Robotics Process Automation and Beyond

TECHNOLOGY SPOTLIGHT

"RPA is a promising new development in business automation that offers a potential ROI of 30–200 percent—in the first year"

—Xavier Lhuer, Associate Partner at McKinsey

Robotic process automation (RPA) has been around for several years in Europe and the U.S. In Canada, however, it is only a recently introduced business tool being piloted or in early-phase implementation in most, if not all, financial institutions and telecoms.

Gartner Research reports the global market for RPA software grew by 63.1% to US$846 million in 2018 and is expected to reach US$1.3 billion in 2019 and US$2.4 billion by the end of 2022.[1]

By 2021, Forrester estimates there will be more than four million robots (bots) doing office and administrative work as well as sales and related tasks.[2] So far, instead of the IT department, it has been the business people with the help of third-party professional services who have been building most of them.

> "Finance and accounting process automation can really run the gamut. Simpler, enhanced finance automation can address common, industry agnostic accounting issues. RPA can build momentum by performing repetitive, manual and accounting processes. And, cognitive computing can be configured to adapt to non-routine, industry and organizationally specific needs," **said Kyle Cheney, Deloitte Risk and Financial Advisory partner, Deloitte & Touche LLP.** "No matter the level of process automation complexity, it's easy to see how efficiency and controls can be improved by well-executed programs."

From a financial perspective, more finance functions are either implementing this process improvement tool or have plans to do so in the near future. In a recent Deloitte Center for Controllership™ poll of more than

1 www.gartner.com/en/newsroom/press-releases/2019-06-24-gartner-says-worldwide-robotic-process-automation-sof
2 www.forrester.com/report/The+RPA+Market+Will+Reach+29+Billion+By+2021/-/E-RES137229

1,700 finance, accounting and other professionals, 52.8% say their organizations plan dig-ital controllership improvements by leveraging process automation, analytics and other technologies for financial and accounting processes in the year ahead. Using finance and accounting RPA to increase efficiency and internal controls is the top priority for such efforts (34.7%).[3]
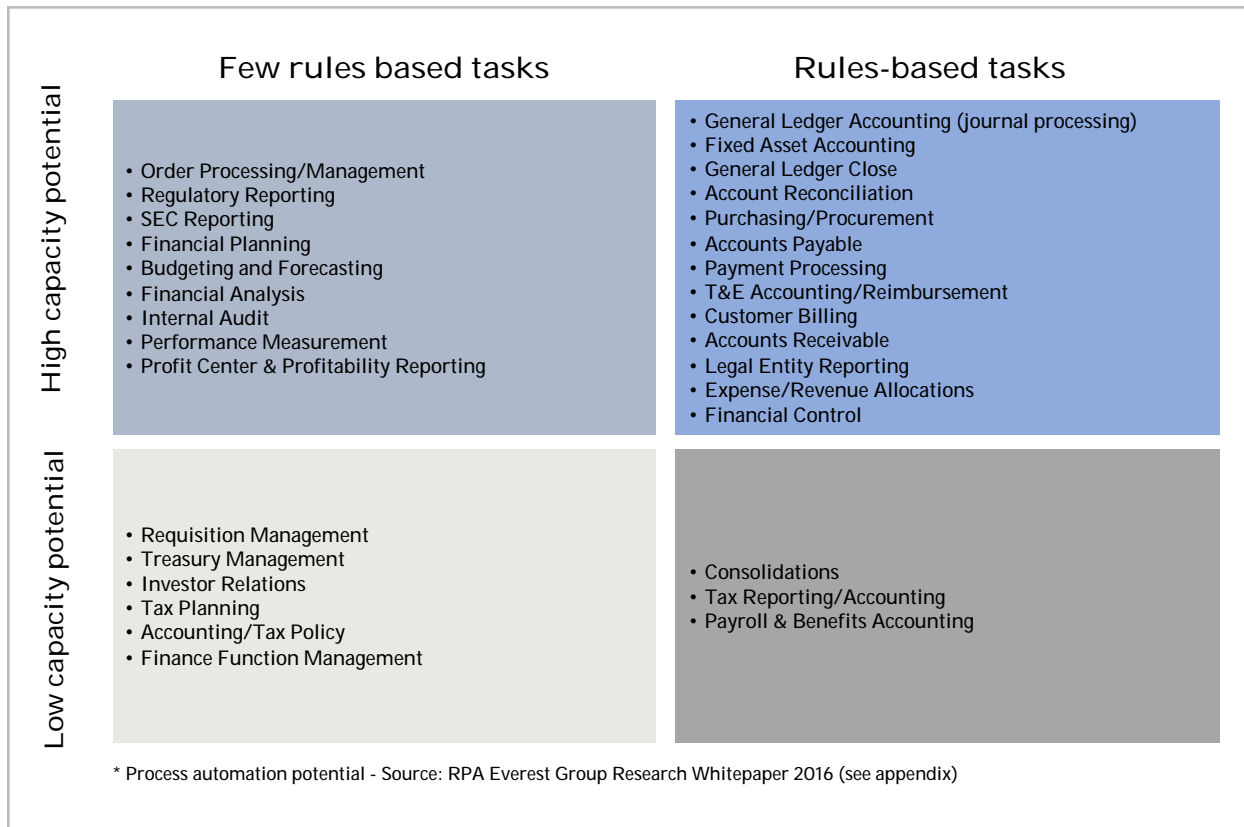
Description

