

TECHNOLOGY INITIATIVE PHASE 1 PRELIMINARY REPORT

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By

IESBA Technology Working Group

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I. PURPOSE OF THE PHASE I PRELIMINARY REPORT

1. The purpose of this report is to share with the IESBA an initial draft of the Technology Working Group's (TWG's) findings and recommendations based on work performed during Phase I of the IESBA's initiative on the trends and developments in technology (Technology Initiative). The TWG will consider and incorporate feedback obtained from the IESBA during the September 2019 board meeting into the final Phase I report to be presented at the December 2019 IESBA meeting.

II. EXECUTIVE SUMMARY OF PHASE 1 RECOMMENDATIONS

2. On a preliminary basis and recognizing that the TWG has not yet completed its Phase 1 work, the TWG recommends **establishing an IESBA project and related Task Force** to address the following items that the TWG believes warrant specific consideration as **potential changes and/or enhancements to the Code**:

- Whether to add new application material to Part 1 of the Code to articulate an expectation that professional accountants (PAs) lead by example in promoting ethical values and behavior as key contributors to public trust in the development and application of technology. (Refer to paragraphs 6 to 21 of this report)
- With regards to ethical issues resulting from complexities of the professional environment in the digital age, whether:
 - To add "*Many of the ...*" at the beginning of the first sentence in paragraph 120.6 A3¹ to acknowledge that there are threats that fall outside the five categories of threats defined in the Code.
 - To amend the definition of intimidation threat set out in paragraph 120.6 A3 to include examples of complexities encountered by a PA, in particular due to new technology, and perhaps also recognizing complex accounting standards, regulatory requirements, etc.
 - To add appropriate references to technology, including technology-related examples of self-interest and intimidation threats, in Sections 200² and 300³ of the Code.

(Refer to paragraphs 22 to 29 of this report)

- Whether to expand the material on a PA's responsibility to be transparent in Subsection 113.⁴ (Refer to paragraphs 41 to 46 of this report)
- Whether to expand the material on accountability in Subsections 111⁵ and 113. (Refer to paragraphs 47 to 53 of this report)
- Whether to include appropriate reference to technology in the provisions relating to reliance on the work of others in Section 220.⁶ Further consideration should also be given to how best to progress these changes in light of the [Exposure Draft, Proposed Revisions to the Code to](#)

¹ Section 120, *The Conceptual Framework*

² Section 200, *Applying the Conceptual Framework – Professional Accountants in Business*, paragraph 200.6 A1

³ Section 300, *Applying the Conceptual Framework – Professional Accountants in Public Practice*, paragraph 300.6 A1

⁴ Subsection 113, *Professional Competence and Due Care*

⁵ Subsection 111, *Integrity*

⁶ Section 220, *Preparation and Presentation of Information*

[Promote the Role and Mindset Expected of Professional Accountants](#) (Role and Mindset ED) which is currently open for comments. In this regard, the TWG is of the view that the Board should consider, as part of its strategic commitment to undertake an implementation review of the revised and restructured Code, the effectiveness of the “applicability provisions” set out in paragraphs 200.5(b) and R300.5 to 300.5 A1 with regards to Section 220. (Refer to paragraphs 52 to 53 of this report)

- Whether to revise the fundamental principle (FP) of confidentiality and to modernize the material in Subsection 114⁷ to better explain the relationship between that FP and the concepts of privacy and transparency, including a PA’s responsibility towards data stewardship. (Refer to paragraphs 54 to 58 of this report)
 - Whether Subsection 113 should be enhanced to include “soft” skills or reference the International Education Standards (IES) issued by the former International Accounting Education Standards Board (IAESB) regarding this type of skills. (Refer to paragraphs 59 to 65 of this report)
3. Furthermore, the TWG recommends **developing non-authoritative material** covering the following five topics over the next 12 – 18 months:

	Topic	Objective	Targeted Audience
1	Update (Q4, 2019)	<ul style="list-style-type: none"> • To <i>inform</i> stakeholders of the TWG’s work to date, including what the TWG has learnt so far (high level), key areas of focus and next steps. 	All
2	Impact of technology	<ul style="list-style-type: none"> • To <i>educate</i> stakeholders about the pervasiveness of technology and its inter-related impact across all FPs. The publication may include, for example, discussions on the impact of machine bias, the relationship between AI ethics principles and the FPs, as well as the threats created by complexities in the professional environment in a digital age. 	All
3	Leadership in promoting ethical behavior	<ul style="list-style-type: none"> • To <i>educate</i> and <i>motivate</i> PAs about promoting an ethics-based culture and how they can contribute to building public trust in the digital age where technology advancements have brought trust and ethics to the forefront of technology discussions, using examples/scenarios and taking into consideration the implications in different jurisdictions 	PAOs and individual PAs
4	Competencies needed in the digital age	<ul style="list-style-type: none"> • To <i>educate</i> PAs about the importance of maintaining and updating their competencies, the importance of soft skills and having the right continuous learning mindset to keep pace with technological changes. This might include 	PAOs, firms, higher education institutions

