



The Association of
Accountants and
Financial Professionals
in Business

*Statement on
Management Accounting*

TRANSFORMING THE FINANCE FUNCTION WITH RPA



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The Association of
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EXECUTIVE SUMMARY

As CFOs implement plans to prepare their teams for the future, finance and accounting professionals are under pressure to enhance their value offering, reduce costs, and acquire new skills. Emerging digital technologies provide the finance and accounting function with a path to fulfilling these objectives while meeting business demand for advanced analytics, efficient operations, and strategic decision support. Robotic process automation (RPA), specifically, presents a clear and sustainable avenue to transforming the finance function.

Organizations that have successfully implemented RPA at scale have seen exponential operational efficiency, elimination of undesirable manual work, and millions of dollars in financial savings. Businesses that have incorporated finance and accounting professionals into the RPA program have seen more robust automation solutions, less costly implementations, and improved employee satisfaction. Finance and accounting functions in these organizations find themselves far ahead of their peers as they are now equipped with business professionals who are cross-functionally trained and have more time to focus on higher value-added tasks.

The historical nature of the finance and accounting function's role dictates that many of its processes are repetitive and rule-based—two of the most important criteria in identifying good RPA candidates. Therefore, it is not surprising that most RPA implementations begin in the finance and accounting department. As RPA is an emerging technology with one of the lowest barriers to entry, the impact of RPA on the finance and accounting function is twofold: Finance and accounting processes will be automated with RPA, and finance and accounting professionals can upskill with RPA.

The necessary revolutionary transformation of the finance and accounting function is upon us, and RPA technology, a feasible option for organizations of any size, can facilitate this journey by increasing the speed with which financial data is made available to the business, pairing with

other digital technologies to deliver higher-quality analysis, improving the accuracy of transactional processing, strengthening the control and compliance landscape, dramatically reducing functional cost, creating new jobs for finance and accounting professionals, and so much more. •



INTRODUCTION

In 2019, the IBM Institute for Business Value published the report *The enterprise guide to closing the skills gap* in which it indicated a staggering “120 million workers in the world’s 12 largest economies may need to be retrained/reskilled in the next 3 years as a result of intelligent/AI-enabled automation.”¹ Perhaps more astonishing is how ill-prepared executives believe their countries and businesses are to offer the development that millions of workers will require.

Businesses are demanding more. Emerging technology is maturing. Consumers and markets across the globe expect a faster pace of delivery. Teams are overworked. Agility is now a requirement. In response, the role of finance and accounting is evolving.

As CFOs implement plans to prepare their teams for the future, finance and accounting professionals are under pressure to enhance their value offering, reduce costs, and acquire new skills. Emerging digital technologies provide the finance and accounting function with a path toward fulfilling these objectives while meeting business demand for advanced analytics, efficient

operations, and strategic decision support. Robotic process automation (RPA), specifically, presents a clear and sustainable avenue toward a transformed finance function.

In a joint survey of finance and accounting professionals conducted by IMA® (Institute of Management Accountants) and Deloitte examining the workforce of the future and how it will be shaped by technology, talent, and automation, nearly 76% of respondents felt their accounting processes were less than 75% automated. When asked how they are expecting the type of work within finance to change, more than 90% of respondents indicated they feel the level of transactional processing will either somewhat or significantly decrease and become more analytical over the next five years.² Finance and accounting professionals are still spending more time on manual processes than drawing insights from high-quality, automatically generated financial data. But there is acknowledgement—now more than ever—that this way of working is not sustainable and will not persist over the next five years. RPA releases finance and accounting staff from dependence on the information technology (IT) function for low- to medium-complexity processes and enables them to take the power of automation into their own hands.

This IMA® Statement on Management Accounting (SMA) aims to supply finance and accounting professionals with enough information about RPA to empower them to play critical roles in, or in partnership with, RPA programs in their respective organizations. This empowerment will come by way of an overview of RPA technology, shedding light on the impact of RPA on the finance and accounting function, offering keys to a successful RPA implementation, and demonstrating how finance and accounting professionals can serve as enablers to RPA value delivery. •



¹ Annette LaPrade, Janet Mertens, Tanya Moore, and Amy Wright, *The enterprise guide to closing the skills gap: Strategies for building and maintaining a skilled workforce*, IBM Institute for Business Value, 2019, www.ibm.com/downloads/cas/EPYMNBJA.

² *From Mirage to Reality: Bringing Finance into Focus in a Digital World*, IMA and Deloitte, upcoming 2020.

RPA Technology

Misconceptions about RPA technology cross several extremes—from “It will automate all of our jobs” and “Only IT can implement it” to “RPA couldn’t possibly do what I do” and “RPA has no applicability to finance and accounting processes.” Each of these misconceptions can be dispelled through knowledge of what RPA is and the actual capability of the technology.

“RPA is technology that enables a robot—the digital worker or ‘bot’—to execute processes by emulating human interaction with computer applications” through the user interface.³

The Capability

Mimicking the clicks and keystrokes of a human user while leveraging documented process steps, bots can log into and perform tasks in accounting and operational desktop and cloud-based applications, access and retrieve data from websites, perform data entry through Citrix- and non-Citrix-based applications, generate reports, read PDF documents, send emails, and so much more. What macros can do for Microsoft Excel, RPA can do for any application accessible by an end user. RPA can also access the back end of applications (the component not typically visible to an end user) by executing application programming interface (API) calls and leveraging various programming languages and custom algorithms for more complex use cases. With the capacity to execute processes 24 hours a day, seven days a week, and 52 weeks a year, the potential productivity of a single bot is considerably higher than that of a human (often one bot can absorb the work of three to five humans)—provided utilization of the bot is

maximized (if multiple processes are assigned to the same robot machine).

Among leading RPA software vendors, advanced native solutions and integrating technologies enhance RPA’s stand-alone capability.⁴ Whereas traditional RPA technology required processes to be completely rule-based and requiring no judgment, intelligent RPA—a sophisticated pairing of artificial intelligence (AI) and RPA—enables the virtual robot to monitor transactional processing, making notes where indicated, and preparing conclusions or even refining its approach to process execution based on learnings, just as a human would.

Thus, revisiting the misconceptions introduced earlier, RPA has applicability to a host of finance and accounting processes and can consequently perform many of the tasks finance and accounting professionals perform today. The other two misconceptions will be addressed later as we explore the software and the impact of RPA on finance and accounting jobs.

The Software

“Most RPA software is made up of three primary components: the bots, a bot manager, and a workflow design module. The bots perform processes; the bot manager enables scheduling and allocation of developed processes; and the workflow design module is where processes are developed.”⁵ Although it is tempting to say—and is widely said—during an RPA implementation, people do not develop bots. They develop processes that bots will perform.

The bots. Robots are assigned user IDs and passwords for the organization’s network and for individual applications it needs to access just

³ Loreal Jiles, “Govern Your Bots!” *Strategic Finance*, January 2020, pp. 24-31, [sfmagazine.com/post-entry/january-2020-govern-your-bots/](https://www.sfmagazine.com/post-entry/january-2020-govern-your-bots/).

⁴ Forrester, *The Forrester Wave: Robotic Process Automation, Q4 2019*, October 2019, www.forrester.com/report/The+Forrester+Wave+Robotic+Process+Automation+Q4+2019/-/E-RES147757.

