CAPCO

HOW RPA ADDS VALUE FOR INTERNAL CONTROL CENTRIC FUNCTIONS

INTRODUCTION

Governance throughout the RPA lifecycle is essential for operational resiliency and maintaining effective controls.

By: Michael Martinen and Yan Gindin

As the ripple effect of digital disruption is felt across industries, and as more companies adopt Robotic Process Automation (RPA), control centric functions are at an inflection point: become technologically savvy or lose professional relevance. One of the key benefits of implementing RPA is the ability to rely on automation bots for the performance of operational processes while strengthening the control environment. However, poorly implemented RPA deployment presents several potential risks for Enterprise Risk Management (ERM) teams to assess and monitor.

Gartner's "Future of Finance" research identified poorly implemented RPA implementation as putting internal controls at risk, since rushed implementation has created risk management blind spots[1].

Governance throughout the RPA lifecycle is essential for operational resiliency and maintenance of effective controls as absence of clear enterprise-wide governance framework does not allow for proper implementation of RPA strategy.

Robotic Process Automation - what's in a name?

According to the Institute for Robotic Process Automation and Artificial Intelligence, RPA is the application of technology that allows users to configure computer software to capture and interpret existing applications. RPA involves software robots, also known as bots, to autonomously execute a series of pre-programed actions in a digital system. It is worthy to note that bots interact with an organization's existing information technology (IT) architecture through the presentation layer that does not require complicated and drawn out integration of legacy systems. RPA is used to automate highly manual, repetitive, and rule-based digital tasks, such as data entry, data reconciliation, data transfer, data processing, data mapping, report generation, and gathering data from web browsers. Companies use RPA to automate their internal processes to increase their efficiency, which allows the company to allocate workers to focus on higher-value work.

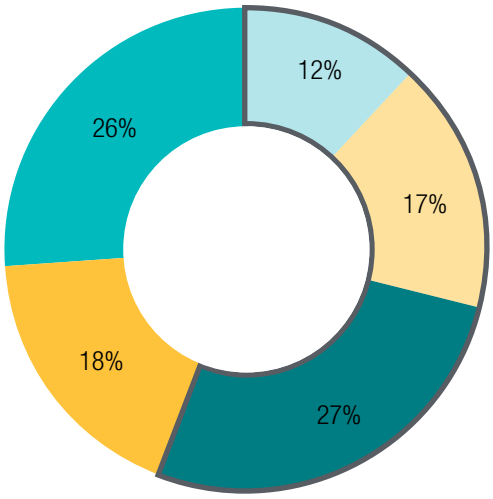
RPA ENHANCES CONTROL CENTRIC FUNCTIONS

RPA adds value to control centric functions by placing it at the forefront of digital transformation and new technology adoption. Automating redundant, manual, and time-consuming tasks, such as executing transactional testing; requesting supporting evidence, gathering, and formatting data for analysis; and creating work templates, increases efficiency and frees up staff hours to focus on higher order tasks, truly enabling ERM teams to do more with less and attain productivity efficiency gains. Automation also increases effectiveness by reducing the likelihood of errors and improving overall processes.

Although control centric functions are typically not early adopters of automation technology, the global COVID-19 pandemic has accelerated the adoption of RPA for many control centric functions that are looking to automation as a force multiplier enabling increased capacity of book of work coverage. Automation will be prominently featured as part of any business plans and will take a pre-eminent place for years to come[2]. In fact, 40% of professionals focused on organizational controls reported that their organizations plan to use RPA in business operations[3]. And, according to tech-industry research firm Gartner Inc., 60% of large companies worldwide deployed some form of RPA technology last year. Global spending on RPA is estimated to reach $2.4 billion by 2022.

1. https://www.gartner.com/en/finance/trends/future-of-finance
2. Rockeman, O., 2020, "Pandemic may permanently replace human jobs," Bloomberg, September 14, https://bloom.bg/3slEcuE
3. Pawlowski, J., and M. Eulerich, 2019, "Bots of automation," Internal Auditor, December, 42-46, https://bit.ly/2NXWKYS

PROCESS AUTOMATION IN US COMPANIES



26% Not started and no plans to

18% Not started, but plan to start within the next year

27% Piloted RPA as a proof-of-concept exercise

17% Fully automated at least one process on a one-off basis

12% Created RPA COE with multiple initiatives in flight

According to Gartner[4] - research on current process automation initiatives, more than half of U.S. companies have ongoing automation initiatives, and roughly one third of companies are actively engaged in scaling their process automation initiatives.