⁷ Subsection 114, *Confidentiality*

		developing a joint publication with IFAC's new International Panel on Accountancy Education.	
5	Confidentiality	<ul style="list-style-type: none"> • To <i>educate</i> PAs about maintaining confidentiality in a digital age. • To <i>socialize</i> with stakeholders the TWG's developing views about how the concept of transparency should be best expressed in the Code. 	PAs and the broader stakeholder community including business and industry

4. A discussion of the factors considered and basis for the recommendations in paragraphs 2 and 3 is set out in the remainder of this report.
5. The TWG understands that the Non-assurance Services (NAS) Task Force will put forward its view at the September Board meeting that any further revisions to modernize the NAS provisions in the Code in relation to technology should be developed as part of the Technology Initiative. The TWG will take into consideration the outcome of the Board's consideration of this view in finalizing its report.

III. PHASE I FINDINGS AND RELATED RECOMMENDATIONS

Building Trust: The Critical Role of Ethics and Professional Judgment in the Digital Age

6. Trust and ethics have long been associated with the accountancy profession and are also foundational elements of sustainable societies, economies, businesses and personal relationships. Many stakeholders and others have observed that trust is becoming an increasingly important currency in the digital age. Recent cases of misuse of personal data by companies serve as examples of a need for heightened levels of public trust in the information generated and consumed at ever increasing rates by people across the globe.
7. Alongside the transformational and far reaching benefits of modern technologies for businesses, governments and societies are ethics issues and dilemmas, such as undue influence, biased decisions and unfair treatment, breach of privacy and threats to public health and safety. The speed at which technology works and its pervasiveness suggest there needs to be appropriate attention to ethical values in the development and application of technology in order to avoid far-reaching and equally pervasive negative ramifications of "bad" technology. These issues, if not properly addressed, can result in loss of confidence in businesses, governments, institutions and the community at large. Consequently, ethics are rising to center stage in the discussions of technology disruptions.
8. As trust and ethics gain a higher profile in conversations about technology and its impact, the TWG believes there is an opportunity for PAs to have a broader societal role in promoting ethical behavior beyond their current role of contributing to building public trust in the organizations and professional activities they are directly associated with.
9. Such broader role in society as champions of the importance of ethics in the development and application of technology might encompass, amongst other things, promoting an ethical culture across organizations and among business partners and third parties, influencing others to act ethically as well as holding oneself and others accountable for upholding ethical principles.

10. In having a responsibility to act in the public interest, PAs have historically had a strong appreciation of the importance of public trust and in third parties having confidence in and ascribing value to their work. They also understand that adhering to a code of high ethics standards helps maintain that trust. Currently, Section 200⁸ of the Code contains application material about the expectation of PAs in business (PAIBs) to encourage and promote an ethics-based culture in their organizations, taking into account their position and seniority within those organizations.
11. The TWG notes in the Role and Mindset ED the IESBA has proposed changes to recognize the wide-ranging impact PAs have in society as a result of the skills and values they bring to their work, the centrality of ethical behavior when undertaking professional activities and the role of a PA in championing ethical behavior in their organizations. Additionally, the ED proposes revisions to the description of professional behavior to specifically require a PA to behave in a manner that is consistent with the profession's responsibility to act in the public interest. The proposed ED text also contains new material in Section 120 of the Code that emphasizes the importance of an organizational culture that promotes ethical behavior in the context of PAs applying the conceptual framework.
12. As current provisions in the Code and in the proposed Role and Mindset ED primarily refer to the PA's role in the organizations in which the PA carries out professional activities, the TWG is of the view that further consideration should be given by the IESBA to including new application material in Part 1 of the Code to more clearly highlight a broader societal role of PAs in promoting ethical behavior as a critical, consistent foundation for businesses and other institutions when developing and using technology. The TWG also considers that non-authoritative material on this subject would be helpful to inspire and to inform PAs to act as active champions of ethical behavior in the dynamic, technology-enabled workplace irrespective of the timing or type of technological disruption.
13. Stakeholders have also cited the continuing, if not increasingly important, role of professional judgment as business and society adapt and evolve in a world of dynamic change brought about by ongoing digital transformation.
14. New developments in AI such as machine learning and deep learning, coupled with the availability of big data, mean machines can take on more and more tasks, including complex analysis and predictions. This rise of machine predictions will also generate more demand for decision-making, giving rise to more opportunities to exercise human judgment.
15. Additionally, some have pointed out that whilst AI can improve predictions of future outcomes, it is not always able to judge which outcomes are better or what is best for or in the public interest as it would require machines to consider factors such as hidden costs, rewards, and risks. Consequently, human judgement continues to play an important role in decision-making.
16. As technology such as deep learning continues to evolve, the value of machine prediction will also increase as machines are able to take into consideration more factors and become more accurate, quicker, and more cost effective. In this regard, the TWG notes the concept of intelligence augmentation (IA) as a different way to conceptualize the role of AI whereby humans are remaining at the center of the decision-making process and AI does not replace human intelligence but enhances it. Aligned with the concept of IA, some have suggested that as the value of machine prediction increases, the value of, and need for, human judgment will also increase. The considerable

