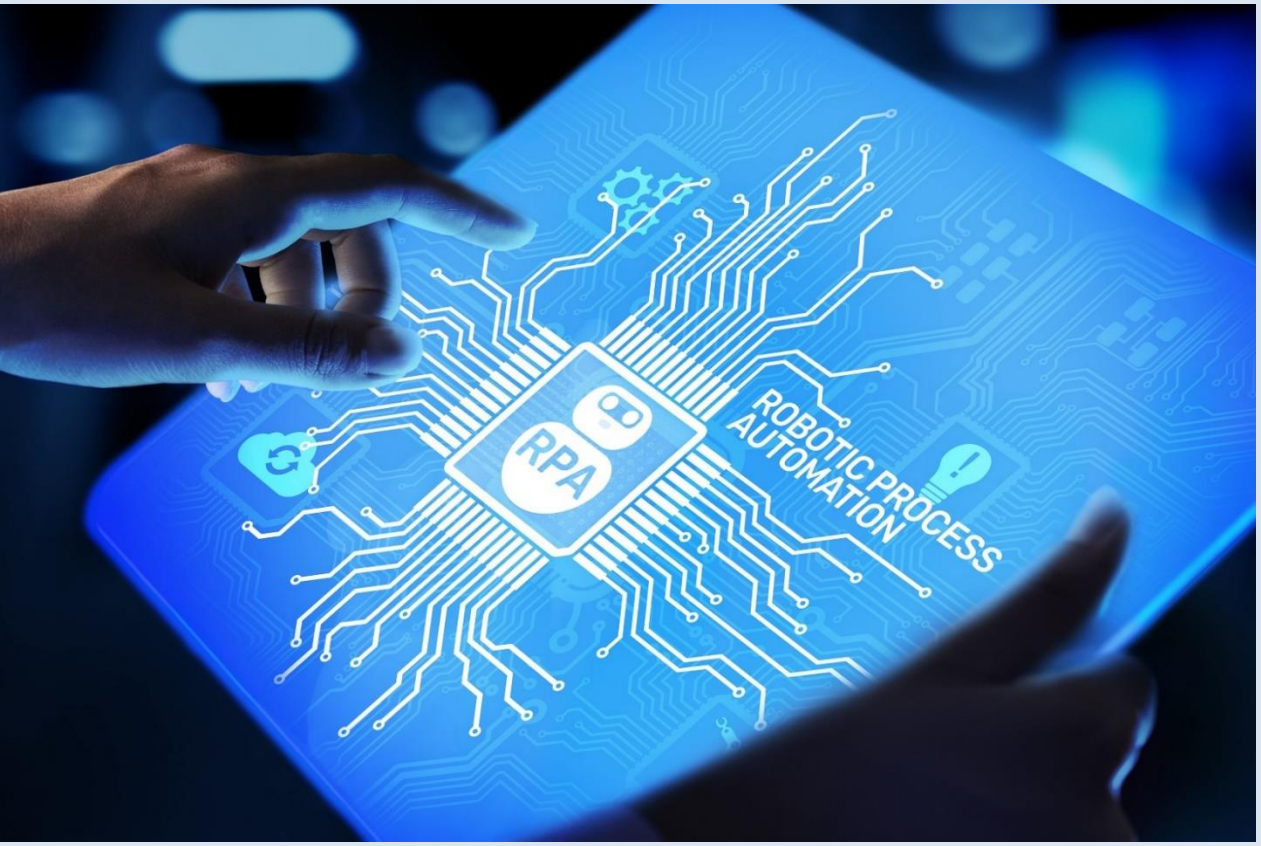
Robotics Process Automation

How automation is evolving the role of Internal Audit in Healthcare



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Abstract:

What is Robotics Process Automation (RPA)? How are healthcare organizations enabling their workforce to leverage automation in Internal Audit? What risks do Internal Audit professionals need to be mindful of as organizations rapidly expand the use and complexity of automated solutions?

