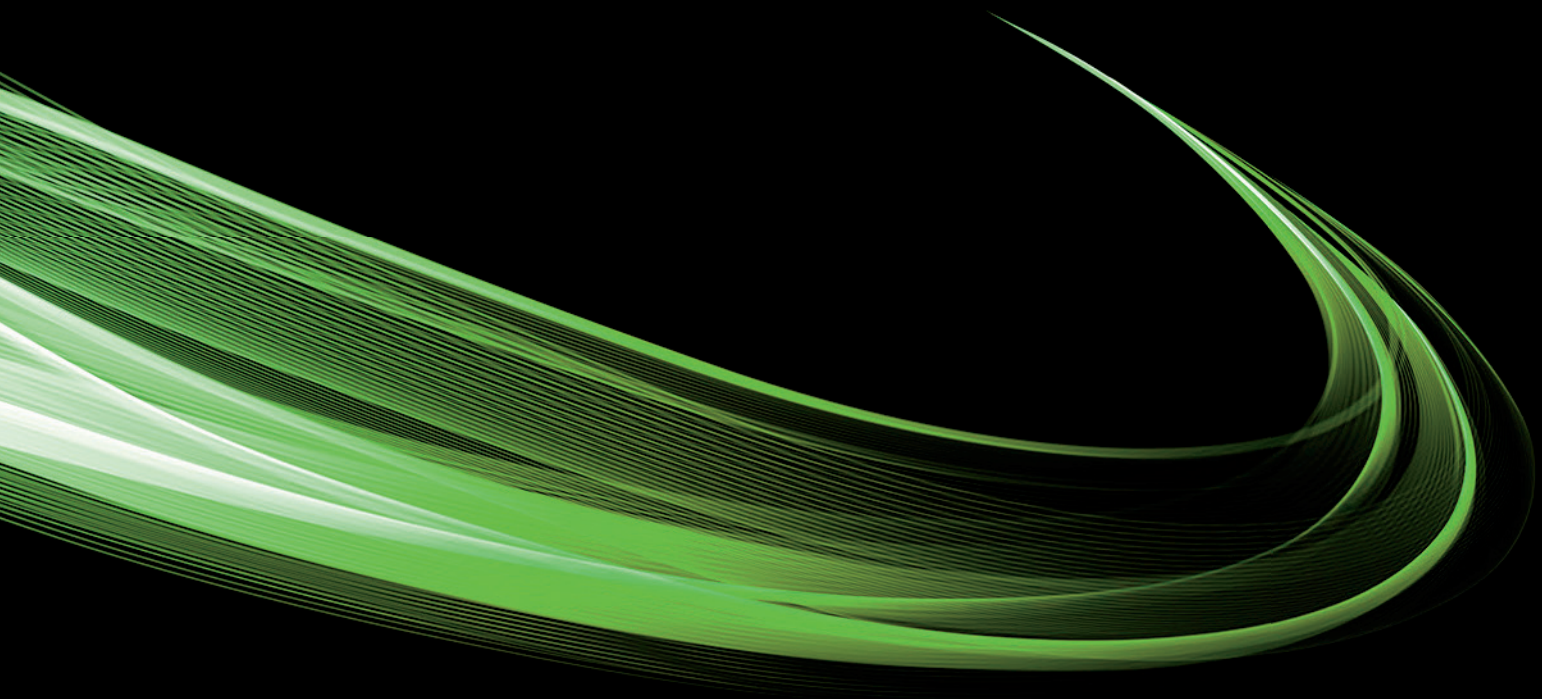
Moving Internal Audit Deeper Into the Digital Age: **Part 1**

A Structured Methodology for Leveraging Automation to Modernize the Internal Audit Function



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Published by the Internal Audit Foundation
1035 Greenwood Blvd., Suite 401
Lake Mary, Florida 32746, USA

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ISBN-13: 978-1-63454-070-4
23 22 21 20 19 1 2 3 4 5

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Moving Internal Audit Deeper Into the Digital Age

A Structured Methodology for Leveraging Automation to Modernize the Internal Audit Function

Robotic process automation (RPA) is among the most prominent disruptive technologies on the market. As early adopters demonstrate its ability to modernize and digitize business functions, internal audit (IA) departments increasingly recognize the automation's potential for improving audit coverage, speeding process execution, and freeing resources from routine tasks so they can focus on strategic, value-generating activities. Some IA organizations have automation plans and are well on their way toward executing them, while others are still contemplating how to embed RPA into their IA functions. In either case, now is the time for IA departments to accelerate their progress. With both budget constraints and an expanding and diversifying risk landscape, the call for thoughtful, progressive deployment of RPA within IA is intensifying.

