



Technology Landscape: Robotics Process Automation

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 Robotics Process Automation (RPA) 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.

Robotic Process Automation

Trends

1. RPA, also known as software robotics (“bots”), uses automation to mimic back-office human tasks and essentially represents digital workers in an organizations’ business unit.
2. Several industries are at the forefront of leveraging RPA technology to streamline their operations, including banking and financial services, insurance, retail, and healthcare.² Many major banks, for example, use RPA solutions to automate tasks, such as customer research, account opening, inquiry processing, and tasks aimed at preventing and detecting fraud and money laundering/terrorist financing. Banks typically deploy thousands of bots to automate manual, high-volume data entry and analysis. These processes entail a plethora of tedious, rule-based tasks that automation streamlines.³
3. In today’s businesses, bots are already performing data entry, generating reports, reading PDF documents and invoices, sending emails, etc. The use of IPA to enable the bot to learn as it processes transactions, remains less common, although such use is on the rise. Consider, for example, the rise of anti-money laundering and anti-terrorism assessments that use AI-enabled automation.⁴
4. Accordingly, demand for roles in areas such as data entry, bookkeeping, and administrative support is decreasing as automation and digitization in the workplace increase.⁵ In this regard, it is observed that roles in such areas (e.g., bookkeeping, including the preparation of reconciliations, etc.) tend to be routine or have well-defined steps to follow or are repetitive. For the accounting profession, in particular, there will be wide-ranging impacts, with some estimating that 94% of U.S. accountant and auditor jobs are likely to be impacted by automation.⁶ Roles such as strategy formulation, business development, strategic decision support, and risk management are less likely (20% or less) to be automated in the foreseeable future.⁷



Opportunities

5. Whereas automation does impact some traditional PA roles, it also means that there are new roles created to enable the delivery of activities using technology and opportunities for PAs to undertake some of these less mundane tasks and provide more value-added services. For example, stakeholders observed that PAs are in an ideal position to enable RPA implementation as they have the knowledge of both the business processes and activities being automated, and the governance process risks related to RPA implementation, such as (a) operational, (b) financial, (c) regulatory, (d) organizational, and (e) technological risks.⁸ The overall key components to enabling good RPA governance include setting in place appropriate governing bodies and organizational constructs, and determining the appropriate operational life cycle, internal controls, technology governance, performance management, and vendor management.

6. The Working Group notes that a PA's adherence to the fundamental principles of the Code, and skillset in exercising ethical decision-making (for example, through having an inquiring mind and exercising professional judgement when applying the Code's conceptual framework),⁹ help facilitate an effective and ethical RPA implementation. In addition, stakeholders reported that the most successful RPA implementations occur when PAs work closely with IT professionals to advise them on the intricacies of the business processes, the inputs available, the impact desired, and the outputs required from the RPA solution.

Impact/Risks

7. Implementing RPA without fully understanding how its functionality fits business needs might result in digital transformations and related internal controls that are not suitable for their intended purpose. Stakeholders noted that when PAs have a good understanding of the capability of RPA, better adapted controls can be implemented and digital transformation through RPA can be enabled more effectively and efficiently. For example, segregation of duties from an internal control perspective becomes less about what the bot has access to, and more about what the human directing the inputs to the bot's activities has access or authority to do. In addition, there are new segregation of duties considerations created around bot creation (i.e., programming what the bots do) versus orchestration (i.e., running the bots).

8. Stakeholders also emphasized consideration of whether there is over-reliance on the RPA and, accordingly, whether there is sufficient, competent human oversight over such automated processes and their outputs. In this regard, the Working Group notes that if a PA is using RPA, the PA might consider the following in determining whether there are threats to compliance with the fundamental principles:

- (a) Is the PA competent to oversee the reasonableness of the output of the technology?
- (b) Is the PA aware of the extent of reliance on the bot (potential automation bias or over-reliance on the technology)?
- (c) Is management taking responsibility for the bot's decisions, such as authorizing transactions and whether the task being automated requires little or no professional judgment?