RPA IS AN ESSENTIAL COMPONENT OF OPERATIONAL RESILIENCY

The effects of the global pandemic have highlighted the need for organizations to include operational resiliency as a required pillar of the going concern planning. As a result, on Oct. 30, 2020, the Federal Reserve System's Board of Governors (FRB), the Office of the Comptroller of the Currency (OCC), and the Federal Deposit Insurance Corporation (FDIC) issued an interagency paper titled, "Sound Practices to Strengthen Operational Resilience."[5] This paper brings together industry standards and existing regulations, and advocates for a principles-based approach to enhance and bolster operational resilience. The select principles listed below - align well with benefits of RPA, thus making it an indispensable component of the operational resiliency:

Governance: Senior management is tasked with "maintaining a detailed overview of the firm's structure to identify critical operations and implementing and maintaining information systems and controls which effectively support critical operations." A key benefit of implementing RPA is the identification of critical operational

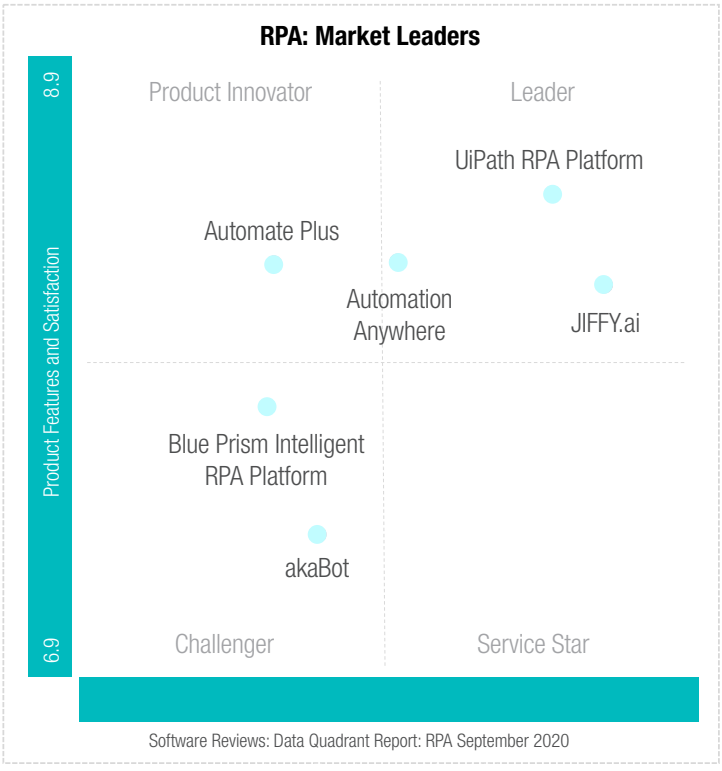
4. https://gtnr.it/3bRsoiO
5. https://bit.ly/383mv0G

process that are prime candidates for automation and documenting these processes. RPA ensures uninterrupted processing execution of critical processes while increasing effectiveness with error-free processing cycles and, as a result, RPA can be a vital element of control framework supporting critical processes.

Business Continuity: The interagency paper requires maintenance of robust business continuity and crisis management plans that identify the people, facilities, and IT systems needed to uphold the delivery of critical operations during an incident or disruption. The paper calls for the creation of "recovery and resolution plans, post-incident business impact analyses and transition plans for returning to business as usual (BAU) and maintenance of wide-scale remote access facilities and communication technology." The implementation of RPA enables creation of business continuity plans as identification of IT systems is a pre-requisite for RPA. Since RPA eliminates manually intensive steps present in a process, implementation of RPA enables faster recovery of operations and transitions to BAU operations. Additionally, as RPA is ideally suited for remote operations because pre-programmed bots can run from any site in any geography, RPA can serve as a vital element of business continuity planning.

Secure and Resilient IT system: The interagency paper stipulates implementation of IT governance frameworks to ensure the proper implementation, use and safeguarding of systems across business units and geographic locations: "Ongoing programs to assess the effectiveness of controls and processes which ensure the overall security of IT systems and protection of data against destructive malware as well as standardized tools and frameworks for monitoring cybersecurity preparedness." Since RPA bots operate as a presentation layer and are not integrated with the various systems and software, they are not at risk of being hijacked by malware or other forms of intrusive software, allowing them to perform well in a systemically compromised environment.