The first step in effectively leveraging automation to modernize internal audit is to obtain a thorough understanding of what RPA is, what it isn't, and the benefits it can provide. Having a solid grasp of the technology's capabilities and constraints can increase the chances of obtaining a return on investment and utilizing the tools to their full capacity. The next step is to adopt a systematic, analytics-driven methodology for identifying and prioritizing high-potential opportunities for IA automation. A structured approach is essential for charting a course toward continuous improvement and value realization once the readily apparent opportunities for RPA have been exploited. Underpinning these actions, it is also important for senior management to express a long-term commitment to RPA.

What RPA Is

RPA platforms, or "software robots," perform routine business processes by mimicking the way that people interact with computer systems. Just as users know where to click to control applications and manipulate data, software robots can be programmed to take similar actions. A single task or an entire end-to-end process across different applications and platforms can be executed by a single software robot with very little human intervention, typically only to manage exceptions.

RPA is best suited for processes with repeatable, predictable interactions with software applications. These processes typically lack the scale or value to warrant IT transformation through deployment of a new platform. Indeed, the beauty of software robots, or "bots" for short, lies in their simplicity: they are typically low cost and easy to implement. Via straightforward programming that requires minimal or no code, bots can enhance process efficiency and service effectiveness without necessitating fundamental process redesign that is often associated with big-system-based automations. Inherently vast, potential RPA scenarios range from generating responses to validating data across multiple systems to fully automating an end-to-end process.

What RPA Isn't

RPA is not machine learning (ML) or artificial intelligence (AI), which are self-teaching and to some degree replicate human perception and judgment. RPA does not attempt to read, interpret, or think. Governed by business logic and structured inputs, software bots can be programmed to perform routine jobs in an enterprise resource planning (ERP) system, such as processing transactions, manipulating data, triggering responses, and communicating with other systems. In the traditional sense, they can eliminate the need for users to click and calculate but not for them to analyze and strategize. That said, some companies are beginning to enhance their RPA platform capabilities by injecting them with cognitive capabilities, such as ML, speech recognition, and natural language processing. Already, there are many AI-enhanced bots in production that read emails, classify the content and respond automatically, make phone calls to alert users to failures or exceptions that need attention, and use optical scanning to go to websites and scrape off information for further processing. If this trend continues, the lines between advanced digital technologies will increasingly blur.

Potential Benefits of RPA in IA

In terms of the potential benefits of RPA, increased process speed, reduced errors and costs, and streamlined processes obviously stand out. But, in addition to the ability to perform the same audits faster and more effectively, there are many other reasons that an IA organization may choose to pursue automation. Deloitte UK's annual Global Robotics Survey sheds light on some of them. In the 2017 report, responding shared services and other administrative organizations indicated that RPA continues to meet and exceed expectations across multiple dimensions, including improved compliance (92%), improved quality/accuracy (90%), improved productivity (86%), and cost reduction (59%).

IA organizations can potentially benefit from all of these dimensions and more. RPA can help to standardize audit processes, which reduces manual errors and enhances audit quality. It is also highly traceable, which can allow errors to be detected more readily and rectified more easily. Often, productivity and talent retention are simultaneously enhanced as full-time employees (FTEs), are freed from performing repetitive tasks, and redirected toward more rewarding work. Tasks such as engaging with business leaders on strategic risks, joining risk committees, and participating in the governance and oversight of major capital projects, all in all helping the function to focus on the truly greatest risks, are just a few of the productive ways employees can spend their newfound time.