⁵ Jiles, 2020.

as humans are. They are granted certain access rights to those respective applications that align with the tasks—or processes—they are permitted to perform, and that access should adhere to segregation of duties policies defined for the virtual workforce, which may or may not mirror those defined for humans.

There are two types of robots: attended and unattended. Attended robots are virtual execution engines that sit on a computer with specific processes assigned to it. They require a human to trigger them (selecting one of the assigned processes and telling the robot—through a series of clicks—to execute that process). Generally, when attended robots are executing processes, the human’s machine is not available for them to perform any other tasks; but recent advancements in the technology of some RPA vendors allows processes to run in the background. Attended robots are useful for short processes or those that require humans to make a decision in real time during the process (for example, the bot can generate a report, prompt the human to review it, and, once the human clicks a button confirming the review is complete, the robot continues executing the next step in the process).

Unattended robots are virtual execution engines that do not require a human to manually kick off processes. Unattended robots commence execution of a process according to a schedule or by monitoring for the right prerequisite set of conditions, then begin the process automatically. An example of those conditions could be monitoring an electronic mailbox for emails that have specific words in the subject line or periodically accessing a shared drive to search for a file with a specific file name or extension. For added flexibility, unattended robots can also be launched manually or on an ad hoc basis outside the schedule.

The bot manager. The bot manager, although it has different names across each RPA tool, serves the same fundamental purposes. In leading tools, the bot manager typically has an encrypted vault for storing bot credentials that would not be

visible to anyone once input into the vault and serves as the central assignment and scheduling hub for all bots and processes. Processes are assigned to specific robots: More than one process can be assigned to a single robot and more than one robot can be assigned to one, usually high-volume, transactional process. Both schedules for the process runs for unattended bots and logs of the details of each process execution for all bots are stored in the bot manager. These logs are critical for audits of processes executed, or of the RPA program holistically, just as confirmation of completion of certain stages of critical processes are captured and subsequently furnished to auditors. Also captured are the success and failure statistics on individual transactions processed, transaction counts, and process execution duration. This web-based component of the software is where the humans managing the RPA program spend most of their time.

The workflow design module. The workflow design module, again with different names across RPA tools, is where RPA developers spend most of their time. This component of the software is where processes that bots will perform are developed. For finance and accounting professionals learning to perform a critical business process, typically a desk manual or a step-by-step desk procedure is provided so the team member will not miss important steps. Through the development process, the workflow design module acts as a platform that allows a human (the developer) to document the process at a meticulous level of detail (configure the workflow by developing a sequence of activities)—equipped with screenshots and personalized instructions at the keystroke level—in a way that the robot can read and deliver. This RPA software component enables RPA development.

The workflow design module is what makes RPA a lower barrier-to-entry technology than many other emerging digital technologies that will also impact the finance and accounting profession. Rather than learning a programming language and writing scripts, automating with RPA transpires

using a host of drag-and-drop activities that are stored within the tool. Boasting activity names such as “click” and “type into,” the user-friendly nature of this technology makes familiarity with the detailed business process a more valuable asset than a computer science background. This feature is also the component that dispels another of the misconceptions referenced earlier as it confirms business professionals and IT experts alike can implement automation solutions with RPA. It is worth noting that complex use cases do require specialized expertise for implementation.

Integrating technologies. Leading RPA vendors have invested heavily in developing native solutions—available within their workflow

design modules—and partnering with other leading technology companies to offer a host of integrating technologies that raise the level of complexity of processes that can be automated with RPA while enhancing the comprehensive value RPA is able to deliver. For example, some existing manual processes require reading an email or low-quality scanned PDF document and taking specific actions based on content or populating extracted data into a data visualization tool and performing analytics. These instances may require use of natural language processing, intelligent optical character recognition, or data analytics and visualization tools, all of which are available either natively or through integrating drag-and-drop activities or library components. •



Impact of RPA on the Finance and Accounting Function

Automation is having a wide-reaching impact on the workforce. Bloomberg has developed a tool simulating the chances of jobs across a host of professions being impacted by automation. It combines wage and education requirements data from the U.S. Bureau of Labor Statistics with data on probability of automation from “The Future of Employment: How Susceptible Are Jobs to Computerisation?” by Carl Frey and Michael Osborne.⁶ With Bloomberg’s simulation, accountant and auditor jobs are 94% likely to be impacted by automation. Another noteworthy observation from this report is that accountant and auditor jobs are among fewer than 10 professions requiring a bachelor’s degree that are more than 90% likely of being impacted by automation.⁷

Although there are several digital tools that can be leveraged to automate finance and accounting processes (for example, data science, traditional automation using programming languages and scripting, better-leveraging native automation solutions within the enterprise resource planning system, AI, and so on), RPA is currently recognized

as one of few emerging technologies most capable of automating a significant amount of finance and accounting end-to-end processes. In a recent RPA webinar hosted by IMA with nearly 1,500 attendees globally, 34% of attendees indicated RPA will be the emerging technology with the greatest impact on the finance and accounting profession in the next three years (see Table 1). Additionally, more than 75% of attendees believed their organization’s finance and accounting processes could benefit moderately to significantly from RPA (see Table 2).

McKinsey & Company conducted a detailed analysis of finance and accounting processes and automation software capability. It found that the capability of automation tools that existed in 2018 could “fully automate 42 percent of finance activities and mostly automate a further 19 percent.”⁸ A summary of finance and accounting tasks evaluated in this study is combined with other common finance and accounting activities to present the relative complexity of the process areas and their relative likelihood of being automated in Figure 1.

TABLE 1: What emerging technology do you believe will have the greatest impact on the finance and accounting profession in the next three years?

a. Robotic process automation	34.4%
b. Data science	14.1%
c. Artificial intelligence	22.7%
d. Data visualization	5.8%
e. Blockchain	6.6%
f. Budgeting, planning, and forecasting tools	12.1%
g. Something else	0.9%
h. Not sure	3.5%

⁶ Carl Frey and Michael Osborne, “The Future of Employment: How Susceptible Are Jobs to Computerisation?” *Technological Forecasting and Social Change*, January 2017, pp. 254-280.

