

Robotic Process Automation to Aid Accounting and Finance Departments

Enterprises are currently experiencing one of the most groundbreaking periods of technology evolution since the Internet first came on the scene decades ago,¹ and the rise of robotic process automation (RPA) is a perfect example. RPA has been around for several years, but only recently has it started to dramatically change how enterprises conduct their operations. One example is the increased demand for business process automation, which continues to drive the growth of artificial intelligence (AI) and software robotics.² The market for RPA is solid, and it is expected to reach nearly US\$3 billion by 2021.³

RPA does not refer to a physical robot; rather, it is a type of configurable software (also known as “softbots”) that performs boring, repetitive and low-value tasks currently carried out by humans.⁴ Various categories of robots are currently transforming the world and the business environment, including collaborative robots, telepresence robots, warehousing and logistics automation, healthcare robots, and self-driving

vehicles.⁵ Collaborative robots, or “cobots,” are designed to function, interact and operate collaboratively with humans, opening up new productivity potential for industrial manufacturers.⁶ Cobots are flexible, easily programmable and can learn complex tasks to achieve desired goals. A telepresence robot refers to a computer, tablet or



Angel R. Otero, Ph.D., CISA, CRISC, CPA, CITP, CICA

Is an assistant professor of accounting and academic chair for the accounting and finance online programs for the Nathan M. Bisk College of Business at the Florida Institute of Technology (USA). He has more than 20 years of experience in the areas of public accounting and auditing, internal control audits, IT consulting, and information systems auditing. Otero previously worked at Deloitte & Touche, LLP, for more than 10 years and attained the position of senior manager. His research interests include the areas of financial audits and internal controls, information systems auditing, accounting information systems, information security audits, and risk assessments. He has published research on the assessment of general information technology controls (GITC) surrounding financial application systems. He is also the author of a published university textbook on information technology auditing.

Ryan Paul Fink, CGBP

Is research manager for iBuyer.com, a real estate technology startup. During his time there, he has gathered and assessed information about the real estate market and presented findings to management, along with recommendations to improve overall business operations. Fink has also worked as an investment associate for Charles Brooks Holding Company, a real estate investment firm. He founded the Florida Institute of Technology Internal Audit Student Organization and served as the organization's president.

“ ROBOTS HAVE THE ADVANTAGE OF NOT REQUIRING INTEGRATION WITH EXISTING TECHNOLOGIES AND CAN, THEREFORE, BE ROLLED OUT IN A MATTER OF WEEKS. ”

smartphone-controlled robot that provides remote presence, allowing those involved with the robot “to view and hear the robot’s operator while the operator can view what the robot is ‘looking’ at, as well as hear sound at the robot’s location.”⁷ Warehousing and logistics automation technology “empowers warehouses to handle fast-changing multichannel and omnichannel requirements and accelerate service levels to support same-day and next-day delivery.”⁸ It is estimated that by the year 2030, most operations, particularly those related to warehousing and logistics, will be automated.⁹ Healthcare robots (also referred to as robots in medicine, surgical robots and medical robots) are “robots used in and out of hospital settings to improve the overall level of patient care.”¹⁰ These robots create operational efficiencies and cost reductions for healthcare facilities by assisting the workload of medical personnel, allowing time to focus on more pressing responsibilities. Surgical robots will play a much bigger role in healthcare in the future, as they are less invasive and more accurate when performing complex surgical treatments.¹¹ The last category of robots, self-driving vehicles, refers to “a vehicle capable of sensing its environment and operating without human involvement.”¹² “The market for self-driving and semi-autonomous vehicles could be US\$77 billion by 2035.”¹³

RPA enables enterprises to perform business processes in much simpler ways, without requiring much intuitive thinking. The phrase “divide and conquer” is applicable here with regard to such processes. For example, in 1913, US industrialist Henry Ford invented the modern assembly line, breaking down processes into repetitive tasks and completely transforming the manufacturing industry. In modern-day automobile manufacturing, robots are programmed to perform specific tasks that would otherwise be performed by humans. Ford Motor Company’s implementation of a “virtual factory” in manufacturing facilities has helped the company

reduce costs by analyzing computer simulations of the complete vehicle production process.¹⁴

The use of robots is not limited to the auto industry. According to a recent survey of more than 400 accounting and finance companies, 53 percent have already started using RPA, and this number is expected to increase by 72 percent over the next several years.¹⁵

Some of the major benefits of RPA and some of the common challenges and risk factors enterprises may face when implementing RPA should be highlighted.