RPA Software Market Leaders: There are many RPA software providers available in the market. The current market leaders are UiPath, Blue Prism, and Automation Anywhere, according to Info-Tech's "Robotic Process Automation Data Quadrant Report," which was published in September 2020.



Source: Info-Tech, "Robotic Process Automation Data Quadrant Report"

UiPath: Designer and developer of robotic process automation and artificial intelligence (AI) software. The company released two major versions of their RPA software in 2020. The first release included enabling citizen development and multitenant SaaS with acquired process mining capabilities. The second release included over 100 advances to its core platform.

Strengths:

- Includes a robust partner ecosystem with 250+ technology partners
- Encourages developers to share automation and AI libraries in the marketplace
- Invests in resources to create online trainings and other learning materials
- Offers an impressive product portfolio and a user-friendly visual design

Automation Anywhere: A developer of robotic process automation software, the company employs software bots to automate business processes. Its RPA product platform includes AI-enabling IQ Bots, Bot Insight for analytics, Bot Store, Discovery Bots, and a mobile app. To date, Automation Anywhere has deployed over 2.4 billion Bots.

Strengths:

- Introduced competitive and transparent pricing in their latest release, which is an improvement from prior pricing strategy
- Encourages external and internal innovation
- Provides large libraries available to developers
- Collaborates with external partners to develop new features

Blue Prism: Developer of intelligent robotic process automation software that provides businesses with a more digital workforce. Their software is designed to automate complex, end-to-end operational activities. Blue Prism offers a flow chart designer with a drag-and-drop feature to automate each step of the business processes.

Strengths:

- Collaborates with 200+ partners to build functionality to enhance their core platform
- Provides many industry solutions to clients across multiple industries
- Includes a user-friendly graphical, Visio-based development environment
- Offers a 30-day trial version to experience the software prior to purchase

I. OVERCOMING INHERENT CHALLENGES AND LIMITATIONS OF RPA

The workforce of the near future will require technologically savvy capabilities, with an emphasis on hybrid developer/coding skillsets, to truly attain the potential of a digital workforce. While the rise of automation and intelligent technologies, such as robots, AI, and machine learning, are radically reshaping work across the globe, the headlines about jobs being lost due to automation continues to cloud the discussion.

Successful adoption of RPA across the enterprise will require education and socialization of both long-term benefits and near-term pain points to ease concerns among a workforce who may feel threatened or may be struggling to understand where they fit in to the new digital landscape. Automation will create real change in how business functions operate but the changes will come in waves. In the meantime, chief risk officers and ERM teams must plan for the transformation of human work.

Implementation of automation will need to be subject to its own unique set of internal control mechanisms and may well require emplacement of new internal controls to support the digital workforce tools being utilized as functions will need to consider the proper governance and internal controls around automation. Implementation of RPA has inherent risks across three dimensions - operational, organizational and cultural:

Operational: Poorly designed bots will multiply errors and mistakes with a single keystroke. That's why post-production assessments of whether bots address stated business needs is critical. The process of bot development needs to adhere to policies and procedures, change management protocols, and systems access controls. However, accuracy and completeness take on the additional level of criticality to ensure reliance on bots does not produce erroneous outcome. A significant challenge and limiting factor to the creation of automation bots is their dependence on the "up-systems" where data resides and on the "down-systems" where bots populate and write data. By design, bots are static and not well-suited for dynamic systemic environments that require constant updates to the bots' structure. Any change to the systems or layout of the underlying data fields will cause errors in the bots' performance and may require complete redevelopment.

Identifying use cases that are prime for automation, such as recurring repetitive manual activities is another challenge. Identification of the automation opportunities will need to be balanced by the implied cost/benefit analysis and feasibility of automation implementation. It is highly likely that only actionable elements of the end-to-end process can be automated, at least initially.

Organizational: The biggest pitfall on the automation journey is taking a siloed approach to automation implementation and not aligning the tactical initiative across the entire organization. This approach fails to generate synergies and causes duplication of efforts. To make the RPA journey successful, implementation should be aligned with the organization's digital strategy and rolled out under a single unified governance perspective. When RPA is launched as part of a unified digital transformation initiative across the entire organization, it produces a standardized framework.