9. In addition, stakeholders pointed out that selecting and prioritizing the right automation opportunities are key for successful RPA implementation. Some questions they suggested a PA might ask when determining whether RPA implementation is appropriate include:
- Is the relevant data readily available, standardized, and of appropriate quality? For example, if the entity has a low level of digitalization, then the error rate might be comparatively higher as paper documents will need to be scanned to enable RPA, which could introduce errors.
 - Is the business process highly manual and repetitive?
 - Is the process mature, with definable criteria, rule-based with a low exception rate? For example, in automating the accounts payable process, the conditions around payment should be well-defined and documented – including processes over the verification of the vendor, vendor payment details, validity of the transaction (e.g., goods received match the invoice and purchase order), etc.
 - What is the impact of automating the process on the overall control and regulatory environment?
 - What value is created by deploying RPA, for example, financial, better staff utilization, or others?
 - What are the potential organizational or business unit process implications of automation?¹⁰ For example, impact on human resources, the potential of automating a poorly designed process, or the cascading effects of poor-quality data entering the system.

-
10. Finally, stakeholders also highlighted that another factor to enable successful automation is the importance of appointing a change or transformation officer with a mix of business and technology understanding to document current processes and develop a roadmap for shifting towards automation. However, it was also noted that significant communication gaps between departments (IT and the business function) frequently exist, leading to a lack of understanding and poor specificity of needs and timelines.

Endnotes

- ¹ IPA refers to the application of AI (including its sub-fields of computer vision, machine learning, etc.) to RPA.
- ² IBM Cloud Education. "Robotic Process Automation." *IBM*, 22 October 2020, <https://www.ibm.com/cloud/learn/rpa>.
- ³ *Ibid.*
- ⁴ Rundle, David. "AI and Algorithms in Financial Services – Future Areas of Focus." *JDSupra*, 6 July 2022, <https://www.jdsupra.com/legalnews/ai-and-algorithms-in-financial-services-1487837/>.
- ⁵ See, for example, "The Future of Jobs Report 2020." *World Economic Forum*, 20 October 2020, [WEF Future of Jobs 2020.pdf \(weforum.org\)](https://www.weforum.org/reports/the-future-of-jobs-report-2020). and Poulsen, Justin. "The Robots are Coming for Phil in Accounting." *The New York Times*, 6 March 2021, <https://www.nytimes.com/2021/03/06/business/the-robots-are-coming-for-phil-in-accounting.html>.
- ⁶ *Ibid.*
- ⁷ Presentation on "Transforming the Finance Function with RPA." *IFAC*, 9 November 2021, <https://www.ifac.org/system/files/uploads/IESBA/RPA-Transforming-Finance-Function.pdf>.
- ⁸ Operational risks: insufficient exception handling in process workflows or inefficient operational delivery from poor bot resource management. Financial risks: poorly defined requirements for bots leading to financial misstatements or inaccurate payments. Regulatory risks: humans directing bot activities in a fraudulent manner for government reporting. Organizational risks: Inadequate change management, documentation, or business continuity planning. Technological risks: instability of integrating applications and the effect that might have on bot performance, cybersecurity risks, inappropriate access controls
- ⁹ Section 120 [The Conceptual Framework](#) of the Code
- ¹⁰ See also Nunes, Ashley. "Automation Doesn't Just Create or Destroy Jobs — It Transforms Them." *Harvard Business Review*, 2 November 2021, <https://hbr.org/2021/11/automation-doesnt-just-create-or-destroy-jobs-it-transforms-them>.

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).

KEY CONTACTS

Brian Friedrich, IESBA Member and Chair of the Technology Working Group (brian@friedrich.ca)

Ken Siong, Program and Senior Director, IESBA (kensiong@ethicsboard.org)

Kam Leung, Principal, IESBA (kamleung@ethicsboard.org)



www.ethicsboard.org



[@ethics_board](https://twitter.com/ethics_board)



[company/iesba](https://www.linkedin.com/company/iesba)

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

Copyright © November 2022 by the International Federation of Accountants (IFAC). All rights reserved. Written permission from IFAC is required to reproduce, store or transmit, or to make other similar uses of, this document, save for where the document is being used for individual, non-commercial use only. Contact permissions@ifac.org.