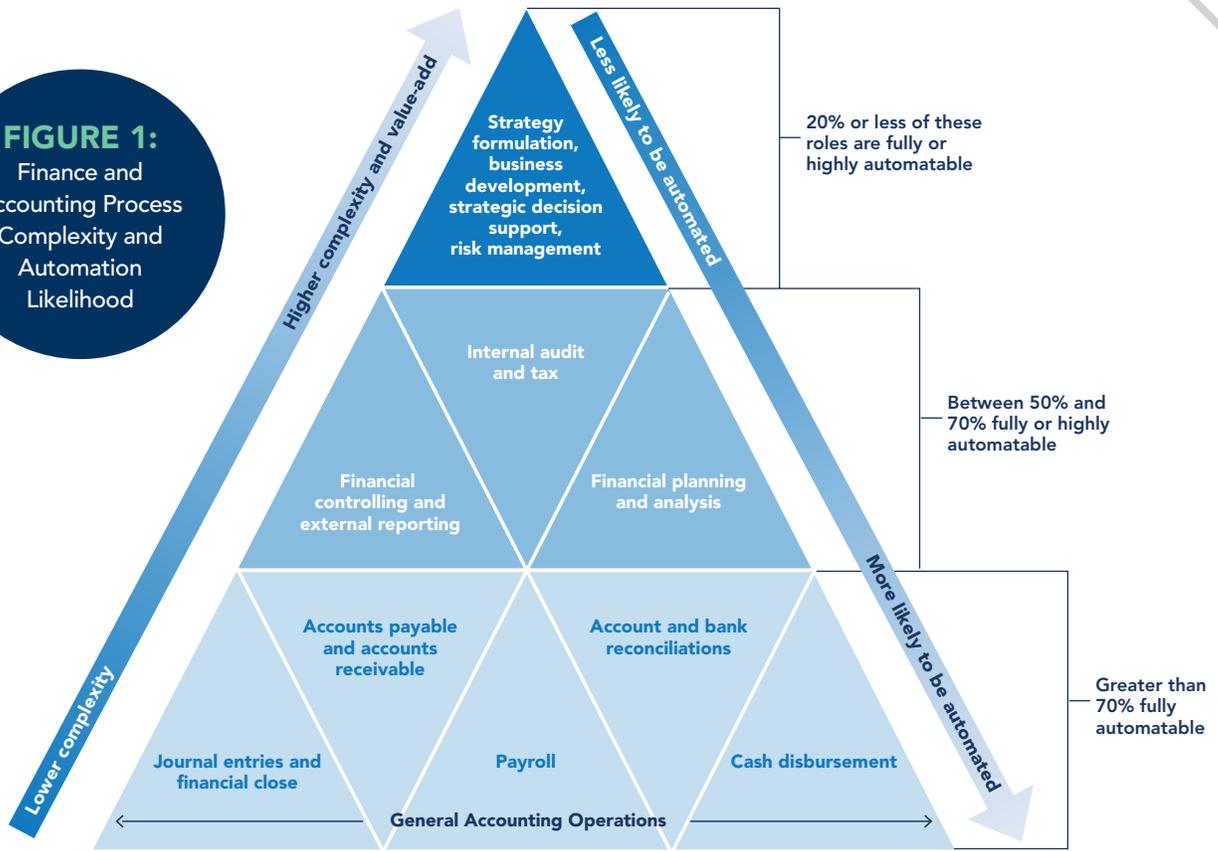
⁷ Mark Whitehouse and Mira Rojanasakul, “Find Out If Your Job Will Be Automated,” Bloomberg, July 2017, www.bloomberg.com/graphics/2017-job-risk/.

⁸ Frank Plaschke, Ishaan Seth, and Rob Whiteman, “Bots, algorithms, and the future of the finance function,” McKinsey & Company, January 2018, www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/bots-algorithms-and-the-future-of-the-finance-function.

TABLE 2: How much do you believe your organization’s finance and accounting processes can benefit from RPA?

a. Significantly! I believe greater than 50% of our finance and accounting processes can benefit from RPA.	28.4%
b. Moderately; I believe between 16% and 50% of our finance and accounting processes can benefit from RPA.	46.8%
c. Somewhat; I believe between 1% and 15% of our finance and accounting processes can benefit from RPA	20.4%
d. Not at all; I do not believe our finance and accounting processes can benefit from RPA.	4.5%

FIGURE 1:
Finance and Accounting Process Complexity and Automation Likelihood



McKinsey’s findings underscore what has been seen in implementations of organizations commencing RPA journeys over the past few years. Leading RPA software vendors have transparently shared that most enterprises, regardless of industry, begin their RPA journeys in the finance and accounting department. Of greatest impact are tasks performed by entry-level finance and accounting staff and finance

and accounting shared service centers. Other examples of finance and accounting processes not listed in Figure 1 that typically make good RPA candidates include:

- Bookkeeping
- Payroll
- Data migration and data entry
- Daily profit and loss reporting
- Control testing

These process areas are particularly attractive from an RPA perspective because they each have a rule-based and repetitive component. They also traditionally have standard input or output report formats and detailed documentation in place. Thus, the reach of RPA capability across finance and accounting processes is quite expansive and likely impacts, at a minimum, a few of the processes performed or touched by every finance and accounting professional across the globe. Good RPA candidates are highly manual and repetitive. Many ideal candidates also have low exception rates, standard and readable inputs, and predefined or definable criteria.

Finance and accounting professionals working in organizations who have made progress along the RPA journey operate in an environment with human and digital coworkers. They receive data from and supply inputs for processes performed by bots. Digital team members log into the financial system during the early morning hours of critical close workdays and pull data to refresh the financial statements, then create a report with variances highlighted for human teammates to review at the start of their day. A bot reads PDF statements and translates the data captured into financial journal entries. When internal (or external) auditors test financial documents, they no longer need to request samples because a robot will leverage RPA and data analytics to test all financial data in scope for the audit period and produce a report of findings for the internal audit team to examine. This is a different world, and the technology to make this a reality already exists and is currently in place in many enterprises.

“The bright side is that accountants should be skilling upwards to negate the risks of obsolescence,” remarked Eva Nagarajah in the *Accountants Today* article “Hi, Robot: What does automation mean for the accounting profession?” She continued with a reference to guidance given by recruitment firm Ranstad Singapore: “...transactional roles like general ledger, accounts

receivable and payable may be endangered, but other higher-skill roles like financial planning and analysis or business controlling would still be in high demand.”⁹ Additionally, finance and accounting professionals can focus on timeless roles in the areas of accounting policy, strategy, financial investment analysis, and business and financial project management, along with a host of others.

Beyond higher value-added finance and accounting-specific activities, the maturation of digital technology opens new doors. IT—where many emerging technology implementations sit within organizations—requires a host of the same skills and capabilities finance and accounting professionals have amassed during schooling and career experience. Relevant transferrable skills that finance and accounting professionals likely already possess are being methodical and computer-savvy as well as strong in mathematics and analytics. Their knack for risk mitigation, detail-oriented nature, continuous improvement mind-set, adaptability, and critical-thinking skills can all be combined with business process knowledge to elevate the value delivered by the RPA program (or finance and accounting team implementing RPA) to the organization. Specific opportunities for finance and accounting professionals within the RPA space will be covered as we explore finance and accounting professionals as enablers of the RPA program.

This allows yet another misconception—that RPA will automate all finance and accounting jobs—to be combatted. This is far from true. Although RPA is undoubtedly a viable automation solution for several finance and accounting tasks that people historically thought were “untouchable,” RPA and other digital technologies create new opportunities that, when paired with higher-end finance and accounting activities, produce a more valuable service for the organization and result in an employee base that is agile, digitally equipped, and overseeing a strengthened control environment. •

⁹ Eva Nagarajah, “Hi, Robot: What does automation mean for the accounting profession?” *Accountants Today*, July/August 2016, pp. 34-37, www.pwc.com/my/en/assets/press/1608-accountants-today-automation-impact-on-accounting-profession.pdf.