Common Situations for Applying RPA

- Gathering background information and metrics from multiple systems or sources to better define audit scope
- Continuously monitoring business operations that would be too demanding and/or expensive if done manually
- Pre-populating documentation requests based on audit scope
- Generating planning documentation by automating text-heavy documents
- Performing "what if" analysis on more data more frequently
- Detecting suspicious logs associated with IT systems
- Real-time reporting of frauds arising in financial systems
- Testing control effectiveness based on a sample or the entire population

By enabling full-population testing, as opposed to statistical sampling, RPA can enhance compliance and risk management, thus strengthening the second line of defense. For example, RPA can test the full population of foreign transactions to identify those occurring in countries sanctioned by the Office of Foreign Assets Control (OFAC) or to flag accounts with improper financial controls. This ability to carry out full-population checks across business units can enhance IA's ability to identify regulatory and reputational risks and provide a greater level of assurance regarding the effectiveness of a company's financial and technical controls. Furthermore, by using risk analytics and data visualization tools in conjunction with RPA, auditors can gain greater insight into business processes, allowing them to perform more focused audits while still testing 100 percent of the population.

As an organization's audit capabilities mature, even more benefits may be generated. For instance, RPA can enable IA to test more frequently, with some organizations already transitioning to a continuous auditing model for providing more timely insights to the business. Opportunities for combining data from inside and outside the company can add new richness to insights and provide a more granular understanding of risk. And, RPA-enabled benchmarking, comparative analysis, and trending can be used to enhance on-the-job learning and development while delivering more powerful results to business stakeholders.

Ultimately, progressive RPA deployments that build upon and enrich existing analytics technologies can aid the IA organization in developing a culture of digital adoption and continuous innovation. Such a culture can create a virtuous cycle of ongoing improvement by applying next-gen technologies and data-science disciplines to the audit process.

The Need for a Structured Approach

Despite the long list of potential benefits, discernment is necessary in determining where to apply RPA for maximum effect. While there are certain situations where RPA works well, there are also situations where it does not. Automation is **NOT** appropriate for processes that:

- Involve complex interactions
    - Example: A process that involves a non-standardized method of obtaining data or answers
- Require a judgment call
    - Example: The review that is required when an invoice exceeds a monetary threshold
- Entail high-level cognitive tasks
    - Example: Pattern recognition in determining data clusters and predictive models

Using the general guideline of "repetitive and rule-based," IA organizations can usually find some low-hanging fruit. After that, however, the process of identifying and prioritizing opportunities for automation becomes more complicated. Sole reliance upon finite metrics, such as cost to implement and time saved, can cause added-value automation opportunities—such as those that improve risk mitigation, human-resource allocation, and talent management—to be overlooked. Often what is needed, instead, is a structured methodology for identifying high-potential automation opportunities that deliver strategic value as well as cost savings, while progressively advancing the digital maturity of the organization. It is imperative to understand the value that automation of standardized processes will bring and perform objective assessment of complexity vs. benefits of the automation. To this end, for example, Deloitte has developed an eight-step methodology aimed at helping IA organizations not only to identify appropriate opportunities for RPA but also to develop an automation road map and position themselves to drive value from it.

The Methodology

Step 1: Screen Opportunities

The first step involves reviewing the current state of the IA organization to understand where and how RPA can be embedded to increase audit coverage and improve efficiency and effectiveness. This typically consists of:

- Examining the audit plan to gain a contextual understanding of the business environment and key activities
- Identifying:
    - Processes that are standardized and rule-based, as opposed to variable and decision-based (e.g., analysis and recommendations)
    - Tests, or parts thereof, that are rule-based and can be performed by analyzing and comparing large datasets
    - Controls where full-population testing would be feasible and beneficial
    - Tests that could benefit from increased scope

Output: A list of tests and specific controls that could potentially be automated.

