposes this would create an ethical challenge as the third-party would have the ability to benefit from data that was passed to the audit firm solely for the purpose of performing the audit. It is possible that third-party technology vendors do require access to and require retention of data to train and improve their own software – this is a challenge that requires safe guards to be applied through the legal contracting between audit firms and the third-party vendors.

Furthermore, the nature and the extent of the relationship between the audit firm and the third-party technology vendor (that ranges from off the shelf use of a standard software through to a more formal business relationship such as an alliance with a bespoke software offering) needs to be assessed and can create other potential ethical challenges. For example, this could result in the audit firm being unable to audit the third-party technology vendor.

It is also important that independence standards for third party software providers are sufficiently clear and appropriate given auditors using such tools will be seeking to use them for some time and very often the third parties are seeking to provide their tools to both auditors and corporate entities.

The use of a third-party can increase the risk of data misappropriation and safeguards, through working with reputable organisations, understanding data use, data retention and data security as well as considering shared risk/ liability helps to reduce this risk to an acceptable level.

Q14. Do you agree that the increasing use of third-party providers presents challenges in audit documentation and, where relevant, how have you dealt with this?

Placing reliance on third-party technology vendors can create challenges for the audit firm in respect of how much work they need to perform over the vendor and the technology solution being used and how this is recorded in the audit documentation.

Audit firms must ensure that they have performed an appropriate assessment of the technological resources being used (both technology and people, and where necessary, their independence) such that they can ultimately take responsibility for the audit opinion signed. Therefore, a technology solution which operates as a “black box” where the audit firm has no visibility of how the technology solution operates would be problematic for audit firms.

We believe the challenges can be managed as long as the audit firm is able to adequately understand and test the third-party technological resource in question.



If you have any questions about our response or wish to discuss any of our observations in more detail, please contact Matthew Campbell on +44 (0) 207 311 1664.

Yours faithfully

KPMG LLP

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