

Professional accountants – the future:

Ethics and trust in a digital age

Think Ahead



About ACCA

ACCA (the Association of Chartered Certified Accountants) is the global body for professional accountants, offering business-relevant, first-choice qualifications to people of application, ability and ambition around the world who seek a rewarding career in accountancy, finance and management.

ACCA supports its **198,000** members and **486,000** students in **180** countries, helping them to develop successful careers in accounting and business, with the skills required by employers. ACCA works through a network of **101** offices and centres and more than **7,291** Approved Employers worldwide, who provide high standards of employee learning and development. Through its public interest remit, ACCA promotes appropriate regulation of accounting and conducts relevant research to ensure accountancy continues to grow in reputation and influence.

Founded in 1904, ACCA has consistently held unique core values: opportunity, diversity, innovation, integrity and accountability. It believes that accountants bring value to economies in all stages of development and seek to develop capacity in the profession and encourage the adoption of global standards. ACCA's core values are aligned to the needs of employers in all sectors and it ensures that through its range of qualifications, it prepares accountants for business. ACCA seeks to open up the profession to people of all backgrounds and remove artificial barriers, innovating its qualifications and delivery to meet the diverse needs of trainee professionals and their employers.

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Foreword



Ethical behaviour is normally associated with 'doing the right thing'. For professional accountants this involves much more than just an intuitive sense of following one's conscience. While that is certainly important, being ethical also brings with it specific expectations, such as demonstrating professional competency in the role being performed, exercising due care towards stakeholders and acting to uphold the public interest.

This report's approach to ethics is anchored in three facets that reflect ACCA's priorities in this area, as well as our mission and core values as a professional accountancy body.

Firstly, it is future-looking, with an emphasis on new or emerging ethical considerations in an evolving digital age.

Secondly, it takes an applied approach that assesses ethical implications with respect to specific digital themes and real-world situations.

Thirdly, it reflects a global point of view, with perspectives informed by over 10,000 survey respondents across 158 countries, and roundtable discussions with senior practitioners in nine countries.

The global accountancy profession has an important role to play in ensuring that organisations of all sizes adhere to the highest ethical and governance standards.

ACCA firmly believes in the value and importance of ethical behaviour – both as a necessary attribute of being a professional accountant and as a driver for sustainable organisational performance. We will continue to lead in this important thinking to ensure that ACCA and its members and students are best placed to drive ethical behaviour across the global economy.

Helen Brand OBE
Chief executive
ACCA



Executive summary

Ethical behaviour is a core attribute for professional accountants. Early in 2017, ACCA carried out global surveys of attitudes to ethics among over 10,000 professional accountants (including trainees), and among over 500 senior ('C-suite'¹) managers. More than 8 in 10 of these accountants around the world were of the view that strong ethical principles and behaviour will become even more important in the evolving digital age. This view was echoed by a similar proportion of C-suite executives, referring to the accountants in their organisations.

Furthermore, 9 in 10 professional accountants agree that ethical behaviour helps to build trust in the digital age. And almost all (95%) C-suite executives think that the accountant's ethical behaviour helps the organisation build trust with internal and external stakeholders.

In other words, technology may have an impact on the details one needs to understand in order to be ethical, but it does not change the importance of being ethical. The fundamental principles for accountants, established by the International Ethics Standards Board for Accountants (IESBA), still apply and remain relevant in the digital age, according to 94% of respondents.

Leaders at chief financial officer (CFO) level or similar, place a slightly higher level of importance on ethics than the average across all respondents. This may be a step in the right direction for

promoting ethics as it depends crucially on tone at the top. The behaviour of leaders sets the standard for how the organisation prioritises and displays ethical behaviour.

Also, the proportion of respondents citing ethics as 'very important' rises slightly as one moves from students in training to fully qualified accountants. This may suggest that the training, both conceptual learning and applying it in a work environment, is helping to reinforce the importance of ethics.

When asked whether professional accountants act in the public interest, the majority agreed, with those who were employed more likely to agree (four out of five) than those who were not² (two-thirds).

Professional accountants most frequently cited upholding their own professional code as a way of contributing to the organisation's ability to uphold ethics, with more than three out of four respondents choosing this option – a view that 'ethics begins with me'. Embedding ethical standards in day-to-day procedures was the next most frequently cited, and was chosen by more than two-thirds of respondents. While this is important, embedding ethics into the strategy or business plans was picked by fewer respondents, with only about half of those employed seeing this as a way to contribute.

This may suggest a need to combine a procedural or tactical understanding with a wider view – something that might become particularly important when looking ahead to new or previously unseen situations in a digital context. If procedures have not been tested and well understood over several years, say if dealing with a new area such as internet-platform-based operations, then understanding the overarching strategy and purpose becomes particularly important. Otherwise, there may be a risk of compromising ethics through unintended consequences or performing the wrong procedure.

When commenting on the support needed to promote ethical behaviour in the organisation, strong leadership was cited as the top factor, chosen by about two-thirds of respondents. As mentioned earlier, senior professionals attach a high level of importance to ethics, so this might suggest a degree of alignment between those seeking support from leadership, and the willingness of leaders to provide it.

The second most commonly cited factor, by just over half of respondents, was for support in creating, implementing and managing a code of ethics for the organisation (including organisational values). Rated next in importance were training support and establishing evaluation procedures to assess whether behaviour aligns with fundamental ethical principles.

¹ Operating at CEO, or other board level leadership roles

² Not currently working/career break/retired/full time student

The professional accountant of the future will need, in addition to technical capability, a rounded skill set that demonstrates key quotients for success in areas such as experience, intelligence, creativity, digital skills, emotional intelligence and vision. And at the heart of these lies the ethical quotient.

Fewer than half of respondents cited a well-publicised ‘speak-up’ policy, with appropriate anonymity or protection features. And only a little over half of respondents reported incidents or saw such reporting as a way of contributing to their organisation’s efforts to uphold ethics. This leaves a substantial minority who did not report an incident, or did not see reporting of bad practice as a way of contributing, or who did not seek a well-publicised ‘speak-up’ policy in their organisations.

These findings may suggest the need to explore whether there is sufficient support and encouragement to ensure that professional accountants feel able to report unethical behaviour. Reporting of unethical behaviour may need further strengthening to be more effective in helping professional accountants to act as the ‘ethical conscience’ of their organisations. In addressing this, though, it will be important to understand the particular situation of the organisation. For instance, ‘speak-up’ behaviours may flow more naturally when the culture is more aware and supportive of ethical conduct; in other words forced imposition of a policy may not always be the most effective method of creating an ethical culture.

In order to lend specificity to the analysis of ethics in a digital environment, ethical aspects were identified across six digital themes. These themes were cybersecurity;

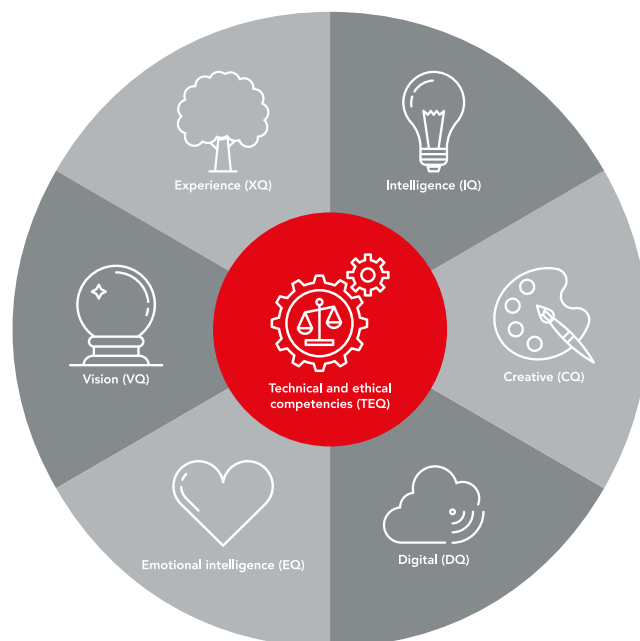
platform-based business models; big data and analytics; cryptocurrencies and distributed ledgers; automation, artificial intelligence and machine learning; and procurement of technology. The observations are informed by discussions with senior finance professionals, typically at the level of CFO, partner or equivalent.

In the context of these digital themes, the IESBA fundamental principle which emerged most frequently as being at risk of compromise was professional competence and due care. This may be a reflection of the extent to which work situations in a digital age can present new information with ethical aspects that have not been seen before. Looking ahead, it seems likely that risks of ethical compromises

go way beyond issues of honest and straightforward professional and business relationships (integrity). For instance, it is difficult to apply ethical judgement to the use of distributed ledgers without a sufficient understanding of what they are.

The professional accountant of the future³ will need, in addition to technical capability, a rounded skill set that demonstrates key quotients for success in areas such as experience, intelligence, creativity, digital skills, emotional intelligence and vision. And at the heart of these lies the ethical quotient.

Professional quotients for success



3 ACCA, *Professional Accountants – the Future: Drivers of Change and Future Skills*, 2016 <<http://www.accaglobal.com/content/dam/members-beta/images/campaigns/pa-tf/pi-professional-accountants-the-future.pdf>>, accessed 22 July 2017.

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1. Introduction

1.1 REPORT STRUCTURE

This report comprises findings from two types of work-streams: quantitative and qualitative research.

A. Quantitative research was based on a global survey examining perspectives relevant to the ethical behaviour of professional accountants in a digital age.

ACCA conducted an in-depth global survey in Q1 2017 to obtain the views of professional accountants, or those training to become such, on ethics and trust in a digital age. The survey was completed by respondents in 158 countries. Over 10,000 respondents completed the survey, of whom roughly 40% were ACCA members, 55% were ACCA students and the remaining 5% were members/students of other professional accountancy bodies.

In addition, to get a view of how accountants are perceived by others, 510 C-suite respondents who interact with the accountants in their organisations were also surveyed. Unless there is a specific mention of this group in a chart, it may be assumed that responses refer to the 10,000+ respondents.

B. Qualitative research was based on roundtable discussions with senior practitioners, at CFO/partner/equivalent level to examine ethical questions within specific digital themes.

The approach is to explore ethical questions that may arise in each of six digital themes, and to consider response options available to the professional accountants. The observations are informed by discussions with senior finance professionals, typically at the level of CFO, partner or equivalent. These

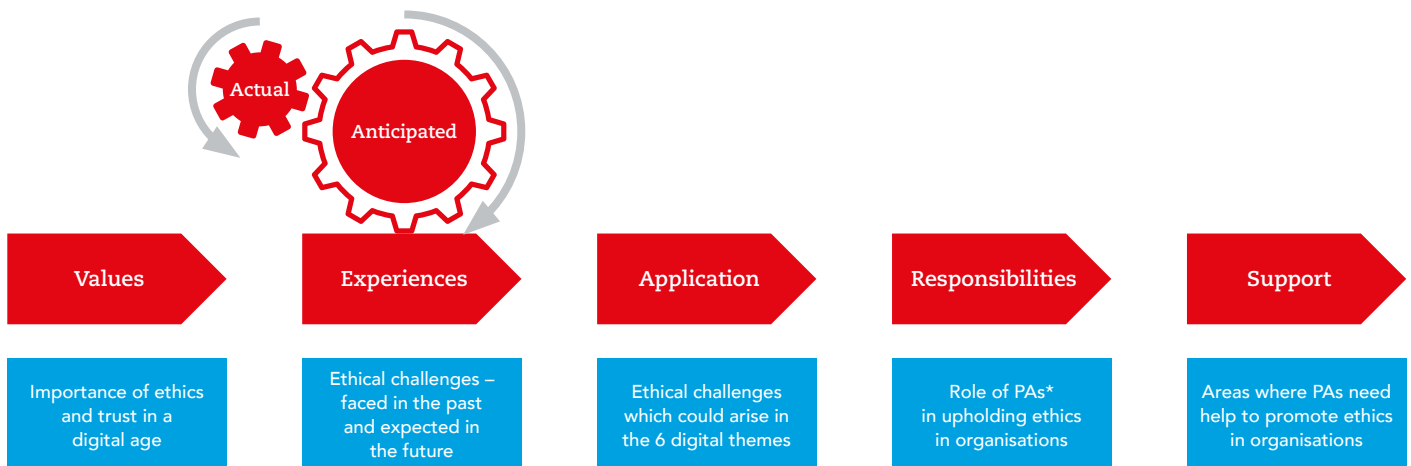
perspectives were gathered via roundtable discussions conducted in Australia, China, Kenya, Nigeria, Republic of Ireland, Russia, Singapore, UAE and the US. In addition, the perspectives are informed by the experience and expertise of ACCA's Global Forums members.

The six digital themes examined are:

1. cybersecurity
2. platform-based business models
3. big data and analytics
4. cryptocurrencies and distributed ledgers
5. automation, artificial intelligence and machine learning and
6. procurement of technology.

The report addresses the aspects illustrated in Figure 1.1.

Figure 1.1: Key considerations pertinent to ethics and trust in a digital age



*Professional accountants

Being ethical is a core attribute for the professional accountant. It is at the heart of the idea of professionalism and it is no coincidence that professional accountants are generally called upon to act as the ethical conscience of their organisations.

1.2 THE CENTRALITY OF ETHICS

Being ethical is a core attribute for the professional accountant. It is at the heart of the idea of professionalism and it is no coincidence that professional accountants are generally called upon to act as the ethical conscience of their organisations.

Previous research conducted by ACCA⁴ has explored the future of the profession and identified ethics as an area that will become even more important in the years ahead. This is perhaps understandable given the fast pace of change, and the resulting possibility of new, and possibly ambiguous, scenarios not previously seen.

One of the key drivers for this change, and the consequent new scenarios, is technology. The adoption of digital ways of working and living is now a given. Although the level of adoption of technology varies around the world, the general move towards greater digitisation is an established reality.

Against this backdrop of a technology-led digital age, it has become important to revisit what it means for the professional accountant to be ethical. This report seeks to shed light on this question. In doing so it is based on the guiding principle that ultimately ethics is about human behaviour – technology merely changes the context within which an ethical decision must be made.

As a result, this report is based on the premise that the existing fundamental ethical principles for professional accountants⁵ continue to be relevant in a digital age. These five principles are established by the IESBA: integrity; objectivity; professional competence and due care; confidentiality; and professional behaviour.

These are principles: they are not highly prescriptive rules to cover every conceivable scenario. As principles, they are not intended to provide a fixed list of procedures to be followed in a literal way for guaranteed compliance, as a check-box exercise. Principles need to be interpreted and applied to a given context in a process that necessarily requires the application of judgement.

In order to make these principles relevant to real life, specific digital themes are explored in this report. For each theme, example situations are described that could create a compromise of fundamental principles for the professional accountant. These potential areas of compromise are explored from the perspective of both the accountant in business and that of the auditor (internal and/or external).

The broad-ranging survey data provides an overall view of what respondents believe to be the key considerations relevant to ethics and trust in a digital age. The digital themes, with their mini case studies, add to this a human perspective that translates the big-picture issues into scenarios that could arise in work environments.

⁴ ACCA, *Professional Accountants – the Future: Drivers of Change and Future Skills*, 2016 <<http://www.accaglobal.com/content/dam/members-beta/docs/ea-patf-drivers-of-change-and-future-skills.pdf>>, accessed 22 July 2017.

⁵ IFAC, *International Ethics Standards Board for Accountants: An Overview of the IESBA's Role and the Standard-Setting Process*, November 2010 <http://www.ifac.org/system/files/downloads/IESBA_Fact_Sheet.pdf>, accessed 22 July 2017.



2. Values

2.1 IMPORTANCE OF ETHICS

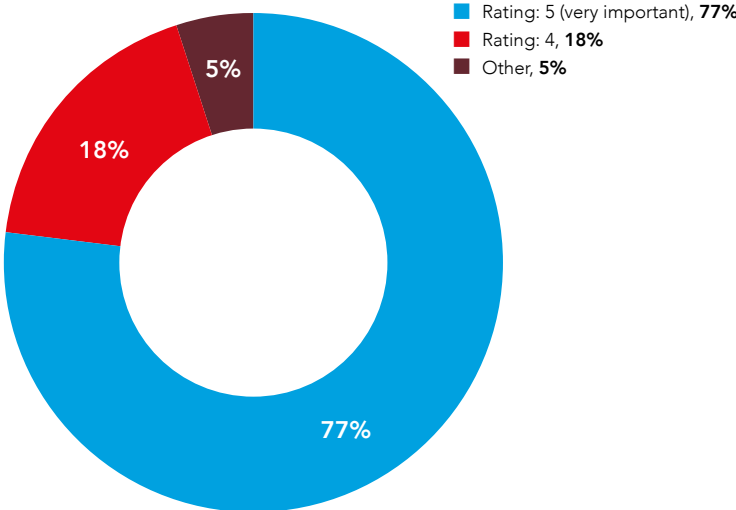
In a previous report on skills relevant to professional accountants⁶ ACCA identified the key quotients (skills) for continued success in the future. These quotients range across technical and ethical areas (TEQ), intelligence (IQ), experience (XQ), creativity (CQ), vision (VQ), digital ability (DQ) and emotional intelligence (EQ).

Respondents were asked about the importance of the ethical quotient in a digital age. The scale ranged from 1 (not at all important) to 5 (very important).

Ethics was cited as a 'very important' skill (rating of 5) in the digital age by over 7,600 respondents, comprising 77% of the total. The overwhelming majority of respondents, more than nine out of ten, gave ethics a rating of 4 or 5.

This may be reflecting a view that despite new and increasingly technology-led ways of working, the ethical dimension still remains central to the agenda of professional accountants. Technology may have an impact on the details one needs to understand in order to be ethical, but it doesn't change the importance of being ethical.

Figure 2.1: Importance of ethics in the digital age



The overwhelming majority of respondents, more than nine out of ten, gave ethics a rating of **4 or 5**

Almost all C-suite respondents agreed that the accountant’s ethical behaviour helps the organisation to build trust with internal and external stakeholders.

The vast majority of respondents supported the view that ethical behaviour does help to build trust in the digital age. This is important because the ability of professional accountants to create value depends crucially on their ability to win the trust of their stakeholders. In a fast-evolving digital age, clients and other stakeholders are much more likely to continue investing their trust in the accountant if they believe that this individual will always act in an ethical manner.

In addition, C-suite executives were asked a more specific question about the link between the ethics of the accountant and the ability of the organisation to build trust with internal and external stakeholders (Figure 2.3). Almost all C-suite respondents agreed that the accountant’s ethical behaviour helps the organisation to build trust with internal and external stakeholders, with 42% being of the view that it helps to a very significant degree.

Figure 2.2: Extent to which respondents agree that ethics helps to build trust

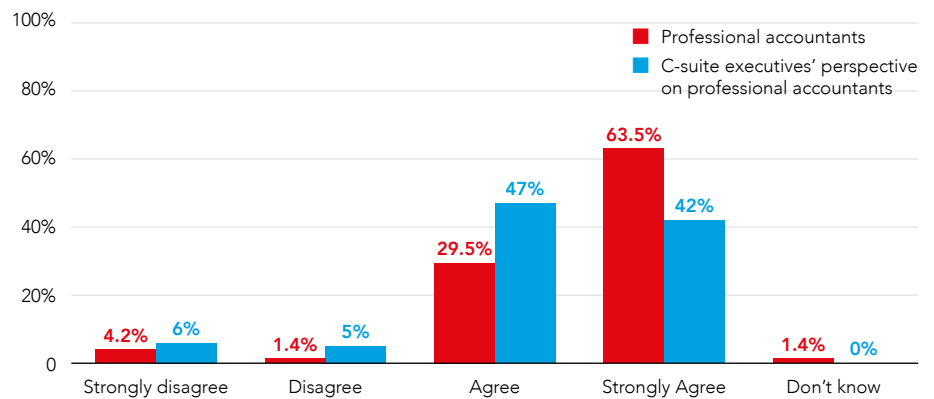
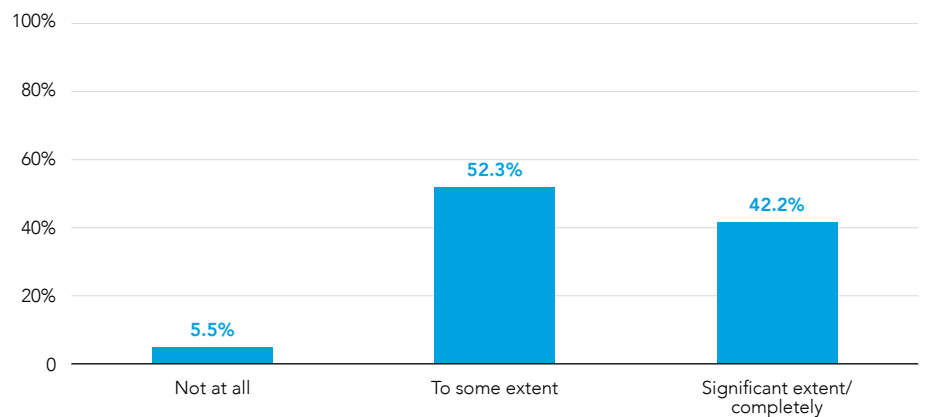


Figure 2.3: A view from the top: C-suite executives think that the accountant’s ethical behaviour helps the organisation build trust with internal and external stakeholders



As automation increases, sound ethical judgement will become ever more important for senior decision makers – to ensure that innovation is supported in a way that doesn't compromise proper behaviour.