RPA refers to business process automation technology that allows software robots to perform repetitive, manual tasks between non-integrated systems. As a powerful and flexible workflow automation tool, RPA allows organizations to develop scripted programs to perform manual tasks otherwise performed by a human. Examples of tasks that can be automated include opening and logging into applications, generating standard system reports, selecting sample populations based upon predefined criteria, performing testing procedures, and issuing results via email platforms.

Today's RPA solution providers have incorporated low- to no-code graphical user interfaces, similar to business process documentation software. As a result, development is no longer limited to system developers -- trained business personnel are capable of configuring RPA robots by documenting a set of sequential actions. RPA is not artificial intelligence though. The best opportunities for automation are tasks that can be scripted based on a defined list of steps and business rules. Human intervention is required where we have variable (and, particularly, unexpected) process steps or decisions requiring subjective judgment.

In our whitepaper, we will provide background on the capabilities and benefits of automation, explore opportunities for organizations to employ RPA robots as part of their digital workforce, and the role of governance required to manage the new risks introduced through automation. In addition, we will discuss how Internal Audit can leverage RPA to perform many standard procedures including testing, and provide illustrative examples of how Internal Audit departments have successfully piloted RPA within their functions.

Introduction to RPA:

Robotic Process Automation (RPA) utilizes software “robots” or “bots” to perform repetitive tasks which humans have typically performed. In recent years, automation platforms have simplified the technology required to design and implement bots, allowing non-Information Technology (IT) personnel to take significant roles moving automation forward within their own groups. In this paper, we will discuss why healthcare Internal Audit departments are prime candidates for RPA adoption, as well as vested stakeholders who need to understand the key risks associated with automation and components of a highly effective RPA governance program.

Industry-wide, Healthcare organizations are requesting their operational, financial, and internal audit resources to provide greater value and operational risk coverage with minimal increase in costs and resources. Because healthcare is being driven by increasing regulatory and operational demands, combined with cost pressures due to lower reimbursement rates, Internal Audit and other healthcare professionals are being asked to rethink the approaches used to execute their projects. RPA has emerged as one of the leading mechanisms for Internal Audit organizations to augment their existing resources with bots to perform manual, repetitive, time-consuming tasks, assist the organization with information and data not currently or easily assessible, and streamline processes for efficiency.

By design, much of Internal Audit’s work is based on highly structured work programs that are rules-based and require execution of repetitive test steps. In many cases, audit procedural steps are manual and time-consuming for Internal Audit teams. We also find the adoption of technology in healthcare has accelerated, but this has not alleviated the challenge for Internal Audit professionals to obtain system-generated data to accomplish audit testing objectives. Whether generating standard claims denial and rejection reports from your electronic medical record (EMR) system or verifying physician credentials on a government website, all require the execution of manual steps to be completed before testing procedures can be initiated. There are significant opportunities for RPA to impact Internal Audit departments on a number of fronts: reduced cost of compliance, stronger leverage of high-value talent, quality improvements, flexible and faster execution, and better data-driven insights into the business.

Where to Begin - Identify Your Pilot Project

One of the most challenging steps for organizations looking to build an impactful RPA program is simply getting started. As we shared earlier, the opportunities for incorporating automation across your organization are nearly limitless. As a result, many organizations experience analysis paralysis getting started because of vast opportunities for RPA use and competing organizational priorities. Successful RPA program launches “start tactically, but think strategically.'' Starting small means initially identifying small automation opportunities that serve as learning opportunities and establish credibility throughout the larger organization. It cannot be emphasized enough that today’s RPA tools enable business users to automate in a less IT-reliant development process, but that does not mean that it’s easy to automate across the enterprise at scale. Many organizations are just beginning to study and understand RPA opportunities, define possibilities for use, best locations within the organization for RPA use and determine when and how to accelerate the journey.