⁸ Paragraph 200.5 A3

benefit of combining machine prediction and professional judgment is an ability to make better decisions based on more comprehensive and more accurate information.

17. As the accountancy profession evolves in the digital age and sets its path for the future, it seems clear that PAs' professional judgement will continue to play a significant role.
18. The revised and restructured Code includes new application material that provides additional guidance to the requirement for PAs to exercise professional judgment in paragraph R120.5. Such application material (paragraphs 120.5 A1 to 120.5 A3 of the Code) describes, amongst other matters, the relationship between the exercise of professional judgment and applying the conceptual framework.
19. The TWG agrees with the observation that with the availability of machine-generated information comes a risk of over-reliance on AI or other forms of technology due to a tendency to favor output generated from automated systems, even when human reasoning or contradictory information raises questions as to whether such output is reliable or fit for purpose. Such tendency (referred to as "automation bias") may impair a PA's exercise of professional judgment. In recognition of this risk, the IESBA agreed to include automation bias in the proposed list of examples of bias in the Role and Mindset ED.
20. As part of its deliberations on the Role and Mindset proposals, the IESBA agreed that the Code already recognized the importance of professional judgment to a PA's application of the conceptual framework and that no further changes to the material on professional judgement is needed.
21. Based on its work in Phase I, the TWG does not propose any further revisions to the Code regarding the importance of professional judgment. However, the TWG is of the view that it would be helpful for the IESBA to develop non-authoritative material that highlights the importance of professional judgment when carrying out professional activities in a dynamic, technology-enabled environment.

Complexities of the Professional Environment in the Digital Age

22. PAs today find themselves working in an increasingly complex environment that includes the use of new technologies. As mentioned earlier, new technology applications, such as those combining the use of AI and big data, can produce information and perform complex tasks much more efficiently and accurately than human agents. In order to rely on the outputs of these technology applications, PAs need to attain sufficient knowledge of the workings of the technology involved, which can often be a complex, time-consuming and arduous task. Another factor that leads to a complex professional environment is the ever-expanding array of regulatory requirements and professional standards that are applicable to the work of PAs as well as client businesses.
23. The Code states that "threats to compliance the FPs fall into one or more" of five categories: self-interest, self-review, advocacy, familiarity and intimidation. The TWG considered at length whether the current five defined categories of threats are sufficient for identifying the ethics risks inherent in the ever-increasing complexity of the PA's professional environment. A potential gap in the Code became apparent to the TWG when considering threats to the FP of professional competence and due care caused by complexity associated with new technologies.
24. To better capture the threats caused by complex professional environments in the Code, the TWG considered the options of inserting a new category of threats (e.g., "complexity" or "self-confidence" threats) or expanding the current categories in paragraph 120.6 A3. Upon further consideration, the

TWG is of the view that adding a new category of threat is not necessary as complexity risk could fall under two of the existing categories of threat:

- Self-interest threat in the sense that a PA does not want to invest in the time, money and other resources to learn about the new technologies or new compliance rules because of the lost opportunity cost. It may be argued that the current description of self-interest threat in paragraph 120.6 A3 (a) already covers this type of threat.
 - Intimidation threat in the sense that a PA is deterred from acting properly because the PA feels intimidated by the complexity of certain technology applications or compliance rules. The TWG, however, is of the view that this type of threat is not currently covered in the existing description of intimidation threat in paragraph 120.6 A3 (e).
25. The TWG is also of the view that it would be beneficial if examples of the threats caused by complexity were added to Sections 200 and 300 of the Code as appropriate.
26. The TWG further queried if the Code's approach in placing every threat under one of the five categories is too restrictive. In this regard, the TWG notes in particular the AICPA Code which states that "...**many** [emphasis added] threats fall into one or more of the following seven broad categories: adverse interest, advocacy, familiarity, management participation, self-interest, self-review, and undue influence..."
27. Sections 200 and 300 of the Code also provide examples of the work and operating environments of firms, employing organizations and with clients that might impact the evaluation of the level of a threat. The TWG is of the view that it might be helpful to include a reference to technology in these provisions.
28. In light of the above, the TWG is of the view that the Board should consider strengthening the Code by:
- Adding "*Many of the ...*" at the beginning of the first sentence in paragraph 120.6 A3 of the Code to acknowledge that there are threats that fall outside the five defined threat categories.
 - Inserting a reference to technology in the description of intimidation threat as set out in paragraph 120.6 A3.
 - Adding appropriate reference to technology, including technology-related examples of self-interest and intimidation threats, in Sections 200 and 300 of the Code.
29. The TWG is also of the view that it would be helpful to develop a non-authoritative publication to discuss the ethical implications of complex professional environments linked to the impact of technology.