2.2 EXPERIENCE AND ETHICS

In the survey, 77% of respondents rated ethics as 'very important' in the digital age. A closer look at this group suggests some variation based on the level of experience of the respondents.

At one end of the spectrum, the value placed on ethics increases slightly when moving from students still in training to fully qualified professional accountants. This may suggest that the training, both the conceptual learning and its application to a work environment, is helping to reinforce the importance of ethics.

At the other end of the spectrum, fully qualified accountants at CFO level or similar place a slightly higher level of importance on ethics than the average across all respondents. This may be a step in the right direction for promoting ethics as it depends crucially on tone at the top. The behaviour of leaders sets the standard for how the organisation prioritises and displays ethical behaviour. Also, as automation increases, sound ethical judgement will become ever more important for senior decision makers – to ensure that innovation is supported in a way that doesn't compromise proper behaviour.

Figure 2.4: Respondents citing ethics as 'very important': students and fully qualified accountants

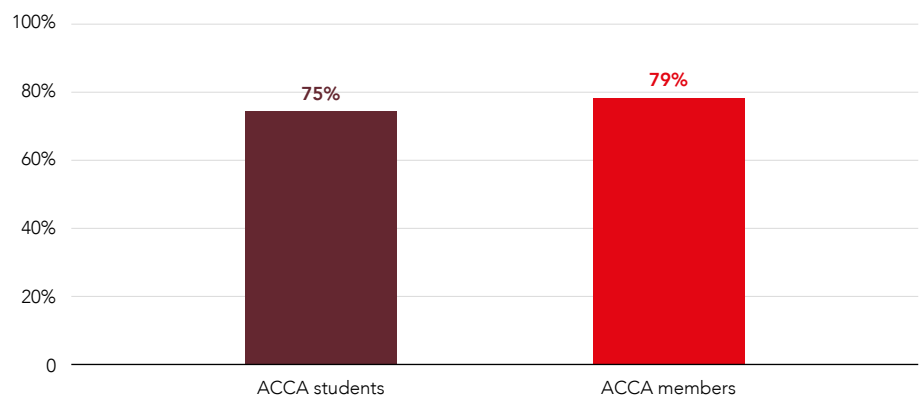
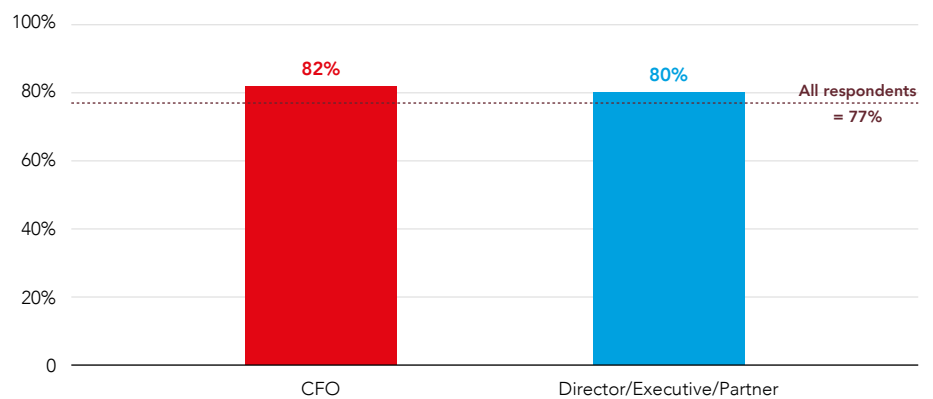


Figure 2.5: Fully qualified respondents citing ethics as 'very important', by role



Ultimately, technology cannot change the fact that ethics (or the lack of it) is expressed through human behaviour and human decisions, and this keeps the principles relevant.

2.3 SECTOR PERSPECTIVES

An above-average proportion of respondents in the not-for-profit and public sector rated ethics as ‘very important’ in the digital age. This may be a reflection of various possible factors, positive or negative. Positive factors such as the social agenda of these organisations might be helping to connect their employees strongly with the value of ethics. Alternatively, if they have witnessed unethical behaviours, this may have reinforced their attention to this area.

Among commercial organisations, four out of five respondents in large financial services organisations rated ethics as ‘very important’. This may be a reflection of the level of scrutiny, regulation and emphasis on culture change within this group in the years since the 2008 crisis.

A similar proportion of sole practitioners rated ethics as ‘very important’. These individuals have generally built up their practices on the basis of their own credibility at an individual level. This fact may be partly reflected in their emphasis on ethics as key to their value proposition. It crucially underpins the ability of their clients to trust them personally; rather than relying mainly on the reputation of the firm employing the accountant.

2.4 RELEVANCE OF IESBA PRINCIPLES

As observed in Figure 2.1, respondents are of the view that ethics remains of key importance in a digital age. The associated question, therefore, is whether the IESBA’s ethical principles for professional accountants remain relevant. Survey respondents were overwhelmingly of the view that they certainly do remain relevant (Figure 2.7).

This may be linked to the fact that, being principles rather than prescriptive rules, they place a responsibility on the professional accountant to apply them to a given situation rather than blindly following a check-box compliance approach.

Ultimately, technology cannot change the fact that ethics (or the lack of it) is expressed through human behaviour and human decisions, and this keeps the principles relevant. Certainly, there will be new information to understand – but this will change the context of the principles’ application, not the principles themselves.

Figure 2.6: Comparison of respondents citing ethics as ‘very important’, by type of organisation

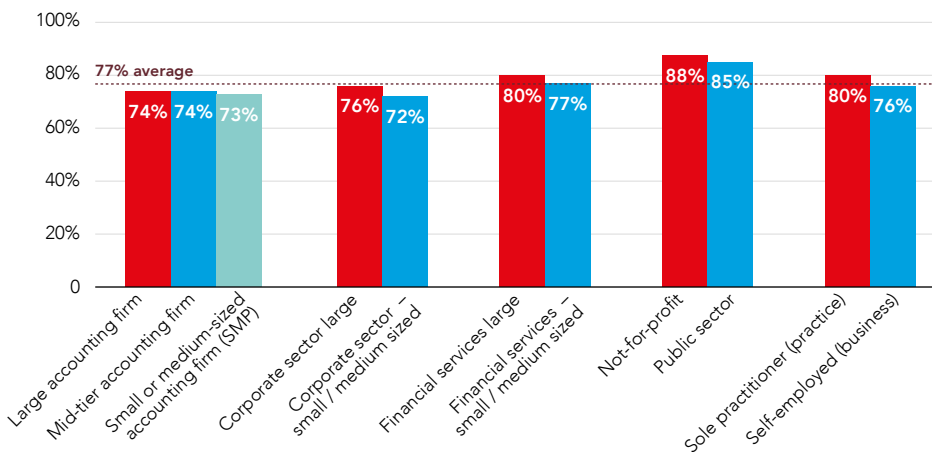
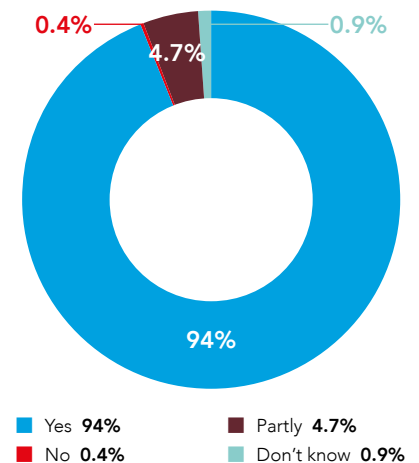


Figure 2.7: IESBA principles still apply and remain relevant





3. Experiences

3.1 ETHICAL CHALLENGES FACED

To explore the nature of ethics and extent of the relevant challenges, respondents were asked to comment on their experience of dealing with ethical challenges in the recent past.

About one in five respondents reported that they had personally experienced pressure to compromise their ethical principles in the preceding 12-month period (Figure 3.1).

Of particular concern, however, is that 2 in 5 of these respondents did not report the incident in which they had experienced pressure to compromise (Figure 3.2). This may be reflective of various underlying reasons, such as a wider culture of acceptance of the unethical behaviour concerned, or the lack of a well-communicated organisational ethics policy.

In addition to being directly connected to ethical situations that are personally experienced, it is possible to be indirectly connected as an observer. This observed behaviour may relate to situations that compromise the organisation's ethics policy and standards. The survey explored this along two dimensions – where the respondent worked in the organisation in question, and where the organisation was a client of the respondent (Figure 3.3).

Figure 3.1: Respondents who had experienced pressure to compromise their ethical principles in the previous 12 months

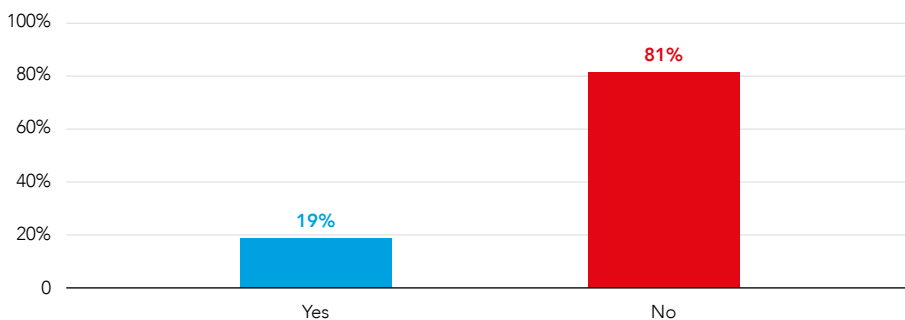


Figure 3.2: Respondents who reported the incident in which they had experienced pressure to compromise their ethical principles

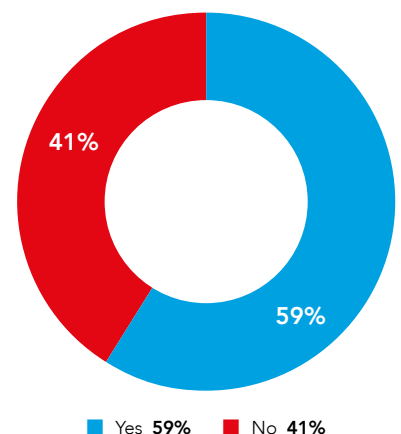
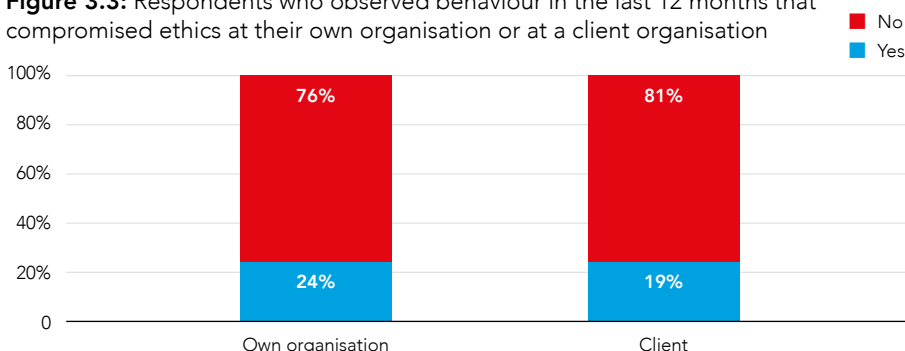


Figure 3.3: Respondents who observed behaviour in the last 12 months that compromised ethics at their own organisation or at a client organisation



Ethical challenges do appear from time to time, with 2 to 3 in every 10 respondents having been exposed (directly or indirectly) to an ethical problem in the last 12 months.

About one-quarter of respondents reported that they had observed behaviour within their own organisation that compromised their ethics policy and standards. About one-fifth had seen instances of compromise within a client organisation. So looking across personally experienced instances as well as those that had been observed, there is a somewhat consistent proportion of professional accountants (fully qualified and students) exposed to ethically challenging situations.

This proportion of approximately one-fifth to one-quarter of respondents represents a substantial minority. Ethical challenges do appear from time to time, with 2 to 3 in every 10 respondents having been exposed (directly or indirectly) to an ethical problem in the last 12 months.

Looking from the other side, slightly under half of C-suite executives believe that accountants 'act ethically at all times'. There are a minority of respondents, about 1 in 10, who report

a 'significant problem regarding the ethical principles of many accountants' in their organisations (Figure 3.4).

Those that had been exposed to an ethical challenge were further asked which ethical principles (as defined by the IESBA) they thought had been compromised. The responses revealed that the most commonly compromised principle was that of integrity – in other words, being straightforward and honest in all professional and business relationships (Figure 3.5).

Figure 3.4: C-suite executives' perspective on accountants in their organisation acting ethically

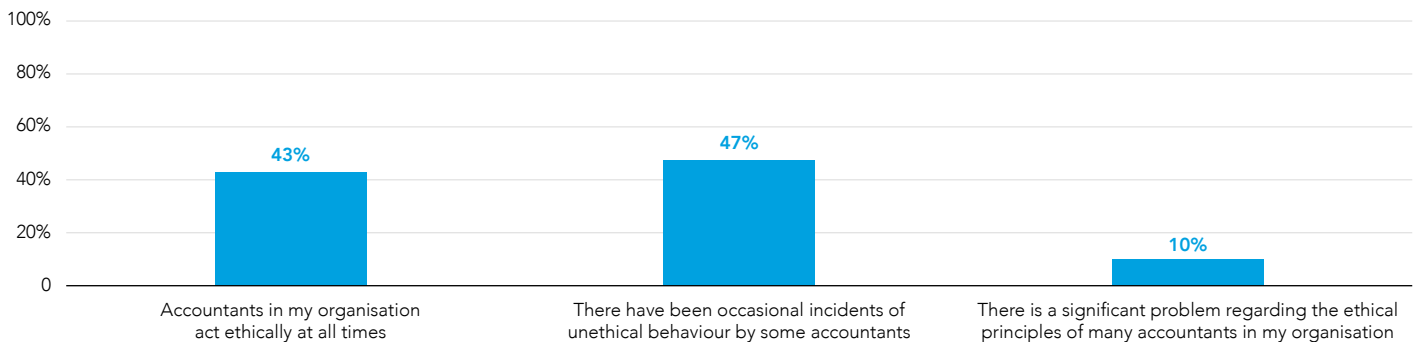
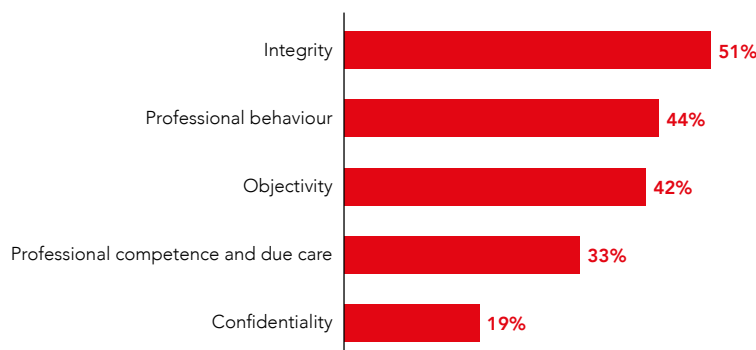


Figure 3.5: Ethical principles that were compromised in a situation that was personally experienced or observed



Dealing with stakeholders in government or the regulator was cited most often as a source of ethical pressure by respondents alongside managing pressure points within the organisation.

Ethics is about human interactions, and it is therefore useful to see which interactions are most often the sources of ethical challenges. Respondents were asked to evaluate which stakeholders they currently saw as an ethical pressure point. Ratings given were from a choice of 'Not currently a pressure point', 'Sometimes', 'Often' and 'Always'.

Dealing with stakeholders in government or the regulator was cited most often as a source of ethical pressure by respondents alongside managing pressure points within the organisation (Figure 3.6).

Furthermore, it may also suggest a degree of connection to the data shown in Figure 2.6, which shows a high proportion of respondents in the public sector citing ethics as very important.

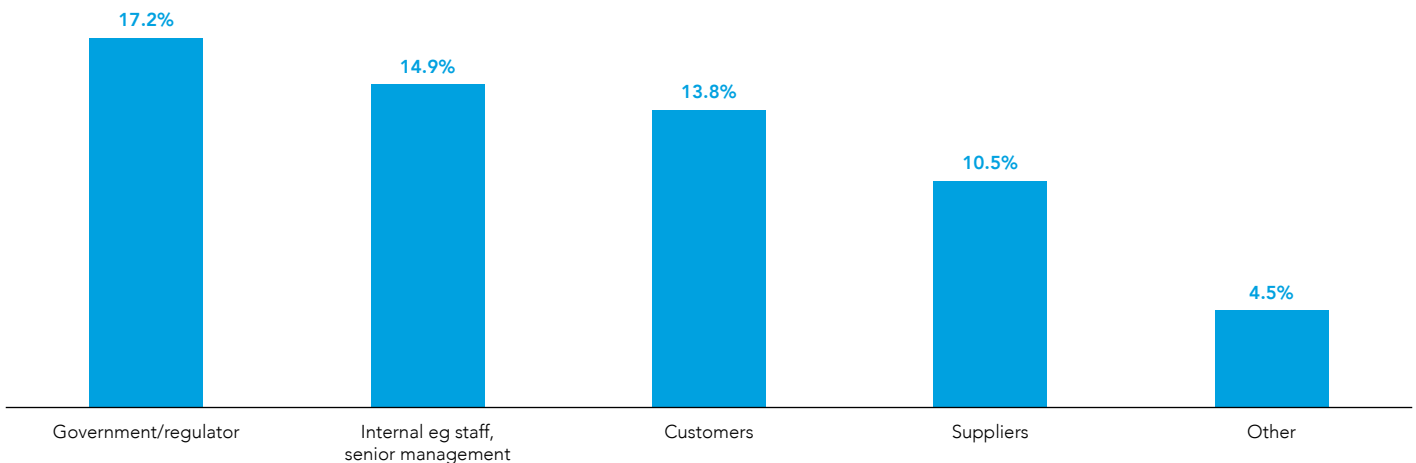
3.2 FUTURE EXPECTATIONS

Respondents were asked to share their views, based on their actual experiences so far, on possible ethical challenges in the future. One aspect of this was the perception of future threats to ethical behaviour, with five categories of threats being considered.

- **Self-interest threat:** a financial or other interest (personal/organisational) will inappropriately influence a professional accountant's judgement or behaviour.
- **Familiarity threat:** owing to a long or close relationship with a client or employer, a professional accountant will be too sympathetic to that party's interests or too accepting of their work.

- **Intimidation threat:** a professional accountant will be deterred from acting objectively because of actual or perceived pressures, including attempts to exercise undue influence over the professional accountant.
- **Self-review:** a professional accountant will not evaluate appropriately the results of a previous judgement, made earlier in the course of providing a current service.
- **Advocacy:** a professional accountant will promote a client's or employer's position to the point that the professional accountant's objectivity is compromised.

Figure 3.6: Stakeholders who are currently 'Often' or 'Always' an ethical pressure point



24%
of respondents highlighted self-interest and familiarity as the threats most likely to become more common in an increasingly digital future

Self-interest and familiarity were highlighted as the biggest threats looking ahead, with just under a quarter of respondents highlighting them as most likely to become more common in an increasingly digital future (Figure 3.7). Advocacy was the least cited, with about one in seven respondents highlighting it as future threat.

These threats could manifest themselves in a wide range of breaches, with Figure 3.8 displaying a selection of these for accountants working in practice.