Step 2: Assess Value

Once a list of potential candidates for automation has been compiled, the next step is to assess the potential value of each according to key criteria, typically related to: time and monetary savings, inherent risk to process, productivity improvements, customer and employee satisfaction, and risk-mitigation impact. The ultimate objective is to score the candidate processes according to their total value potential. This includes both quantitative and qualitative benefits, evaluating them on their ability to enhance effectiveness, ease, and quality, in addition to efficiency by assessing benefits through low, medium, and high tiers.

Output: A comparison of candidate processes according to their potential business value (see **figure 1**).

Figure 1: Key Outcome: Each of the Candidate Processes Can Be Compared by Their Relative Complexity and Business Value

Criteria #	Key Criteria	Low Value	Medium Value	High Value	Definition
B1	FTE capacity improvement	<1 FTE	1-10 FTE	>10 FTE	How many FTEs are currently assigned to the process?
B2	Decreased process handling times	<10%	10-90%	>90%	How much deduction in process handling time will RPA offer?
B3	Increased accuracy, quality, and risk reduction	No significant impact	10-20% increase in compliance targets	>20% increase in compliance targets	What is the risk level involved and are there any quality issues in the current process? If so, will RPA increase compliance targets by reducing risky steps?
B4	Reduction in customer wait times	<10%	10-90%	>90%	What is the reduction in wait time experienced by a customer as a result of automating this process?
B5	Improvement in customer interactions	No improvement	Slightly improved	Optimize customer service	How will RPA improve the customer service processes via simplifying the process and/or by integrating customer channels, business data, and enterprise applications?
B6	Removal of repetitive tasks/ value-add enhancement	No impact	Removal of select repetitive tasks	Complete removal of repetitive tasks	How well does RPA remove the repetitive tasks for the user? Does the opportunity exist to upskill the workforce in more value-added tasks and reduce attrition rates?
B7	Reusable components	No existing reusable components	A couple of modules with significant adjustments needed	A lot of modules with minor adjustments needed	Does the potential exist to introduce an agile capability to respond to ever-changing business processes by being able to reuse components? If so, then this criteria has a high business value and the ability to ramp up the workforce as required.
B8	Replication of processes/ tasks across business units and geographies	No replication applicable	N/A	Some replication applicable	If the process today is performed by a team that is widely distributed geographically—and for each of the team members the process is only a fraction of their work—some process transformation initiative, with the objective to centralize the process, may be necessary before embarking on the automation journey.

Source: Adapted from "RPA Opportunity Assessment Framework," Deloitte Australia 2018, p. 11. © 2018 Deloitte Touche Tohmatsu

Step 3: Evaluate Complexity

After performing a value assessment, the focus then turns to determining the feasibility of automating the candidate processes. One way to assess feasibility is to evaluate process complexity against key criteria, such as the number of applications involved, duration, data handling, access security, and geographic scope. Similar to the aforementioned value assessment, the goal of the complexity assessment is to score the candidate processes according to their degree of automation difficulty (i.e., complexity), parsing them into low, medium, and high tiers.

Output: A comparison of candidate processes according to automation feasibility (see **figure 2**).

Figure 2: RPA Opportunity Assessment Framework

Criteria #	Key Criteria	Low Complexity	Medium Complexity	High Complexity	Definition
C1	Number of applications	<3	=3	>4	How many programs does the process touch?
C2	Number of screens	<10	10-30	>30	Within a particular application, how many different panes/pages does the process interact with?
C3	Number of actions	<20	20-50	>50	How many times is an operation executed on the screen (i.e., copy/paste data, open/close an application, download/upload an attachment, create/delete row in a spreadsheet, log on/off, etc.)?
C4	Scale of exception handling expected	Low	Medium	High	To what degree does the process predictably deviate from the norm? And what is the complexity of the steps to handle this deviation?
C5	Data type	Digital, structured, and standardized	Digital, structured, and standardized	Digital, structured, and unstandardized	Structured – emails with templates, Excel spreadsheets, etc. Unstructured – emails of plain text, PDF documents, etc.
C6	Data handling required	Copy/paste	Copy, paste, read, and modify data	Copy, paste, read data, data enrichment, PDF data extraction	What is the nature of the interactions with the screen listed above? Copy/paste, read and modify, data enrichment, or data extraction?
C7	Access security	Single Sign-On (SSO)	Application-managed credentials	Authentication structure not documented or maintained	Type of security infrastructure and number of touch points that require clearance/authentication.
C8	Process geography	Local process	Multi-location process requiring adaptation to code (e.g., GIAC Security Essentials Certification)	Global process with multiple variations and code adaptation requirement	How many physical machines does the process use and where are they located? Consider difference in salaries across geographies for weighting.
C9	Process redesign required?	No process changes required	Minor process changes required (1-3 steps not satisfied)	Significant process redesign required (4-8 steps not satisfied)	Does any step in the process need to be changed to make it RPA eligible? Is there any human judgment required?
C10	Associated level of operational risk	Non-core processing	Time or business-dependent processing	Business critical BAU processing	Business impact if the process were to stop. Consider financial risks, chance of robot making a mistake, meeting SLA requirements, etc.
C11	Typical duration	4-6 weeks	7-9 weeks	12-14 weeks	Development time to productionize.