RPA at Scale

Many enterprises have already embarked upon their RPA journeys—with significant impact in the shared services department of the organization and a decisive shift away from business process outsourcing to automation first. Deloitte conducted a study on RPA, attracting responses from more than 400 organizations globally. Fifty-three percent of respondents had already begun their RPA journeys and 19% intended to begin within the next two years. Yet only 3% of these organizations had actually “scaled their digital workforce” beyond 50 robots.¹⁰

This low scaling rate exists despite the wide-reaching applicability of RPA technology, affordability of licenses, and low barrier to entry for implementation. When reporting on predictions in the RPA market, Gartner found “organizations often underestimate the complexity of RPA initiatives.” Although the software itself is user-friendly and training is free and readily available from many vendors, “there is a large variety of business processes—ranging from simple, well-defined rote examples to complex, subject matter expert (SME)-intensive, exception-heavy areas.”¹¹ These process areas require more attention, governance, and coordination than a single team member automating processes on behalf of other team members or teams. RPA program leaders (generally in the absence of an actual program team in the earlier days) often suffer from one or more of the following barriers to scaling:

- Lack of executive sponsorship needed to promote wide-scale adoption across teams.
- Misalignment of RPA program goals to company or department strategic goals.
- Absence of IT buy-in needed to build appropriate infrastructure and application integration support.

- Underestimating the complexity or disparate nature of existing processes.
- Inadequate development and/or training partners.
- Insufficient financial or human resources.
- Wrong business stakeholders engaged for process selection and solution design.
- No documented governance for the RPA program.
- Automating fragmented processes (automating individual components rather than end-to-end process where applicable).

RPA at scale—or fully-leveraged—could be a perfect solution for a small or mid-sized business with overworked finance and accounting teams needing relief and leaders seeking to elevate the department’s offering. It could equally serve as a monumentally transformational initiative in a larger enterprise that shines light on opportunities in other parts of the organization that can also benefit. Specific to finance and accounting departments, team members who learn of this technology, proactively train staff on RPA, and/or lead RPA programs tend to see much more benefit, professionally and organizationally, than those on the receiving end of the automation solutions.

In any scenario, businesses need to take the following three actions to successfully scale RPA.

Establish governance. The single most important prerequisite to a successful RPA program is governance. An RPA team can have a multimillion-dollar budget and the best developers on the globe but without governance, failure is the most likely scenario. RPA program failure can resemble anything from stalling because there are not enough quality processes to automate or

¹⁰ Deloitte, *The robots are ready. Are you? Untapped advantage in your digital workforce*, 2017, www2.deloitte.com/content/dam/Deloitte/cn/Documents/strategy/deloitte-cn-consulting-the-robots-are-ready-en-180329.PDF.

¹¹ Stephanie Stoudt-Hansen, Frances Karamouzis, Arthur Villa, Saikat Ray, Rob Dunie, Nicole Sturgill, Laurie Shotton, Derek Miers, and Fabrizio Biscotti, “Predicts 2020: RPA Renaissance Driven by Morphing Offerings and Zeal for Operational Excellence,” Gartner, December 2019, gtrn.it/37T2IW7.

compromising the control environment because no RPA coding standards were followed to regulatory violations, inaccurate payment processing, and material financial misstatements due to missing process steps or lack of SME engagement.

Governance mitigates risk. According to Patrick Hauck, head of RPA Practice at Novatio Solutions, governance, “a framework for

identifying, assessing, and managing risk,” is about “delivering business value to stakeholders in a transparent, compliant, and sustainable manner.”¹² In late 2018, five key risk areas for RPA implementations were identified by Deloitte: operational, financial, regulatory, organizational, and technology. Examples of risks in each of these areas can be found in Table 3.

TABLE 3: BOT IMPLEMENTATION RISKS

KEY RISK AREAS	RISK EXAMPLES
OPERATIONAL	Insufficient exception handling in process workflows or inefficient operational delivery from poor bot resource management (e.g., allocating too many time-sensitive processes to a single bot)
FINANCIAL	Poorly defined requirements leading to financial misstatements or inaccurate payments; allowing a human to direct the inputs of multiple bots, potentially leading to segregation of duties violations; automating processes that lead to financial loss for the company (negative net present value)
REGULATORY	Humans directing bot activities in a fraudulent manner for government reporting (e.g., manipulating the inputs to the process a bot performs to direct a fraudulent output); immaturity of laws regulating standards for automation
ORGANIZATIONAL	Inadequate change management, documentation, or business continuity planning (as resources are reallocated to do other work) or failure to retain enough expertise within the team after automation
TECHNOLOGY	Instability of integrating applications and the effect that may have on bot performance; cyber risks: attackers leveraging privileged access accounts or retrieving data stored in RPA program databases; bot developers not encrypting sensitive data as part of bot design

Source: Loreal Jiles, “Govern Your Bots!” *Strategic Finance*, January 2020, pp. 24-31, sfmagazine.com/post-entry/january-2020-govern-your-bots/.

To mitigate the risks that an RPA implementation introduces, governing new digital teammates is a must. This governance takes place in much the same way as policies are written to govern processes executed by humans. Further, in addition to governing bots, governance must be established for the humans involved in RPA implementation. “Bots [and their human counterparts] should be governed through written procedures that define how automation candidates will be selected, how data will be secured, who

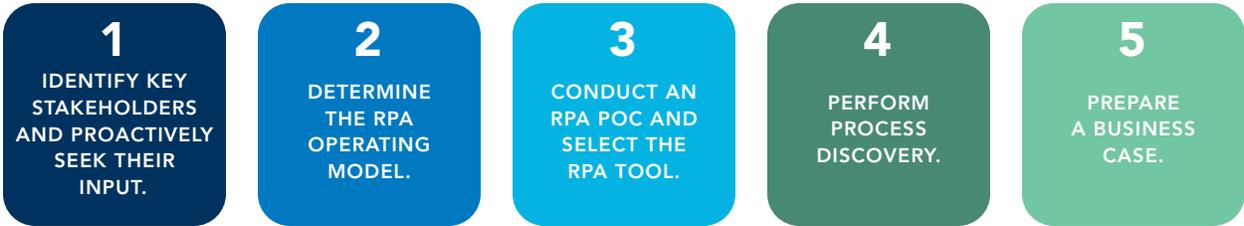
will carry out implementation, what standards development will be held to, and how benefits will be realized.”¹³ Prior to establishing governance, the following prerequisites should be met:

1. Identify key stakeholders and proactively seek their input.
2. Determine the RPA operating model.
3. Conduct an RPA proof of concept (POC) and select the RPA tool.
4. Perform process discovery.
5. Prepare a business case.

¹² Jiles, 2020.