To choose a pilot, it helps for internal audit to explore possibilities with management. Will the pilot be a repetitive regulatory driven control, an executive dashboarding solution, or a periodic financial reconciliation? Is your organizational value driver primarily efficiency, cost savings (ROI), or providing greater risk coverage? In any event, the pilot will be a learning opportunity for the organization, as it will be the first time you onboard

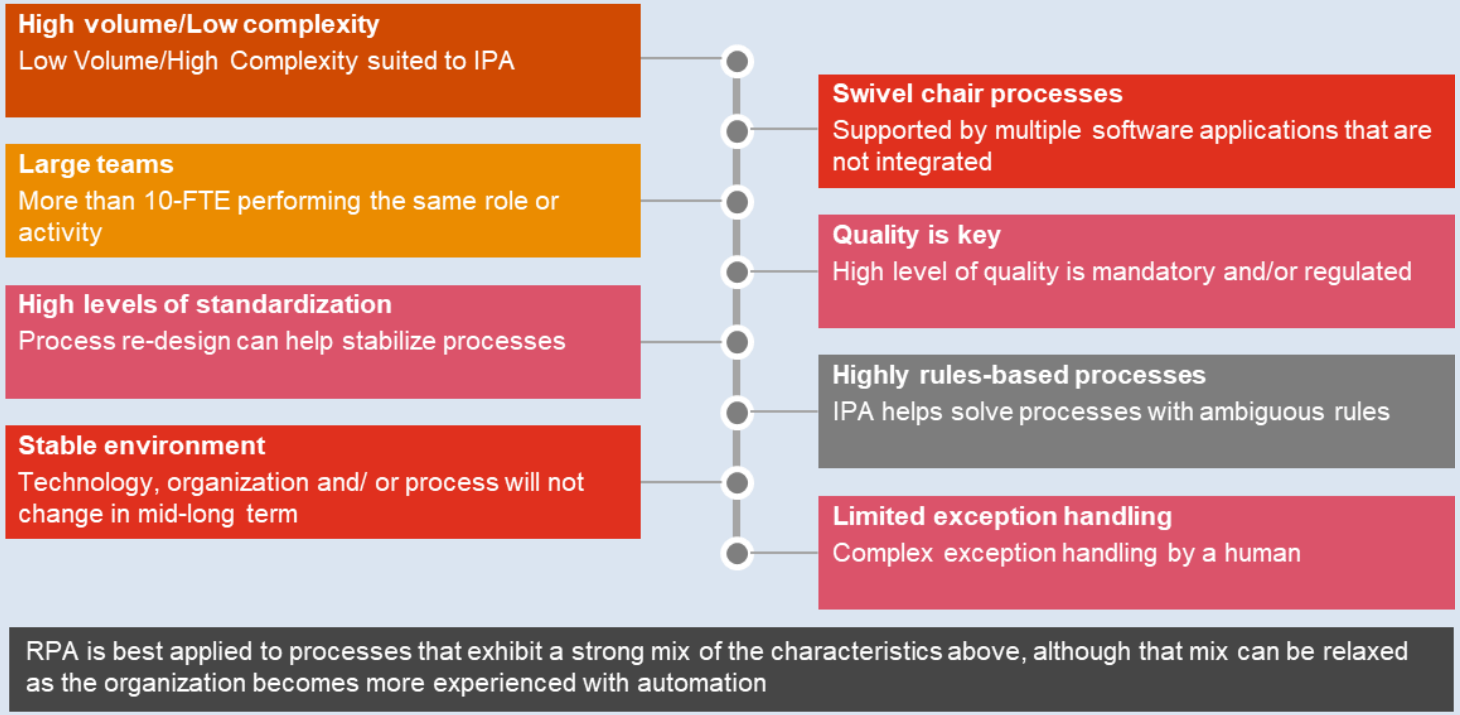
non-human digital workers – the bots. Most organizations will start with one to three pilot processes for automation during the pilot. When starting small, you can target particular areas and move more quickly. Starting small also moves the organization beyond paralysis -- with just a handful of good ideas, it is easier to -select the initial pilot opportunities.

Making an impact during the pilot is crucial. We want the pilot to impress the audience, show the "art of the possible" and gain buy-in to further scale the program. Because internal auditors know their organization, how processes work, and any potential bottlenecks, it is a good place to begin this automation. Identify projects that will be beneficial first projects, but consider that very complex projects may want to be held until the pilot projects are successfully launched and completed.