Figure 3.7: Threats that respondents thought were most likely to become more common

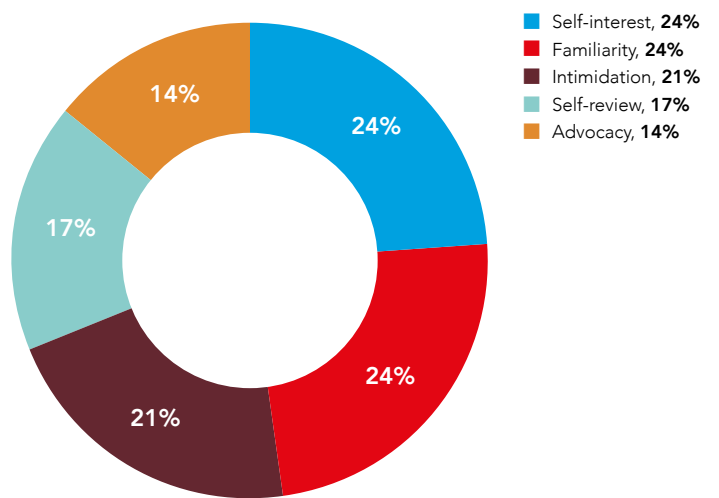


Figure 3.8: Breaches of ethical principles likely to become more prevalent in the next 10 years for accountants in practice



When looking ahead, the vast majority of respondents are of the view that strong ethical principles and behaviour will become more important in the evolving digital age.

When looking ahead, the vast majority of respondents are of the view that strong ethical principles and behaviour will become more important in the evolving digital age (Figure 3.9). As noted above, respondents see the potential for a range of threats and associated breaches. This, combined with the pace of change and the need to absorb new information specific to digital scenarios, may be driving the view that this area will become even more important in the future.

Given the view that ethics is expected to become even more important in the future, it is relevant to examine the view of C-suite executives on the level of preparedness of professional accountants in their organisation (Figure 3.10). About one-third of respondents took the view that the accountants in their organisation are fit-for-purpose and no improvement is required. At the other extreme, about one in six respondents take the view that 'significant' improvement will be required.

No improvement will be required: accountants in the organisation have a solid understanding of the ethical dilemmas that can arise in the context of digital ways of working; they know more about it than most other parts of the organisation and are viewed as go-to individuals for this area.

Some improvement will be required: the accountants have generic understanding of some issues, such as cybersecurity risk, but have not considered how the organisation's digital operations will evolve and the ethical issues this may pose in future.

Significant improvement will be required: the accountants have poor understanding of digital working practices and their ethical implications.

Figure 3.9: Strong ethical principles and behaviour will become more important in the evolving digital age

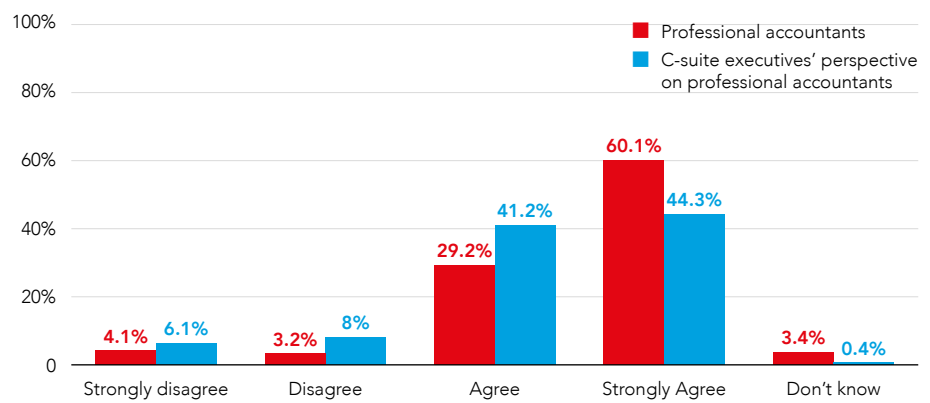
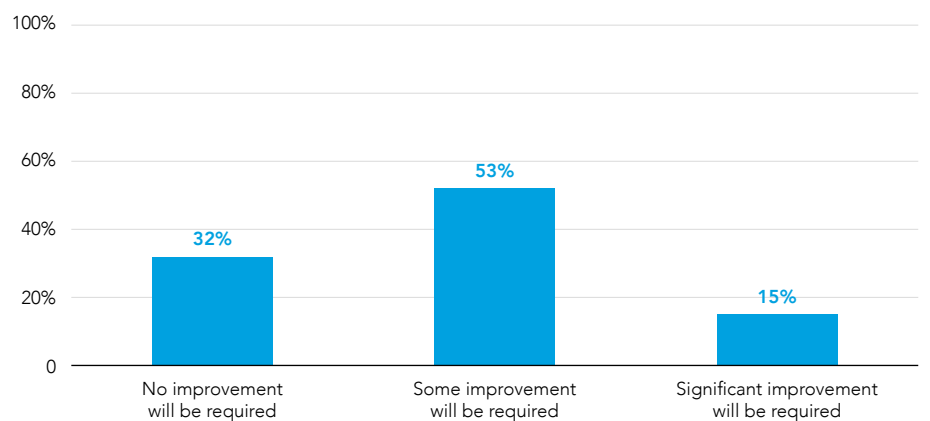


Figure 3.10: C-suite executives' views on whether professional accountants in their organisation are ready for the digital age



4. Application of an 'ethical lens' to digital themes



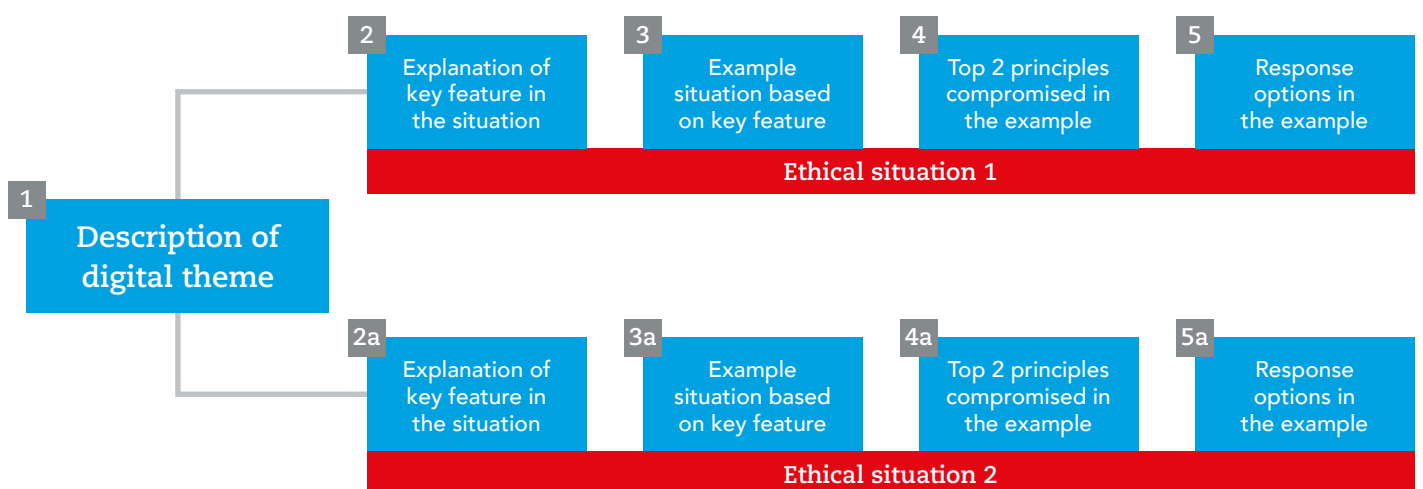
In order to lend specificity to the analysis of ethics in a digital context, six digital themes have been chosen. For each theme two ethically challenging situations have been identified and assessed against the IESBA principles.

The aim is to identify the top two IESBA principles that could be compromised within each ethically challenging situation and then to reflect briefly on response options for that situation (Figure 4.1).

This assessment is done both from the perspective of the accountant in business and the auditor (depending on the situation, reference may be to internal auditors, external auditors, or both).

This view is informed by discussions with senior finance professionals, typically at the level of CFO, partner or equivalent. The perspectives were gathered from roundtable discussions conducted in Australia, China, Kenya, Nigeria, Republic of Ireland, Russia, Singapore, UAE and the US. In addition, the perspectives are informed by the experience and expertise of ACCA's Global Forum members.

Figure 4.1: Layout of information: applying an ethical lens to a digital theme



Looking ahead, it seems likely that risks of compromise go way beyond issues of honest and straightforward professional and business relationships.

The choice of the top two principles that have been compromised is informed by discussions with senior finance professionals, typically at CFO, partner level or equivalent. They were asked to consider the likelihood and frequency of compromise, as well as the seriousness of the impact from such a compromise (Figure 4.2).

The six digital themes examined are:

1. cybersecurity
2. platform-based business models
3. big data and analytics
4. cryptocurrencies and distributed ledgers
5. automation, artificial intelligence and machine learning, and
6. procurement of technology.

As shown in Figure 4.2, the principle that was most frequently cited as being under threat of compromise was professional competence and due care. This may be a reflection of the extent to which ethically challenging situations in a digital age can present new problems that have not been seen before.

Reacting properly requires building up a high standard of knowledge and understanding of the situation and its context before being able to act in an ethical manner. A lack of knowledge and expertise will create the risk of compromising professional competence and due care obligations.

When accountants reflected on principles that were compromised in the recent past (Figure 3.5), integrity featured very highly. Looking ahead, it seems likely that risks of compromise go way beyond issues of honest and straightforward professional and business relationships. It is difficult to apply ethical judgement on the use of distributed ledgers for example, without an understanding of what they are, and the opportunities and challenges they pose.

Figure 4.2: IESBA principles at risk of compromise for accountants in business and auditors across all six digital themes



4.1 DIGITAL THEME 1: Cybersecurity

Cybersecurity encompasses wide-ranging threats to computers, networks, data and programs. Viruses, malware and other forms of cyberattack can cause havoc through system outage, data theft or denial of service – any of which has serious reputational and financial impact.

Sign in

Create a new account



Username



●●●●●●●●●●

Remember me

help?

Data theft

Data theft is the most immediate and common impact of a breach in cybersecurity. Organisations hold a lot of valuable data in a variety of systems. Some organisations may use proprietary software, while others may rely more on open-source code. Some software might be fully owned and paid for by the organisation while others might be licensed via monthly subscription, for example where the provision is through a cloud service. The data itself could be internal (eg employee-related) or external (eg customer-related). Whatever the scenario, the effects of data theft include financial loss and reputation/brand damage.

4.1.1 EXAMPLE SITUATION: Ransomware

Hackers expose the vulnerability in an open-source database where commercial implementations have not been adequately secured. The organisation is compromised, with all the data in the system having been deleted and a note left by the hacker. The hacker claims to have retained a copy of the data and will return it on payment of a 0.5 bitcoin⁷ payment to a specified account. There is no back-up of the data.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Objectivity	There is a need to 'do the right thing', which may be to refuse to pay. While £1,000 may be within tolerance limits, but there is no guarantee that the data will be returned, or that more money will not be demanded. The risk that objectivity may be compromised arises from undue influence (intimidation from threats that data will be misused/destroyed), being allowed to override professional or business judgement.
Confidentiality	Ransom demands work best when there is a real cost (financial or reputational) should the data be out of the organisation's control – which is most likely to arise with confidential data. Whether or not customer data is covered by contractual confidentiality clauses, exposing it to unauthorised parties may breach the fundamental ethical duty of confidentiality.
AUDITOR:	
Professional competence and due care	For internal auditors, the risk can stem from having inadequate as well as infrequent review mechanisms. Cyberattacks are continually getting more sophisticated so lack of awareness of emerging developments could lead to ethical compromise.
Integrity	Internal auditors will need to be honest in their assessment of the procedures put in place to guard against cyberattacks, which are now a permanent issue. If it later emerges, for instance, that the internal auditor was aware that the latest security patches had not been used to secure the systems, questions might arise as to why this lapse had occurred.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	IT security is at one level a technology issue but the accountant in a business (as a custodian of sensitive data) needs to be aware of the risks, and have knowledge of the techniques adopted by their organisation and others to address these.
Resolving	Whether or not the ransom is eventually paid, it is important that communications about the data loss are clear, controlled and transparent. The impression that facts are being suppressed is damaging. In many cases, it may be necessary to make affected customers aware as soon as possible that their data has been compromised. The accountant may need to advise management on these issues.
AUDITOR:	
Acting in the shareholder and public interest	External auditors may need to decide whether a public disclosure about the data loss is required. Public disclosure is a major decision and careful consideration will need to be given to whether this is appropriate and permissible. ⁸ Internal auditors may need to check whether the organisation has appropriate review mechanisms to allow incorporation of new/emerging cyber threats into existing risk-assessment processes.
Maintaining independence	If there is uncertainty on the best approach for dealing with the ransom demand, the external auditor might recommend seeking external guidance. This opinion may be based on the auditor's awareness of experts in this specialist area, but the auditor should remain independent and not have any involvement in the selection decision.

7 About £1,000 in June 2017.

8 Under the IESBA Code, public disclosure would only be permissible if (1) it is authorised by the client or organisation and not prohibited by law; (2) it is required by law; or (3) there has been an act of NOCLAR (non-compliance with laws and regulations), such act has caused actual or potential substantial harm to the public, and such disclosure would not be prohibited by law.



The asset base that we're trying to protect is changing, but also [those] whom we're protecting it from [have] changed as well. Traditionally, that protection would have been more internally focused, because clients would have people who had control of the assets, whereas today the risk is more likely to arise from external sources than internal – this is harder to foresee and protect against.

Derek Henry, Partner – Head of R&D, BDO



For organisations with an internal audit function, the role of internal auditors is always to ask the difficult questions. For cybersecurity, there is a long list of difficult questions to ask. These questions play a role in improving the level of [systems] maturity and making sure that organisations take cybersecurity seriously and have the right safeguards in place. There's also recent guidance from the Central Bank of Ireland that cybersecurity should be a standing item on Board agendas.

Gary McPartland, Associate Director, Grant Thornton



For us as accountants it is important that we understand where the threats are coming from or else we will be fooled by internal and external threats, such as ransomware; appropriate network security is needed to be in place at all times.

Kola Agunbiade, Chief Financial Officer, IS Internet Solutions (A division of Dimension Data)



If there is an unfortunate data leakage and the leakage could harm individuals or companies, an organisation should be transparent and inform all of those affected. Alerting customers and external parties that data has leaked, to enable them to contain information and change passwords, is fair and ethical. Organisations have a duty of care to let all people know who are affected by the leak.

Amanda Powell, Chief Financial Officer, ME Digital Group FZ LLC



Professional accountants have an obligation to act in the public interest. If there was a data breach, they should endeavour to inform the end user, the customer or the client, at the earliest opportunity and let them know that their confidential information has been exposed... [rather than] seeking to protect the interests or reputation of the organisation.

Ken Siong, Technical Director, IESBA

Ethical hacking

The increasing sophistication of cyberattacks makes the process of finding and fixing security vulnerabilities crucial. To address this, many organisations employ an 'ethical hacker' to test how effective their perimeter security is, via a process known as penetration testing. This involves deliberately trying to break through the security layers, in the same way that a rogue hacker would. There are risks in using an ethical hacker – the organisation must ensure that they have suitable experience and qualifications, are up-to-date on security issues and don't misuse any information gathered.

4.1.2 EXAMPLE SITUATION: Control over valuable/sensitive information

An international engineering company hires an ethical hacker who is experienced and well qualified. The ethical hacker successfully completes the exercise and provides a detailed report highlighting the issues and recommendations for fixing them. This includes weaknesses in controls for securing the electronic documentation concerning new products, an area of valuable intellectual property (IP) for the company.

About six months later the sales director, at a trade show sees a competitor firm promoting a product identical to one that the director's company has not yet launched. It may be coincidence, but this product was the main focus of development when the ethical hacker was employed and spotted the control weaknesses.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Objectivity	Any review of the situation must resist a pre-determined bias towards assuming that the ethical-hacker abused a position of power by stealing and selling the IP. The records could have been accessed prior to the hacker's work or the product may even have been independently developed by the competitor organisation.
Professional competence and due care	Having insufficient understanding of the operations and risk areas with respect to IP could breach this principle. Properly assessing the situation may require an end-to-end understanding of the organisation's new product development process and IT document security protocols, as well as policies for hiring, pay and rewards for those involved in these areas.
AUDITOR:	
Professional competence and due care	This is a specialised area and the internal auditor may be compromised through a lack of familiarity or knowledge. They may find it challenging to differentiate between standard procedures or norms for working with ethical hackers and actions taken by the organisation which expose it to unnecessary risk.
Objectivity	For the external auditor, this is more likely to be relevant if it is serious enough to create a risk of material misstatement. There is a need to resist accepting at face value, prevailing views on whether the arrangement with the ethical hacker was properly set up. The risk of compromise can arise from a bias towards accepting information simply because it is readily available from the management.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	Professional accountants need to know where there is information of value to external agents and to assist in putting controls to secure it. Pre-emptive action may be appropriate in some cases, eg early lodging of patent applications for new initiatives with tangible IP.
Resolving	Known weaknesses in security need to be addressed via increasing in-house skills or doing a regular external review. For the future, the accountant could recommend that the firm also explore the use of a different ethical hacker, and possibly perform more extensive background checks, if this emerges as an issue.
AUDITOR:	
Acting in the shareholder and public interest	External auditors may need to consider whether the issue of the allegedly stolen IP is sufficiently significant to warrant a public disclosure. This includes assessing the situation against the IESBA code, and may involve the need to consider whether disclosure constitutes a direct/indirect accusation against another company with risk of libel action.
Maintaining independence	The internal auditor needs to have oversight over processes involved, and the ability to challenge them if necessary. Their view must not be influenced, for example, by their reporting into the team that hired the ethical hacker.



Professional competence is the key issue because the other competences, such as integrity, objectivity and confidentiality that we have to provide to clients, don't change. So in the same way as traditional audit techniques try to find weaknesses in systems and where they could be broken down, we were training people to effectively understand how to commit a fraud so they could see it and react, in the same way [that] an ethical hacker is given the modus operandi to hack a system, but the same standards either side of that need to apply. It's back to the competence - we need to understand what they're hacking and the reason they are doing so within a controlled environment.

Derek Henry, Partner – Head of R&D, BDO



The 'good' hacking would be for the purpose of fixing whatever faults are found; it is [done] with a very legitimate, positive, noble purpose; you are trying to protect your organisation. The question now becomes from an ethical challenge point of view, how do you figure out that you are getting the right people and [ensure that] you trust the right people to do this task? This is where you need professional competence and [to] exercise[e] due care on behalf of your organisation to ensure that you are not handing valuable information to the wrong people.

Folashade Eyinola (Odusanya), Chief Financial Officer, Blue Talia Consulting



Using technology as a preventative measure; in addition, for every process that is put in place, accountants also need to understand the process and to identify the [possible] breaches and the course of action if and when they happen.

Kola Agunbiade, Chief Financial Officer, IS Internet Solutions (A division of Dimension Data)



Some accountants are unable to adapt to our changing technology environment. This hinders their ability to undertake or support necessary steps, such as annual penetration testing, utilising the power of big data and eliminating unnecessary manual data processing.

Michelle Hourican, Director, Datatrails



Professional accountants should be spending no more than 20% [of their time] on the traditional parts of the financial control, leaving them with 80% of their time on strategic work such as implementing business forecasting, new technology solutions and penetration analytics.

Etain Doyle, Chair, Group Insight

4.2 DIGITAL THEME 2: Platform-based business models

The platform is a business model, not just a piece of technology. It creates value by connecting buyers and sellers for a good or service. As with many internet-based businesses, the user base can scale very quickly owing to the combination of technology and the network effect. Platforms can exist in a variety of industries connecting, for example, cab drivers with passengers, or those seeking accommodation with those offering it.

Profits versus people

Platform-based businesses do not need to increase the size of their own employee base significantly to scale up the business. As intermediaries, they just need two sufficiently large groups of people to connect – those that provide a good or service and those that need it. This means that they can quickly expand to a massive size, with far fewer permanent employees than a traditional company of similar revenues. While the business is responsible for setting up the internet platform, typically, the individuals whose services it offers are contracted to work for, but are not employees of, the business. This can raise questions about employee protections and governance mechanisms.