Benefits of RPA

Both literature and industry experts have highlighted several benefits of using RPA. Integrating robots into an enterprise results in an overall cost reduction and enables employees to devote their attention to more value-added activities,¹⁶ such as collaborating more frequently, sharing knowledge among functional units, and discussing new or improved ideas that can help achieve enterprise goals and objectives.¹⁷ With fewer repetitive tasks to perform, employees can take on additional responsibilities or challenges, such as completing high-value projects. RPA frees employees from “mind-numbing, repetitive duties that lead to disengagement, leaving them to focus on the higher value tasks that stretch their creativity and responsibilities.”¹⁸ RPA is a necessity for enterprises that want to improve operational efficiency because robots do not experience fatigue like humans do, are not prone to human error, are cheaper than human labor and tend to be more productive than their human counterparts.¹⁹

Robots are here to stay. As a separate technology platform, robots have the advantage of not requiring integration with existing technologies and can, therefore, be rolled out in a matter of weeks, taking away ordinary tasks from employees.²⁰ Based on a survey conducted in 2017, “over 40% of workers... spend at least a quarter of their work week on manual, repetitive tasks, with email, data collection, and data entry occupying the most time.”²¹ By eliminating these routine tasks, employees have 25 percent more time (on average) to enhance their

work environment, whether through brainstorming with project teams, developing new business processes or working on side projects that increase revenue. With less time spent on repetitive tasks, employees' morale is likely to increase, adding to job satisfaction and productivity.²² The automation side of RPA allows robots to mimic "existing rule-based activities and perform them exactly as a human would."²³ Robots improve productivity by reducing mistakes, resulting in quality output that is compliant with enterprise policies, procedures and applicable laws and regulations.²⁴

“ A GOOD WAY TO CENTRALIZE RPA IS BY IMPLEMENTING A CENTER OF EXCELLENCE (COE). ”

Cost savings are another critical benefit of RPA. The cost of a single robot ranges from US\$5,000 to US\$15,000.²⁵ Therefore, the total cost of 10 high-priced robots would be approximately US\$150,000. It can be assumed that implementing RPA with these 10 robots would allow an enterprise to replace 20 employees dedicated to performing repetitive tasks. If each employee earns an average annual salary of US\$50,000, a total of US\$1 million salary cost would be incurred. Replacing the 20 employees with robots would save approximately US\$850,000 in just one year. **Figure 1** summarizes the benefits of using RPA.

Challenges of RPA

The implementation of RPA has not been smooth.²⁶ Practical challenges or risk factors with the adoption of RPA relate to enterprise-level

governance. Enterprise RPA implementations typically start with processes that lack the necessary detail and procedures to ensure errors are adequately corrected and risk is reduced to acceptable levels.²⁷ Such lack of clear structure or governance promotes additional risk across the enterprise that may directly affect critical operations. In one case, robots were tasked by a financial institution to obtain and copy financial transactions from one internal corporate system and display such transactions into another system for efficiency purposes. By operating simultaneously, but in an unstructured manner, the robots quickly overloaded the systems with financial transactions and other nonrelevant information, resulting in polluted corporate systems unable to continue with normal operations.²⁸ To address this kind of risk, RPA processes must be centralized and follow a robust governance structure. A good way to centralize RPA is by implementing a center of excellence (CoE). A CoE "ensures that best practices are used in the development of reusable solutions and that the use of bots does not increase negative risks for the organization."²⁹ Common activities and responsibilities of a CoE include:

- Establishing and guiding automation processes within the enterprise
- Providing trainings and seminars to increase RPA awareness
- Assessing the quality of applicable automation solutions, ensuring that only the best ones are implemented
- Monitoring robot operations and ensuring effective compliance with policies, procedures and service level agreements

Figure 1—Benefits of RPA

Benefit	Description
Operational efficiency	Performs activities and tasks faster; generates accurate and complete output
Nonintrusive	Requires no integration with existing technologies
Automation	Mimics existing tasks currently performed by humans
Consistent and compliant execution	Eliminates issues and reduces mistakes caused by humans
Reduction of mundane tasks	Allows more time to focus on enhancing the work environment while increasing morale and job satisfaction
Cost-effective	Produces significant cost savings that allow for higher profits

