Technology Landscape: Cloud Computing

Introduction

This publication forms part of the IESBA's Technology Working Group's Phase 2 Report, which documents the impacts of disruptive and transformative technologies on the work of professional accountants, and provides extensive analysis and insights into the ethics dimension of those developments.

Specifically, this publication surveys the technology landscape in relation to Cloud Computing and summarizes the outcomes of the Working Group's fact-finding into the trends, opportunities, and impact/ risks related to ethics implications of such technologies.

The Working Group comprises Brian Friedrich, IESBA Member and Chair of the Working Group; Vania Borgerth, IESBA Member; David Clark, IESBA Technical Advisor; Christelle Martin, IESBA Member; and Sundeep Takwani, former IESBA Technical Advisor.

The full Phase 2 Report also discusses the relevance and importance of the overarching principles and specific provisions in the *International Code of Ethics for Professional Accountants (including International Independence Standards)* (the Code) in laying out the ethics guardrails for professional accountants as they face opportunities and challenges in their work as a result of rapid digitalization.

This publication does not amend or override the Code, the text of which alone is authoritative and reading it is not a substitute for reading the Code and is not intended to be exhaustive and reference to the Code itself should always be made. This publication does not constitute an authoritative or official pronouncement of the IESBA.

Technology Landscape

This section covers the trends, opportunities, and impact/risks of the following technologies and related issues: Robotic Process Automation (RPA), AI, blockchain, cloud computing, and data governance, including cybersecurity. Key ethics-related concerns arising from these technologies and issues are covered in the subsequent subsection entitled *C: Potential Ethics Impact on the Behavior of PAs*. The Working Group notes that most of the ethics-related impact/risks and key concerns are addressed by provisions in the extant Code and proposals in the Technology ED. Those that the Working Group believes can benefit from further guidance are outlined in *Section III: Insights and Recommendations*.

Stakeholders report that the most common emerging technologies and technology-related issues currently impacting business processes are RPA, AI (including intelligent process automation (IPA)),[1] cybersecurity (including data privacy), and blockchain. It was consistently reported, however, that the uptake by organizations of AI and blockchain-related technologies is slower than expected and slower relative to the publicity these technologies receive. Based on stakeholder and TEG commentary, as well as

desk research, it appears that most organizations are finding these technologies challenging to effectively implement as a result of process fragmentation, resources being allocated to other priorities, difficulties in establishing business cases (for example, a lack of understanding of the return on investment (ROI) arising from the technology or a belief that the ROI is too slow), and the general lack of maturity, and accordingly lack of understanding, of the technologies.

Nevertheless, accelerated implementation of transformative technologies has been observed – particularly in the past couple of years – often connected with mitigating business issues related to the COVID-19 pandemic, such as RPA, cloud computing, tools to support remote working and access, and addressing cybersecurity concerns.

Cloud Computing

Trends

1. Given exponential data growth,[2] cloud computing is becoming a necessity. There is an increasing use of third-party cloud services such as governance, risk management, and compliance (GRC) and audit management tools for organizations to manage and document their controls. In particular, the COVID-19 pandemic ushered in a new era of cloud-based Software as a Service (SaaS – software distribution models in which a cloud provider hosts applications and makes them available to end users over the internet). In this model, an independent software vendor may contract a third-party cloud provider to host the application or alternatively, with larger organizations, the cloud provider might also be the software vendor.[3]

Opportunities

2. Cloud computing marks a significant shift from the traditional way businesses think about IT resources.[4] One of the biggest impacts is in relation to cost and scalability. Use of cloud eliminates the capital expense of buying, operating, and maintaining local hardware and software and setting up and running on-site data centers. At the same time, it enables more rapid scaling by changing the service agreement for IT resources with the vendor as needed (i.e., more or less computing power, storage, bandwidth). In addition, cloud computing makes data backup, disaster recovery, and business continuity easier and less expensive because data can be mirrored at multiple redundant sites on the cloud provider's network.