4.2.1 EXAMPLE SITUATION: Defining the relationship between worker and platform

A platform business has built up a substantial user base in household services. These include cooking, cleaning, house painting, plumbing, electric repairs and gardening. Users like the platform because they can come to one place for a range of requirements, and the pricing is attractive. The platform has built up a list of trusted specialist suppliers to provide the services.

The suppliers are agents or contractors of the platform business and use their own equipment to provide the services. They are technically self-employed, ie the business 'hires' them when a user requests a job through the platform. In practice, however, the vast majority of the contractors' work comes via the platform, as a result of which they have limited bargaining power to refuse a customer and generally work to the schedule set by the platform. They do not receive any paid leave, or the benefits or employee protections that are available to the small number of people directly employed by the platform operator.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Integrity	The accountant would need to evaluate whether the supplier is being unfairly treated by the platform. There is a need to be honest in examining the true nature of the relationship between the providers of services and the platform – in particular, whether they are suppliers or employees.
Objectivity	There is a need to balance the commercial interests of the business with the interests of contractors and customers. The rights of contract staff in a 'gig economy' may need to be balanced against the reduced flexibility of employees working on defined shifts (given that the current, contractor-based model supplies expertise 'on demand').
AUDITOR:	
Professional competence and due care	External auditors need to obtain a sufficient understanding of the platform to enable them to audit the organisation's financial statements. Not following up on areas of concern or making sufficient checks to satisfy themselves that they have a sufficient understanding of the operating model could compromise their ability to act with professional competence and due care.
Objectivity	Internal auditors may face pressures from senior management to retain certain business practices that the auditor has challenged, particularly if any change would affect margins. They also need to avoid a bias towards disregard for the interests of self-employed service providers who may lack power or influence.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	Preventing unfair treatment of stakeholders is more likely with a robust ethical code. This is a relatively new type of business model, where practices are not as established as in traditional companies – a code can help to set down some basic guidelines regarding ethical behaviour.
Resolving	If suppliers wish to renegotiate to receive rights and benefits similar to permanent staff, the platform business may need to commence a process of dialogue, taking into account evolving legislation. The accountant may need to advise on this process. Ignoring the issue could make matters worse, and there may be a need to consider best practice in this area.
AUDITOR:	
Acting in the shareholder and public interest	External auditors may need to consider whether challenging the platform operator on the rights of suppliers is in the public interest. They should only do so if they are aware that some laws or regulations have been broken, since without such NOCLAR (non-compliance with laws and regulations), it is not within the external auditor's remit to formulate views as to whether suppliers are being unfairly treated.
Maintaining independence	The internal auditor will need to avoid getting drawn into any dispute between the platform operator and its suppliers. It is not their role to take sides in a conflict, but rather to provide a clear and independent view of what the appropriate solution could be, taking into account best practice.



There are many new business developments which are changing the way we conduct business. So how do we as ACCA members keep abreast of this and ensure that we will be able to apply everything we know; ...using our knowledge to account for these new businesses where there are no physical assets; where we remain objective and apply professional behaviour? We have to rely on and apply professional competence and due care, so ensuring that we account for these properly.

Cheryl Clarke, Auditor, United Nations



The role of accountants is to ensure that accounts that are given, whether financial or otherwise, are factual and not misleading. The rise of cloud computing represents a historical shift in the scale of society's dependence upon service organisations' controls, both financial and technical. This places greater importance than ever before on the ability of society to rely upon the work of accountants.

Roland Turner, Chief Privacy Officer, TrustSphere



Thinking of scope, I would think the internal auditor has a much broader scope in comparison [with] external auditors, because an internal auditor could be, or should also be, looking broadly at operational issues.

Paul Karr, Retired, IMA Financial Reporting Committee member



Internal controls are going to become all the more important as the workforce and the working environment become more fluid.

Scott Ackerman, Chief Financial Officer, The Genuine Origin Coffee Project



If accountants are part of the 'gig economy' (internal or external) one needs to be doubly sure that [they] operate with integrity and objectivity.

Brad Monterio, Managing Director, Colcomgroup, Inc.



Once the reputation of the organisation is affected, at the end of the day it's the internal auditor's association with the misleading information that raises questions about integrity. The internal auditor's responsibility is to the employer in making sure there's nothing that's going to damage the reputation of the employer. So it comes down to what is my obligation to my profession? Having joined that profession, how can I make sure that I am acting with integrity if I am facing this situation? So yes, I might be concerned with the reputation of my employer, but at the end of the day, how do I link it back to my acting with integrity?

Ken Siong, Technical Director, IESBA

Protecting platform businesses' intellectual property (IP)

Platform-based businesses are intermediaries with minimal levels of physical assets or inventory of their own to sell. Therefore, IP can be a key element in driving success. Some platforms, for example, have a 'recommendation engine' that uses sophisticated analytics to leverage the large volume of data passing through the platform to make tailored purchase recommendations to users of the platform. The ability to attract users, leverage their data and provide value-added services may all link to the IP of the platform – which needs to be protected from copying or theft.

4.2.2 EXAMPLE SITUATION: 'Web scraping'

A company creates a platform, in this case a mobile phone application that provides users with ratings of restaurants based on user reviews. The site also provides location details and a reservation service. Over time the number of live reviews has reached a point where 84% of restaurants have at least one rating and 62% have more than five, so it has become the go-to place for ratings.

This has helped to boost revenue from the restaurants – the primary source of income for the company (the application itself is free for users). But now a relatively new hotel-booking site appears to have started listing restaurants as well, but with identical rating scores for the restaurants. There is a concern and suspicion that the hotel site may be using 'web scraping', a form of copying data from websites generally enabled by a 'bot', or automated programme, to copy the ratings in real time.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Professional competence and due care	The accountant needs to recognise that the sticky-ness ⁹ of the application, and the company's business model, is driven by reviews and ratings. This IP is of core value to the business proposition. Where someone else copies and uses the valuable information, this dilutes its ability to attract more users than the competition.
Confidentiality	The data that has been copied may also provide links to information such as email addresses of registered users. Allowing unauthorised persons to access this type of data could constitute a breach of the ethical duty of confidentiality.
AUDITOR:	
Professional competence and due care	The internal auditor would need to have considered the possibility that Web scraping might compromise the IP of the platform. These businesses can evolve quickly, gaining or losing users much faster than traditional businesses. So if the internal auditor's competence is compromised, this might quickly damage the business.
Integrity	The internal auditor has a duty to be honest in all professional and business relationships. If they have not heard of Web scraping or other such threats, it is important to acknowledge this openly rather than suggesting that it is not relevant to their checks when in fact they believe that it is.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	The accountant needs to ascertain how easily this IP might be stolen and to discuss key considerations for its protection. In most organisations the IT team is likely to manage these issues as part of their role, but the accountant has a key role to play from a risk management point-of view to relate technology to business risks.
Resolving	From a future-proofing perspective, the accountant may recommend employing an 'ethical hacker' (as discussed in section 4.1.2) to help the company understand where and how its technology security is being compromised. In certain cases, the company may consider legal action against the hotel-booking site, but criminality may be difficult to prove, and litigation may be expensive.
AUDITOR:	
Acting in the shareholder and public interest	The internal auditor should review the mechanisms suggested and implemented to protect the IP data. These must be assessed to see if they are sufficient to reduce the risk of recurrence. These checks would be needed periodically to ascertain that IP remains protected.
Maintaining independence	The internal auditor is responsible for ensuring that controls are adequate for reducing risk and proportionate to the threats being faced. The internal auditor is not responsible for choosing or implementing the techniques – the accountability for this must remain with technology experts.

9 Ability to hold on to users.



The accountancy profession will have to continuously level up in terms of financial and accounting knowledge and business acumen. It must go beyond mere numbers and figures, and to understand and assess new technologies. The accounting profession needs to know how these new technologies can get the work done better and to generate revenue.

Ho Yew Kee, Associate Provost (SkillsFuture and Staff Development), Singapore Institute of Technology



The auditor needs to go that extra mile to make sure that the company has adequate safeguards in place which ensure that risks associated with platform based businesses are mitigated because sometimes it's very easy to overlook the softer issues.

Victoria Ipomai, Group Chief Financial Officer, Sanlam Kenya PLC



Data confidentiality regarding the platform business itself consists of two parts. The first part concerns the customer's own data confidentiality. Today, data contributes to an organisation's profit and income, and in our practice we strive to safeguard confidentiality across the whole system, reporting any loopholes identified to the managers, shareholders, the independent board of directors and the audit committee. The second part is the use of data in the public process. There is a possibility of data leakage, and an accountant should prevent against such conduct by institutional and technical means, balancing between convenience and the security of data access.

Ko Chee Wai (David Ko), Head of Audit, KPMG China



4.3 DIGITAL THEME 3: Big data and analytics

Big data is commonly associated with a high volume of data that has a high degree of variety (eg structured quantitative data as well as unstructured data such as videos/pictures); and is managed against a backdrop of ever-increasing data-processing speed.

Analytics has shifted the emphasis from viewing data as a hygiene factor to an asset that can be leveraged. Analytical tools often use sophisticated segmentation techniques and predictive modelling to anticipate future behaviours and to be able to do this on truly vast data sets.



Meeting regulatory requirements

Regulation on data collection and analytics is increasing, with significant financial penalties for non-compliance. New regulations are challenging to adopt and organisations need to ensure the involvement of all relevant stakeholders. This might include, for example, the establishing of roles such as 'chief data officer', which didn't exist until a few years ago. Careful oversight is required to ensure that regulations are understood, and properly addressed, and that those responsible have a suitable degree of oversight and visibility.

4.3.1 EXAMPLE SITUATION: General Data Protection Regulation (GDPR)

A large utility company decides to expand its offerings into financial services, with a credit card that offers loyalty discounts. It uses its utilities customer database as a marketing vehicle and sends them emails about the credit card offers. It has not sought prior permission for sending this communication.

The company is heavily criticised by consumer groups for misusing customer data and encouraging people to take on more debt. The launch comes months before the introduction of GDPR (scheduled for May 2018), which specifically prohibits companies from using data for a purpose other than that for which it was collected.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Professional competence and due care	The accountant should have known that GDPR is being introduced and that under GDPR the action taken would have been illegal. Failing to warn the business that the action should not go ahead because they hadn't realised the impending change could be construed as a failure to act with competence and due care towards customers.
Integrity	Use of the utilities customers' data to promote credit products may be ethically questionable. At the time it was done, it was not (yet) banned by the regulation but the accountant in the business would need to consider whether the organisation had acted in the spirit of compliance with regulations, or had exploited a timing advantage.
AUDITOR:	
Professional competence and due care	Internal audit could be compromised if the marketing email was allowed to go ahead as a result of inadequate checks and balances. More generally, if there is a lack of awareness about the boundaries and obligations with respect to handling customer data, competence could be called into question.
Professional behaviour	Internal auditors need to understand the incoming GDPR regulations and the basis on which instances can occur that could breach them. Checks need to evaluate compliance with current regulations, and future ones, to avoid bringing disrepute to the profession by signing-off any non-compliant activities.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	Speaking up where necessary is crucial. Professional accountants would need to be vocal in questioning the marketing approach if it is apparent that there could be a breach of principles. In addition, highlighting the upcoming legislation and risks to brand are also important.
Resolving	The accountant should assist in guiding future activity to prevent recurrence. Tightening the procedural weaknesses that were exposed in this incident will be essential. This will need to be part of a wider involvement with the organisation's checks of its readiness for GDPR.
AUDITOR:	
Acting in the shareholder and public interest	Given the forthcoming legislation as well as adverse public and media interest, the internal auditor may consider whether this marketing approach is in the shareholders' interest. It may also be important to check, in the public interest, that vulnerable customers, who may present higher credit risk, are removed from any marketing initiative.
Maintaining independence	The internal auditor needs to guard against allowing personal opinions to influence their actions. They may personally agree or disagree with management on the marketing decision but they need to maintain arms-length distance from direct decision-making and focus on the criteria for best practice and evaluating impact.



When GDPR comes into force, systems will have to be in place to allow individuals the right to be forgotten – can most systems even do that? Businesses adopt bring your own device (BYOD) approach for its obvious gains, but there are other implications such as data theft. A breach of GDPR could cost a business 4% of gross worldwide turnover.

Michelle Hourican, Director, Datatrails



A difficult call to make and in some jurisdictions there'll be strong data security laws. But it's not by any means across the globe. Without there being strong rules and regulations that spell out the precise responsibilities it's a bit of a grey zone. And that's where perhaps the standards really become important.

Ken Siong, Technical Director, IESBA



When you look at the internal audit function, one major challenge, of course, is to sort key questions in the beginning when you are creating the function. If defined in advance, [the accountant's] role could include appraising the systems and reporting to the governance committees.

Daniel Okila Omulando Angoyia, Group Financial Controller, SGA Security (Kenya, Tanzania, Uganda)



...having the right data governance strategy [is also essential] in addition to technology strategy and business strategy. There is a big opportunity for the internal audit and external audit and other people to challenge that, because if data governance structures fail, these ethical issues can creep in.

Brian DeSouza, Director and Head of Risk Consulting Services, KPMG Advisory Services Limited



With regard to data management, one of the key things is around trust; you know the customer trusts that when they give you their information you will keep it confidential. We need to make sure that our customers continue to trust us to keep their data. I think we are in a safe space in Kenya because the Communications Authority has very robust regulations on what a Telco can and cannot do; for example, you cannot release confidential customer information.

Vincent Acholah Opiyo, Head of Finance Operations, Safaricom Limited

Abuse of customer privacy

Analytics is a powerful tool that can use high-volume granular data as raw material for generating accurate insights. These insights typically have a predictive quality, for example what types of customer are more likely to purchase which types of product? If more data is available, the process of detailed segmentation and identifying patterns within the data becomes more accurate. This is why data is an asset, and organisations may be willing to go to great lengths to acquire it, sometimes crossing an ethical line in the process.

4.3.2 EXAMPLE SITUATION: Customer data in shopping centre

A shopping centre installs beacons to monitor footfall across the large area of the centre. These can track mobile phones using anonymous detection of Wi-Fi signals. Shoppers can log onto the Wi-Fi from their smartphone, and get free internet access. The webpage offers an 'opt-out' check-box. If the customer does not check the box (usually they are in a hurry to get onto the internet and move past this quickly), they have accepted being tracked by the centre, becoming identifiable on return visits and consenting for the centre to sell their data.

Over time the centre acquires a considerable volume of data and uses analytics to determine which customers visit which stores, footfall of returning customers versus first-timers and time spent in different parts of the centre. It starts a paid-for service to retailers in the centre who use this data to send targeted advertisements to the shopper's mobile. As the volume of advertisements sent rises, a privacy group finds out about this. It highlights the approach in a leading local newspaper and suggests boycotting the centre until the use of data is made more transparent.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Integrity	It is possible that the organisation may be protected from legal action. Even so, the professional accountant would need to consider whether the organisation has been straightforward and honest in the way it has obtained 'consent' from the customers for using their data.
Confidentiality	The organisation may compromise customers' confidentiality, depending on what is permissible for the various types of data in the wide range that it holds. The information held may include locational data reflecting customer movements, personal identification data or inferences about financial data, such as purchase estimates based on time spent in the shops.
AUDITOR:	
Professional competence and due care	Auditors, both internal and external, will need to be alert to risks in the questionable use of consumer data, and the impact this can have on the business and the brand, and advise management accordingly.
Objectivity	The shopping centre management will want to avoid compromising a healthy revenue stream. The retailers like the data as it is highly segmented and targeted in nature, and its use gives them a much better return on investment than the usual marketing campaigns. The challenge to the internal auditor is the need to remain objective in the face of management's clearly formed preferences.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	If the business decides it will continue to use the data in this way, it will need to be much more open with consumers. The accountant should advise that it may be more ethical for customers to be required to 'opt-in' if they agree to be tracked and to receive offers, rather than opt-out if they disagree.
Resolving	If the reputation impact is serious enough, it may be advisable to abandon this practice. Alternatively, this approach may continue, but after making the use of data more transparent. A well-crafted communications campaign to explain the changes will be necessary for media issues, and the accountant may input into this.
AUDITOR:	
Acting in the shareholder and public interest	It may be appropriate for internal auditors to examine whether there has been any infringement of data privacy laws. There may also be a shareholder interest in ascertaining whether, if it continues, the commercial arrangement with retailers could be challenged at a later stage by privacy groups. As an area of growing concern, auditors need to educate themselves on best practice as well as other examples of where the use of customer data has been questioned on ethical grounds.
Maintaining independence	The internal auditor may need to ensure that the business gets specialist external advice on dealing with privacy-related issues, so that risks are minimised. The external adviser may also need to examine governance structures within the organisation and mechanisms for escalating concerns in this area.



Professional competence and due care are required when using aggregated data to make decisions or support management decision-making. There is a need for us as accountants to have a bigger, wider skill set. It is not just the ability to understand the data but also to know its limitations.

Fred Alale, Associate Director, KPMG



From a technological point of view, things are getting easier but it's also getting more complex owing to the amount of information there is now... [about] people and with this there are more interactions so there is more connection with other factors. So when somebody in an organisation decides to focus on a very specific population and try to increase profits it can raise ethical dilemmas.

Peter Ujvari, Senior IFRS Expert, KBC Group



Data protection is a key issue in everyone's mind at the moment so I think that has definitely become more relevant. Systems are more integrated, providing easier access to more information.

Derek Henry, Partner- Head of R&D, BDO



It is confidentiality and integrity – these two principles are at the centre when vast amounts of data may be shared and used to draw conclusions about people or about businesses. The challenge lies in the lack of clarity, and understanding, in the handling and disclosing of information.

Gary McPartland, Associate Director, Grant Thornton

Ethics is about human behaviour – it's about knowing to do the right thing with the information [one has].

Ita McCarron, Finance Director, GlaxoSmithKline



My own view is that certainly the principles need to be adhered to regardless of the digital age but it comes down to each individual accountant to adhere to those principles. Every member needs to know where the boundaries are and that's not as easy in the digital age, they may not even be aware that they are breaching the principles. We are used to living in a paper-based society where the boundaries were clearer. I think in the new big data age, people seem to think that all this data is hanging out there and we can just take it and use it as we see fit. We need to ensure that we're still operating within our ethical guidelines and principles. Even though we're dealing with big data the fundamentals remain the same.

Kenneth Garvey, Partner, Cusack Garvey

4.4 DIGITAL THEME 4: Cryptocurrencies and distributed ledgers

Cryptocurrencies such as bitcoin differ from traditional ('fiat') currencies in that their supply is not controlled by a national, issuing, government. They generally operate on a digital peer-to-peer basis with encryption tools being used to ensure that payments occur correctly between the designated source and recipient.

A distributed ledger is a digital database of records with information relevant to a group of participants within a network (eg showing the value of assets they hold). All participants are looking at a common, shared, view of the records. This view is updated at the same time for all network participants, using a mechanism that achieves consensus among them for approving changes.



Bitcoin and money laundering

There is a relatively small but growing group of cryptocurrency enthusiasts who are very familiar with how bitcoin works. But to many, the idea of a digital currency may not be intuitively easy to grasp. Bitcoins can be traded and converted to traditional currencies – one bitcoin was worth almost GBP 2,000 at the end of June 2017. With traditional, 'fiat' currencies there are established regulations for tracking the source and use of funds, in order to prevent money laundering. There is less clarity on the equivalent control structures for bitcoins and the distributed ledgers (blockchains) on which their transfers are tracked.

4.4.1 EXAMPLE SITUATION: Risks to brand and operations

A large technology retailer is exploring the possibility of accepting bitcoin payments for transactions. There is a view that many customers may welcome the move and that such a move would strengthen the company's brand as an innovative organisation. Several competitors are also rumoured to be examining such a possibility in a favourable light.