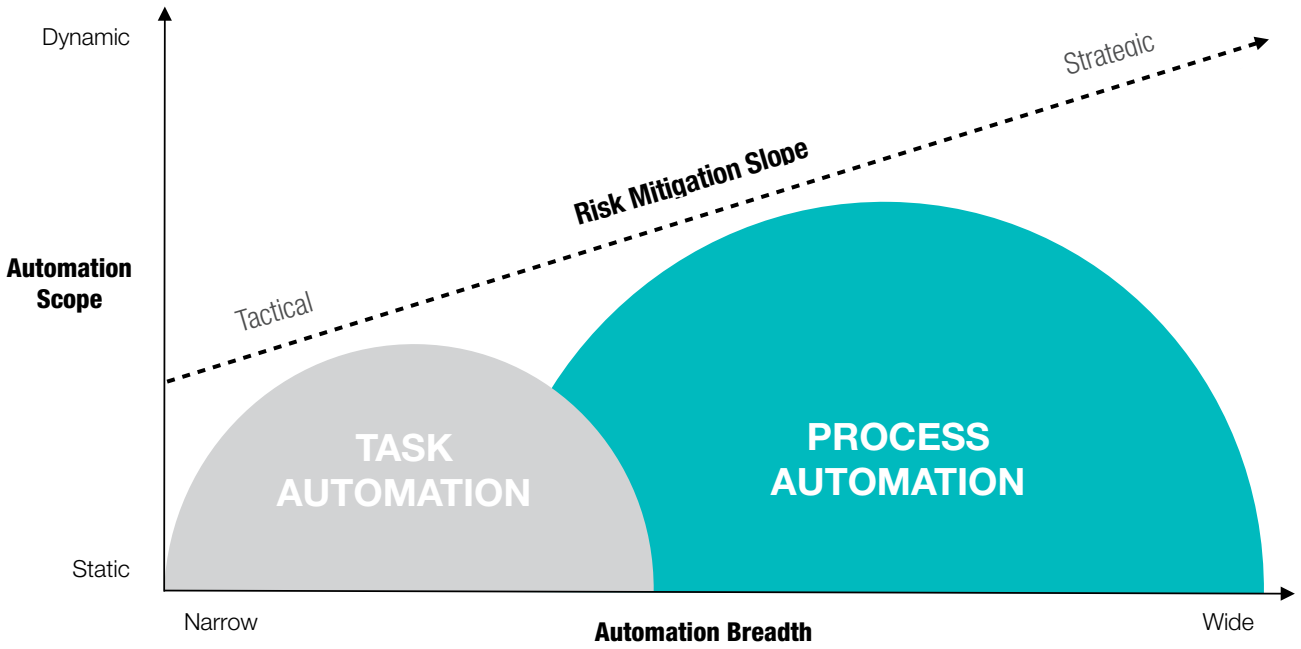
Organizations have to formulate a coherent and consistent approach to implementing bots across the organization, since a major consideration for the implementation of RPA is the maintenance of the technology and structured programing. Therefore, implementation of RPA has to address the following fundamental questions:

- Should bot implementation be standardized across the control testing process or customized to each individual testing plan?
- Should bots be created and rolled out centrally to reflect organizational policy?
- Should bot programming rest within an individual control tester and reflect peculiarities of the individual approach?

Functions will need to set a threshold and define the comfort level of how many bots to use. It is one thing to have a dozen or more standard bots where oversight can be easily implemented, but it is a different matter entirely to have dozens, if not hundreds of custom-made bots. Additionally, functions will need to decide which elements of the control evaluation processes, or combination of processes, are appropriate to be covered either by a single bot or multiple bots.

Cultural: Resistance to change and fear of job losses are natural reactions to automation[6]. According to the CGMA, almost every profession has partial automation potential and roughly half of all the activities employees are paid to do could be automated by adopting current established technologies.[7] Corporate culture of open two-way upstream and downstream communication regarding the benefits of the workplace paradigm shift towards the digital workforce and RPA is critical to attain cultural buy-in. A bellwether of successful RPA implementation is a proof-of-concept (PoC) automation of a defined, high-importance, high-impact process reliant of multiple repetitive manual tasks. PoC is an effective way to understand if automation will be successful in the confines of a customized business environment and the way it will impact existing systems. Another important element of introducing RPA is educating and empowering staff with necessary technological skillsets. The ideal professional in the control centric function will not only understand the intricacies of a process but will also have a firm grasp of the technology and coding skills. Since the current workforce skillset comes up short due to the generational and digital gaps, senior managers may opt to rely on the adaptive, flexible consultancy-based staffing model.