What Should I Automate – How Do I Build the Pipeline?

Once the pilot has begun, you are ready to build an initial development pipeline. It starts with a critical analysis of current processes and functions, including day-to-day, periodic and project specific. Being selective about what could be automated is key to getting started successfully. Using an inventory of the processes where significant time is spent, consider characteristics that align with automation. Are there multiple applications involved? Is the data structured and easy to work with? Will the process remain consistent for the immediate future? The best projects for a pilot are ones that are jointly selected as possible and relevant, defined by both internal audit and management. The table below illustrates typical characteristics of areas that are ripe for automation, and can be a guide as you make your selection.

Process characteristics for automation



RPA Opportunities for Internal Audit

Many functions performed by Internal Audit professionals are manual, repetitive and rules based. Further, quality is of paramount importance, and many testing procedures require access and reporting from numerous non-integrated information systems. As a result, Internal Audit is an area where healthcare organizations can apply RPA. There are opportunities to automate data validation, reporting and dashboarding, compliance reviews, and move toward more continuous monitoring of high-risk areas. Please refer to the following graphic for sample opportunities to incorporate within your Internal Audit organization, as well as illustrative use cases for both provider and payer environments.

Automation Opportunities in Healthcare Internal Audit

Many areas within Internal Audit have potential for automation. Consider monitoring and management activities and any recurring activity such as controls testing

1
Data Validation and Reconciliations

Automate claims systems configurations audits against provider contracts, verify EMR documentation against billing

2
Report, Workpaper, and Sample Population Generation

Generate EMR audit log report, roll forward and clean up workpapers, pull populations for testing SOX & MAR

3
Automated Auditing

Streamline your claims audit process to automate navigation through your claims system and compare against provider contracts

4
User Access Reviews

Terminated user access reviews for registry nurses, or temporary staff

5
Website verification

Verify provider credentials periodically by having a bot do screen-scraping

6
Dashboard Development

Automate reporting and dashboarding activities, including audit committee, quality reporting, and performance scorecards

7
Rules-based triggers

EMR workqueue activity notifications

8
Audit follow-up

Automate email follow-up and reminders to stakeholders for audit requirements

9
Data Quality Reviews

Evaluate data quality in clinical or claims systems, such as in master data files, checking for completeness of fields, duplicates and validation

Driving change within the Organization

As the 3rd line of defense, Internal Audit is uniquely positioned to identify automation opportunities across the organization where operations are highly manual, repeatable and subject to quality issues. Through the execution of an annual risk assessment, process walkthrough or audit reporting delivery cycle, Internal Audit is able to identify opportunities and recommend automation solutions to mitigate risk, improve operations and reduce costs. Consulting-focused Internal Audit teams already have a brand as a change agent, and can be a catalyst to drive cost savings and quality improvement across the entire organization. It starts by:

1. **Executive Buy-In:** Use your Internal Audit relationships to evangelize automation, citing opportunities around reducing manual resource cost and improving quality. Finance and operations typically have many manual processes, where tasks are repeatable and struggle with resourcing, which as a result could be initial areas to begin the conversation with key stakeholders.

2. **Opportunity Assessment:** As part of your organization's Internal Audit procedures, look to incorporate steps to identify and recommend opportunities for automation. As the organization's trusted advisor, Internal Audit is well positioned to observe and recommend automation solutions to address identified control gaps where there are known organizational limitations such as technology constraints or staffing shortages. Key areas to consider are repetitive system-based controls, especially those that historically have performance or compliance issues.