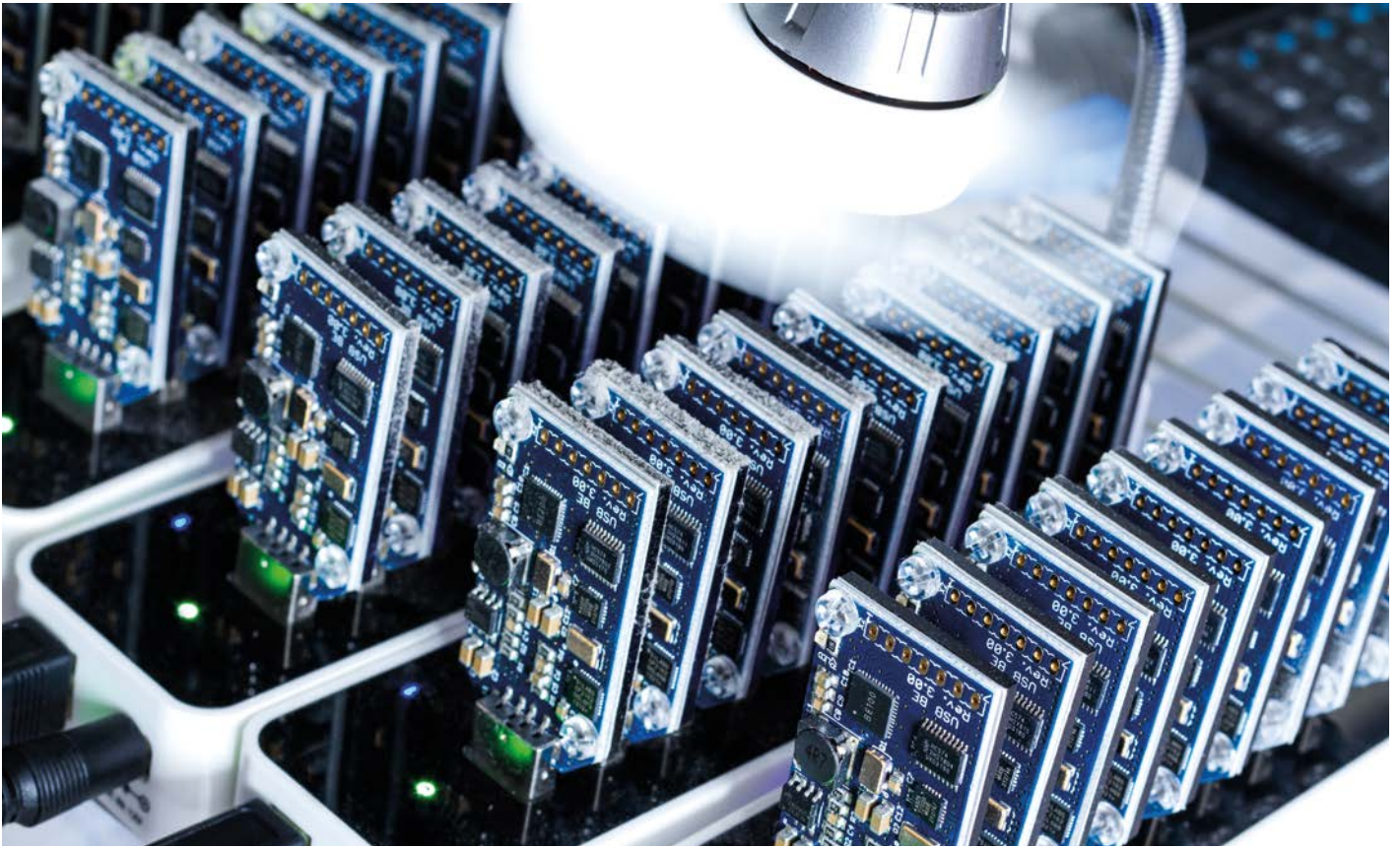
Nonetheless, there are concerns about whether bitcoins could be used for money laundering. It is not clear how valid these claims are and the kind of impact the use of bitcoins could have on the brand and operational risk profile of the company.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Professional competence and due care	Bitcoin is tracked outside the traditional structures within which accountants may normally work, and they will need to understand the details to assess the implications properly. For example, transactions are public but pseudonymous: payments are sent to a publicly visible address but such addresses are identified by pseudonyms rather than users' own names.
Objectivity	The proposal has its cheerleaders internally, and as a technology company it is under pressure to be seen to be comfortable with new technological frontiers. Professional accountants need to take a balanced view, particularly if arguments are based on such factors as bitcoin's possible use by competitors.
AUDITOR:	
Professional competence and due care	The internal auditor must take due note of considerations such as the ability to establish a basis for fair value and the impact of high levels of price volatility on how bitcoins are traded and move through the system. This process of knowledge-building forms a foundation on which the internal auditor can develop checks for detecting money laundering activity. The ethical danger here is a failure to take these precautions.
Professional behaviour	Auditors, both internal and external, have an ethical duty to be aware of any implications for the company's regulatory obligations, say with respect to disclosures and tax. The auditor may also need to examine, or arrange examination of, applicable rules where the customers are in a different country/jurisdiction from the company itself.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	Given that bitcoin use is an evolving trend the accountant can help to prevent problems by maintaining an awareness of market sentiment and the opinion of bitcoin experts. It will be useful to stay alert to the likelihood of significant changes in public perception that could cause reputational impact.
Resolving	The launch of bitcoin trading is a planned initiative, so there should be a pre-defined action plan for dealing with problems. If any arise, they should be mapped against the action plan. If there is evidence of money laundering, for instance, it will be important to communicate in a transparent way about the situation, and have ready a clear remedial or exit strategy, as appropriate.
AUDITOR:	
Acting in the shareholder and public interest	Internal auditors have a responsibility for ensuring that they are clear in communicating the risks and organisational implications of using bitcoin. Many shareholders and others may have a limited grasp of the key considerations involved and the factors to consider.
Maintaining independence	Internal auditors can play a role in analysing company plans against market norms, while maintaining a detached view of the organisation. They can provide objective advice and a review of the company's approach to determine whether all factors have been considered.



In many organisations, the accountant may probably be the only person that is a member of a professional body and thus bound by ethical principles imposed by that professional body. And therefore, the accountant is expected to always act ethically and in the best interest of the public.

Terry Wee Hiang Bing, Partner, Assurance, EY



Perhaps the most interesting ethical dilemma in cryptocurrencies, so far as designers and promoters are concerned, is the conflict between use as a medium-of-exchange and as a store-of-value. High price volatility indicates a poor store-of-value. The more speculation in a cryptocurrency, the worse it acts as a currency. For money launderers, if it's high-volatility you want to go through the cryptocurrency; if it's a good store-of-value you want to go into the cryptocurrency. Money as a technology depends on belief in the future existence of a community trading debts in its currency. So, paradoxically, money launderers leaving their proceeds in the cryptocurrency may indicate that it's maturing as a medium-of-exchange and a store-of-value.

Michael Mainelli, Executive Chairman, Z/Yen Group



Ledger reliability and security

Distributed ledgers¹⁰ have been mentioned as a step-change development that can significantly improve efficiency without compromising reliability and security. This is an emerging area, and many uses have been proposed – most of which are in proof-of-concept, although some, such as those for international payments, have entered production mode. There is a need to be aware and receptive to big trends, which could completely change the current way of functioning, but this will need to be balanced against a realistic approach that takes into account organisational realities.

4.4.2 EXAMPLE SITUATION: Holding citizen data

A government department is considering using a distributed ledger to improve the process of recording property transactions in the country. This would allow for a shared, trusted digitised record that is visible to authorised entities. This is expected to bring significant benefits by reducing errors and forgeries. It will also provide a definitive digital record confirming the current owner of the property, as well as details of any previous purchases.

The finance team is generally supportive of innovation and has been made aware of the efficiencies that this could bring. But there is concern about the reliability of this system and whether sensitive citizen data could be put at risk. Given that this relates to property transfers, it is likely to affect a significant proportion of the population and translate into a major disaster if things go wrong. This may present ethical challenges to the government's accountants and auditors.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Professional competence and due care	There are a range of aspects that the accountants need to understand, starting with a basic knowledge of distributed ledgers. After this, they need to see evidence of whether the technology can be scaled up to the current requirement and the risk of hacking or other unauthorised access to data.
Integrity	Professional accountants must be honest about whether they are comfortable with what they know. They need to resist going along with the project if they have doubts. If there turn out to be significant issues later on, they may find themselves being questioned about the basis on which they signed off the project.
AUDITOR:	
Professional behaviour	Internal auditors will need to consider whether the exact processes and mechanisms that are proposed for putting data on a distributed ledger violate any laws and regulations, eg laws relating to data access and confidentiality in a 'shared' ledger, or to the rights and obligations of those authorised to make ledger entries.
Professional competence and due care	To be able to advise on the use of distributed ledgers, the auditors may need to learn new tools and focus more closely on their ability to conduct a rigorous systems audit. Although checking at transaction level may no longer be as pertinent, it will be doubly important to be able to interrogate the technology, appreciating how data flows through it and what the key areas of risk could be.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	The accountants must avoid allowing the project to develop in ways likely to cause problems. They will do this by voicing their concerns and seeking clarification from senior managers as the process unfolds. They are also highly likely to need specialist consultancy input from distributed ledger experts.
Resolving	Given the high stakes involved in a case of this nature, it is likely that any system would be trialled first in a pilot environment. Resolving issues at this stage requires detailed red flag reviews which can point out all issues, however small – as these can escalate into major problems on expansion to full scale.
AUDITOR:	
Acting in the shareholder and public interest	In addition to standard checks, internal auditors may need to consider some questions about the public interest: in particular, whether there is a material risk that large volumes of sensitive citizen data will fall into the wrong hands. Spurious transfers of title ownership, for example, could be costly and time consuming to resolve.
Maintaining independence	Internal auditors need to be able to report freely and without interference from stakeholders who are directly managing due diligence for this initiative. They must also remain independent from political pressures (in what may be a high-profile project for the government) and base their opinions on technical merits.

10 <http://www.accaglobal.com/uk/en/technical-activities/technical-resources-search/2017/april/divided-we-fall-distributed-we-stand.html>, accessed 31 July 2017.



Perhaps blockchain is an opportunity to close some of the trust gaps while assisting market stability and pricing; not having a preference for specific software, just implementing whatever is best for the market as a whole.

Robert Smith, Chief Financial Officer, Vivid Technology Limited



Distributed ledgers will pose new problems to auditors with regards to understanding systems and controls. Understanding who is in the reporting community and how any particular participant can avoid contagion from other participants' unethical behaviour will be paramount. The involvement of professional accountants in the data governance of participating entities will be one indicator of lower risk.

Robert Stenhouse, Vice President, ACCA



There is also a positive side. As more assets and documents are digitised, the more one can use digital tools to audit. One is sure to leave a trail when audit is done digitally. This will allow auditors to identify patterns and trends that would not have been possible in a paper-based approach.

Holger Lindner, Chief Financial Officer, TÜV SÜD Asia Pacific Pte Ltd



4.5 DIGITAL THEME 5: Automation, Artificial Intelligence (AI) and Machine Learning (ML)

Robotic Process Automation is increasingly enabling software bots to take over repetitive, rule-based activities. Artificial intelligence (AI) and machine learning (ML) can enable the analysis of large and complex data sets so that machines can over time start forming some of the decision rules themselves. In addition to quantitative data sets, this is likely to involve unstructured/unlabelled data that can arrive in real time as a live stream ('Big data').

Automation adoption

As automation continues to take over previously manual tasks, the challenge for businesses is to assess when automation developments are right for them: in fit, maturity, costs and risks. The organisation must balance potential benefits against risks and uncertainties, while also carefully considering the impact on all stakeholders. A balance must be found between satisfying shareholders' needs for competitiveness and efficiency, with the organisation's responsibilities towards its employees.

4.5.1 EXAMPLE SITUATION: Reorganising a call centre

A fast-growing mobile telecommunications company wants to reduce its dependence on its call centre staff. This is a large team that handles all incoming calls, across a range of issues from new customer queries to complaints and faults. The aim is to implement a new capability that will analyse customer data to predict the reason for each customer's call.

The new system will combine with Interactive Voice Response (IVR) to route the call to the appropriate function, wherever possible using an automated response rather than a staff member. The automated response would provide answers to queries and details of relevant weblinks for further information. Inbound enquiries can require the ability to combine knowledge with analysis (say, if customer wants to compare the pros and cost of two different contract options).

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Objectivity	The accountant may face pressures from management who might see implementation of the new system as a straightforward decision, with automation 'obviously' the way forward. Unbiased analysis is needed to ascertain whether the reduced headcount more than compensates for migration costs, and that business risks are within acceptable limits.
Professional behaviour	A lack of sufficient clarity about the new system can create breaches of applicable rules and laws. It is important for the accountant to understand the firm's obligations to staff while closing down existing teams and the available options for re-training/re-assigning staff. It is important for the accountant to review procedures for internal communications.
AUDITOR:	
Professional competence and due care	The internal auditor will need to display a rigorous approach based on best practice for technology audits, asking the key questions about process, risks and monitoring. The auditor may need to bring in a wider understanding of lessons from other similar initiatives, to provide adequate challenge to management and monitoring of implementation.
Integrity	Internal auditors will often be looking at the effects of a decision after it has been implemented, and should check results in a transparent and unbiased way. For example, they should not ignore the different levels of importance of different queries (they must avoid over-simplifying so as to save time) and must check whether the technology adopted is able to handle non-standard queries efficiently.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	Preventing an error of judgement depends on using an analytical approach, as well as applying commercial acumen. In a competitive business with tight margins, reducing costs from a large fixed headcount is important. On the other hands, this is a growing business in an industry where high churn and low customer loyalty may be valid considerations. So if the quality falls as a result of the automation, the lower costs may be more than offset by lost customers. The accountant needs to weigh these considerations and advise management appropriately.
Resolving	Dealing with difficulties once a decision to migrate has been taken requires effective change management. If it is becoming apparent that the transition has hit problems, then remedial action may be needed. Sometimes, phased implementation may be appropriate – to make sure that the company has correctly identified customer needs. For example, the solution to some problems may not lie in the automation itself, but may lie in better management of customer expectations. The accountant should advise management on these issues.
AUDITOR:	
Acting in the shareholder and public interest	If the company has a reputation for successful innovation, then this investment may be seen as in line with shareholders' expectations. Alternatively, if it seems like the proposed automation is happening alongside too many other changes or is being rushed through as a 'pet' project – then the internal auditor may need to identify and report on material risks that could damage business operations.
Maintaining independence	Larger audit firms are likely to have consulting departments that advise on technology selection and implementation support. The external auditor would need to avoid taking management responsibility in these areas but maintain a strictly advisory role, providing advice or recommendations to the audit client.



[The] integrity of the information being fed into the machine is very important, because that's what makes those decisions, and those extrapolations. As the machine learns, we have a significant impact on or input into it, into what it's learning and processing for us.

Fred Alale, Associate Director, KPMG



One of the major recommendations from the 1987 financial market crash¹¹ was that we need circuit breakers, and the circuit breaker must be triggered by [a] human being. In that sense, there must be human intervention in any schema of activities and operations. The human intervention could be auditors to check the algorithm, to verify the logic, to examine the principles and ultimately to override the decisions of the AI-based system when needed.

Ho Yew Kee, Associate Provost (SkillsFuture and Staff Development), Singapore Institute of Technology



Professional competence and due care play a role, if you don't rush into [a situation] without knowing what you unleash. So that's something where an accountant can play a role in terms of assessing the risks, not through a tick-box approach but rather through a simulation approach, maybe using the right tools to say, okay, what if something goes wrong, what's the extent of damage being created?

Holger Lindner, Chief Financial Officer, TÜV SÜD Asia Pacific Pte Ltd



As we rely more on automation tools we must remember that they can contain errors or faults in logic. It is important that these are checked at the outset and continuously monitored. As auditors there is an obligation to have reasonable assurance that automation tools are adequately controlled and governed. Auditors may consider asking businesses: 'how are you, as the owner and the expert in the system, confident of its integrity? How have you built it? And what measures have you taken to correct problems or defects?' This may provide some level of reasonable assurance.

Gary McPartland, Associate Director, Grant Thornton

¹¹ Global stock market crash often referred to as 'Black Monday'.

Algorithm-driven decisions

Historically, machines simply executed programs developed by humans. They were 'doers' rather than 'thinkers'. Now with complex pattern-recognition-based machine learning (ML) tools, it is possible for systems to engage in discretionary decision-making. The machine analyses large volumes of data over time, and relies on historic patterns/trends to inform decisions. This means it can develop decision rules and dynamically change them as new information emerges.

4.5.2 EXAMPLE SITUATION: Fraud detection

A bank has transitioned to using algorithms to identify fraud, automatically scoring each customer and transaction, and creating alerts based on score peaks above a threshold. The algorithm uses a wide range of data inputs that vary over time. It uses machine learning by taking data inputs from known fraud cases, as they occur, to change the balance of input importance and weighting.

Every week the live scoring model gets updated on the basis of the latest algorithm. In one particular week there has been an unusual surge in the use of stolen cards in a specific city. As a result the scoring model becomes highly sensitive to transactions in this location and 20% of transactions are blocked on the incorrect assumption that they are fraudulent.

This incident occurs at a weekend, and affects a large number of customers. It creates significant frustration for these customers, an overload of inbound calls to customer services, negative social media, and criticism in national newspapers.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Objectivity	The professional accountant would need to consider objectively whether there is the correct balance between reliance on the algorithm and human oversight. There may be a need for more human oversight with its associated costs, eg a need for staff to speak to a customer in some cases, before blocking a transaction.
Professional competence and due care	False positives (legitimate transactions flagged as fraudulent) can be tricky to spot. Poor understanding of the root causes of false positives and failure to establish appropriate control mechanisms can make this an expensive problem. This may dilute the business case for the automated system, not because it is unsuitable, but because it is poorly implemented. The accountant must be competent to advise in this situation and exercise due care in providing that advice.
AUDITOR:	
Objectivity	This is a high-profile issue that has had an impact on the public perception and brand of the organisation. The internal auditor will need to avoid being unduly influenced by the management, analytics team or other stakeholders in the organisation, who may be anxious to prove that this was a one-off issue.
Professional competence and due care	Internal auditors need to be competent at interrogating the version of the truth provided by technology, analytics or other teams. They would need to be able to understand how and why the algorithm was over-sensitive and to relate this to factors such as internal and customer-facing processes, and business risks such as the potential for data theft or loss.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	The accountant needs to oversee the establishing of controls. For example, suppose the bank has struggled with silos, and many of the transactions had been blocked because information did not flow between different departments. This would worsen the initial algorithm error, and really should have been addressed before the current issue arose. Given that it was not, the accountant may now need to advise on ways of improving internal communications.
Resolving	Customers who had transactions declined could be eligible for and provided with compensation. This will reduce their frustration with the bank, and reduce risk of defection to a competitor. Many customers realise things can go wrong but look favourably on transparent and prompt communication. The accountant may need to advise management about the approach to deciding the level of compensation.
AUDITOR:	
Acting in the shareholder and public interest	Internal auditors may need to take a view as to the suitability of the action taken by the company for recompensing affected customers and make recommendations if compensation payments seem to be inadequate (or excessive).
Maintaining independence	It will be important for internal auditors to take a detached view of the reaction by customers and media, and if appropriate to set it in the context of similar incidents in other organisations.

We have lots of data, we have lots of experience when machine learning worked well, and when it worked badly. Machine learning can replace all those people who are making all those decisions and very efficiently decide – probably very, very well and even better possibly than the people in terms of getting good returns. However, there are also some horrible examples of machine learning where you feed the systems what looks like reasonable data and it comes to conclusions that we as people would be embarrassed to make.



Michael Johnson, Scientific Director of the Optus Macquarie University Cyber Security Hub, Macquarie University

It links directly to two principles: objectivity and professional competence. It becomes quite difficult for a person with insufficient knowledge of the technical elements to really understand what's going on and at what point...you start to place too much reliance on the machine.



John Studley, Lead Partner, Data Analytics, PwC

It is important that we consider ethical issues when adopting machine learning for decision-making purposes from the onset, in order to avoid building unintended biases into the machines' foundational layers and models, upon which these biases may be amplified when more sophisticated decision engines are further developed.



Eric Lim Jin Huei, Managing Director, United Overseas Bank Limited

AI could actually help. Because it is learning, it may better anticipate and identify mispriced assets and risks and then make it transparent very fast, before it develops into a bubble.



Holger Lindner, Chief Financial Officer, TÜV SÜD Asia Pacific Pte Ltd

I think we've handed over a lot of the decision-making processes to artificial intelligence and we have no idea of how the algorithms behind this drive our businesses. Who's deciding how these algorithms have been created and whether they're producing the right information?