Suitability of the Fundamental Principles for the Digital Age

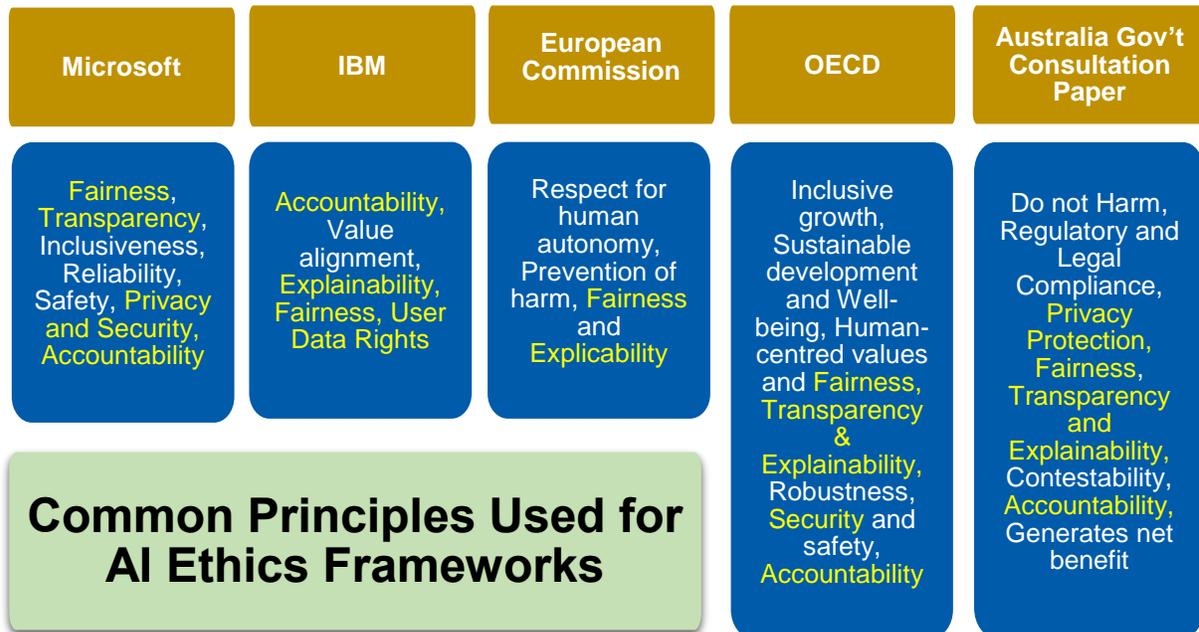
30. While the individual FPs are defined broadly and in a way that generally addresses technology-related risks, the TWG believes that the impact of new technology developments cuts across all five FPs in an interrelated manner. As a result, missing or not fully understanding the threat to complying with one FP resulting from the impact of technology might also lead to non-compliance with another FP. This "combined" effect, along with the fast pace of work that technology enables, suggests that it is especially important for a PA to consider the inter-related nature of the FPs.

31. The proper consideration of the potential impact of machine bias associated with the use of AI provides an example of this pervasive, inter-related impact. When AI is used, bias could be present in the datasets consumed by the AI system, in the algorithms that reflect biases of the human AI system's developers and coders, and/or in the interpretation of the system's outputs. Consequently, a PA needs to think concurrently and holistically about compliance with the FPs in a technology-enabled business environment:
- *Objectivity* could be impaired when undue reliance is placed on AI system outputs, especially when such output has been generated from biased data or information that might compromise a PA's professional judgment.
 - In order to avoid undue reliance, the PA must have the appropriate *professional competence and due care* to sufficiently understand and evaluate the business and technical aspects of how AI system outputs were generated. Whilst a PA is not expected to have the same level of knowledge and skills as a data scientist, it is important that the accountant is capable of asking the appropriate questions to ensure high quality of information is being used.
 - If the PA knew or should have known that the AI system's outputs were not objective, then this implies a lack of fair dealing or truthfulness, namely *integrity*.
 - Furthermore, since AI systems are fueled by consuming of large amounts and different types of data, privacy considerations arise and can heighten the level of threat to complying with the FPs of *confidentiality* and *professional behavior*.
 - Lastly, the consequences of one or more such lapses in compliance with these FPs may also discredit the profession under the FP of *professional behavior*, particularly in light of the increasing public expectations for trust in the digital age.
32. The TWG is of the view that further enhancement to the Code to highlight the pervasive and inter-connected nature of the impact of technology is not necessary. Instead, the TWG is of the view that non-authoritative material on the overall impact of technology in terms of the FPs, including the example of machine bias, would be helpful to stakeholders.