3. **Get Started:** After opportunities have been identified, it's time to automate! Finding resources that can dedicate time to upskill and apply their learning to build automation is often a difficult hurdle. Here are a few steps that we recommend you consider as you begin your journey:
    a. RPA Platform Application: Identify if your organization has selected an enterprise-wide RPA vendor. If one has not been selected, initiate the discussion. Key to a successful RPA program launch is the implementation of a standard, flexible automation platform that can be used across your organization and meets the needs of all potential stakeholders.
    b. Department Resources: Select a small number of individuals on your team to initially train up on the technology, methodology and organizational approach. Generally speaking, these individuals should be both technologically savvy and have a strong understanding of business process analysis.
    c. Training: Allocate budget, both in dollars and hours, to send resources to a boot camp or training offered by the vendor or a technology consultant. Many vendors have robust trainings on their websites, in some cases their foundational courses are offered for free.

d. Pilot Projects: For your initial automation projects, have your resources start with a small task. An example of an administrative task that could provide benefit to your department, but is low risk to the organization would be the distribution of a recurring email communication (such as a status report). Seeing the bot execute these tasks builds excitement, confidence, and a desire to further automate. Once your resources have mastered small automation projects, continue to incrementally increase the size and complexity of solutions.

e. Rollout all education to a larger audience: Building excitement for the entire team is key, as is setting up a framework and roadmap for how everyone can get involved over the next few months to capitalize on the success of the pilot. At this point, how fast you move and how broad you go is up to you and your team. Perhaps you can kick it off with a 2-day boot camp, introducing the basic lessons and bringing the other priority ideas to the team. Organize your team's work to set time aside for automation – being deliberate about it will help instill the automation culture that will keep this engine going on its own.

4. **Governance:** Assess the existence and efficacy of organizational standards to manage the development and management of automation solutions. If your organization has not established a governance council, Internal Audit can help in establishing a cross-functional leadership team to guide the organization automation efforts.

5. **Center of Excellence:** Once your organization has completed the initial phases of automation program development, look to establish a strong foundation to continue sustainable growth by establishing a Center of Excellence. Building a central location for organizational tools and knowledge will help your organization scale to meet the automation needs.

Sample Internal Audit Use Cases

To help jumpstart your thinking, we've provided two Internal Audit use cases where automation has been applied. To help identify and articulate the process steps able to be automated, we have provided visual keys in the top left corner of each box to show where manual steps are currently performed and opportunities for automation.