Anne Keogh, Chief Financial Officer/ Chief Operational Officer, Pharmapod Ltd

AI won't show integrity if it's just an algorithm making the decision. I think the accountant has an obligation, and it depends on seniority, to reach across organisation lines and have a dialogue with the people in operations and get some comfort, if there's an issue, that the operations process or the black box, whatever they've got, is using reliable information.



Paul Karr, Retired, IMA Financial Reporting Committee member

For automation the biggest risk to compliance with the fundamental principles of integrity, objectivity and professional behaviour would be in terms of who's making the final judgement, and if you're going to rely on machine analysis, deduction, or prediction, where does the role of the accountant come into play? Are we going to simply accept the answers from the machine in terms of judgement?



Ken Siong, Technical Director, IESBA



4.6 DIGITAL THEME 6: Procurement of technology

This is one of the more traditional elements when considering ethical issues in a digital age. Technology costs can be a significant part of organisational budgets. And the technology can change or become obsolete quickly compared with other investments, so it can become a recurring hit to the bottom line.

Shadow IT

Shadow IT refers to technology procurement practices that exist outside the approved (and often centralised) guidelines and processes that have been defined for the organisation – such as a team or department making a purchase without involving the central procurement function. It has arisen for a variety of reasons: some people report the difficulty of navigating organisational processes and others the time it takes for approval via the centralised governance process. Ultimately, shadow IT can result in duplication and inefficient procurement that does not meet the needs and opportunities for the organisation as a whole.

4.6.1 EXAMPLE SITUATION: Divisions acting as independent fiefdoms

A successful division within a large organisation is procuring software from its own budgets, and bypassing centralised procurement processes. As a result, sub-optimal decisions are being made. There have been instances of wrong purchases owing to lack of clarity about the specification required (poor version control), failure to coordinate across the organisation for favourable pricing and fragmented division-specific systems that are not scalable. The finance function is considering how to improve the visibility of the divisional spend on IT, without introducing excessive or onerous processes.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Integrity	Once the finance function has become aware of an issue and its impact, the accountant must seek visibility of the processes leading to these bad decisions, rather than just assessing the impact after they have been made. Failure to do this is a form of dishonesty in acknowledging and dealing with the problem.
Objectivity	The divisional head may be a successful leader, and influential as the owner of a key profit-centre for the organisation. The accountant may need to stand up to any pressure from that person or their colleagues, while listening to legitimate concerns they may have about the centralised processes.
AUDITOR:	
Professional competence and due care	The internal auditor must be competent to perform a key role in uncovering the real impact of the shadow IT activity. They must avoid being fragmented themselves, and take care to spot wastage, risks and sub-optimal outcomes across the organisation – rather than evaluating the division in isolation from the rest of the business.
Professional behaviour	Internal auditors will need to be alert for breaches of applicable rules. If the division is paying more for a particular service than the guidelines set by company policy, for example, this could create wider issues for the organisation, particularly if there is also clear evidence that the amounts paid are outside current market price ranges.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	Tackling the root cause is important here. While it is easy to blame the division responsible for these purchases, the underlying problem may be a slow, bureaucratic central procurement process. Other factors could include the loss of credibility through previous inability to achieve economies of scale and organisation-wide applications, lack of IT awareness at divisional level, or internal power dynamics between the central and divisional teams. The accountant needs to identify these problems, assess their relative impact and advise management on their resolution.
Resolving	Dismantling established shadow IT practices starts with defining 'in-scope' expenditures so that these purchases are unambiguously identified and procurement rules applied. The accountant can also guide the development of rules that balance commercial considerations with the need for central control. A sensible materiality threshold to avoid wasting time on smaller purchases may also be needed.
AUDITOR:	
Acting in the shareholder and public interest	Internal auditors can provide guidance on the development of best-practice procedures, along with rules which ensure thresholds are adequate but not onerous. Creating and continually updating these also provides assurance that shareholder value is not destroyed.
Maintaining independence	The internal auditor has a responsibility for ensuring that the organisation's purchasing rules are being applied as intended and is having the desired effect – to provide some rigour while not impeding business agility. The internal auditor will need to be outside the reporting line of any divisional heads and have full authority to probe the division's practices.



Professional competence of IT-based solutions needs to be developed soon and quickly as accountants are not IT professionals so at times the problem is knowing enough about the system one is about to procure.

Folashade Eyinola (Odusanya), Chief Financial Officer, Blue Talia Consulting



As an accountant, do you have adequate professional competency to involve [yourself] in this process? For example, in the bidding process and verification of quotes for many technical solutions, is it a fair price? The end user may find the judgement highly subjective [owing] to the immeasurable [nature of the] technology solution being procured.

Rong Yufei (Gabriel Rong), Director, Business Support – Controls, Greater China, IHG



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From the perspective of learning, accountants should strengthen their IT knowledge. Many CFOs today have to manage IT, which calls for very technical knowledge to solve the problem of technology procurement. The best solution is to endow IT knowledge in the financial staff, enabling them to identify the core issues such as process control, thus to avoid the prominent problem of asymmetry.

Feng Yifeng, Chief Financial Officer, Shanghai Chicmax Cosmetic Co.,Ltd




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Auditors will need to first understand what industry the target of audit is in, and then its specific internal control and product. The auditor must first know the business' process; otherwise there is no way to carry out any audit. So I think there is going to be an interactive business convergence, and it may be the future trend for the financial staff to know business and IT well.

Lian Xiangyang, Shanghai Managing Partner, Member of Partner Management Committee, Ruihua Certified Public Accountants

Cosy supplier relationships

Relationship bias towards a small group of suppliers can occur both intentionally or through negligence. The former could be linked to factors ranging from personal friendships to bribery. The latter might be a result of being locked in to a supplier because of not understanding the details well enough, or not bothering to question/change long-standing norms that grant contracts to a particular supplier.

4.6.2 EXAMPLE SITUATION: Small pool of suppliers

The majority of contracts managed by the technology procurement team in a mid-sized company tend to be awarded to the same supplier. This is highly unusual and management would like to understand the relationship with this supplier a little better. At present, full details are not clear but there is no suggestion of any illegal activities or corruption. Nonetheless, the finance department is concerned that the company may not be getting the best value for money.

Compromise of ethical principles

ACCOUNTANT IN BUSINESS:	
Integrity	The possibility that the accountant's integrity will be compromised arises if the accountant ignores the possibility that supplier relationships are inappropriate in some way – perhaps to avoid what could be a difficult area to engage with or because it is tricky to get the key information from stakeholders. Professional accountants need to be honest, both with themselves and with others.
Objectivity	It is acceptable to have a concern, but not to assume without evidence that a relationship is too 'cosy'. The background for decisions must be properly understood. Various upgrades to legacy systems, for example, might have to be made through the supplier who did the initial installation.
AUDITOR:	
Professional competence and due care	The internal auditor should have been alerted to any unusual practices through their monitoring and control procedures. To exercise due care, the auditor needs to check processes against standard requirements and best practice, for example, checking whether there is evidence in the technology procurement processes of benchmarking or competitive tender. Competence therefore requires knowledge of standard requirements and best practice.
Objectivity	Failure to act in an objective way would arise if, for instance, the internal auditor had been aware of the lack of competitive benchmarking or tendering and had relied on the senior managers for reassurance that contract prices were reasonable.

Response to this situation

ACCOUNTANT IN BUSINESS:	
Preventing	The accountant may need to advise on strengthening procedures, for example making procurement above a threshold amount subject to competitive evaluation by default. It may also be appropriate to embed periodic review mechanisms with criteria for escalating to a deeper investigation – such as examining contract values or frequency of supplier use.
Resolving	Rather than attempting to tackle this as an isolated issue, the accountant could lead an improvement of existing procurement guidelines, possibly across all purchasing areas, not necessarily just for technology. Even if not involved on a continuous basis, the accountant can assist in setting these procedures up, easing their implementation and ensuring that the guidelines are being adopted as expected. Initial implementation may also detect historic issues.
AUDITOR:	
Acting in the shareholder and public interest	If an internal auditor uncovers evidence of inappropriate behaviour there is a duty to alert those who need to know. This may include senior executives or the board and, in exceptional circumstances, external notification to regulators or other authorities.
Maintaining independence	The internal auditor may help set up the rules and procedures for contract review, but should not be part of the process of picking suppliers. The auditor may be involved in periodic review to ensure that the rules and procedures are being adopted as intended and they are achieving the goal intended, but the auditor's role is checking this not doing it.



The external auditor has a role to play in this in terms of working with the procurement team to either help and/or set procurement policies and to monitor that policies are followed. In some cases tailoring may be required, depending on the situation. External auditors have a definite role in ensuring that there is no bias.

Kola Agunbiade, Chief Financial Officer, IS Internet Solutions (A division of Dimension Data)



Smooth running of the business is more important than chasing cost savings in such a crucial area, where the security of client data and continuity of service are so important.

Sara Harvey, Director, Hines Harvey Woods Ltd



5. Responsibilities

5.1 ACTING IN THE PUBLIC INTEREST

This is a fundamental responsibility that goes to the heart of being a professional accountant. The majority of respondents in the ACCA survey did think that accountants do act in public interest – but the responses showed some variation depending on respondents’ employment status.

Four out of five respondents who were employed took the view that professional accountants act in the public interest ‘Always’ or ‘Mostly’ (Figure 5.1). On the other hand, among those who were not in employment¹², a lower proportion of about two-thirds took a similar view about the extent to which professional accountants act in the public interest.

5.2 UPHOLDING ETHICS IN THE ORGANISATION

5.2.1 Ethics begins with me

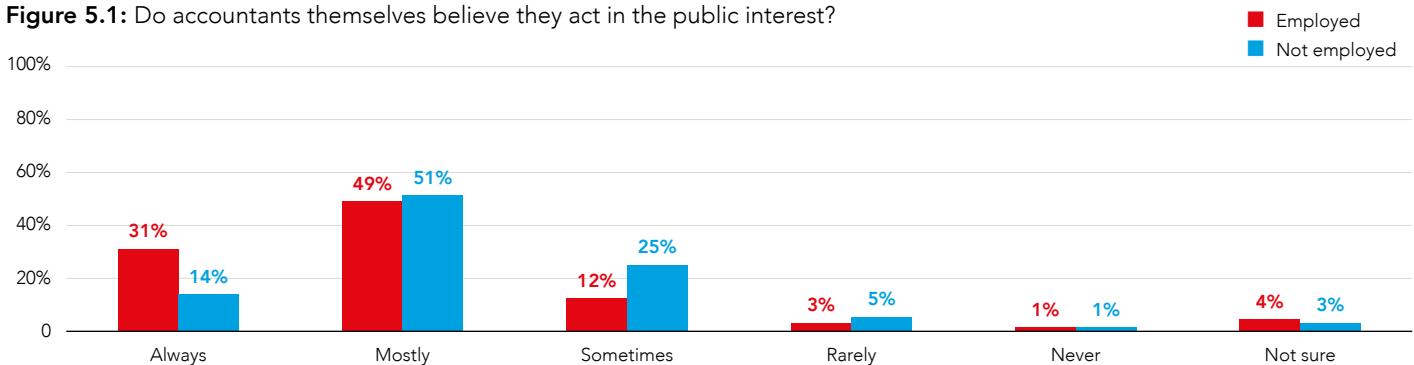
Professional accountants have a key role to play in the ability of organisations (whether their own or of a client) to uphold ethics in an increasingly digital way of working. Respondents, whether they were employed or not, rated upholding their own professional code as the most frequently cited way of contributing to their organisation’s ability to uphold ethics – with more than three-quarters of respondents choosing this option.

5.2.2 Connecting tactical and strategic

Following on from this, they rated embedding ethical standards in day-to-day procedures as their next most frequently cited option – chosen by more than two out of three respondents. While this is important from a tactical point of view, another option of embedding ethics into the strategy or business plans was picked by fewer respondents, with only about half of those in employment seeing this as a way to contribute.

This may suggest a need to combine a procedural or tactical understanding with a wider view – something that might become particularly important when looking ahead to new or previously unseen situations in

Figure 5.1: Do accountants themselves believe they act in the public interest?



¹² Not employed: not currently working/career break/retired/full time student

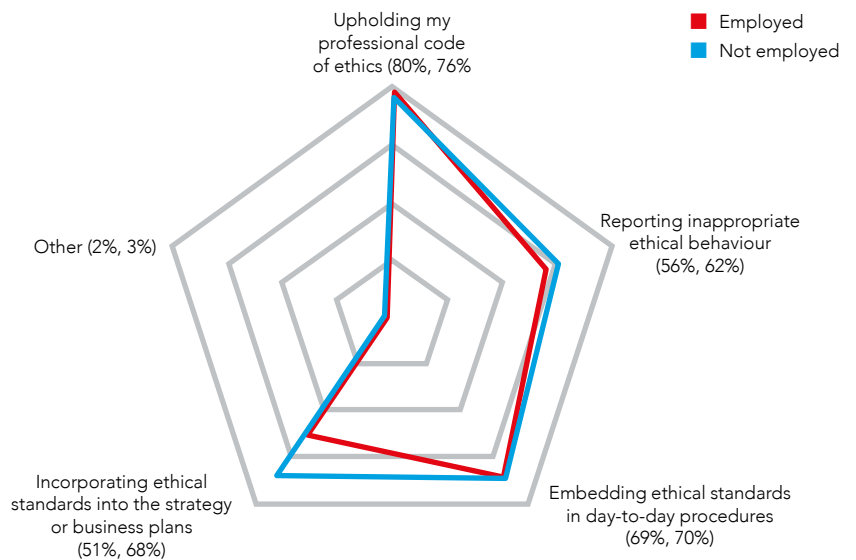
If procedures have not been tested and well understood over several years, say if dealing with a new area such as the adoption of platform-based operations, then it becomes particularly important to understand the organisation’s underlying strategy and purpose.

a digital context. If procedures have not been tested and well understood over several years, say if dealing with a new area such as the adoption of platform-based operations, then it becomes particularly important to understand the organisation’s underlying strategy and purpose. Otherwise there may be a risk of compromising ethics through unintended consequences or wrong procedures.

5.2.3 Reporting can be key to resolving problems

All the above are very important, particularly as prevention strategies before a breach occurs. But if a breach has already occurred, upholding the organisation’s ethics may require the willingness to report inappropriate and unethical behaviour. A relatively low number of respondents picked this as a way of contributing, compared with the options mentioned above, particularly among employed respondents, where only just over half of the group chose this as a way of contributing to their organisation’s ability to uphold ethics.

Figure 5.2: Professional accountants contributing to the organisation’s ability to uphold ethics in a digital age





6. Support for promoting ethics in organisations

6.1 LEADERSHIP

Strong leadership to set the tone at the top was cited as the top area (by about two-thirds of respondents) where support is needed for promoting ethical behaviour in organisations. This is a crucial factor that guides the direction for the entire organisation. It also encourages the embedding of ethics into the organisation's strategy and business plans. As shown in Figure 2.5, senior professionals (at CFO level) place a slightly higher level of importance on ethics than the average across all respondents. So there may be a degree of alignment between those wanting support from leadership and the willingness of leaders to provide it.

6.2 ORGANISATIONAL CODE

The second most commonly cited need, chosen by just over half the respondents, was for support in creating, implementing and managing a code of ethics for the organisation ('ethics' here includes organisational values). Upholding their own professional code of ethics was the most frequently cited way in which

professionals thought that they could contribute to their organisation's ability to uphold ethics. The value placed on an organisational code of ethics may be consistent with this – a way of driving at institutional level the idea of a code of ethics that they value at individual level.

6.3 LEARNING AND EVALUATING PERFORMANCE

The next couple of priorities for support relate to building up the understanding of ethical considerations in a digital context. A few more than half the respondents reported the need for support in 'raising awareness' about the repercussions of breaching the code of ethics, while a slightly smaller number preferred a training-based approach to teach best practice in a more structured, formalised way. Although knowledge-building is deemed important, the ability to evaluate whether knowledge levels are adequate is also a competence needing support. In the survey, 43% of respondents said they would like support with establishing evaluation processes: mechanisms to assess whether behaviour is ethical or not.

6.4 'SPEAK-UP' POLICY

Fewer than half the respondents cited a well-publicised 'speak-up' policy, with appropriate anonymity or protection features. This facility is outside the top five areas for support cited by professional accountants.

Only a little over half of respondents either reported incidents (Figure 3.2) or saw such reporting as a way of contributing to their organisation's upholding of ethics (Figure 5.2). This leaves a substantial minority who did not report an incident, did not see reporting of bad practice as a way of contributing or did not cite support with speak-up arrangements.

These findings may suggest the need to explore whether there is sufficient encouragement to ensure that professional accountants feel able to report inappropriate or unethical behaviour. Reporting of unethical behaviour may be an area that needs further strengthening in order to help professional accountants to act as the 'ethical conscience' of their organisations.

Dealing with the dilemmas and creating culture change in the fast-moving digital age presents requirements that go beyond establishing a committee.

In addressing this, however, it will be important to understand the particular situation of the organisation. For instance, 'speak-up' behaviours may flow more naturally when the culture is more aware and supportive of ethical conduct; in other words, forcing a policy may not always be the most effective approach.

6.5 ETHICS COMMITTEE

Establishing an ethics committee to consider ethical dilemmas and embed ethical culture was cited by the fewest respondents as an area needing support. This may be for a variety of reasons. For some, their organisation may already have such a committee – often setting up a committee can be the first thing that is done as a visible way of showing engagement. Others may take the view that dealing with the dilemmas and creating culture change in the fast-moving digital age presents requirements that go beyond establishing a committee. The latter could be seen as a legacy approach given today's 'crowd-sourced' approach to information and opinion.

Figure 6.1: Areas where support is needed for promoting ethical behaviour in organisations





7. Conclusion

To behave ethically and instil trust in a digital age, professional accountants will need to learn new information relatively quickly, and to apply their judgement to this information, often in situations they may not have seen before. The five IESBA fundamental principles provide a foundation, on the basis of which accountants can assess whether they are meeting the standards of ethical behaviour expected from them.

Looking ahead, it will be important to have an open mind that recognises the value of what has been learnt so far, but with an understanding that this has to be continually placed into the context of situations as they evolve.

At the very least it would seem beneficial for professional accountants to bear in mind the following as they navigate ethical situations in the digital age.

- **Build knowledge of emerging technologies and digital issues:** to reduce risk of compromise to professional competence and due care.
- **Combine process control with a strategic view:** to reduce the risk of unintended consequences.
- **Evaluate mechanisms for reporting unethical behaviour:** to reduce the risk of breaches.