Source: Adapted from "RPA Opportunity Assessment Framework," Deloitte Australia 2018, p. 10. © 2018 Deloitte Touche Tohmatsu

Step 4: Qualify Processes

Once business value and complexity have been determined, the processes can be mapped onto a selection matrix or scorecard, with the categories of automate now, road map priority, automation opportunity, and automation challenge.

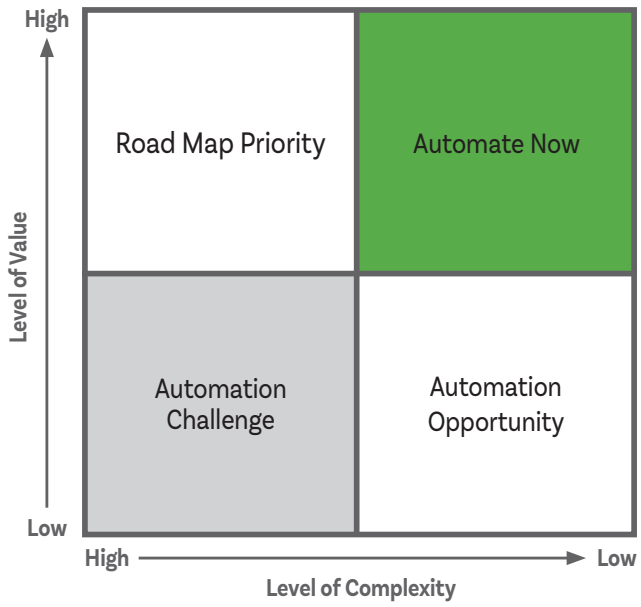
Once the processes have been assigned to the various quadrants on the matrix, IA leaders can consult with process owners to:

- Validate the value and complexity findings.
- Prioritize processes with immediate automation opportunities based on value and complexity metrics.
- Understand the full end-to-end process, which will ultimately guide the creation of automation documentation.
- Comprehend the level of cooperation from stakeholders, data owners, and other members of the business.

Informed by the scorecard and subsequent discussions with process owners, IA leaders can determine which processes warrant immediate or near-term action, which ones can wait, and whether or not some processes are worth automating at all.

Output: A prioritized list of processes to automate (see **figure 3**).