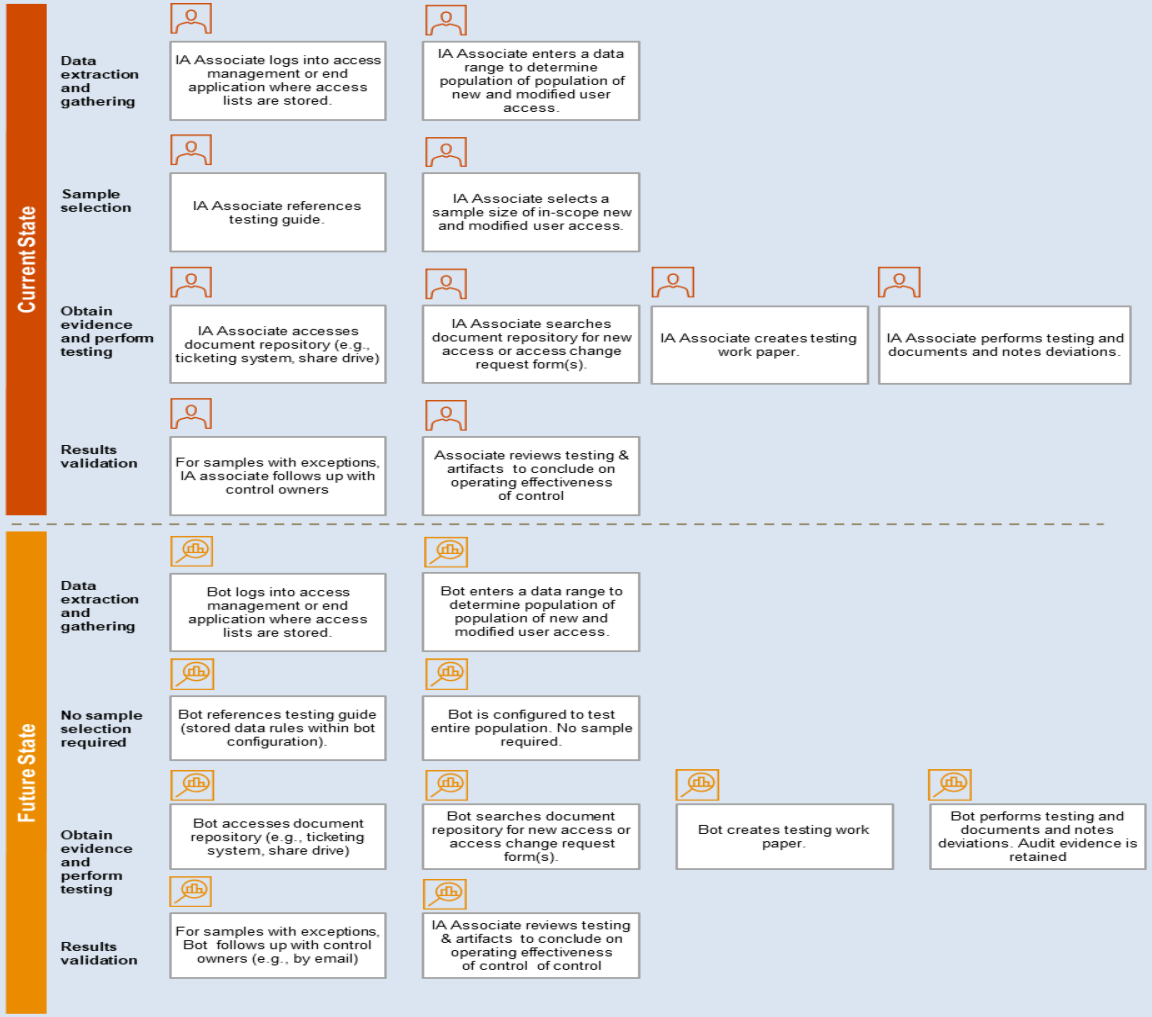


Figure 1

Provider use case – EMR User Access Reviews (Figure 1)

Automation Opportunity: Internal Audit, as part of Sarbanes Oxley or Model Audit Rule testing, is required to perform user access testing. As part of the standard controls testing, Internal Audit will review users with access to sensitive information system privileges or verify the removal of terminated users. Due to the nature of the control, it is a candidate for Robotics Automation for Internal Audit testing of the manual control activities.

Payer use case – Internal Audit Claims Reconciliation (Figure 2)

Automation Opportunity: Internal Audit testing of the reconciliation between the claims system and the bank. A control typically exists to ensure that claim activity is completely and accurately paid on a periodic basis, and that the payment activity is reconciled to the bank for completeness and accuracy, and that any high-dollar payment activity is authorized and appropriate. Periodically, Internal Audit performs sample-based testing.