RPA is a software development toolkit that allows non-engineers to quickly create software robots to automate rules-driven business processes. At the core, an RPA system imitates human interventions that interact with internal IT systems. It is a non-invasive application that requires minimum integration with the existing IT setup; delivering productivity by replacing human effort to execute routine, mostly mundane tasks. Any company which has labour-intensive processes, where people are performing high-volume, highly transac-tional sets of activities, will boost their capabilities and save money and time with RPA.

When automating financial processes, we tend to consider workflow technologies, optical character recognition, and automated data feeds. RPA software solutions can interact with multiple existing applications, such as your ERP, CRM, even your email system, to mimic the actions of a person performing repetitive activities.

Ideal processes or activities for RPA

When initially looking to implement RPA, it is best to identify processes or activities that are highly rules-based, repetitive, stable, and well defined. RPA is also most effective when working with consistent and highly structured data sources. The table below classifies financial processes and activities in different quadrants. The high rules-based/high-capacity potential processes are those that should be addressed first. Of course, RPA can be used for processes and activities outside finance. The same approach should be used for those activities as well.

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3   Deloitte US Press Release, New York, February 7, 2018, *Finance and Accounting Robotic Process Automation a Priority As Over Half Plan to Improve Digital Controllership in 2018*

	Few rules based tasks	Rules-based tasks
High capacity potential	• Order Processing/Management • Regulatory Reporting • SEC Reporting • Financial Planning • Budgeting and Forecasting • Financial Analysis • Internal Audit • Performance Measurement • Profit Center & Profitability Reporting	• General Ledger Accounting (journal processing) • Fixed Asset Accounting • General Ledger Close • Account Reconciliation • Purchasing/Procurement • Accounts Payable • Payment Processing • T&E Accounting/Reimbursement • Customer Billing • Accounts Receivable • Legal Entity Reporting • Expense/Revenue Allocations • Financial Control
Low capacity potential	• Requisition Management • Treasury Management • Investor Relations • Tax Planning • Accounting/Tax Policy • Finance Function Management	• Consolidations • Tax Reporting/Accounting • Payroll & Benefits Accounting