Figure 3: RPA Process Selection Matrix



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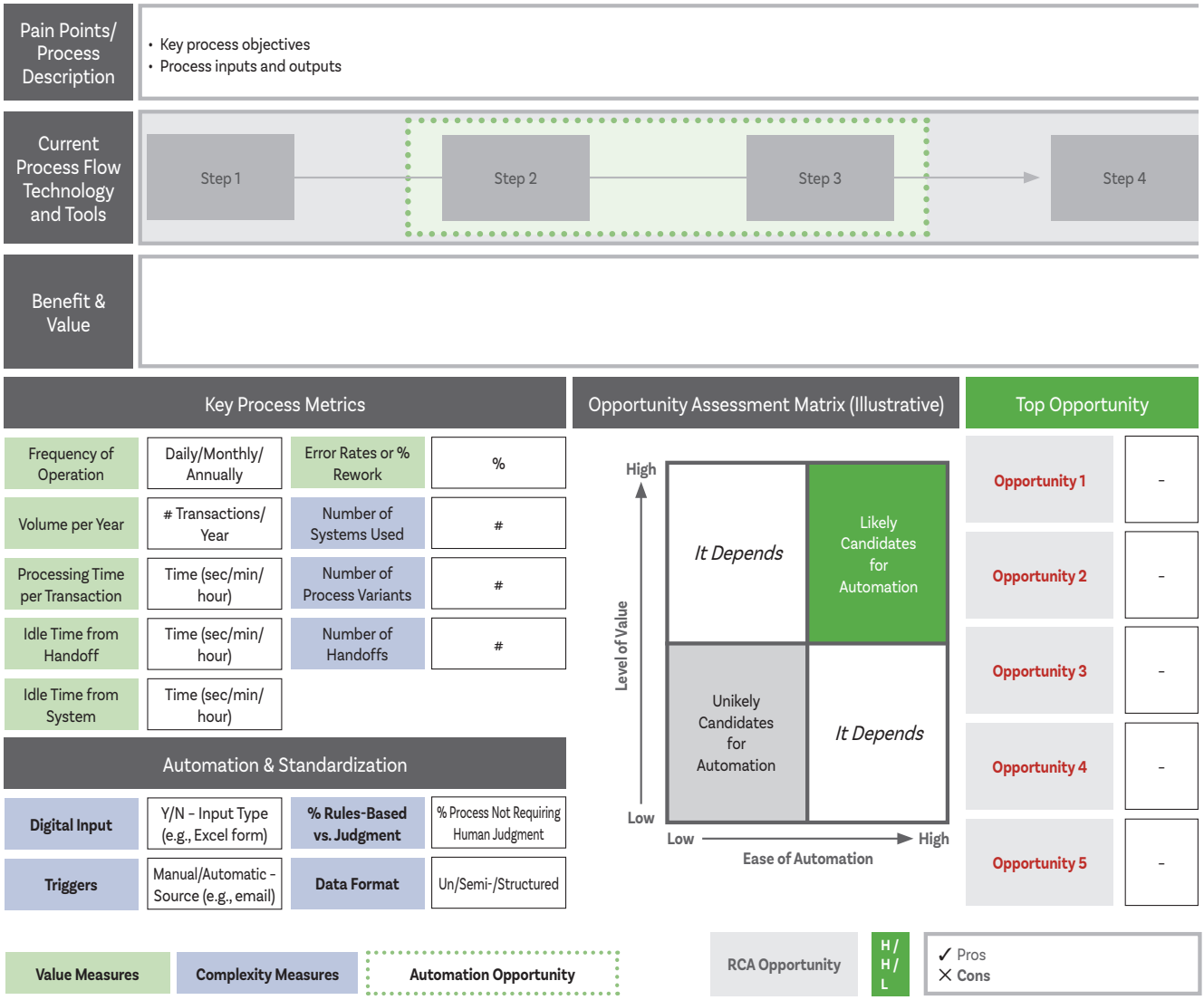
Step 5: Create Process Qualification Document(s)

A process qualification document (PQD) is a framework for presenting important information about a specific process at a high level. It illustrates and describes the process flow, explains challenges and required improvements, summarizes the business case, and organizes contact and ownership information. A PQD should be created for each process deemed an automation priority. The purpose of the PQD is to facilitate discussion with management in preparation for obtaining approval and funding.

Output: One PQD per priority process (see **figure 4**).

Figure 4: Sample Process Qualification Document



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Step 6: Review and Signoff

It is important for IA and IT to agree that each PQD accurately captures the process to be automated, and an official document is essential for codifying this agreement. A leading-practice signoff document should typically include at a minimum:

1. A list of identified processes suitable for automation
2. The corresponding PQD and selection matrix for each

After final agreement has been reached among IA, IT, and the automation development team, the design phase can begin.