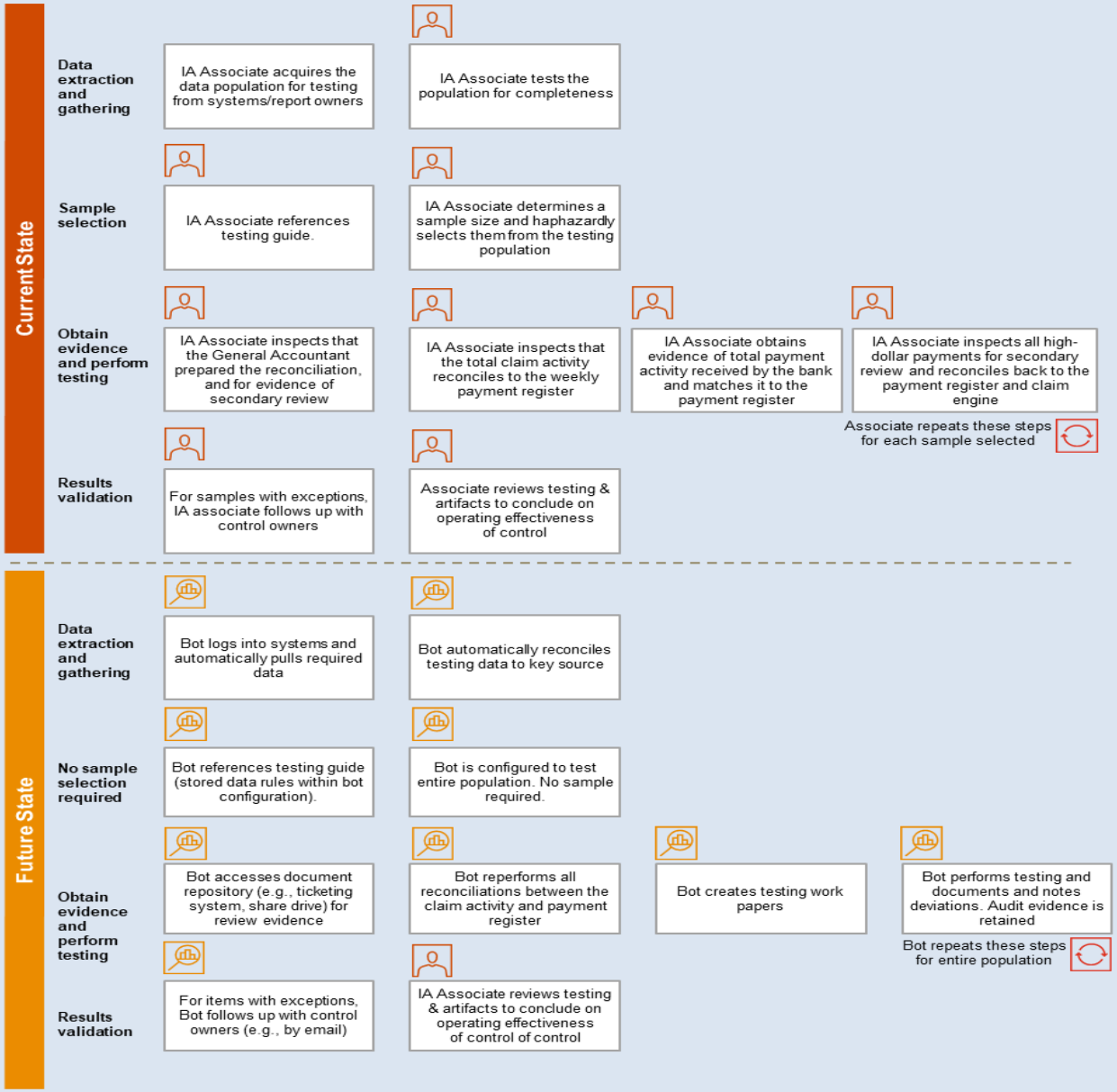


Figure 2

What's My ROI?

When assessing opportunities to implement RPA within Internal Audit, it is important to think about ROI – is the automation worth the effort? This value is much more than just dollars and cents as well. While cost savings remains a key factor, most organizations are also looking at automation opportunities that drive better risk management, higher quality, improved customer service, faster speed to market, and improved employee satisfaction. Also, consider the difference between actual cost takeout (put in the bots and remove employees) versus cost avoidance (changing the cost curve as the business grows, or "doing more with the same"). This distinction becomes important as we consider automation opportunities that may be more discreet or less transactional in nature. The individual ROI of an automation opportunity may be hard to measure initially, but as these steps are taken over the course of time, there may be a larger ROI opportunity related to cost.

Internal auditors may feel there are not enough recurring audits within your department to justify an investment in RPA. While automation, like analytics, is a core competency of high-performing teams and worth investing in, most cost savings within an organization are unlikely to be in Internal Audit. However, Internal Audit is uniquely positioned to have an organization-wide view into the processes and pain-points where automation could be very helpful. Consulting-focused Internal Audit teams already have a brand to drive change and can be a catalyst to drive cost savings and quality improvement across the entire organization. The value of RPA can be demonstrated by using pilots in carefully selected areas that touch multiple functions, such as "Break the Glass" or auditing emergency access to patient medical records, which involves Compliance, Clinical, and Operations.