* Process automation potential - Source: RPA Everest Group Research Whitepaper 2016 (see appendix)
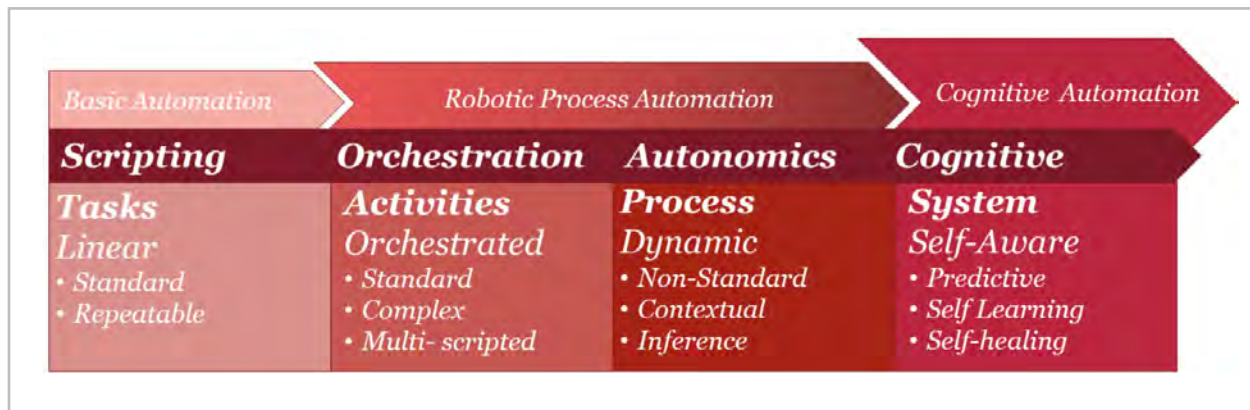
Importance

The value proposition of RPA is the optimal use of human resources while working with technology on repetitive tasks. It is the beginning of a human workforce working closely with a digital workforce (i.e., bots) to leverage each other's strength (aka Co-Boting).

Expansion of Cognitive Automation

As businesses become more digitized, RPA provides the building blocks for digitizing rudimentary processes; however, the broader market for cognitive process automation is more than 10 times the size of RPA. Cognitive automation or intelligent automation (i.e., the application of AI techniques to automate specific processes) creates more capabilities and enables end-to-end business process transformation. However, adoption of AI is still in the early stages in comparison to RPA. Only 5% of companies consider themselves to be mature in their use of AI compared with the 15% who consider themselves as mature in RPA.[4]

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4   www.ey.com/Publication/vwLUAssets/ey-robotics-and-intelligent-automation-power-of-human-and-machine/$FILE/ey-robotics-and-intelligent-automation.pdf

The spectrum of automation technologies:

Source: Institute for Robotic Process Automation and Artificial Intelligence

Just as RPA was a significant improvement over basic automation of standard and repeatable tasks, so cognitive automation will be an important advancement in the automation journey. The infusion of AI capabilities will enable RPA solutions to become more contextually aware of the data they are processing and will eventually support the processing of unstructured data. These capabilities will allow businesses to unlock new processes for automation.

Business Benefits and Considerations

The automation of rules-based activities and processes will:

- increase efficiency in performing processes by allowing employees to focus on higher value, strategic work and enable better allocation of resources
- improve data quality by reducing manual errors and strictly following standard operating procedures as programmed in the bot
- generate detailed transaction logs for compliance and audit purposes
- be easily and inexpensively scaled to meet surges in demand
- require minimum integration effort with existing IT systems (accounting, ERP, CRM, etc.)
- improve internal controls by testing wider sets of data and reducing human error
- work 24 hours a day, 365 days a year
- limit reliance on the IT Function required in the operations of the bots.

Generally speaking, RPA is faster, cheaper, and easier to implement than full-out system upgrades. RPA does not require the same level of IT involvement as traditional automation. Anyone with a good understanding of process and workflow and some coding experience

can program RPA bots. Programing bots is less complex than coding since much of the software uses drag-and-drop commands. However, a basic knowledge of coding is very useful for developing the set of commands in an efficient manner.

THE BENEFITS OF RPA QUANTIFIED

The returns on RPA make it possible for most organizations to derive a positive business case. Based on the average 2018 list price of RPA service providers, you can start your RPA project with an annual "platform" fee of approximately CDN$150,000, and an annual per-bot fee of approximately CDN$7,500. An organization can run one bot for 24 hours a day 365 days a year.