Spectrum of RPA Impact



6. Castellanos, S., 2019, "Unleash the bots: firms report positive returns with RPA," Wall Street Journal, March 6, https://on.wsj.com/2NTichQ
7. CGMA, 2019, "Future of automation," The Institute of Charted Global Management Accountants, June

Spectrum of RPA Impact Infographic

Risk mitigation is enabled by both task automation and process automation. Task automation is defined by a static scope and narrow breath (i.e., a limited number of standalone or independent automated tasks). Process automation is defined by a dynamic scope and wide breadth (i.e., the automation of a sequence of steps and associated tasks embedded in the end-to-end process.) The risk mitigation slope demonstrates how risk is increasingly mitigated moving from individual task automation (which only results in tactical risk mitigation) to process automation (which is more dynamic and results in greater risk mitigating capabilities).

A tool for internal control functions

The traditional control evaluation process, subject to structured test steps and an audit program, has always been a fairly manual process. However, the use of automation bots holds the promise of transforming the control evaluation into an assembly line process[8]. Not every step in the control testing process is a candidate for automation, but routine defined testing activities that are performed frequently are prime candidates for workflow automation bots that will enable faster control testing execution. What's more, automation enforces consistent performance ensuring no steps of the control testing program are omitted. Determining what type of control testing is suitable for RPA requires assessment of each testing step, and review of testing inputs (i.e., control documentation to be tested) and outputs (i.e., types of expected variance). Substantiative testing, which is based on predictable volume of transactions, known supporting documentation, and other standardized systemic outputs, is more readily adoptable for RPA than observational testing, which is reliant on human performance. In short, the processes that are optimal candidates for automation bots are those that pull standardized and structured electronic data sets or inputs from applications. Labor-intensive tasks, such as pulling data from Excel spreadsheets, Word documents, emails, presentations, and PDF files, are primary candidates for bot automation. Processes that require more human judgement and greater use of exception scenarios, as well as those that are triggered by inputs that vary, are not ideal candidates for RPA.

It is important to note that RPA implementation will need to be carried through in a structured manner, since tasks will need to be broken into sub-steps (in effect, smaller sub-modules) that can be then relied on by the bot. Reliance on bots to execute elements of control testing does not lessen the responsibility of humans to understand and validate the completeness and accuracy of the data being gathered by the bots[9]. The traditional control test procedures focused on assertions of completeness, accuracy, and existence still have to be performed. While the subject of AI and machine learning is beyond the scope of this paper, RPA is a building block on the path to AI and intelligent machine learning that expands on RPA by learning from prior decisions to automatically adjust the algorithm. Therefore, advances in intelligent process automation when it comes to comprehension, intelligence, and precision will result in an advanced version of robotic process automation that analyzes prior decisions and actions of the human control tester, learns over time and then attains capability to actually perform tests of controls rather than simply pulling in the data for human operator's consideration and analysis[10].

Control activities that are prime for automation

There are four phases in the control evaluation process: planning, fieldwork, analytical procedures, and reporting. These activities are common with control centric functions and, depending on circumstances and capabilities, are prime focus areas for automation.

8. Harris, S. B., 2017, "Technology and the audit of today and tomorrow," speech at the PCAOB/AAA Annual Meeting, April 20, Washington D.
9. Lin, P., and T. Hazelbacker, 2019, "Meeting challenges of artificial intelligence: what CPAs need to know," The CPA Journal, July, https://bit.ly/2OffLWC
10. Joshi, N., 2019, "Robotic process automation just got 'intelligent' thanks to machine learning," Forbes, January 29, https://bit.ly/2PsHYtN

Planning: In a standard planning phase, many time-consuming preparatory activities, such as documenting control testing plan and setting up control testing templates, take place. The Institute of Internal Auditors estimates that a typical planning phase consumes almost to 20%-25% of the allotted hourly budget. Steps involved include pulling risk taxonomies, entering process descriptions, attaching supporting memos, documenting process trees, and setting up multiple testing templates that comply with a defined structure and layout. Developing bots that can quickly perform setup activities will free up time and expedite the overall completion timeline.