Appendix



Australia

90%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

95%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

88%

of professional accountants

*Global = 78%



89%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

96%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



92%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

97%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

85%

of professional accountants

*Global = 78%



85%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

97%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



China

94%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

95%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

80%

of professional accountants

*Global = 78%



78%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

98%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Hong Kong

92%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

94%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

68%

of professional accountants

*Global = 78%



58%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

95%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



India

83%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

88%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

68%

of professional accountants

*Global = 78%



80%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

85%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Kenya

91%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

92%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

68%

of professional accountants

*Global = 78%



87%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

88%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Malaysia

93%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

94%

*Global = 93%



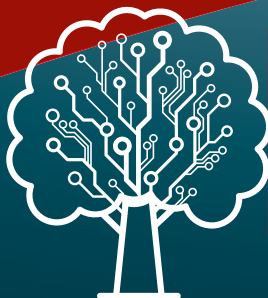
Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

67%

of professional accountants

*Global = 78%



73%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

91%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Nigeria

93%
*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

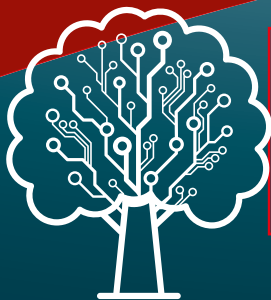
94%
*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

77%
of professional accountants
*Global = 78%



85%
*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

96%
*Global = 94%



IESBA principles still apply and remain relevant in the digital age



89%
*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

93%
*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

68%
of professional accountants
*Global = 78%



63%
*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

88%
*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Poland

83%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

93%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

91%

of professional accountants

*Global = 78%



61%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

97%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Republic of Ireland

89%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

91%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

87%

of professional accountants

*Global = 78%



87%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

96%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Romania

88%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

92%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

85%

of professional accountants

*Global = 78%



66%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

94%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Russia

83%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

90%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

84%

of professional accountants

*Global = 78%



59%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

96%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age

93%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

96%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

76%

of professional accountants

*Global = 78%



66%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

94%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Singapore

92%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

94%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

79%

of professional accountants

*Global = 78%



79%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

94%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Trinidad & Tobago

87%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

94%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

67%

of professional accountants

*Global = 78%



93%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

93%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



United Arab Emirates

90%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

93%

*Global = 93%



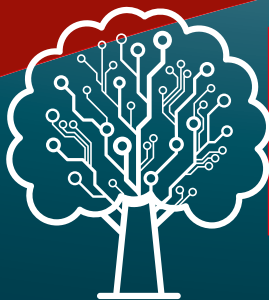
Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

75%

of professional accountants

*Global = 78%



71%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

92%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



UK

87%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

93%

*Global = 93%



Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

89%

of professional accountants

*Global = 78%



89%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

97%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



USA

90%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

94%

*Global = 93%



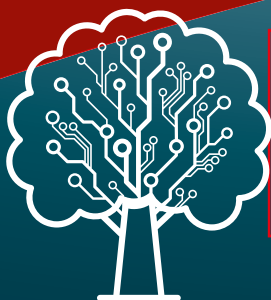
Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

89%

of professional accountants

*Global = 78%



92%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

99%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age



Zambia

91%

*Global = 89%



Strong ethical principles and behaviour will become more important in the digital age

94%

*Global = 93%



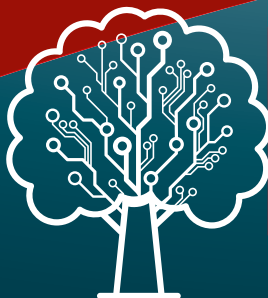
Ethical behaviour helps to build trust in the digital age

Professional accountants act in the public interest

75%

of professional accountants

*Global = 78%



92%

*Global = 80%

Professional accountants upholding their code contributes to organisations' ability to uphold ethics

94%

*Global = 94%



IESBA principles still apply and remain relevant in the digital age

Acknowledgements

AUSTRALIA



Fred Alale
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Fred Alale specialises in financial management. He has over 15 years' finance and consulting experience, including finance process and retained organisation design, shared services and outsourcing, operating model design and optimisation, business and financial process improvement, budgeting and planning, productivity review, and governance review and assessment. Fred draws from his experiences managing process improvement projects across industries including technology, healthcare, government, oil and gas, telecommunication, printing and publishing, education, manufacturing, retail and hospitality.



Michael Johnson
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Professor Michael Johnson PhD, FAustMS, FACS CP, has held various academic posts in mathematics and computing, and works with universities in Australia, the US and Europe. He has served on committees of the Australian Research Council, the Australian Computer Society, and CORE's Curriculum Committee among others. He is deputy chair of the Seoul Accord and has been consultant to two European Commission FP7 projects. He is a life member of the American Mathematical Society.



Colleen Chapman
Head of Financial Control
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Colleen Chapman is responsible for a large and varied number of functions in the QBE Australia Finance Team. The size of her team in Australia is approximately 25. She has just over 140 team members in QBE's Global Shared Services Centre in Manila, providing direct support for her on-shore accounting team. Previous roles include CFO GE Insurance Australia, and financial controller for Allianz Insurance Australia.



Anthony Papalia
Product Manager
myadvisor.ai



Anthony Papalia was previously the cloud enablement specialist at PwC, responsible for the firm's use of cloud accounting tools nationally. In his current post he combines cutting-edge techniques in data analytics, artificial intelligence and computational linguistics, creating tailored, actionable financial analysis reports for accountants and SMEs at scale and speed. He is a chartered accountant and has a Masters of Applied Taxation from the University of New South Wales.



Mithran Doraisamy
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and Consultant
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Mithran Doraisamy is a transformative consultant and executive. Until recently, he was a senior executive at Telstra Corporation, driving transformative change. He was previously a Founding Partner of EY's consulting practice in Australia and New Zealand, where he was Lead Partner for the Customer and Transformation practices. He has also worked at several strategy consulting firms, and began his career as a chartered accountant.



John Paterson
Chief Financial Officer
Chartered Accountants
ANZ



John Paterson has significant experience in finance and business with over 15 years in senior management, formulating strategy and driving business performance. He has served as CFO Americas for Standard Chartered Bank and as CFO Asia Pacific for the Royal Bank of Scotland. He holds a Bachelor of Management Studies degree from the University of Waikato and is a graduate member of the Australian Institute of Company Directors.



John Studley
Lead Partner
PwC's Data Analytics



John Studley's work incorporates insight analytics and enterprise information management. His team specialises in data-driven insights, analytics organisation design and custom quantitative modelling to inform strategy and decision making – applying statistical and advanced data analytics to business questions concerning growth, customer analytics, marketing effectiveness, operations simulation and efficiency, evidence-based productivity and workforce optimisation, using data discovery and visualisation applications, cloud platforms, machine learning and artificial intelligence technologies.



Robert Smith
Chief Financial Officer
Vivid Technology
Limited



Robert Smith is a financial and advisory professional with diverse industry experience across funds management, energy, private equity, commodities, manufacturing, imports, wholesale, logistics and franchising. A financial services specialist, his corporate finance experience includes mergers and acquisitions, restructures and divestments.

BELGIUM



Peter Ujvari
Senior IFRS Expert
KBC Group



Peter Ujvari is a finance professional with more than 15 years' experience. He has worked mainly in Belgium and Hungary, gathering experience in audit, accounting, financial reporting and capital market transactions. He is currently responsible for the implementation of IFRS 9 for KBC Group, Belgium's biggest financial conglomerate.

CHINA



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Partner, Assurance Leader,
China Central
Ernst & Young Hua Ming LLP



George Chan's responsibilities span the Shanghai, Nanjing, Suzhou, Hangzhou, Wuhan, Chengdu, Zhengzhou and Xi'an offices. With over 20 years' experience in professional accounting and advisory services, he has served a wide range of Chinese enterprises in their cross-border capital market transactions. He has used his experience in the international financial market and the operations of Chinese enterprises to help his clients improve their accounting visibility and transparency, navigating and communicating with the financial world.



Feng Yifeng
Chief Financial Officer
Shanghai Chicmax
Cosmetic Co.,Ltd



Feng Yifeng FCCA CICPA has worked as finance director of Sinopharm (an HK listed company), a Fortune 500 company and the largest pharmaceutical group in China. He also worked for PwC for 10 years. His current company, Chicmax, is one of China's leading cosmetic companies.



Yang Jin
Finance Director
Yum China



Yang Jin FCCA has over 20 years' experience in finance processing and system re-engineering and improvement, US GAAP reporting and consolidation, and finance management and operation. Her current focus is finance transformation through centralised shared service centres, including organisational design and change management. She began her career with a Big 6 accounting firm, in the audit /assurance division.



David Ko
Partner, Head of Audit
KPMG China



David Ko has been involved in restructuring and initial public offering projects of Chinese state-owned and privately owned enterprises in various international capital markets since the early 1990s. He also has extensive experience of serving multinational companies in China. He is a member of ACCA's Steering Committee Central China.



Michael Lai
Chief Internal Auditor
Shui On Management
Limited



Michael Lai is a member of the Chartered Professional Accountants of Canada and the Institute of Internal Auditors. He has over 38 years of risk management and internal audit experience. Prior to joining the Shui On Land group as head of internal Audit in April 2013, he was an advisory partner in KPMG China.



Silas Zhu
Partner, Advisory
Deloitte China



Silas Zhu leads the technology audit advisory practice in Deloitte East China and serves as key taskforce on audit transformation and innovation as well as digital finance services. Integrating technology, data analytics, internal control, and capital market compliance skills, he helps his clients to address business concerns using innovative technology at each stage of a company's development.



Steve Ng
Partner, Assurance,
Shanghai
Grant Thornton



Steve Ng provides assurance services to IPO clients, listed companies and MNC clients in mainland China and Hong Kong operating in manufacturing, automobile, gaming, retail sales, construction, hotel hospitality, property development, financial services and media services. He has worked on transaction support assignments, including financial due diligence. He has extensive experience in International Financial Reporting Standards, Hong Kong Financial Reporting Standards, China Accounting Standards, US GAAP and Hong Kong and US listing rules and requirements.

ETHIOPIA



Tewodros Tilahun Sahile
Owner and General Manager
Diligence Consultancy Service
Private Limited Company



Tewodros Tilahun Sahile FCCA has served as managing director of Ethiopian Insurance Corporation (EIC), where his earlier roles included deputy managing director, Finance and Investment Division, and head of Operations Department Information and Computing Service. A practising professional accountant, his areas of expertise include accounting, finance, consultancy, training, and insurance.



Lian Xiangyang
Shanghai Managing Partner,
Member of Partner
Management Committee
Ruihua Certified
Public Accountants



Lian Xiangyang ACCA is a senior accountant with more than 20 years' experience in accounting and audit. He has in-depth analytical understanding of Chinese accounting standards. He is also an experienced professional accountant in various industries, providing accounting and advisory services, including the annual report of state-owned companies and listed companies, M&A, company restructuring and accountability audit.

GERMANY



Ulla Bauer
Senior Manager
BDO AG



Ulla-Martina Bauer BDO AG, FCA, CPA, GCMA, Wirtschaftsprüfer, Steuerberaterin, currently works for an international accounting firm. Ulla has worked in the audit department for international accounting firms in the US, UK, Germany and Russia, mainly in charge of multinational groups and companies.



Michael Zhang
Chief Financial Officer
ANE Logistics



Michael Zhang CPA has an MBA from INSEAD and BSc degree from Shanghai Jiaotong University. He started his career in PwC and Orient Securities, later working for Danone in China and in its Paris headquarters, leading finance and strategy for Danone Waters China, Danone Baby Nutrition China, and Imported Baby Nutrition China. He is now CFO of ANE Logistics, a Chinese start-up whose investors include Warburg Pincus, Carlyle, and Goldman Sachs.

GUERNSEY



Mark Le Page
Deputy Director
Financial Services Regulatory Authority

Mark Le Page FCCA sits on ACCA's global technical fora on business law, corporate reporting, and business ethics. He is a chartered manager, a chartered member of CISI, and a member of ARIES. He has recently completed the Postgraduate Diploma in Financial Strategy at Saïd Business School.

HONG KONG



Anne Copeland
Managing Director
and Sustainability Advisor
Copeland & Partners Limited



Anne Copeland MA has worked in sustainability for 20 years, assisting entities to manage environmental and social risks and embed sustainability issues into operations and reporting. Her clients range from multinationals to private equity firms in many industries. She has worked on projects for International Finance Corporation, BMT Asia Pacific and ERM in Hong Kong, and the LURA Group in Canada. She remains actively involved in several major sustainability initiatives.



Kenneth Garvey
Partner
Cusack Garvey



Kenneth Garvey has over 20 years' practice experience, specialising in tax planning, forensic accounting and auditing. He previously worked for CIE and Dairygold. A member of ACCA's Global Forum for Taxation, he sits on the Irish Tax Institute Branch Network – Large Cases Division and represents ACCA on the Consultative Committee of Accountancy Bodies in Ireland (CCAB-I) Tax Committee, which makes representations to government on tax policy. He previously sat on CCAB-I's Business Law Committee.

INDIA



Hrishikesh Soman
Principal
Symbiosis College of
Arts and Commerce, Pune



Hrishikesh Soman PhD has academic interests in higher education and tourism marketing. In his capacity as principal of the College, he has overseen and encouraged the introduction of innovative and creative programmes and courses reflecting his concern for the empowerment of youth.



Derek Henry
Partner – Head of R&D
BDO



Derek Henry is a chartered accountant and an associate of the Irish Taxation Institute. He has a BA in Accounting and Finance, an MBS in Accounting from DCU and a Diploma in Legal Studies from the King's Inns.



Michelle Hourican
Director
Datatrails



Michelle Hourican is a founding member of Datatrails, a company that provides consultancy services, traditional training and e-learning on the General Data Protection Regulation (GDPR). Michelle also lectures on a variety of topics. She is a member of the Council at ACCA. Prior to her current roles, Michelle was a senior manager in Deloitte Consulting.

IRELAND



Etain Doyle
Chair
Group Insight



Chairman of ACCA Ireland from March 2016 to March 2017 and chair of the Ireland Committee's technology group. Etain is committed to supporting members in developing and maintaining their skills in the fast changing digital world. She runs Group Insight, providing peer learning and business coaching to SME CEOs and Senior Executives.



Anne Keogh
Chief Financial Officer/
Chief Operational Officer
Pharmapod Ltd



Anne Keogh runs Finance and Operations for Pharmapod Ltd, leading and developing the commercial and finance teams, and monitoring all aspects of the business. She has a passionate belief that engineering winning teams is key, as is surrounding oneself with great people and continuously mentoring them.



Peter Fagan
EMEA
Financial Controller
Indeed



Peter Fagan has responsibility for global treasury, accounting, compliance, payroll and accounts payable at Indeed. Before joining Indeed, he spent over 20 years working in the technology and financial services sectors with blue chip companies such as HP, Dell, CIT and Anglo Irish Bank, leading and developing large teams across controllership, treasury, tax and FP&A.



George Maloney
Consulting Partner
RSM Ireland



George Maloney is a specialist in corporate recovery, restructuring and investigations. He has served as a member of the Council at ACCA, is a past president of ACCA Ireland and currently represents ACCA on the Consultative Committee of Accountancy Bodies in Ireland (CCAB-I).



Alan Shaughnessy FCCA
Founding Partner
DFS & co



Alan Shaughnessy FCCA is a founding partner at DFS & co a digital driven Accountancy & Advisory firm focused primarily on its Irish SME client base. Prior to his existing role Alan held a number of senior roles in the Capitals Market arm of a Investing banking including Lloyds TSB, JP Morgan and ING bank.



Gary McPartland
Associate Director
Grant Thornton



Gary McPartland has held IT roles in cybersecurity, service delivery and project management and data protection. He has provided professional services to clients across multiple sectors. His IT and IT Security certifications include CISA, CISM, CSX-F, CSAME, Prince2, COBIT5, ITILv3, MCTS, MCP, and CNA. He also holds a Diploma in Project Management from DBS, a BSC in Management Applications from IT Sligo, and is currently completing a Master's in the Management of Operations in DCU.

KENYA



Daniel Okila
Omulando Angoyia
Group Financial Controller
SGA Security
(Kenya, Tanzania, Uganda)



Daniel Okila Omulando Angoyia FCCA has a B.Tech in Chemical and Process Engineering. He has wide experience in financial management, corporate finance, corporate governance, treasury management, taxation, financial accounting and reporting. He previously worked for Sameer Investments Ltd, Airtel Networks Kenya Ltd, Bharti Airtel International Netherlands B.V. and Deloitte & Touche, East Africa.



Myles O'Grady
Group Director of Finance
and Investor Relations
AIB Group



Myles O'Grady held a range of finance and business restructuring positions in Citibank, Bord Gais Energy and Dresdner Kleinwort Benson before joining AIB Bank, Ireland's largest bank with assets of c.€100bn.



Brian DeSouza
Director and Head of
Risk Consulting Services
KPMG Advisory
Services Limited



Brian DeSouza FCCA is a member of the Institute of Certified Public Accountants of Kenya and member of the Information Systems and Control Association. He is a director and the head of Risk Consulting Services, with more than 25 years' experience in providing consultancy and assurance services for a host of international and local organisations in the region.



John Quinn
Senior Managing Director
State Street



John Quinn is a senior managing director with State Street where he has over twenty years of experience in Alternative Investment Services working primarily with hedge fund clients. Prior to joining State Street in 1998, he worked for the Office of the Comptroller and Auditor General in Ireland as a trainee auditor. John is a Fellow of the Chartered Association of Certified Accountants and holds a diploma in Information Systems from Trinity College Dublin.



Victoria Ipomai
Group Chief
Financial Officer
Sanlam Kenya PLC



Victoria Ipomai FCCA manages the financial and risk aspects of Sanlam Kenya PLC. Before joining in January 2016, Victoria was the Country Chief Financial Officer for AIG in Kenya. Victoria's career spans over 16 years, concentrated within the insurance sector and across functions in underwriting, claims finance and strategy. She holds a BA in Quantity Surveying from the University of Nairobi and an MBA from Strathmore Business School.



Kenneth Kamurasi
Head of Audit –
Barclays Africa
Subsidiaries
Barclays



Kenneth Kamurasi FCCA he leads the Internal Audit function across the Barclays Africa Subsidiaries (10 commercial banking businesses across the African continent, ex South Africa). He is a Certified Internal Auditor (CIA), and a member of the Institutes of Certified Public Accountants of Kenya (ICPAK) and Uganda (ICPAU). He is based in Nairobi, Kenya.



Fred Toni M'bololo
Finance and
Administration Manager
Tintoria Ltd



Fred Toni M'bololo holds a Bachelor of Commerce degree from the University of Nairobi (1990–93), a post-graduate diploma In Business Administration (2014) and a Master's degree in Business Administration (2016) both from the London Metropolitan University. He is also a member of the Institute of Certified Public Accountants (ICPAK).



Vincent Acholah Opiyo
Head of Finance
Operations
Safaricom Limited



Vincent Acholah Opiyo ACCA holds a BComm (Accounting) (University of Nairobi). He is responsible for financial reporting, accounts payable and receivable, treasury, taxation, inventory, fixed assets and investor relations. Before joining Safaricom, a leading mobile telecommunications operator in Kenya, his previous roles included CFO at Uchumi Supermarkets and finance roles in Total Kenya, Airtel Kenya and African Banking Corporation. Through the Safaricom Foundation he does voluntary work with communities on CSR activities.



Palak Tewary
Outsourcing Manager
RSM (Eastern Africa)
Consulting Ltd



Palak Tewary FCCA has an MBA from Cass Business School, London. She has worked in the business advisory and accountancy sector since 2003, in the UK and Kenya. She is experienced in outsourcing, accounting, tax, grant and project management, consultancy, communications, design, IT, HR and coaching and was a finalist in the British Indian Awards 2015 Rising Star category. She is also a mentor with the Cherie Blair Foundation.

MALAYSIA



Jeffrey Chew
Group Chief
Executive Officer
Paramount Corporation
Berhad (PCB)



Jeffrey Chew FCCA FCIBS CA(M) began his career at PricewaterhouseCoopers and Citibank in customer relationship, risk and product management, international offshore banking, and general management of commercial banking. He has served OCBC as head of SME business and business banking, director and CEO. An independent director of Asian Banking School, he chairs its audit committee, and is a member of the Small Debt Resolution Committee, Bank Negara Malaysia and the ACCA Malaysia Advisory Committee.



Ng Kean Kok
Director
Gold-Wing
Sdn Bhd



Ng Kean Kok FCCA is experienced in auditing, accounting, finance and company secretarial services. He is a Council Member of the Malaysian Institute of Accountants (MIA), and serves on the Financial Reporting Standards Implementation Committee, Financial Statements Review Committee, Public Accountants in Business Committee and Monitoring Committee. A member of ACCA's Global Forum – Corporate Reporting, he also previously served on the SSM Committee and as a member of ACCA Malaysia's Technical Committee.

MAURITIUS



Danny Balluck
Executive Director and
Chief Financial Officer
Standard Chartered
Bank (Mauritius) Limited



Danny Balluck FCCA actively contributes in the creation of sustainable shareholder value. He is a member of the Mauritius Institute of Professional Accountants and of the Mauritius Institute of Directors. He has more than 20 years' experience in finance, auditing, banking and investment. He spent several years at EY in the Auditing and Advisory department and has also worked in different key sectors of the economy, including manufacturing, hospitality and financial services.

NEPAL



Biraj Pradhun
Research Manager
Kathmandu University,
Nepal



Biraj Pradhun ACCA is manager for research, development and consultancy at Kathmandu University, with experience of issues affecting economic development, research and development, corporate governance, audit and corporate reporting, sustainability and professional regulation. An ACCA member since 2008 and International Assembly member since July 2013, he has in-depth expertise in financial reporting, researching, drafting and writing on technical issues. He has led the Nepal Member Advisory committee of ACCA as Chairman since July 2015.

NEW ZEALAND



Nida Naeem
Senior Associate
PricewaterhouseCoopers
New Zealand

Nida Naeem works with public and private entities, helping them manage their risks, improve business processes and controls and obtain financial and risk assurance.