Key Principles in AI Ethics Frameworks

33. As part of its review, the TWG compared the ethics principles embodied in a number of AI ethics frameworks to the descriptions of the FPs and related application material in the Code.
34. In recognizing trustworthiness as a key factor to the acceptance of AI, many governments, transnational organizations and corporations have been proactively proposing and implementing ethics frameworks for the development and application of AI. Such organizations are also committed to developing AI ethics framework in order to maximize the potential of AI in bringing positive transformations to society and to minimize the risk of significant societal damage.

35. The diagram below includes a list of some of the AI ethics principles from different sources reviewed by the TWG:



36. In reviewing the various AI ethics frameworks, the TWG has observed that they consistently include the concepts of fairness, transparency, explainability, accountability and privacy/confidentiality. The TWG has considered whether, and if so how, these concepts are covered in the Code and whether there might be a need or benefit to more explicitly relate these ethical principles to the FPs. A summary of the TWG's deliberations is set out in paragraphs 38 to 59 below.
37. The TWG also recommends that the relationship between the common AI ethics principles and the FPs be included in non-authoritative material.

Fairness

38. The TWG is of the view that there is a public expectation for a PA to act fairly when undertaking professional activities. Whilst the concept of fairness is not defined or explained in the Code, the TWG has considered that the application of this concept has the following ethical implications for a PA:
- A PA must be impartial and not be biased against any individuals or organizations in the PA's decisions or actions, including presentation of information. In this regard, the PA must not cherry-pick datasets. (FP: Objectivity)
 - A PA must include all relevant known information when making decisions and have the necessary competence to identify and understand the information required to make such decisions. (FP: Professional Competence and Due Care; and Professional Judgement)
 - To act unfairly might also impact the good reputation of the profession. (FP: Professional Behavior)

39. Currently in the Code, the FP of integrity alludes to the concept of fairness by requiring a PA to be straightforward and honest as well as explaining that the principle implies fair dealing and truthfulness. However, some may perceive there is no requirement for a PA to act fairly. In addition, there is no guidance on what that concept means in the context of undertaking professional activities.
40. Upon deliberation, the TWG is of the view that further enhancement to the Code to include the concept of fairness is not necessary for the following key reasons:
 - It may be argued that compliance with the FPs and proper application of the conceptual framework already provide the necessary assurance that a PA will act fairly.
 - The proposed revisions to the Code in the Role and Mindset ED, such as the inclusion of “having an inquiring mind” and guidance material on bias under Section 120, will further reduce the risk of a PA acting unfairly.
 - The TWG also recognized that the term “fairness” is a value-laden concept which might make it difficult to develop a global view on how the concept should be applied.

Transparency and Explainability

41. The Code already contains provisions that promote transparency by requiring PAs and firms to disclose certain information to relevant parties, for example disclosure of confidential information under certain circumstances in Subsection 114, disclosure of the nature of a conflict of interest in Sections 210⁹ and 310,¹⁰ as well as fee disclosure to those charged with governance of an audit client in Section 410.¹¹
42. In addition to the specific disclosure requirements stated above, the TWG is also of the view that a PA needs to be transparent about, and be able to explain, how decisions are reached, the processes applied, and how the information the PA relied on has been derived appropriately. In this sense, transparency is more a mindset or attitude whereas explainability relates more to a PA’s capabilities. The importance of these two closely linked but distinct concepts is further heightened with the development AI technologies such as machine learning and deep learning, and the use of increasingly complex algorithms. By being transparent and able to communicate and explain certain aspects of a decision or process, this would help to build trust in the work being undertaken by a PA.
43. Under of the FP of professional competence and due care, a PA is required to make certain parties such as clients and employing organizations aware of the limitations inherent in the PA’s services or activities (see paragraph R113.3 of the Code). The TWG also considered that the concept of transparency ties in with professional judgment as they both are important elements of the decision-making process. A PA should be able to demonstrate how professional judgment has been exercised and the robustness of a decision.
44. With regards to the concept of explainability, the TWG is of the view that it is linked more closely to the FP of professional competence and due care as a PA should also have the requisite skills and knowledge to explain a decision or the decision-making process in such a way that will establish trust in the robustness of the decision.