Fieldwork: The essence of the risk management and control evaluation does not change with the introduction of automation bots, but the use of bots provides a new approach to gathering and evaluating evidence. One of the more time-consuming aspects of any control testing is review of the documentary evidence. A lot of time is spent obtaining supporting evidence from various databases, downloading electronic copies of the original source's documentation, or simply waiting for business functions to do it manually. Simply opening electronic attachments may involve such manual steps as accessing a database, typing a client code, entering a document reference number, accessing attachments, choosing the correct file path, entering a file name and copying it into a predefined folder structure. Developing bots that can quickly access documentation and aggregate it for review and assessment will make the overall process of control testing more efficient by saving time otherwise spend on highly manual tasks or otherwise wasted on waiting for business to furnish requested documentation. A type of test often performed as part of fieldwork is reconciliation. Activities, such as querying for trial balance, and extracting account and sub-account balances, can be easily automated.

Analytics: Control testing activities focused on reconciliation and data validation require access to and assessment of extended data sets. Data extraction is in and of itself an involved and technology-dependent process that involves pre-defined database queries. Bots created to aid data generation and data extraction support for overall data analysis can reduce erroneous sampling, eliminate false sampling errors, and increase turnaround time. It's important to emphasize that data analysis with the use of RPA requires consistency across various data fields accessed by the bots[11]. Since data comes from different sources, databases, and documents, data fields with required content may be named differently. For this reason, successful implementation of bots requires standardized data libraries, unified data domains, and is dependent upon the organizational wide data strategy. Without a unifying data strategy, the bots will not be able to extract data in a meaningful manner. A type of test often performed to ensure data accuracy is analytical procedures. Analytical test activities performed to verify data accuracy, such as extracting values and comparing values across balances and systems, as well as generating variance alerts, can all be easily automated.

Reporting: Control evaluation findings report writing is often said to be all about perspiration and never inspiration. Many of the tasks involved with the compilation of the report are repetitive in nature and consist of details from other control evaluation documents, such as testing programs, announcement memos, and findings details. Bots can automate these repetitive tasks, such as report creation based on the testing program, socializing the report, and sending out inquiries and reminders.

The maintenance of effective system-level and entity-level internal controls over regulatory reporting particularly in a period of change, such as the implementation of robotics, blockchain and other new technologies as part of digital transformation, has been recently emphasized by the regulatory agencies.

11. Vasarhelyi, M. A., and A. M. Rozario, 2018, "How robotic process automation is transforming auditing," The CPA Journal, July, https://bit.ly/3kEPnBv

II. A JOURNEY OF PARTNERSHIP

As outlined in the preceding sections, Robotic Process Automation can bring significant immediate benefits to process operational efficiency and effectiveness across organization's control centric functions. As an element of digital transformation, RPA is merely a first step along the way to a more advanced machine learning and AI-enabled future that holds the promise of making a truly digital workforce a reality with predictive analytics and process mining. Whether RPA is implemented as a PoC exercise, as a tactical tool to facilitate one-off components of control testing, or as a driving force for strategic innovation implementation, success of the transformative roll out will depend on three elements - strategy, governance, and implementation - that are common to all entities and functions.

Strategy: There is no "one-size-fits-all" approach to RPA implementation as the needs vary based on the entity size, process complexity, control testing priorities, and book of work. Once a PoC is established, further development of the automation strategy at the line of business (LOB) level ensures it's alignment with the overall enterprise-wide automation strategy for successful long term implementation.

Governance: While a decentralized approach based on "out-of-the-box" software packages can produce faster adoption and more immediate benefits, any systemic implementation of RPA will depend on the organizational functions, such as IT, ERM, LOB, compliance and others. It's critical that these functions have an integrated approach to oversight and development, in order to meet common goals and prevent RPA from being implemented in an ad hoc manner. To be successful, RPA implementation must be executed through a structured, disciplined approach that aligns to the COSO Internal Controls principles in order to avoid clashing priorities, haphazard build out, and failure to deliver[12]. Establishing a Center of Excellence plays a central role in the RPA roll out as it emplaces a formalized structured governance framework.