- Following up and reporting on the main development stages
- Ensuring adequate execution of established governance processes
- Guaranteeing the continual improvement of automation processes and tools

Additional related issues regarding RPA implementation revolve around a lack of adequate controls to address cybersecurity “gaps,” insufficient documentation describing new or revised business processes, sustainability, and management’s dedication to finding new areas and opportunities for improvement (e.g., automating more complex processes).^{30, 31} **Figure 2** shows the top-five risk factors and challenges associated with RPA according to Deloitte³² and PricewaterhouseCoopers (PwC).³³

The American Institute of Certified Public Accountants (AICPA) has identified two common challenges related to RPA implementation, which summarize those listed in **figure 2**.³⁴

1. Alignment of RPA implementation with enterprise goals and objectives
2. Management’s lack of technical knowledge and commitment

Alignment of RPA Implementation With Enterprise Goals and Objectives

Strategy and governance should define the overall vision and value of RPA at the enterprise level.³⁵ An enterprise governance of information and technology (EGIT) program is a perfect example, as it is “concerned with value delivery from digital transformation and the mitigation of business risk that results from such digital transformation.”³⁶

Nevertheless, in most cases, enterprises doubt whether RPA will add value or align with overall business goals and objectives.³⁷ If robots do not add value to the enterprise, there is no point in investing in the software. For example, for an enterprise that typically has only a few electronic transactions and, therefore, does not require the heavy use of computers, implementing RPA does not make much business sense. In contrast, for an accounting and investment firm that constantly processes electronic transactions (e.g., posting journal entries and payments received and recording sales and purchase transactions) and stores documents virtually, RPA is certainly a viable option.³⁸

A case study of OpusCapita, an outsourcing firm that processes financial data for other enterprises, illustrates the importance of implementing an effective RPA plan.³⁹ The purpose of the study was to examine how OpusCapita tackled the challenges of introducing RPA to the market. Specifically, the case outlined the steps required to help OpusCapita’s clients prevent RPA-related challenges while ensuring value and the achievement of enterprise goals and objectives. The study found that OpusCapita accomplished this by following a specific and structured RPA implementation process, as outlined in **figure 3**.

Management’s Lack of Technical Knowledge and Commitment

Because RPA generally deals with entire business processes, management is usually in charge of its implementation.⁴⁰ That is, because managers oversee business operations, they formally direct the implementation of RPA. This can be problematic because many managers lack the technical knowledge required to embark on this type of implementation.⁴¹ If a manager is not familiar with

Figure 2—Top-Five Risk Factors and Challenges Associated With RPA

Deloitte	PwC
1. Standardization, uniformity and consistency of processes	1. Consistency and stability of processes
2. IT support and alignment	2. Technical difficulty
3. Integration with other IT systems and adaptability	3. RPA’s capacity to deliver benefits to current operations
4. Stakeholder engagement and anticipated outcomes	4. Ownership and accountability of RPA implementation
5. Impact on human workforce	5. Operational risk management

Figure 3—Planning Steps to Ensure RPA Value and Compliance

Step	Description and Significance for Client Enterprise
1. Conduct training, seminars or workshops to determine whether RPA is suitable and a good fit for the enterprise.	OpusCapita held a two-hour workshop with a client to determine whether RPA was a good fit, helping the client identify and validate the need for RPA.
2. Divide and conquer: break down business activities and processes to identify those being performed repetitively and not requiring much intuitive thinking.	OpusCapita broke down the tasks and activities performed by each employee within a client enterprise, helping to identify which tasks and activities were suitable for robots to perform.
3. Identify and assign those activities that can be performed effectively and efficiently by robots to add value and reduce costs.	OpusCapita presented a client with a plan for using robots to achieve cost efficiency and enhance productivity, which also supported the addition of robots to add value and meet the client's goals, objectives and needs.

RPA and does not have adequate in-house resources (e.g., IT personnel) with the required knowledge, outsiders may have to be brought in, either from recruiting personnel or hiring third parties, both of which can be costly. Ideally, management should have enough technical knowledge and background to oversee this type of project.^{42, 43}

“ANOTHER CRITICAL REASON FOR IMPLEMENTATING RPA INCLUDES HAVING ROBOTS AVAILABLE TO QUICKLY RESTORE AND CONTINUE BUSINESS FUNCTIONS FOLLOWING A DISASTER.”