⁹ Section 210, *Conflicts of Interest*

¹⁰ Section 310, *Conflicts of Interest*

¹¹ Section 410, *Fees*

45. The TWG does not believe there is a need to include the concept of explainability in Subsection 113. However, it is recommended that the IESBA consider further enhancement to this subsection with a view to expanding a PA's *responsibility* to be transparent, which is not currently expressly stated in the Code, being mindful of circumstances that impact the extent of transparency (e.g., in an audit, the type and timing of test procedures).
46. Additionally, the TWG believes that as part of non-authoritative material on the importance of professional judgment the relationship between transparency and professional judgment can be highlighted.

Accountability

47. The TWG believes there is a public expectation that a PA is accountable for the decisions, actions or outcomes for which the PA has due responsibility. Accountability goes beyond just having someone to blame when things do not go as planned, and sanctions. As highlighted in a recent report by the Institute of Chartered Accountants in England and Wales titled "[New technologies, ethics and accountability](#)", the right accountability framework serves as a driver to acting appropriately in the moment to avoid shame and embarrassment at a later date.
48. As the discharging of professional activities becomes more complex and services become more integrated, both PAs in public practice (PAPPs) and PAIBs are becoming more reliant on the work of subject matter experts as well as the outputs from technologies such as AI systems. Whilst an intelligent agent does not (yet) have any legal, ethical or moral responsibility, reliance on the work produced by such an agent is in many ways no different than a PA relying on the work of a human agent such as a junior staff member or a subject matter expert.
49. In considering the appropriate accountability of PAs when operating in a technology-enabled professional environment, the TWG has formed the view that PAs must (i) be willing to be held fully accountable for their work – regardless of whether other human or intelligent agents contribute to their conclusions and decision-making processes, and (ii) take the necessary steps to ensure that they properly discharge their duties.
50. With regards to having a willingness to be held accountable, the TWG considers that this concept aligns best to the FP of integrity in Subsection 111 as this principle requires a PA to be straightforward and honest. In this regard, the TWG has also taken into consideration the proposed new material in the Role and Mindset ED on having the determination to act appropriately when confronting dilemmas or difficult situations. The TWG is of the view the whilst the need for willingness to accept responsibility may be broadly covered in the proposed new material, there is room for potential enhancement to the Code to strengthen this aspect of accountability in the Code.
51. The FP of Professional Competence and Due Care set out in Subsection 113 of the Code includes the requirement that a PA take the necessary steps to fulfil the PA's responsibilities (see paragraphs 113.1 A3 to R113.3). The TWG is of the view that these paragraphs might be further strengthened in order to more clearly explain the concept of accountability in light of the increasing use of external experts and intelligent agents.
52. The TWG has also reviewed the material relating to relying on the work of others in paragraphs R220.7 to 220.7 A1 of the Code as well as the proposed revisions to paragraph R220.7 in the Role and Mindset ED. The TWG noted that in approving the proposed revisions to R220.7, the IESBA agreed to remove a proposed reference to reliance on technology suggested by the Role and Mindset

Task Force on the grounds that the TWG is better placed to consider the inclusion of any such references in these two paragraphs. Having reflected upon the matter, the TWG is of the view that the IESBA should consider including material on reliance on technology in paragraphs R220.7 and 220.7 A1.

53. The TWG also noted that there is no equivalent section or material on preparing and presenting of information that specifically addresses a PA's reliance on the work of others in Part 3 of the Code. In considering how the applicability provisions in paragraphs 200.5(b) and R300.5 to 300.5 A1 would apply in these situations, the TWG has concluded that any review of the applicability provisions may be best addressed as part the IESBA's implementation review of the revised and restructured Code in the future.

Privacy and Confidentiality

54. The concept of privacy is closely related to the concept of confidentiality. In the context of information, privacy relates to the legal right of a person protecting, and controlling access to, his or her personal information or data. In contrast, confidentiality refers to how personal information or other information that need to be kept confidential (such as commercially sensitive information) will be protected from unauthorized access.
55. The TWG has heard that when considering how privacy should be protected, due consideration must be given to how the ownership of personal information is viewed in different jurisdictions. Some stakeholders have noted that whereas some jurisdictions consider the ownership of private information rests with individuals, other jurisdictions view private information to be owned by corporations or the State.
56. In today's "information" economy where data are considered by many as a new form of asset, the sharing and use of large amounts of digital data have become accepted (and somewhat expected) in order to create value for businesses, employees, customers and clients. Technology has also allowed data to proliferate and be transferred more easily and quickly. With the flow of large data sets that often include personal and other sensitive information, the protection of confidential information becomes a significant matter for consideration by firms and other organizations that have access to these datasets.
57. With the growing availability and use of big data, there is also a need and opportunity for development and implementation of proper data governance and frameworks. The TWG has heard from some stakeholders that the profession is well placed to be a contributor to the discussion of the need for effective data governance frameworks given its traditional role in handling financial data.
58. In reviewing the material on the FP of confidentiality set out in Subsection 114 of the Code, the TWG has formed the view that the Subsection should be further enhanced. The TWG noted that, amongst other matters, the following may require further consideration by the IESBA:
 - Whether the language and terminology should be updated in order to take into consideration new risks such as the use of social media and other changes to the concept of confidentiality. When considering how the Subsection can be modernized, it might be helpful to also review existing data governance principles and privacy laws.
 - Whether the material should be less descriptive and be further summarized into higher level principles to avoid the risk of becoming obsolete.