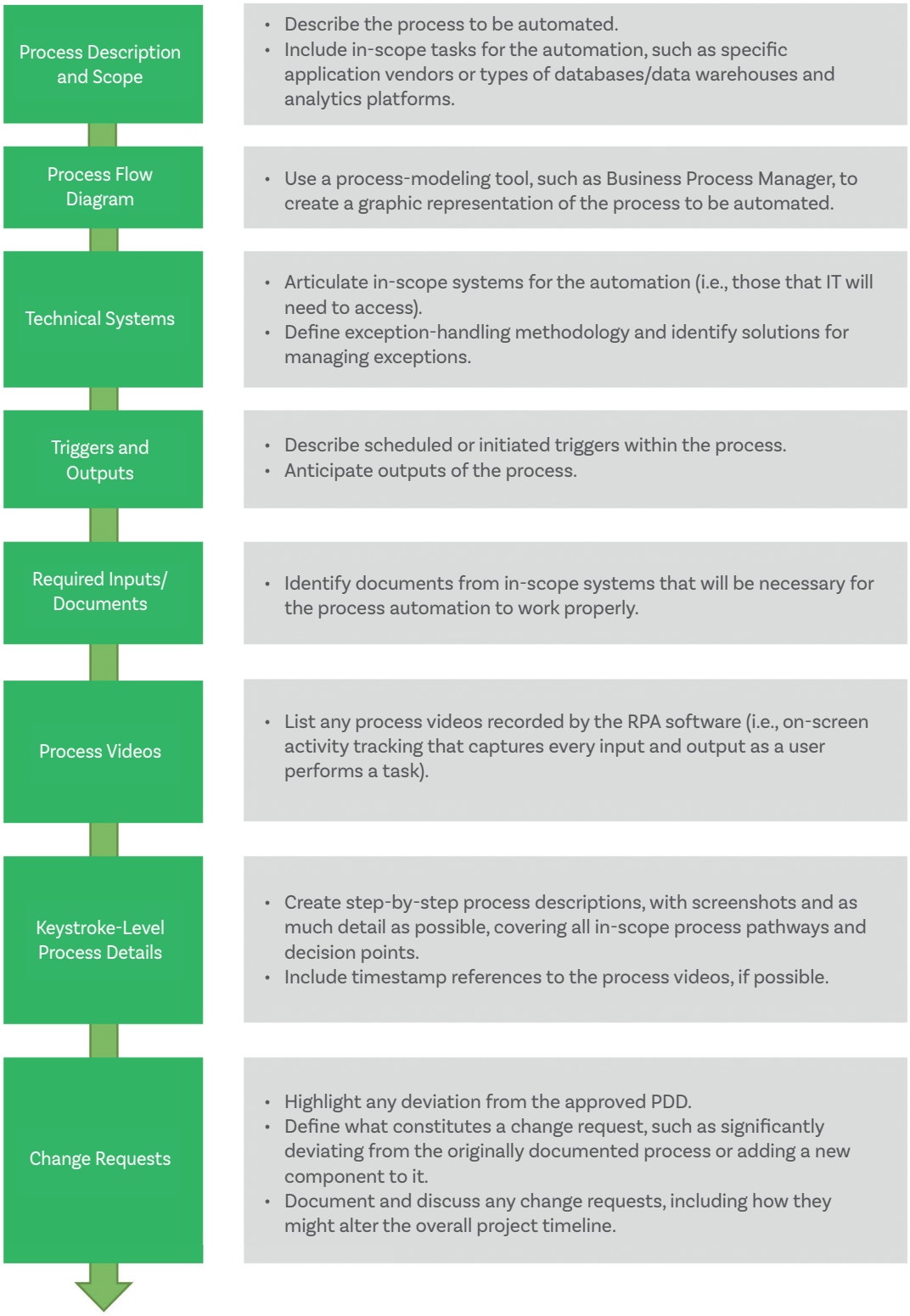
Output: Signed document approving the processes to be automated.

Step 7: Produce Process Design Document(s)

The process design document (PDD) provides an overall framework for automation development. It includes a scope description, a step-by-step process flow, technical descriptions, required inputs and documents, and change requests. A leading-practice PDD, as detailed in **figure 5**, includes key-stroke-level details and matching screen shots so the developer can experience the process firsthand. The PDD not only guides development, but also facilitates discussion about the impact of change requests upon the process flow and project timeline.