Obtaining and maintaining senior-level support throughout the implementation of any major change, such as RPA, is of the utmost importance.⁴⁴ “RPA programs have a greater chance of success with C-suite and senior executive commitment.”⁴⁵ Because many enterprises are “uncertain where and how to begin to transition to robotics,” management’s commitment and support are critical.⁴⁶ Management should first assist in choosing the right business processes to automate with RPA.⁴⁷ This requires financial and operational assessments within and across the various departments to determine the feasibility of RPA and its ultimate value to the enterprise.⁴⁸ Given complex

schedules and sensitive business environments, these assessments are a challenge and require the direct participation of management.⁴⁹ Other challenges that may be encountered during RPA implementation include overcoming restrictions that might prevent effective automation, configuring the RPA software, managing people and the business culture, and monitoring RPA performance. RPA implementation “should ensure things like first-class operational support for constant monitoring and troubleshooting” and frequent intervention by management “to make certain that robots’ usage is optimal across processes, performance metrics, and full audit trails.”⁵⁰

In a study of issues that emerged during the setup and implementation of RPA, researchers interviewed employees across multiple industries whose enterprises had recently automated several accounting and finance tasks. Specifically, they asked about the reasons for implementing RPA, the tasks for which RPA is best suited, and the challenges and risk factors generated by RPA. They discovered that the most suitable tasks for RPA are “labor-intensive, repetitive, high volume, rules based, and structured.” They also found that requirements related to effective security, compliance, internal controls and governance were common reasons for accounting and finance departments to implement RPA.⁵¹ For instance, robots can be designed to work without interruption, minimizing downtime and human access to sensitive systems and information. Having humans process sensitive and confidential information can lead to security and privacy breaches, ranging from intentional data

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theft to accidental disclosures.⁵² Another critical reason for implementing RPA includes having robots available to quickly restore and continue business functions following a disaster. Accounting and finance departments employ RPA to successfully achieve the following:

- Protect their sensitive financial systems (security).
- Ensure compliance with applicable laws, regulations, policies and procedures (compliance).
- Implement new internal controls or complement existing ones to manage risk (internal controls).
- Work together to achieve organizational goals and objectives (through governance).

Other reasons include staying up to date and competitive as well as improving performance and enhancing productivity.

In terms of risk factors and challenges, the study found that it is critical for employees, particularly accounting and finance personnel, to be exposed to and understand RPA basics, at a minimum.⁵³ This understanding, which can be achieved through trainings and seminars, may equip personnel to correct issues and problems that are not necessarily technical in nature. Otherwise, if a system is down while waiting for IT personnel to fix a problem, such downtime could easily translate to significant amounts of lost revenue.

With regard to management's commitment and support, the researchers concluded that before enterprises invest in RPA, they should establish an "organization-wide bot governance structure" that oversees the RPA process.⁵⁴ Such governance structure must guarantee that the intended RPA

technology does support the enterprise strategy and objectives and that IT resources will be ready and available to support the implementation.⁵⁵ The structure also ensures accountability and responsibility across all stakeholders involved in the RPA implementation. Ideally, members of such a structure would have prior automation experience, adequate technical skills and be actively involved throughout the RPA implementation process. As the appetite for RPA continues to proliferate, organizations should recognize the necessity to establish governance programs such as governance, risk and compliance (GRC) platforms from the start in order to "enforce consistency, accountability and standardization."⁵⁶

Conclusion

It is important for enterprises to understand RPA before taking on its implementation. Emerging technologies such as RPA offer many opportunities for enterprises to get ahead and stay competitive, but they also expose enterprises to new sets of risk factors. Managers must do their homework, be diligent, and clearly understand the benefits and added value before considering RPA. Implementing robots to perform mundane and time-consuming tasks provides employees with opportunities to focus their time, energy and effort on more strategic, high-value activities consistent with the enterprise's mission, goals and objectives.

On the other hand, challenges, risk factors and obstacles must also be studied in detail and tackled in an effective and efficient manner. Procedures must be established to ensure that the RPA implementation is aligned with the enterprise's goals and objectives, management is on board from day one, and relevant personnel possess the necessary technical knowledge. The establishment of well-defined governance procedures is of utmost importance to oversee the implementation and operation of robots, provide assurance of the quality of the automation and minimize the chance of an unfavorable impact on the enterprise. Only by understanding, preparing for and addressing these factors can enterprises capitalize on RPA and expand its usage.

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