A bot can do the work of approximately three to six people, depending on the volumes and repetitive nature of the work. This results in approximately CDN$300,000 to over CDN$500,000 annual saving for an investment of approximately CDN$172,500 to CDN$195,000 per year. The objective is to optimize each bot to work 24/7. For large organizations, the implementation of bots could be achieved in one department (e.g., a manual account payable department). For example, where there are six full time equivalents (FTEs) performing accounts payable activities, one bot could be implemented to process the transactional activities currently performed by three to four FTEs while two to three FTEs could handle the exceptions to the standard processes as well as manage all non-standard activities.

In a smaller organization, the identification of processes or activities to be automated needs occur across the organization in order to maximize the use of the bot. For example, one bot could perform the repetitive work of accounts payable, the application of client payments, the review of duplicate vendors, the matching of values from one data source to another, etc. The sum of these activities may correspond to a few FTEs but may not convert to actual full-time human workers (i.e., 1.25 FTEs or 2.5 FTEs). Implementing RPA still liberates capacity for these workers to focus on more cognitive tasks. The business case for adoption of a bot is harder to make in a small business since quantification of the savings is naturally difficult. Nevertheless, some savings can be expected, especially if the company's business is growing or there is a labour shortage.

While the cost benefits from RPA implementation can be significant, it is also important to factor in costs related to human oversight and quality control since these costs are often overlooked.

Permanent or temporary fix?

There is an ongoing debate over whether to implement RPA only when completely re-engineering a process or as a band aid or a quick fix on a process until something more permanent changes the process. In the former use, the process must be very well defined and well documented. This can delay the start of an RPA implementation and defer some cost savings, but it is the most efficient way to implement RPA since the process will have been redesigned from end-to-end in one project. However, it is not incorrect to use bots to temporarily render a process or activity more efficient until a new system is selected and

implemented, or a transformation project commences. Consider an organization that has grown through acquisitions and has not integrated its different systems. All these systems need to feed to one general ledger and at times this is done manually. In this case, a bot could be programmed to run routines and validate the completeness of the transfer of data. It could also map the different system accounts to the main general-ledger accounts. The human workforce can then spend more time on exceptions and analysis.

Controls

The use of bots is very flexible; however, reviewing and updating their programming are key to the continued correctness of their output. Programming bots will play an important role in the organization.

As an organization uses more and more bots, there will be a need to orchestrate them and review their programming. Bots mimic the activities of human users of the various systems. A username and password is needed for each application. A bot can also be programmed to perform certain activities and outcomes that may not be desired. Good governance would dictate that the programming of the bots be reviewed by a second person to validate whether the original desired outcome has been achieved. Development space is required for programming the bots prior to their release into a live environment. Most, if not all, RPA suppliers provide a development environment with their solution.

Potential Challenges to Implementation

Elusive cost savings and return on investment

Some RPA software firms are demonstrating actual cases where the use of RPA has shaved more than 40% of costs off the bottom line. Some cases are real but beware of hype. Many RPA pilots and early-phase implementations have been left stranded because clients just could not figure out the ROI or how to implement the software in their business. An RPA implementation is not simply buying software that will remove all manual efforts overnight; it requires real effort and buy-in from IT and operations leaders to invest in the technology, manage the organizational change, and teach the transformation skills.

Working toward biased targets

Organizations buying into an RPA solution are often planning their results based on highly favourable information. This can put the implementation team under tremendous pressure to develop and execute an RPA strategy against pie-in-the-sky metrics. However, many organizations do not have the necessary in-house skills, clear picture of the project's outcome, or understanding of how the project will impact resources to achieve these metrics and need to turn to third parties for assistance.

Selecting the right provider

Some advisors are claiming they are now "RPA experts" while struggling to scale up talent bases that can understand the technology and deal with the considerable change-management tensions within their client organizations. RPA is murky and complex and not something you can train a 28-year-old MBA to master overnight. Meanwhile, some advisors simply broker RPA software deals for small fees only to make a hasty exit from the client because they do not have the expertise to roll out effective implementation and change-management programs.