Output: One PDD per prioritized process.

Figure 5: Sample Process Design Document



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Step 8: Establish an Internal Audit Specific Automation PMO Group

An automation project management group (PMO) can lead IA in its efforts to scale RPA by leveraging common technology, a centralized governance model, and standard processes and procedures. It typically comprises several cross-functional roles that collectively oversee current and future automation within a business unit or across the whole organization:

- Automation sponsor: Owns the RPA initiative and participates in executive RPA meetings
- Automation PMO leader: Manages the RPA PMO group within IA, defines the RPA strategy, and acts as the IA RPA evangelist
- RPA change manager: Serves as the RPA change agent across the enterprise; creates and executes the change and communication plan
- Automation solution architect: Defines the architecture and serves as the guardian of the automation solution from end to end.

Skills commonly found in an automation PMO group include strategy, process reengineering, IT infrastructure and development, change management, and customer support. As organizations scale, all of these skills are necessary for choosing a fit-for-purpose operating model and determining an appropriate level of centralized governance. Automation capability maturity, available resources, and tools leveraged across business units are frequently important factors in making these decisions. In addition, the IA PMO group provides input and acts as subject matter experts (SMEs) in creating a risk and control framework for auditing business RPA-driven processes.

While the size of some IA departments may warrant the creation of an IA specific PMO group, smaller IA groups might need to leverage knowledge and technical expertise found within business and IT groups. However, it is important to have designated resources that will drive the implementation of the automation across IA and build the relationships across the organization.

Value Realization

Software bots can be programmed to automatically execute repetitive processes and process large quantities of data, but they can't be programmed to automatically generate value. Making the bots work in a way that produces the intended results requires an operating model that fosters cross-functional relationships by:

- Bringing IT on board early to help establish automation criteria and determine if it would be worthwhile to automate a given task
- Training auditors and IT professionals so that both groups understand the automation criteria and how automation tools can be applied
- Encouraging an open environment for sharing knowledge and exchanging ideas among the PMO and IT and audit teams

RPA Gets Smarter

The power of automation can be significantly enhanced by deploying RPA in conjunction with cognitive technologies, such as natural language generation, natural language processing, ML, and computer vision.

For instance, RPA infused with ML capabilities can determine why an invoice or a transaction had been classified as fraud in the past and then look for those clues in new samples. If a match is found, it can be flagged as needing further inquiry.

Computer vision, which enables automation tools to recognize text and items within remote desktops, extends these capabilities deeper into the enterprise. For example, with the help of computer vision, ML can extract information from new, remotely created documents, such as invoices or bills of sale. For instance, once the tool learns to extract critical information from one type of document, it can extract it from other types by looking for "key context" descriptors, such as total price or tax.

Conclusion

When deployed successfully, RPA can significantly reduce and—in some cases—eliminate the need for human intervention in performing low-value, mandatory audit testing. This, in turn, can save hundreds of person-hours that can be redirected to higher-value activities. Second-line-of-defense functions, such as compliance, may also benefit from using RPA to reduce repetitive or redundant monitoring activities.

These possibilities are just the beginning. RPA that has been enhanced with ML and AI can tackle higher-level audit activities that have traditionally required human judgment, such as transaction classification, exception-based testing, and analytical dashboards. By allowing IA professionals to spend even more time on strategic activities, advanced RPA can promote greater collaboration among the three lines of defense, with the ultimate goal of enabling an integrated approach to risk management.

By implementing an operating model where audit and IT can work together to identify and develop high-potential opportunities, IA organizations have a better chance of reaping these and other intended benefits from automation. Some leading-practice organizations are discovering that the imperative is not only to automate but also to take advantage of the resources saved by redirecting them toward ongoing modernization and continuous improvement. Here, the human element can't be ignored. Bots may have the muscle to process huge amounts of data and find patterns and exceptions, but only people have the brains to decide what matters most.

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