- Whether Subsection 114 should cover other aspects of data and information stewardship beyond “use” and “disclosure.” Other stages of a typical data management life cycle control framework include collection, storage, transmission, processing and destruction.
- Whether there should be a scalability concept included in the Code whereby the actions need to be taken to protect confidential information depend on the sensitivity of the information (e.g., greater sensitivities related to health, racial, biometric information and religious beliefs).
- In addition to a responsibility to not disclose confidential information, whether there should also be a responsibility to ensure such information is protected from cyberattack or other forms of hacking. The TWG is of the view that any proposals to strengthen the FP of confidentiality should be developed in conjunction with the information gathering on the topic of cybersecurity and cybercrime.
- Whilst the material is sufficiently broad to include protection of an individual’s right to privacy, the TWG considered that it might be appropriate for the Code to expressly include this concept as a reminder to PAs of its importance.
- Paragraph 114.1 A1 explains the tension between transparency and confidentiality by describing the circumstances where the disclosure of confidential information is required or appropriate. As there is more acceptance for making information publicly available in certain circumstances, the TWG considered that it would be helpful if paragraph 114.1 A1 were reviewed to determine if more exceptions to the responsibility to protect confidentiality are necessary.

Competencies and Skills Necessary in the Digital Age

59. As the capability and capacity of new technology developments continue to grow, more and more existing accounting roles and functions will be replaced by machines and automation whilst opportunities for other roles such as consultancy and advice will open up. This evolution means that the accountancy profession will need to rethink the competences and skills required of PAs in the future. In order to work alongside new technologies, there seems to be a consistent acknowledgement by stakeholders that PAs need to upskill themselves on understanding how these technologies work and to keep this knowledge current in the face of ongoing technological advancements.
60. In addition to having the requisite knowledge on technologies, the TWG has also observed a general view amongst stakeholders that there will be a greater need for PAs to develop their “soft” skills. Stakeholders have suggested that the pervasive impact of technological breakthroughs is a key driver for how the accountancy profession is changing. In its report [*“Professional Accountants – the Future: Drivers of Change and Future Skills”*](#), the Association of Chartered Certified Accountants (ACCA) has identified the spread of digital technologies as one of the key driving forces that will have the most impact on PAs and financial professionals including the skills that are required of them. Technology related external factors such as development of intelligent automated accounting systems, adoption of cloud computing and data mining and the use of social media have been identified as key factors that will have the most impact on the profession. In order to adjust to these changes, PAs will need to also combine their technical skills with other softer skills in areas such as emotional intelligence, ethics, communications, agility and leadership.
61. In its report [*“The Future of Talent: Opportunities Unlimited”*](#), the Chartered Accountants Australia and New Zealand (CAANZ) observed that the accountancy profession rated its top four very important

skills for the future as: problem solving, communication skills, collaboration, and the ability to work with data and the latest technology and systems. This report also suggests that this is a reflection of the increased use of technology and move from lower level processing work which in turn allow PAs to focus on value-add work such as strategic advice.

62. The TWG also observed from discussions with stakeholders that having the right mindset is an important component of success for a PA in the digital age. Such a mindset ranges from one that adapts to new technology to expanding their mindset from a compliance one to also an advisory one. Of note, some have highlighted the importance of a growth mindset in the age of digital transformation. Whilst there are various definitions of “growth mindset,” each of them includes similar concepts, such as a belief that abilities and acumen can be developed, and “the capacity to feel comfortable in one’s ability to overcome obstacles and challenge one’s own identity, and to extend oneself into new areas.”¹² These concepts align with an earlier ACCA report [“Ethics and Trust in a Digital Age”](#) which highlights the need for continuous learning and the importance of the principle of professional competence and due care in a digital age.
63. Currently, the fundamental principle of professional competence and due care as set out in Subsection 113 of the Code requires PAs to have certain levels of professional knowledge and skill that are based on current technical and professional standards and relevant legislation. Paragraph 113.1 A2 also provides guidance on how professional competence can be maintained, which includes a continuing awareness and understanding of different forms of development. In this regard, the TWG noted that the Role and Mindset ED has proposed that technology-related development be added to this paragraph.
64. In light of the growing importance of soft skills for PAs of the future as a result of the pervasive impact of technology on the profession and businesses, the TWG is of the view that Subsection 113 should be further enhanced to include this type of skill or reference the IESs issued by the former IAESB.
65. The TWG also considers that non-authoritative material on the subject of professional competence and skill, highlighting the relevant considerations pertaining to technology, would be helpful to stakeholders.