Experienced RPA advisors tell their clients that implementing RPA will not be easy and requires a centralized, concise strategy. As the RPA market grows, so does the expertise of certain consultants and boutique firms. Below are some considerations when assessing a potential RPA advisor:

- Are they able to provide end-to-end services that include use-case identification, change management, and governance considerations?

- Do they have a clear RPA roadmap that moves toward a broader cognitive automation offering?

- Do they have a history of delivering successful business outcomes?

Separation from applications and underlying systems

RPA software runs separately from your underlying systems and can be implemented and altered relatively easily. This has led to many business-led implementations that lack integration with IT and underlying systems. The separation has created control and governance issues because RPA may not have been subject to the same robust enterprise-wide IT controls. However, businesses are changing as they realize the need for more robust control and governance structures around RPA.

Need for human processing and oversight

While RPA implementation is often marketed as a tool for process automation, RPA solutions today still require human processing and oversight. Such human work could include quality control, maintenance, and optimization of the bots. For example, if you make updates to the enterprise resource planning (ERP) system used by your RPA software, your bots may also need to be adjusted or reprogrammed to ensure the processes or tasks they are performing work correctly. From a control point of view, you want someone to review the programming of the bots to confirm the actions programmed result in the expected outcome.

Conclusion

Proper RPA implementation can generate rapid and significant return on investment. However, there are many RPA solutions in the marketplace and each one is designed to perform in different ways. When selecting an RPA solution, you need to evaluate various solutions

to identify which best fits your RPA needs, your IT infrastructure, and desired ease of use. Beyond RPA, businesses should begin thinking about more advanced RPA solutions that combine RPA and artificial intelligence to achieve the ultimate goal of leveraging cognitive automation to deliver end-to-end process transformations.

Appendix

Examples of RPA in Finance

Supporting financial close
The financial close and reporting process encompasses all the tasks and processes — from closing out subledgers to creating and delivering financial filings to regulatory bodies — which involve many systems, departments and individuals. The process requires posting data from sources such as Excel to these subledgers, a tedious undertaking that RPA can mitigate.

Data extraction for accounting close
All departments and divisions record transactions in journals, which need to be consolidated and reconciled. A robot can gather and consolidate transactions and reconcile them in your ERP.

Data management
Aggregating and analyzing financial and operational performance is a business-critical function, but collecting, processing and delivering that information in a timely manner often feels like a sprint. A robot will take this job on and not only lighten the time-sensitive burden for employees gathering data, but also benefit executives who need information to gain insight into the business.

Accounts payable
Bots can find supplier invoices in an email in-box, trigger the optical character recognition program, capture the needed information and upload this data to the general ledger. Bots can send emails to vendors regarding the compliance of their invoices. They can list out the invoices produced overnight and flag which invoices need manual intervention. Because these tasks are all repetitive and rules-based, RPA is ideal for optimizing accounts payable processes.

RPA Software Vendors and Their Products
The landscape for RPA vendors is in flux. New vendors come into the market while existing vendors enhance their solutions. The following is a list of RPA vendors and their products as of early 2019. This list is provided as information to our readers and should not be considered in anyway as an endorsement by CPA Canada.

RPA Software Vendors and Their Products

The following criteria were used for inclusion to the list of vendors[5]

- Each vendor has a product orientation rather than a service orientation.

- These providers have strong breadth of RPA functionality.

- Each vendor markets actively in at least two major regions.

- Vendors meet the minimum revenue requirements.

- Each vendor has significant market share or is an innovator developing new capabilities.

- These providers generate strong customer interest.

5   The Forrester WaveTM: Robotic Process Automation, Q2 2018, The 15 Providers that Matter most and How they stack up by Craig Le Clair, June 26, 2018

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The entire series covers technology trends that impact CPAs and are available on our website.