¹³ *Ibid.*

FIVE PREREQUISITES FOR EFFECTIVE BOT GOVERNANCE

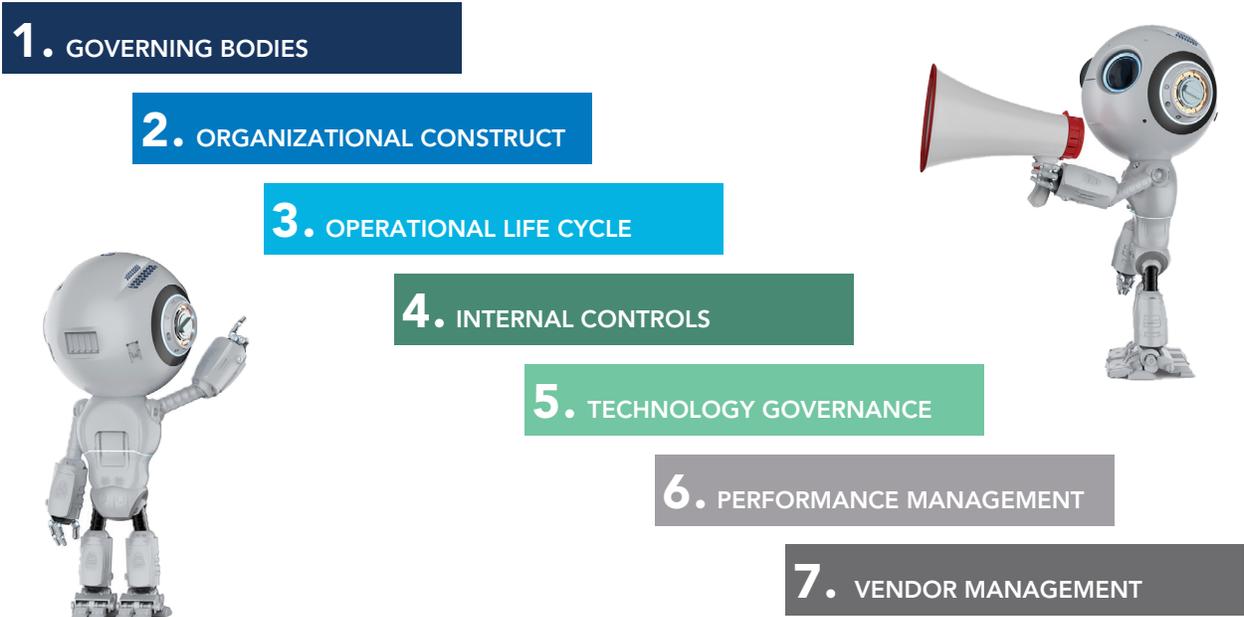


Once the prerequisites are met, governance documentation can be prepared. The format of governance documentation can be as short as an executive brief for each major section or as long as a 100-page manual. It can take the format of a slide deck, document, or quick reference guide. Regardless of length or style, the governance documentation should be easily accessible by all persons within and interacting with the group leading RPA implementation and should be clear, detailed, and comprehensive. Following a review of governance guidelines from multiple

RPA vendors and development partners, seven key components of RPA governance have been identified in “Govern Your Bots!” which appeared in the January 2020 issue of *Strategic Finance*.¹⁴ These key components are:

- 1. Governing bodies
- 2. Organizational construct
- 3. Operational life cycle
- 4. Internal controls
- 5. Technology governance
- 6. Performance management
- 7. Vendor management

THE SEVEN KEY COMPONENTS OF RPA GOVERNANCE



¹⁴ Jiles, 2020.

It is never too late to establish governance. Ideally, establishing governance is an up-front investment of time prior to making architecture decisions or developing any processes. Yet if implementation is already under way when the team realizes some of the seven components have not taken place, the best path forward is to press pause and begin relevant stakeholder engagement to mitigate the risks that may exist. For a deep dive into RPA governance, including steps to conducting a POC and an overview of all RPA governance components, see “Govern Your Bots!”¹⁵

Do not compromise on resource quality. There is irony in IBM’s research that called attention to the inevitable substantial shortage of workers prepared to perform tasks in completely new areas as a result of intelligent automation: Intelligent automation cannot scale without qualified workers to implement the technology.¹⁶ Many enterprises in the midst of RPA journeys have struggled to find capable, high-quality RPA development resources. A host of RPA development firms have surfaced in recent years as RPA adoption in the United States began to increase. Unfortunately, few have enough resources with enough expertise to deliver robust

automation solutions of varying complexity for enterprises eager to expedite the pace of delivery.

Furthermore, organizations choosing to invest in their own staff to progress implementation will still need to allow adequate time for development of their teams (without rushing them into tangible delivery) and will need to have a quality control process in place (code, peer, control, business, and digital security reviews) to prevent poorly developed workflows from introducing unmitigated risk into operational processes.

The operating model decision covered in the prerequisites to establishing governance is a key driver that shapes the nature of the investment in resource quality. There are three primary RPA operating models: centralized, decentralized, and federated. An overview of each of these operating models can be found in Figure 2. The fundamental differences between the operating models are whether there will be a central team leading governance and implementation, a central hub focused on governance with various spokes in different parts of the organization leading implementation for their respective areas, or all governance and implementation sitting within respective business units, departments, or teams.

FIGURE 2: THREE PRIMARY RPA OPERATING MODELS



¹⁵ Jiles, 2020.

¹⁶ La Prade, et al., 2019.

Once the operating model is chosen, the organization will know if it will be allowing business staff to develop processes or if it will be led by the IT organization, if development will take place in-house, or if a third-party development partner will be identified to progress implementation. These decisions inform whether the organization will need to develop a capability development plan for its staff or a vetting process to assess the qualifications of resources provided by a third party. Without enough capable resources to prepare and develop automation solutions, the process backlog can be very long with strong business cases and still deliver little to no value.

Automate the right processes. Despite the breadth of process areas with RPA applicability, all processes are not created equal. Consequently, all finance and accounting processes are not strong RPA candidates. Choosing the wrong automation candidates can result in wasted budget, negative returns on process implementations, dissatisfied employees, reputational harm to the RPA program, or even issues with internal or external auditors and financial misstatements.

While good RPA candidates should be mature, well-defined, and well-documented, it is worth noting that processes that do not check all of these boxes may still be great candidates; they may simply require more prep work (documentation and standardization) prior to automating. When automation teams begin playing the role of process optimization teams, it can dilute the quick implementation metric expected of RPA. The automation itself is generally quick; it is the understanding, definition, and agreement of the process steps that often lengthens the timeline. Teams should take care to define and clearly communicate their scope along the continuum of automation and optimization up front.

In the earlier days of an RPA program, processes automated should be simple, deliver value, and not expose risk to critical assets, external financial statements, or regulatory compliance. Teams are advised to get the program operational first

with lower risk opportunities, then, as it matures, progress to a candidate pool that includes higher-risk, high-return processes when it is easier to add the necessary layers of governance for their sustainability.

Filling the Hopper with Ideas

To automate the right processes, organizations should first identify how they will source automation opportunities. The RPA process hopper or backlog can be filled from the bottom-up (from staff in the organization), the top-down (leadership guidance), and inspired by problems or audit and analytical findings. There are three common ways to source automation opportunities:

- 1. Bottom-up:** Ideation sessions can be held or access to a central repository can be provided to staff at the grassroots level to learn what manual processes are most important to staff to be automated.
- 2. Top-down:** Leadership identifies strategic initiatives for specific processes requiring automation. Although this is a common sourcing approach, best practice informs failure is nearly certain if this method is used exclusively or without adequately valuing the input of the RPA team for candidate feasibility assessments. Often, process problems identified by leadership can be resolved by RPA but will require too much maintenance or exceed the capability or bandwidth of the existing program team. Mandates to move forward with candidates fitting this description can topple an RPA program. To mitigate this risk, leadership should be trained to develop a firm understanding of what makes a process a good RPA candidate, and the RPA steering committee, with heavy input from the RPA program leader (RPA product owner), should have ultimate veto power or, at a minimum, the ability to set the timelines and priority of automation to match the capability and bandwidth of the development team. See Table 4 on p. 20 for more information on the role of the RPA steering committee and RPA product owner.