Implementation: One of the most important questions that entities and functions have to address is whether to implement RPA as an in-house native development or partner with a recognized RPA implementation market leader. Successful implementation of RPA depends on a variety of activities, including:

- Identifying the processes best suited for automation
- Creating collateral to support a structured and disciplined build-out, such as documented process rationalization and redesign to identify automaton pathways
- Documenting business requirement documents that capture the desired future state of an automated process
- Identifying the proper tools to deploy across multiple users
- Relying on configurable or customizable programming
- Using an agile vs. waterfall approach

Invariably, successful implementation depends on selecting the right framework and partners to help with the digital transformation given the organizational wide impact of RPA implementation and Capco is ready to provide requisite guidance and expertise to make the successful journey of partnership for RPA implementation.

12. https://bit.ly/3c04xNM

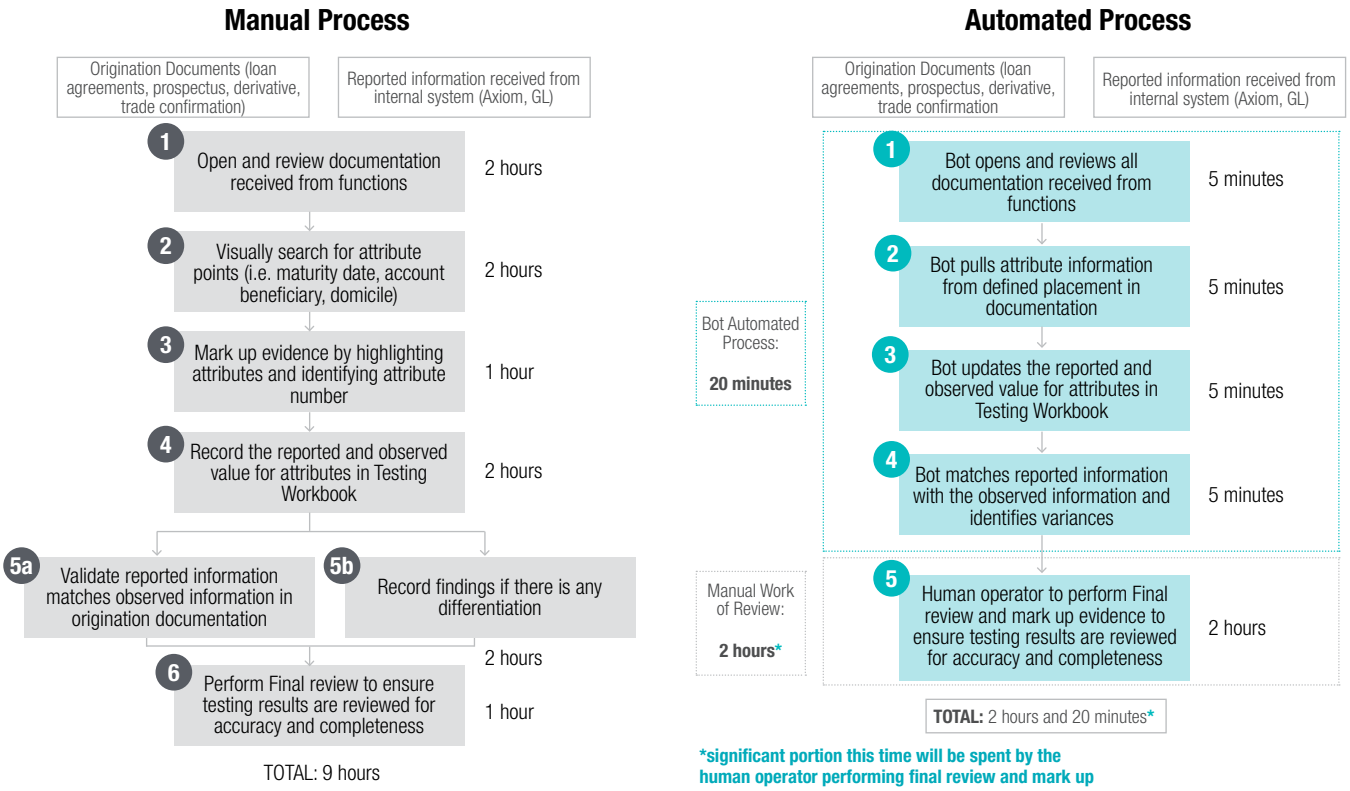
ROBOTIC PROCESS AUTOMATION USE CASE - REGULATORY REPORTING TRANSACTIONAL TESTING