Impact/Risks

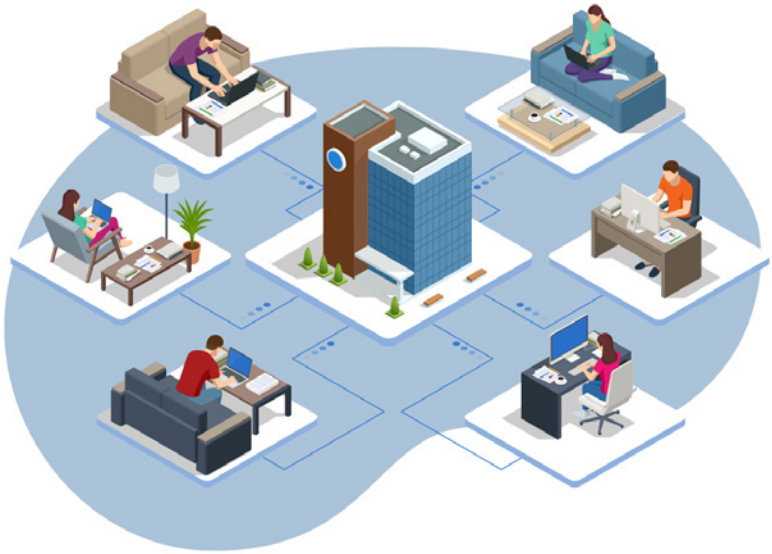
3. Stakeholders observed that whether a firm or company decides to use a cloud provider typically involves the following considerations:

- Security concerns, given the sensitivity of data being processed and stored outside the organization's direct control (potential market sensitive data, private employee and client data, industry-specific considerations, etc.).
- Legal, regulatory, and/or professional compliance requirements, such as data sovereignty laws that require data to remain within a particular jurisdiction.

4. Many organizations or firms already use the cloud for their data and accounting systems. When a cloud provider is used, the provider stores data and information related to the particular organization or firm and/or its clients or customers. Hence, the organization or firm must ensure that the provider implements necessary security measures. Designing and implementing an appropriate data governance and management framework that might not have traditionally existed has become a priority, especially in the face of increasing, and ever more sophisticated, cyberattacks. It was noted that this might be particularly challenging for small- and medium-sized entities and practitioners who potentially lack the budget, resources, and negotiating influence needed to engage cloud service providers.

5. Stakeholders indicated that it is challenging to keep up with the direction of evolving data privacy and cybersecurity regulations and best practices. Other important pain points to watch in data governance are: (a) data collection, including the quality of metadata management, (b) data access and controls, and (c) objectivity in data analytics. See discussion on *Focus on Data Governance*.

6. For firms in particular, providing cloud-based services has raised questions over when holding client information and data constitutes "hosting" by a firm, and whether this is permissible or is seen to be assuming a management responsibility. See discussion on *Independence*.



Endnotes

1 IPA refers to the application of AI (including its sub-fields of computer vision, machine learning, etc.) to RPA.

2 "Data: a small four-letter word which has grown exponentially to such a big value." *Deloitte*, https://www2.deloitte.com/cy/en/pages/technology/articles/data-grown-big-value.html.

3 Chai, Wesley. "Software as a Service (SaaS)." *TechTarget*, October 2022, https://www.techtarget.com/searchcloudcomputing/definition/Software-as-a-Service.

4 Microsoft has produced a concise and easy to understand guide to the key benefits, types, and service types of cloud computing, including SaaS. See "What is cloud computing? A beginner's guide." *Azure*, https://azure.microsoft.com/en-ca/resources/cloud-computing-dictionary/what-is-cloud-computing/.

ABOUT THE IESBA

The International Ethics Standards Board for Accountants (IESBA) is an independent global standard-setting board. The IESBA serves the public interest by setting ethics standards, including auditor independence requirements, which seek to raise the bar for ethical conduct and practice for all professional accountants through a robust, globally operable International *Code of Ethics for Professional Accountants (including International Independence Standards)*.

The IESBA believes a single set of high-quality ethics standards enhances the quality and consistency of services provided by professional accountants, thus contributing to public trust and confidence in the accountancy profession. The IESBA sets its standards in the public interest with advice from the IESBA Consultative Advisory Group (CAG) and under the oversight of the Public Interest Oversight Board (PIOB).

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Published by International Federation of Accountants (IFAC), 529 Fifth Avenue, New York, NY 10017