3. Inspired by problems or audit and analytical findings: Problems like audit gaps, financial misstatements, or inaccurate government reporting can expose errors resulting from manual processes that might not exist if the process were automated. Process analysis can be performed manually or by any of a host of process mining tools available in the market to identify deviations from standard operating procedures, revealing potential automation opportunities. Further, RPA vendors on the leading end of AI integration have empowered bots to monitor human activities, detect patterns in repetitive behavior, prioritize opportunities, and even draft workflows for automation solutions.

opportunity, and the right stakeholders should be engaged to review the automation opportunity to ensure it meets established criteria. Stakeholders should also ask important questions: Is another team already working on this automation with a different technology? Should this process be eliminated? Should this process be standardized or reengineered prior to implementation?

After asking some of these fundamental questions, decision makers should shift their focus to the business case, which should provide a summary of the opportunity, the proposed solution, and, most importantly, a list of the benefits. The types of benefits reaped from RPA can be broadly categorized into three buckets: efficiency and cost, effectiveness and quality, and risk and compliance.¹⁷

Selecting and Prioritizing Automation Opportunities

Two fundamental questions should be answered prior to moving forward with automating a process. The first: Can we automate? In expanded form: From a technical perspective, can RPA technology be used to automate this process and in a sustainable way? Feasibility assessments should be conducted to understand if the applications the robot will need to interact with are stable and if all criteria for the in-scope process components are in fact rule-based and definable at the keystroke level. Figure 3 shows the characteristics of ideal RPA automation candidates.

Even if the process is an ideal RPA candidate from a technical perspective, there is a possibility it still should not be automated. Value is maximized through RPA implementations when automating processes that span multiple applications or workloads across multiple persons to automate end-to-end processes rather than automating as a siloed component. Therefore, the second critical question that should be answered is: Should we automate? In expanded form: Do the business benefits (or business case) support automation? A business case should be prepared for each individual automation

FIGURE 3: CHARACTERISTICS OF AN IDEAL AUTOMATION CANDIDATE



- Highly manual
- Highly repetitive
- Rule-based
- Exception rate low
- Standard and readable electronic inputs
- Mature and stable
- Specialty level low
- Definable criteria

¹⁷ Timothy Driscoll, "Value through Robotic Process Automation," *Strategic Finance*, March 2018, pp. 70-71, sfmagazine.com/post-entry/march-2018-value-through-robotic-process-automation/.

Efficiency and cost. This is the category of benefits that is most widely promoted when discussing RPA value. Efficiency and cost summarizes the time savings of having a robot perform tasks rather than humans, reallocation of the human resources to other tasks or roles, and the financialization of those time savings (how much money the organization is saving as a result of efficiencies gained). While benefits in the areas of efficiency and cost can be quantified using data such as number of man hours saved, average salary of employees performing the job manually, and implementation cost along with calculations like net present value, return on investment, and payback period, benefits in the other categories are not often apparent value targets.

Effectiveness and quality. Although humans are more experienced in performing automated processes, they make mistakes. It is inevitable. That is part of the underlying reason for the control function within finance and accounting. Robots do not make mistakes. Therefore, if SMEs are properly engaged in designing the automated process, the process executed by the robots will be performed with greater accuracy than humans. Improved accuracy leads to greater effectiveness and higher-quality process delivery. Thus, the automated process is likely to result in cycle-time reduction and increased client satisfaction—also known as effectiveness and quality.

Risk and compliance. In many instances, an automation solution may not deliver material efficiencies or cost reduction. Some automation opportunities are implemented because the organization may need to deliver a new report for regulatory purposes, submit data through a new electronic portal, or perform control checks for other manual or automated processes being performed. These solutions mitigate operational risk and strengthen the control environment, adding significant value to the organization because this type of risk mitigation and compliance assurance can impact an organization’s license to operate in its respective industry or the safety of its employees and customers. Alternatively, automating processes

that require real-time policy interpretation and application or that send data out directly to regulatory agencies without adequate controls can weaken the control environment and lead to detrimental results for the organization.

Figure 4 contains examples of factors that should be considered while evaluating whether a process should be automated. These factors would need to be weighed against each other based on the priorities of the organization and the RPA program.

FIGURE 4: EVALUATING THE BENEFITS OF AUTOMATION



- RISK PROFILE**
Impact of automating the process on the control and regulatory environment
- ERROR RATE**
Susceptibility of manual process to errors
- IMPACT**
Impact to the organization of errors and delays
- VOLUME**
Volume of process transactions
- VALUE CREATION**
Process robot is performing generates financial value
- TIME**
Time required to complete each transaction
- EFFORT**
Full-time equivalents required to support the process •

F&A Professionals as RPA Enablers

It is imperative that finance and accounting professionals begin reskilling in preparation for the future. Change is no longer imminent; it is under way. Advances in digital technology make it increasingly more feasible to automate finance and accounting processes of varying complexity for organizations of any size. In addition to upskilling by deepening finance and accounting and business knowledge (performing processes on the higher end of the finance and accounting process pyramid; see Figure 1) and learning other digital technologies such as data analytics, data visualization, or AI, finance and accounting professionals should embrace RPA.

Finance and accounting professionals are already well-positioned to play some of the roles in an RPA program. For decades, finance and accounting professionals have been relied upon for investment valuation, project management, process documentation, providing assurance, and assessing, defining, and implementing controls. All of these, plus many more, are critical to the successful implementation of an RPA program.

RPA Role Overview

Regardless of the chosen operating model, there are traditionally three primary groups of RPA roles: governing bodies, the RPA program team, and

stakeholders (a host of extended team members within the broader organization). The groups may be called different names, the segregation of the groups may vary, and individuals may wear multiple hats depending on the operating model, but the tasks carried out by each individual role should still be performed in an RPA program of any size.

Figure 5 shows an overview of the typical roles of persons working with and within an RPA program team. Roles illustrated

in yellow are traditionally held by IT professionals given the deep IT expertise required to mitigate technological risks in the areas of architecture and infrastructure, cybersecurity risks, application integration, database and platform maintenance, and so on. All other roles lend themselves to business or IT professionals interchangeably. Table 4 provides an overview of the roles within and around the RPA program that are suitable for finance and accounting professionals.