NIGERIA



Kola Agunbiade
Chief Financial Officer
IS Internet Solutions
(A division of
Dimension Data)



Kola Agunbiade FCCA is a finance professional with over 15 years' experience spanning ICT, FMCG and professional services, in various multinational companies. He is an alumnus of Manchester Business School, Oxford Brookes University, UK and Yaba College of Technology, Lagos. He is a Fellow of the Institute of Chartered Accountants of Nigeria [ICAN], and a member of the Institute of Directors [IoD], Nigeria.



Folashade Eyinola Odusanya
Chief Financial Officer
Blue Talia Consulting



Folashade Eyinola Odusanya ACCA has a BSc Accounting from Ahmadu Bello University Zaria, Nigeria. She is a project management professional (Prince2) with 16 years' experience in several sectors, having spent seven of those years in a senior management role, three as a chief financial officer.

QATAR



Lorraine Holleway
Head of Financial Reporting
Qatar Shell

Lorraine Holleway FCCA has worked for Shell for 14 years in various roles, including group reporting and finance shared services. Prior to joining Shell, she worked in finance for various small manufacturing companies.



Ewald Müller
Managing Director,
Supervision &
Authorisation
Qatar Financial Centre
Regulatory Authority (QFCRA)



Ewald Müller SA, B. Compt (Hons) (UNISA), first joined QFCRA in April 2012 as director, financial analysis, from SAICA where he had served as senior executive: standards. His areas of responsibility cover banking, investment management, insurance, AML/CFT and macroprudential analysis. Mr Müller is a member of the King Committee on Corporate Governance and serves on ISAR of UNCTAD and the Global Forum for Ethics.

ROMANIA



Cristina Gutu
Advisory Manager,
Head of KPMG
Training Academy
KPMG Romania



Cristina Gutu FCCA DipIFR has specialised in professional education for the past nine years. She gained practical experience working on multiple assurance and advisory national and international engagements, and now provides highly practical, focused and interactive tuition. Her specialties include accounting, financial reporting and auditing. For six years (2010–16), she represented the ACCA Romanian community in the ACCA International Assembly. She is a member of the ACCA Global Forum for Corporate Reporting.

RUSSIA



Olga Baranova
Former KPMG manager

Olga Baranova FCCA worked for KPMG for over 10 years, specialising in auditing industrial legal entities in areas ranging from agriculture to metallurgy. She trained younger staff and worked with universities, preparing ISA courses for audit professionals and teaching courses on management accounting, audit, and taxation. In 2009 she obtained her PhD in Accounting and Statistics and continues to explore digitalisation of the control environment and changes in audit procedures in response to IT risks.



Alexey Blagirev
Director of Innovations
JSC Innovation Bank,
Otkrytie, Russia



Alexey Blagirev has over 10 years' banking experience, specialising in breakthrough technologies and problem solving. An expert in digital and finance issues in Russia's financial sector, he evaluates new technologies, including blockchain, the IoT, virtual reality and emotional technologies. He solves problems in business integration, analysis and data structuring, converting ideas into reality. An expert in data management, finance, operations, audit and big data analysis, he has worked for Alfa-Bank, Société Générale, PwC, Samsung, Marriott, etc.



Evgeny Klimov
Technical Director
Informzaschita



Evgeny Klimov is responsible for technical and business development at Informzaschita. He has over 15 years' cybersecurity and forensic technologies experience in Russia and Kazakhstan with multinational corporations, ensuring that information assets are adequately protected. He has designed and implemented information security management systems. A president of Russian Information Systems Security Professional Association and founder of Cloud Security Alliance Russian Chapter, he belongs to the International Information Systems Security Certification Consortium and other professional bodies.



Elena Krupskaya
Advisor for Finance
SMP Bank



Elena Krupskaya ACCA has over 20 years' experience in audit and advisory roles for manufacturing and service companies. She has experienced in merger and acquisition (M&A) projects. Her current position as advisor for finance in SMP Bank involves carrying out projects on request from members of the board of directors.



Natalia Losevskaya
Managing Partner
and Founder
SL Partners, Russia



Natalia Losevskaya specialises in business restructuring and business strategy, having over 20 years' finance and consulting experience, including business process optimisation, mergers and acquisitions, corporate strategy development. She previously worked for multinational and local private companies and draws from her diverse experiences managing process improvement projects in oil and gas, financial services, development and construction, retail and pharmaceutical firms. She publishes articles, and often speaks at Russian business conferences and universities, on finance subjects.



Oxana Losevskaya
Partner
SL Partners, Russia



Oxana Losevskaya FCCA specialises in business restructuring and strategy. She has spent over 18 years in banking, consulting and investment, heading finance, research and M&A divisions for Citibank, EY, the Bank of Russia and others. She has also worked in corporate strategy and project management in the banking, oil and gas, development, construction and retail industries in Australia and Russia. She publishes articles, and often speaks at Russian business conferences and universities, on finance subjects.



Natalia Neverkevich
Chief Financial Officer
RB Partners



Natalia Neverkevich ACCA has more than 20 years' professional experience in audit and IFRS. She started her career in PwC, then moved to Sberbank. In MDM-Bank she led the Internal Audit and Control department. She later joined Promsvyazbank as a vice-president and head of the Internal Audit and Control department.



Andrey Pisarev
Project Manager of Strategic Development and M&A
MEGAPOLIS
Group of Companies



Andrey Pisarev has held various finance and investment positions, over the past seven years, in major Russian transportation companies, responsible for management reporting, budgeting, investments, strategy development and M&A projects. At MEGAPOLIS, the only tobacco distributor of PMI, JTI and ITG, he is responsible for strategy development, new product launches, company restructuring and M&A projects.

SINGAPORE



Terry Wee Hiang Bing
Partner, Assurance
EY

Terry Wee Hiang Bing has over 20 years' public accounting experience. He has served a number of Singapore publicly listed companies, statutory boards and multinational corporations across various industries with a focus on the consumer products and retail and transportation sectors.



Valentin Porzhenko
Chief Executive Officer
Interplazis LLC

Valentin Porzhenko is a founder of Interplazis LLC. He has over 20 years' professional experience in corporate and legal management in both construction and real estate development industries. During his career he has held senior management positions in INTERROS HC Group (OPIN OJSC, ProfEsteit CJSC, Rosa Khutor LLC), and Sberbank PJSC (GR division). He specialises in business strategy, business development and corporate governance.



Rathakrishnan Govind
Chief Executive Officer
London School of Business and Finance Global (LSBF)



Rathakrishnan Govind joined LSBF Singapore in 2013 as managing director, and under his leadership the school has become one of Asia's leading private institutions. As CEO, he is now expanding the brand and operations to other territories in the region.



Irina Rybalchenko
Chief Financial Officer and Head of Investments
TN Capital



Irina Rybalchenko has held various positions in finance, including CFO of a holding company and CFO and COO of a prominent family office. She also has extensive experience in finance and advisory roles in production, distribution and technology as well financial markets and financial institutions. Her earlier career was as a financial institutions auditor with EY.



Eric Lim Jin Huei
Managing Director and Head, UOB Group Finance
United Overseas Bank Limited (UOB)



Eric Lim Jin Huei is responsible for UOB's core finance functions, spanning regulatory and financial reporting to performance management. Previously, he was MD and head of wholesale banking finance, Singapore and Southeast Asia for Standard Chartered Bank, responsible for finance functions covering commercial banking, financial markets and investment banking. He has worked in finance in over 20 countries. He holds Bachelor of Accounting (Nanyang Technological University) and Executive MBA (Kellogg School of Management, USA) degrees.



Georgi Vladislavov
Deputy Director of Consolidation and Methodology Department
Rosneft

Georgi Vladislavov ACCA has considerable experience in preparing and auditing IFRS and US GAAP financial statements of Russian and international companies, and in supporting M&A, corporate restructuring and finance-raising projects, IFRS implementation projects, due diligence and other non-audit work. As group accounts director for TNK-BP he managed the production of consolidated financial statements, including the transition from US GAAP to IFRS, and the accounting policy work during TNK-BP's integration with Rosneft.



Mark Jansen
Technology, Media and Telecommunications Leader and Co-Leader Digital Trust
PwC Singapore



Mark Jansen has extensive experience of working with clients from strategy to execution across the Asia region. One of his key passions is helping companies assess the impact of digital technologies on their business and he advocates the importance of trust in the digital environment.



Ho Yew Kee
Associate Provost
(SkillsFuture and
Staff Development)
Singapore Institute of Technology



Ho Yew Kee is Professor of Accounting at Singapore Institute of Technology. He also oversees the training of adults in Singapore's continuing development of the country's workforce (SkillsFuture). Previously, he was professor of accounting and the head, Department of Accounting of NUS.



Jeffrey Vibert
Partner – Head
of Assurance
Grant Thornton Singapore



Jeffrey Vibert has over 30 years' experience in the provision of audit and accounting advisory services. He has worked in numerous countries around the world and has extensive experience servicing multinational and listed companies, in a variety of industries in the public and private sectors.



Holger Lindner
Chief Financial Officer
TÜV SÜD Asia Pacific
Pte Ltd



Holger Lindner has more than 20 years' experience in finance, sales and marketing, and strategy. After various international positions in the Daimler Group, including the role of CFO for Daimler South East Asia, he is currently the CFO of TÜV SÜD's Global Product Service Division.



Ng Boon Yew
Executive Chairman
Raffles Campus Foundation



Ng Boon Yew FCCA, ACA worked in the UK and Singapore for Peat Marwick Mitchell (now KPMG), becoming a partner of KPMG in 1984, and leaving in 2000 to become an independent consultant. He is executive chairman of Raffles Campus Foundation, a leading Singapore educational group. The President of Singapore awarded him the Public Service Star in 2004. He serves / has served on the boards of a number of Singapore listed companies and public interest entities. He is chair of the ACCA Accountancy Futures Academy Global Forum.



Richard McLean
Regional Chief Financial
Officer, Asia Pacific Japan
SAP Asia Pte Ltd



Richard McLean is a member of the SAP Global Finance Leadership and Senior Executive teams, APJ. Richard has over 20 year' senior finance experience with global companies in financial services, investment banking, automotive and IT. He has built high-performing, customer-centric, commercial finance teams that have provided business insight, deal support and robust governance and compliance structures to ensure sustained and profitable growth. He is a transformation agent and leader of change within the finance function.



Belinda Young
Director
Centrecourt Group
of Companies



Belinda Young, the only female member to have served from Singapore, sits on ACCA Council, and the Resource Oversight Committee. Her company operates across 18 countries and in over 20 industries. She previously worked in a Big Four accounting firm and at the largest property developer in Singapore. She sits on the finance committees of a number of large and medium-sized charities and on ACCA's Global Forum on Taxation and Global Forum for Business Law.



Roland Turner
Chief Privacy Officer
TrustSphere



Roland Turner is responsible for information policy and practices affecting all TrustSphere's stakeholders. He is a HackerspaceSG founding member and FOSSASIA organiser and holds an Honours degree in Computer Science from UTS.

SOUTH AFRICA



Marie McCrea
Partner
Centre for Innovative
Leadership – CIL



Marie McCrea FCCA is a consultant and facilitator with CIL, an international consulting and executive development organisation. She supports organisations in managing large-scale change, transition projects and capacity building. Her experience of financial and scenario-based strategy and development is grounded in systems thinking; she integrates and combines multiple elements of project and capacity building. She is certified as a Master Trainer by the Master Training Institute in Geneva.

SRI LANKA



Nandika Buddhipala
Chief Financial Officer
Commercial Bank
of Ceylon PLC



Nandika Buddhipala FCCA has over 25 years' work experience in audit and assurance, telecommunication and the banking industry. He is a past president (2008–9) and current member of the Member Network Panel of ACCA Sri Lanka. He has BSc, MBA in Management, MA in Financial Economics and MSc in Financial Mathematics degrees and a PG Diploma.



Samanthi Senaratne
Professor in Accounting of
the Department of Accounting
University of Sri Jayewardenepura,
Sri Lanka



Samanthi Senaratne holds a Bachelor's Degree in Accounting, an MBA and a PhD in finance. She has published widely on corporate governance, corporate sustainability accounting, integrated reporting and accounting education, both locally and internationally. Currently teaching financial reporting and accounting theory at undergraduate and postgraduate levels, she is engaged in curriculum development and quality assurance activities of Sri Lankan national universities and national-level educational institutes. She is director of her university's Internal Quality Assurance Unit.



**Uresha Tharangani
Walpitagama**
Consultant and Director
Staylanka Bookings
(Private) Limited



Uresha Tharangani Walpitagama served in the Ministry of Finance, Sri Lanka for more than 10 years and was a key professional for initiating and guiding new projects and concepts. She provides consultancy services to private and public sector clients. She is both academically and professionally qualified and a member of both ACCA's SME and Public Sector forums.

UAE



Kamal Goyal
Chief Financial Officer

Kamal Goyal FCCA has worked in a range of diversified businesses such as construction, real estate, manufacturing, and automotives. He is currently employed in the UAE, having previously worked in India, Oman and Kuwait. He is a transformational leader, and has led several projects that transformed organisations, cultures, processes, procedures and systems, resulting in improved efficiency, effectiveness and gains in long-term competitive advantage.



Amanda Powell
Chief Financial Officer
ME Digital Group FZ LLC



Amanda Powell FCCA has been focusing on acquisitions and ERP implementations since 2014. Prior to this, she worked as head of finance for Etihad Airways for seven years and has gained extensive experience in financial systems, controls and corporate governance.

UK



Chris Blackburn
Pro Vice-Chancellor
and Dean
Oxford Brookes Business School



Chris Blackburn began his academic career at Oxford University as a modern linguist, before moving into advertising. He returned to academe to undertake research into marketing communications in the post-Soviet bloc. He is now Dean of Oxford Brookes Business School and Pro Vice-Chancellor for the development of the University's marketing strategy.



Lois Guthrie
Founding Director
Climate Disclosure
Standards Board (CDSB)



Lois Guthrie is responsible for CDSB's work in developing an environmental information reporting framework for corporate reports. Previously, she was technical director at Zurich Insurance Group, and at the International Integrated Reporting Council, and worked in international taxation and social security at PwC and Zurich Insurance Group. She serves on ACCA's Global Forum on Sustainability and on Carbon Tracker's Advisory Board. She holds an MSc in Responsibility and Business Practice.



Anthony Harbinson
Director of Safer Communities
Departments of Justice, Northern Ireland



Anthony Harbinson is a senior civil servant who has spent 32 year working in the public sector. He is currently the director of Safer Communities for the Northern Ireland Department of Justice. He is a former ACCA president and also a past chairman of CCAB, the umbrella group of British and Irish chartered professional accountancy bodies.



John Lelliott
Chair
Natural Capital Coalition

John Lelliott OBE is a non-executive director of Royal Bournemouth & Christchurch NHS Foundation Trust and The Covent Garden Market Authority. He was finance director of The Crown Estate, retiring in September 2016 after over 30 years' service. He chairs both The Natural Capital Coalition and the ACCA Global Sustainability Forum.



Sara Harvey
Director
Hines Harvey Woods Ltd



Sara Harvey has over 30 years' experience in general practice, providing audit, accountancy and taxation services to SME clients in the UK. She is chair of the ACCA Global Ethics Forum, and a member of the ACCA Global Tax Forum and CCAB Ethics Group.



Michael Mainelli
Executive Chairman
Z/Yen Group



Alderman Professor Michael Mainelli FCCA FCSI FBCS is a qualified accountant, securities professional, computer specialist, and management consultant, educated at Harvard University and Trinity College Dublin. He gained his PhD at London School of Economics where he was also a visiting professor. In 1994 he co-founded Z/Yen, the City of London's leading think tank, to promote societal advance through better finance and technology.



Andrew Jones
Vice-President
(Research and Enterprise)
City University London



Professor Andrew Jones is an inter-disciplinary social scientist with a background as an economic geographer. His research focuses on global economy, including firms, governing organisations and the activities of key individuals and he has a particular interest in financial and business services. He has authored and edited several books, including the 2016 publication of *Services and the Green Economy*.



John McKernan
Professor in Accounting and Finance
University of Glasgow



John McKernan FCCA trained with Ernst & Whinney CA (now Ernst & Young). While lecturing in accounting and finance at Napier University, he completed an MBA at the University of Strathclyde, and began a Master of Accountancy (MAcc) degree at the University of Glasgow. He moved there as a lecturer in 1990, completing a PhD (Psychology) in 2000. He researches the psychology of judgement and decision-making in accounting and audit, critical accounting issues, and accounting ethics and regulation.



Ajith Lekshmanan
Managing Director
Leksh Solutions Ltd



Ajith Lekshmanan has held senior finance positions in the public sector. He also worked with many high-profile services as a business transformation consultant. He is the audit chair and an NED on the NHS Newham CCG Board. He is a member of ACCA's Global Public Sector Forum.



Dave Rawlings
Vice President Global Tax
Reinsurance Group of America



Dave Rawlings has over 30 years' experience working in the life insurance and reinsurance sectors, with leadership roles across a variety of reporting and technical areas, most recently leading RGA's BEPS transfer pricing initiative. Active within ACCA, he is a member of the Corporate Reporting Global Forum and former chair of the Financial Services Network Panel.



Anne Stafford
Professor in Accounting and Finance
Alliance Manchester Business School,
University of Manchester



Professor Anne Stafford BA PhD FCCA worked in industry and commerce before entering academia. Her research interests include financial analysis of public policy, and public sector corporate governance and accountability. Her publications have been cited in submissions to governments, the OECD and the World Bank.



Anne Christensen
Professor of Accounting
Jake Jabs College of Business & Entrepreneurship,
Montana State University



Anne Christensen conducts research focusing on ethics, judgement and decision-making. She teaches undergraduate and graduate tax courses.



Robert Stenhouse
Vice President
ACCA



Robert chairs ACCA's Global Forum for Audit and Assurance and is also Chairman of ACCA's own Audit Committee and a member of ACCA's Remuneration Committee. In 2016 he was elected Vice President of ACCA. Robert is a director in Deloitte in the UK specialising in auditing technical matters. He represents Deloitte UK on the DTTL Audit Technical Advisory Board which develops audit policy and methodology for the Deloitte network worldwide.



Cheryl Clarke
Auditor
United Nations



Cheryl Clarke FCCA is a Jamaican auditor with over 30 years' experience working in the public and private sector. She holds an MBA from Rutgers University as well as being a certified internal auditor, and has both certification in risk management assurance (CRMA) and certification in control self-assessment (CCSA) from the Institute of Internal Auditors.



Ian Waugh
Director of Finance:
Scottish Government:
Scottish Public Pensions Agency

Ian Waugh ACCA has extensive experience as an ACCA accountant in the public sector, having qualified in 2000. He is actively involved in member advocacy, having participated in the work of member networks, 'ACCA Scotland', 'Public Sector Global Forum' and 'Health Panel'. He is also a Chartered Director and contributes to professional journals.



Kenneth Henry
Associate Professor
of Accounting
Florida International
University



Kenneth Henry PhD is an ACCA Council member and chairs ACCA's Governance Design Committee. He also sits on ACCA's Global Forum on Audit and Assurance, and represents ACCA on the International Internal Audit Standards Board. He spent 20 years in public practice with PwC, in Jamaica and the US. He designs, conducts and assists in academic quality reviews of graduate and undergraduate courses in Accounting, Auditing, and Information Systems.



Paul Karr
Retired, IMA Financial Reporting
Committee member

Paul Karr is a member of IMA's Financial Reporting Committee, having previously worked in senior roles at AIG, Amex, Nortel, Bristol-Myers Squibb, and GE. He is a former partner at Deloitte.

USA



Scott Ackerman
Chief Financial Officer
The Genuine Origin
Coffee Project



Scott Ackerman, a Certified Management Accountant, is a financial leader with multinational, consumer products experience. His present firm, Genuine Origin, is dedicated to reimagining and elevating the specialty coffee industry from coffee plant to roaster.



Brad Monterio
Managing Director
Colcomgroup, Inc.



Brad Monterio's company is a marketing/advisory services firm focusing on technology, accounting, finance and corporate reporting. He is a global board member of the Institute of Management Accountants, vice chair of its Technology Solutions & Practices Committee, and past board member of the Casualty Actuarial Society. He is a graduate of Ivy League institution, Dartmouth College.



Ken Siong
Technical Director
IESBA



Ken Siong BSc, ACA, CPA, manages the IESBA's strategic and operational activities and its work programme. He also plays a key role in developing and strengthening its stakeholder relationships.