Transactional testing refers to the testing of individual transactions and is also known as an account-level sampling or transaction-level testing. At its core, transactional testing decomposes specific line items from regulatory reports, disaggregates composite transactions, traces selected types of transactions through the aggregation hubs back to the system of origin, and substantiates reported transactional attributes by tracing the attributes to the originating supporting documentation. Transactional testing is performed to ensure completeness and accuracy of regulatory reports as per supervisory (e.g., Federal Reserve Board ("FRB")) instructions.

Transactional testing involves several manual steps: logging into multiple system, navigating to various database screens, acquiring specific fields with required information so that a sample of test items can be identified, and pulling the sample data into a testing lead sheet to determine the test outcome.

As transaction testing is intended to verify accuracy between source documentation and report attributes within regulatory reports, manual tracing efforts are required to capture source documentation values. These values (observed values within source documentation provided by functions) are then recorded within a unique testing workbook and analyzed against the value that was reported as part of the regulatory report.

Automating a transactional testing process increases efficiency and saves time



Total efficiency gained: +6 hours 40 minutes

The side-by-side comparison of manual and automated approaches to transactional testing of 25 transactional samples demonstrates how automating the process gains efficiencies and saves an estimated six hours and 40 minutes as compared to the manual process. The automated process increases efficiency as the human operator only performs value-added tasks, such as documentation confirmation, marking up the selected attributes in the source documentation with testing notes to evidence performance of the test, final review of the testing workbooks and clarification of variances between reported values and observed values all of which is estimated to take two hours. For the previously manual steps, bots automatically access documents, pull the tested values and compare the results which is estimated to only take 20 minutes.

An example of how this process would function at the transaction level, before and after automation, is as follows:

Step 1: Open the credit agreement file (document 1) and identify the loan type in the field loan type (attribute 1) on page 3 of the credit agreement file.

Automated Step 1: A bot opens and reviews all documentation received from functions, the bot also checks to see that all documentation is received from functions based on request lists.

Step 2: Identify loan type in the field loan type (attribute 1) on page 3 of the credit agreement file.

Automated Step 2: The bot pulls attribute information from defined placement in documentation to ensure that attributes within the document are identified for based on attribute lists.

Step 3: Highlight the loan type on page 3 of the credit agreement file for attribute 1.

Automated Step 3: The bot updates the reported and observed value for attributes in the testing workbook to ensure information can be compared easily and efficiently in the next step.

Step 4: Open testing workbook and record loan type in the observed value field for loan type and location found within the KYC file in the testing workbook.

Automated Step 4: Bot compares information in the reported and observed information column to determine if there are any variances.

Step 5a: Verify that reported information of the loan type in the workbook matches the observed information within the origination documentation.

Step 5b: Note any variations in the testing workbook, such as if the system reports a loan as a closed end loan, but the original loan agreement specifies that it is a revolving loan.

Automated Step 5: Bot verifies reported information and identification of variances is executed in Step 4 by the bot.

Step 6: Open testing workbook and record the loan type in the observed value field for loan type and location found within the UCC file in the testing workbook.

Automated Step 6: Even in the automated process, the final step requires a human operator to perform the final review and mark up of evidence.

CONCLUSION

As digital technologies, such as robotic process automation, continue to disrupt industries and markets, the control centric functions must also transform to keep up the with the industry developments. RPA brings significant and immediate benefits since it has proven capabilities to create bots that can perform time and labor-intensive process tasks thus improving process operational efficiency and effectiveness across an organization's control centric functions. RPA is also an important element of operational resiliency as it enables business operations to recover and resume normal functioning faster given that bots can replicate manual operational tasks and can be relied upon to execute process steps even if the human workforce is displaced or unavailable. Implementation of RPA is not without its challenges, however, and must be implemented systemically to attain its true potential, whether implemented in-house or with partners.

WHAT PATH WILL YOU CHOOSE: IMPLEMENT RPA TO ENHANCE CONTROL EVALUATION LIFECYCLE OR GET LEFT BEHIND?

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