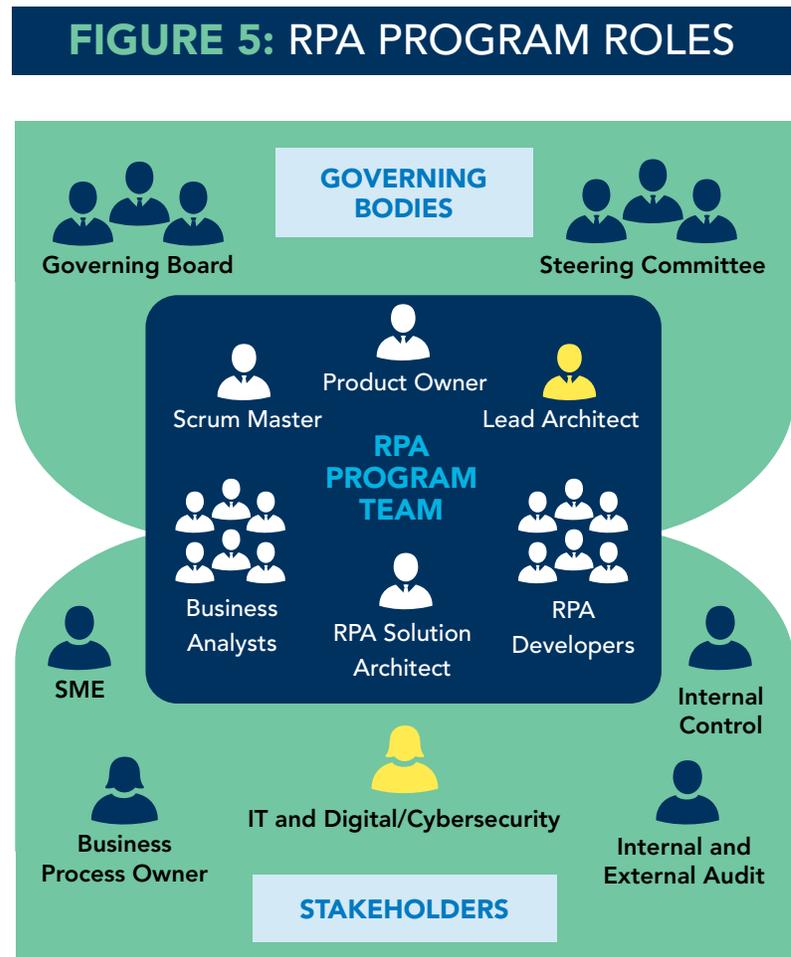


TABLE 4: RPA ROLES FOR FINANCE AND ACCOUNTING PROFESSIONALS

Typically Full-Time Jobs within RPA program					
	PRODUCT OWNER	SCRUM MASTER	RPA SOLUTION ARCHITECT	RPA BUSINESS ANALYST	RPA DEVELOPER
ROLE OVERVIEW	<p>Leader of the RPA program and accountable for overall value delivery, operational execution, and maintenance of automation solutions as well as realizing associated benefits and managing risk.</p>	<p>Facilitates agile development for the team. The scrum master assists the team in achieving goals by removing impediments, ensuring clarity on the definition of done for individual components of delivery, and leading scrum sessions—which are cross-functional working sessions that require delivery of specific deliverables by the end of the session.</p>	<p>Assesses the technical feasibility of opportunities being considered for automation by the program and ultimately leads or supports the technical design of the solution along with the RPA developer. The solution architect recommends efficiencies or changes to the manual process to minimize the chance that there are technical challenges with the actual implementation. This role is typically an IT resource but could be a business resource with the right amount of RPA training.</p>	<p>Works hand in hand with the process SME (who likely currently performs the process) to understand and document the process (creating a process definition document), participating in solution design sessions with the developer and architect, leading testing efforts, and liaising between the business and the development team. Also, generally prepares business cases, supports process selection and prioritization, and tracks data against the key performance indicators established.</p>	<p>Accountable for design, development, testing, and maintenance of RPA solutions. The developer is required to investigate, analyze, and set up automated processes using RPA software. The developer partners with the RPA business analyst, architect, and SME as needed to design and deliver robust automation solutions. Can be a business or IT professional. Advantages to both business and IT professionals playing this role—business professionals know the processes, and IT people have more technical background to get more creative with and handle more complex development.</p>
SKILLS NEEDED	<ul style="list-style-type: none"> • Leadership • RPA technology (intermediate knowledge) • Business process knowledge • Agile methodology and scrum framework (intermediate) • Basic data analytics (to analyze the work of the robots and translate that into greater output) 	<ul style="list-style-type: none"> • Project management • Agile methodology and scrum framework (advanced) • Introductory-level RPA knowledge • Business process familiarity • Can become a Certified Scrum Master and use it for much more than RPA 	<ul style="list-style-type: none"> • Advanced RPA technology knowledge • IT experience—understanding of application landscape and infrastructure • Agile methodology and scrum framework (intermediate) • Business process familiarity 	<ul style="list-style-type: none"> • Meticulously detail-oriented and inquisitive • Business process familiarity (high) • Performance management • RPA technology (introductory to intermediate level) • Agile methodology and scrum framework (foundational) 	<ul style="list-style-type: none"> • Advanced knowledge of RPA software • Some programming language or experience would be a plus but is not mandatory • Agile methodology and scrum framework (intermediate) • Detail-oriented and inquisitive • Business process familiarity (level varies) • Can become a certified RPA developer through RPA software companies at no cost

TABLE 4: RPA ROLES FOR FINANCE AND ACCOUNTING PROFESSIONALS

Typically Roles Outside the RPA Program—Part-Time Involvement because of the Nature of Their Full-Time Job					
	GOVERNANCE BOARD	STEERING COMMITTEE	SUBJECT MATTER EXPERT (SME)	BUSINESS PROCESS OWNER	INTERNAL CONTROL AND INTERNAL AND EXTERNAL AUDIT
ROLE OVERVIEW	<p>The governance board is generally made of a program or executive sponsor in the business area where RPA is being implemented along with other senior leaders in that part of the business and senior IT leaders. The governance board's role is to ultimately approve the overall program budget, sometimes set delivery targets for the RPA program, and certainly to set strategic direction. The governance board also typically agrees on what prioritization principles should be applied as the members within the delivery team accept and implement opportunities.</p>	<p>Steering committee members are typically broad-reaching SMEs in middle management or other nonexecutive leadership positions within the area of the business where RPA is being implemented. A representative from this body typically reviews and approves automation of processes—as aligned with their respective areas of expertise (all steering committee members do not need to provide approval for all processes; typically one committee member approves a specific process in his or her area). Knowledge of business processes is particularly important in this role to ensure the program is not automating processes that another part of the organization is working on or that just should not be automated for any number of reasons.</p>	<p>SMEs are one of the most important roles in RPA implementation. There is typically a different SME for each individual process being automated (unless there are several processes being automated in a given team). The RPA implementation team—specifically an RPA business analyst—partners with the SME to shadow the SME while performing the current manual process, validate the process definition document, sign-off on the solution design document that is ultimately prepared by the RPA team, support development of and execute the user acceptance testing plan, provide feedback during demos of progress made, and, once development and testing are complete, give sign off that the process can be used in production (used for live transactions rather than test transactions).</p>	<p>The business process owner is often the line manager of the SME or someone who has a bit of a wider reach across certain process types or business areas, depending on the size of the organization. This person only has to review work the SME has done—enough to be comfortable and, ultimately, provide approval for the feasibility of the business case assumptions, solution design, testing scenarios, and go-live readiness.</p>	<p>Internal groups are engaged for reviews of processes the program team intends to automate to ensure there are no violations of any existing policies, soundness of the control environment post-implementation, and to grant approval to proceed to development and ultimately to production.</p> <p>External audit will audit individual processes depending on their criticality and sometimes the entire RPA program.</p>
SKILLS NEEDED	<ul style="list-style-type: none"> • Skills needed for traditional finance and accounting role • Introductory-level knowledge of RPA 	<ul style="list-style-type: none"> • Skills needed for traditional finance and accounting role • Introductory-level knowledge of RPA 	<ul style="list-style-type: none"> • Skills needed for traditional finance and accounting role • Introductory-level knowledge of RPA 	<ul style="list-style-type: none"> • Skills needed for traditional finance and accounting role • Introductory-level knowledge of RPA 	<ul style="list-style-type: none"> • Skills needed for traditional finance and accounting role • Introductory-level knowledge of RPA

RPA fundamentals. All persons involved in and interacting with the RPA program should take introductory-level training courses to ensure a foundational understanding of RPA software and capability. The Forrester Wave RPA report released in the fourth quarter of 2019 reported UiPath, Automation Anywhere, and Blue Prism as the top leading RPA vendors in the market.¹⁸ Each of these vendors offers this type of training online and at no cost.