Independence Considerations

66. The TWG is continuing its review of the impact of technology on complying with the independence requirements of the Code. At the outset, the TWG took the view that:
 - The complexity risk is less impactful when considering independence as the associated threats are more related to the FP of professional competence and due care than to integrity and objectivity, which are core elements of the concept of independence.
 - With respect to the threats to objectivity and application to the conceptual framework, the key impact specific to technology appeared to be over-reliance on technology or automation bias. Such impact, from an audit perspective, seems to relate more to audit execution and compliance with professional standards or to compliance with the FPs as opposed to the traditional notion of independence, which is about the state of mind or the appearance of being influenced by relationships with the audit client or other circumstances.

¹² ACCA, *Emotional Quotient in a Digital Age*, 2018

67. As part of its review of Parts 4A¹³ and 4B¹⁴ of the Code, the TWG is considering, amongst other things:
- Whether the definition of “office” remains relevant in the context of the Code in light of the increasing use of remote offices enabled by technology innovations.
 - Whether the definition of “financial interest” as referred to in Section 510¹⁵ should be revised to encompass emerging electronic currency.
 - Whether the concepts of a “loan or guarantee” and “bank or similar institutions” in Section 511¹⁶ need to be modernized.
 - Whether the provision of technology tools without an underlying service is a service or a business relationship in Section 520.¹⁷
68. With regards to the determination of whether an entity should be treated as a public interest entity, one of the factors to be taken into consideration is the nature of the business, such as the holding of assets in a fiduciary capacity for a large number of stakeholders. In this regard, the TWG has considered if the holding of assets in a fiduciary nature should include the holding of data or intellectual assets in the era of cloud providers, shared technology infrastructure providers, cryptocurrency exchanges, or data protection companies on which the public and the government are reliant. The TWG is of the view that this issue should be included in the matters for consideration as part of the upcoming project on defining public interest entities.
69. The TWG will finalize its review and provide its recommended way forward for the independence standards as part of its Phase 1 final report to be presented at the December 2019 meeting.

IV. COORDINATION WITH IAASB

70. As the IESBA's and International Auditing and Assurance Standards Board's (IAASB's) technology work streams progress, matters of mutual interest will be identified, discussed and managed at the staff, working group and Board levels in accordance with the agreed coordination framework between the two Boards.
71. As part of the coordination arrangement for the technology work streams, a member from the IAASB's Technology Working Group (formerly its Data Analytics Working Group) has been added to the TWG as a correspondent member, and vice versa. The purpose of this correspondent member arrangement is to facilitate discussions and optimize coordination and collaboration on matters of mutual interest between the two Boards. This would enable timely inputs to agenda papers and mutual participation in working group discussions as appropriate.

V. REMAINING PHASE 1 ACTIVITIES FOR Q4 2019

72. The TWG will meet in Q4 to discuss the Board's feedback and any outstanding issues with a view to finalizing its Phase 1 report. The final report will include recommendations on how the IESBA should

¹³ Part 4A, *Independence for Audit and Review Engagements*

¹⁴ Part 4B, *Independence for Assurance Engagements Other Than Audit and Review Engagements*

¹⁵ Section 510, *Financial Interests*

¹⁶ Section 511, *Loans and Guarantees*

¹⁷ Section 520, *Business Relationships*

progress with its technology work stream beyond Phase 1.

73. Subject to establishing a project Task Force, the TWG will consider, amongst other matters, the following activities for 2020:
- Information gathering and assessment of the impact of technology with regards to other forms of technologies such as blockchain, cryptocurrencies, cybercrime and cybersecurity in accordance with the TWG's Terms of Reference.
 - The need to encourage or commission academic research on applied technology-specific topics related to accounting ethics.
 - The need for meetings with stakeholders in those regions the TWG has not yet engaged in order to gain a broader range of perspectives.
74. Subject to input from IESBA members regarding the TWG's preliminary findings and recommended way forward, the TWG will also consider if the recommended activities for 2020 should be included in the scope of a new project or if there should be a separate project to focus only on potential changes to the Code and a technology work stream to manage the other recommended activities.