Available training is not limited to that of RPA developer but expands to include RPA business analyst roles—the roles that most easily translate from business positions to digital implementation. The closer to actual RPA development a role is, the more RPA training is needed.

How RPA is delivered. Implementation of RPA opportunities is generally best delivered through agile methodology, which is a software development life cycle model. It is an approach to project management for software development that focuses on the use of incremental, iterative work sequences to deliver planned outcomes.¹⁹ Most organizations take agile methodology a step further and center execution around scrum—an agile “framework for developing, delivering, and sustaining complex products” in which the iterative work sequences are known as sprints.²⁰ In this approach, the stakeholder or end user (business team member in RPA implementation) receives regular demos of development progress as it is made, minimizing the likelihood that the end product does not meet business requirements. This differs from the historically popular waterfall approach that focuses more on linear project management, during which business requirements are gathered at the beginning of the project, a sequential project plan is developed and

executed, then the business user is reengaged upon project completion—presenting greater risk that the automation solution does not meet business requirements and compromising the expected quick implementation timeline.²¹

As agile methodology and the scrum framework are widely used not only across RPA implementations but also across many digital technology programs, finance and accounting professionals should gain an introductory knowledge of this project management approach. All RPA program team members would have to deliver work in accordance with this method if it is chosen for the program.

Who delivers RPA? The RPA program team is comprised of persons who work full-time on RPA and are accountable for sizable components of the delivery of RPA initiatives. To add value to an RPA program, specific capabilities required expand beyond RPA technical skills and agile methodology awareness to a host of soft skills. In the IBM Institute for Business Value report on the skills gap, executives reported the two skills most critical for employees “were behavioral skills—willingness to be flexible, agile, and adaptable to change and time management skills and ability to prioritize.” IBM also found a “culture of continuous learning” a necessary ingredient for success “in the era of AI.”²²

In addition to the roles within the RPA program that are directly accountable for delivery of automation initiatives, there are other roles that allow for involvement with the RPA program while delivering traditional finance and accounting accountabilities. Engagement typically transpires because of the nature of the employee’s specific job, but some organizations allow business professionals to volunteer as citizen developers or business analysts, preparing processes for automation.

¹⁸ Forrester, 2019.

¹⁹ “A Beginner’s Guide to the Agile Method & Scrums,” Linchpin SEO, June 2020, linchpinseo.com/the-agile-method/.

²⁰ Ken Schwaber and Jeff Sutherland, “The Scrum Guide,” November 2017, www.scrumguides.org/scrum-guide.html.

²¹ “Waterfall Methodology in Project Management,” projectmanager.com, www.projectmanager.com/software/use-cases/waterfall-methodology.

²² “IBM Study: The Skills Gap is Not a Myth, But Can Be Addressed with Real Solutions,” 2019, newsroom.ibm.com/2019-09-06-IBM-Study-The-Skills-Gap-is-Not-a-Myth-But-Can-Be-Addressed-with-Real-Solutions.

Next Steps

Finance and accounting professionals who want to get involved with RPA have several actions available to them.

- Find out if there is already an RPA program under way and ask which RPA tool is in use to avoid beginning initial training in another tool. If the organization has not yet begun its RPA journey, choose one of the leading tools to get started for ease of accessibility.
- Engage leadership and/or IT representatives to learn if there is appetite to explore the technology if the organization has not explored RPA at all. As finance and accounting professionals learn more about the technology through RPA software vendor training available online, they should identify a few processes within the organization or a specific team that might make good RPA candidates. Take the IMA RPA Value Creation course (available at www.imanet.org) to view steps to creating a one-page business case for each opportunity. Use this business case to present your ideas to leadership to learn if your organization's leaders are willing to explore piloting the software.
- Engage a few RPA vendors to request quotes and learn about the piloting or POC process. RPA is much more affordable than many organizations (especially small and mid-sized businesses) realize.
- Deepen RPA expertise as much as interest leads. Certificates of completion are available in the RPA business analyst area, and RPA software vendors offer certified RPA developer designations—all online.
- Consider learning more about agile methodology and the scrum framework. If it is intriguing enough, a finance and accounting professional may consider becoming certified as a Professional Scrum Master.
- Proactively seek opportunities to develop behavioral skills: being adaptable to change, time management and prioritization, leadership, and so on.
- Identify ways to focus more energy on tasks at the higher end of the finance and accounting process pyramid rather than the lower, more automatable end. •



CONCLUSION

Automation is here to stay. Although widespread democratization of RPA, the concept of a bot for every employee, may still be far off, digital teammates are already on the payroll and leadership is assigning them finance and accounting tasks. As RPA vendors strengthen their native offerings and progress with integrating technology partnerships, the complexity of the processes digital teammates can perform with intelligent RPA will undoubtedly increase.

To become more efficient, eliminate mundane tasks, and holistically transform the finance and accounting function, many CFOs are already looking to RPA as a solution that also exposes staff to digital tools, reduces cost, and paves the way for other technologies. To add to these benefits, with proper governance and appropriate engagement of SMEs, scaling RPA results in a strengthened control environment and sustainable automation solutions that enable staff, willing to reskill, to further invest in analytics, strategy, and business decision support. As businesses demand more, CFOs who do not act will find themselves leading overpriced, overworked teams without the bandwidth or skill set to operate in an agile manner or deliver elevated analytics supporting real-time business decisions.

To avoid risk of becoming obsolete or competing for roles they are ill-prepared for, finance and accounting professionals must, too, take action to transform. RPA is a low barrier-to-entry technology with free online training available, providing an easily accessible path to upskilling and adding value within an individual team or across a department. The skills gained through RPA are transferrable and, at a minimum, foundational to other technologies—opening the door to future opportunities. For those who do not desire to learn development or business analyst skill sets, they can get an introductory



understanding of the technology to support process identification, governance, or review exercises. In any of these scenarios, finance and accounting professionals will find themselves more valuable and, subsequently, more marketable from the experience.

Now equipped with the information provided, those who have not yet embraced RPA are prepared, encouraged, and, hopefully, motivated, to proceed. As the profession embarks upon a bright yet different future alongside digital teammates, the business world should brace itself as the power of the transformed finance and accounting function is unleashed. •



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