Once a pilot shows the value of automation, building the business case for more widespread adoption is a matter of applying Internal Audit's knowledge of improvement areas throughout the organization. Internal Audit's early involvement in an RPA initiative ensures a balanced discussion, a risk-based approach, and agreement on the overall governance framework and process design.

How Do I Manage the Risks?

Governance, risk, and control of your automation program is also a key factor in helping you effectively scale. Beyond just ROI, we should consider the risk of a particular automation – is the automation ROI worth the potential risk? Organizations that don't incorporate governance early in their journey typically become concerned about whether they are unnecessarily adding risk or moving too quickly, which ends up slowing down or stopping the progress toward scale.

There are multiple governance models to effectively manage RPA risks. While Internal Audit likely will not ultimately own the function, governance is essential to ensuring the organizational risks are identified, with effectively designed appropriate mitigating controls. Whether your organization is considering a centralized, decentralized, or hybrid (federated) governance model, it is important you consider how identification, prioritization, development, deployment, and monitoring components are controlled and follow a consistent, auditable methodology. In many cases, the risks posed by RPA are not new, but we may control them in different ways – at the end of the day, bots aren't humans, and that should be considered when performing monitoring and oversight.

As part of any organization's RPA Governance model, there are five key risk areas your Internal Audit team should consider when assessing adequacy and effectiveness. They are Executive Risk, Technical Risk, Operational Risk, Functional Risk, and Change Management Risk.

RPA Governance

1. **Executive Risk** – Cornerstone to the successful launch and ongoing success of a RPA Governance organization, key components in this vector include analysis and documentation of organizational sponsorship, business objectives and value drivers, organizational prioritization, and investment planning.

Questions to ask your organization:

- Do we have appropriate leadership representation from business, information technology and risk management guiding the development of our RPA program?
- Have we clearly identified our goals for RPA and have we adequately funded and resourced the program to be successful?

2. **Technical Risks** – When establishing a foundation to build and manage RPA "bots", organizations must understand the fundamentals of development, deployment, and information security. While similar to your organization's system development life cycle, there are risks within this vector that are unique to RPA and should be considered, which include development methodology, configuration, testing, operational readiness, and deployment. Additionally, as part of the build and ongoing access provisioning, review the organization's need to assess information security, data and privacy requirements.

Questions to ask your organization:

- What is my organization's access credentialing strategy for bots and does it support information security requirements and segregation of duties?
- What architecture should be utilized to allow the strongest and most stable performance from the bots?
- How do we manage the technical change management to identify where our bot assets are deployed, and what other technical components they touch?

3. **Operational Risks** – While leveraging bots in your organization will allow for the consistent, repeatable execution of standard functions, operational oversight remains paramount to maintaining a strong risk management posture. This vector assesses the RPA organization's governance, regulatory compliance, operating effectiveness, and monitoring/quality control.

Questions to ask your organization:

- What development framework have we chosen and does it reflect leading practice requirements relevant to bot development?
- What is the impact on our people, how do we effectively communicate our strategy around automation, and how are we upskilling our talent?
- What complementary controls have we implemented to monitor RPA operations, inclusive of issue and quality management?

4. **Functional Risks** – Similar to implementing other software systems within your organization, conscious design and alignment with your organization's processes is essential to maximizing the value derived from RPA while minimizing risk. As part of this vector, your organization should consider performance and functional requirements in the design of business processes and controls.

   Questions to ask your organization:
   - Will the design, functionality, and output from your automation be auditable to meet the requirements of our regulators?
   - What control areas are touched by the automation, and how does this change the evidence produced?
   - What are the key areas that could go wrong during the automated process, and what escalation points or exception handling need to be considered?

5. **Change Management Risks** – Rolling out a workforce of bots will have many implications for your organization and requires coordination across business, technology and administrative functions. As a result, effective program management, including project management and change management are critical to ensure your organization's RPA Program aligns with the corporate strategy and is managed accordingly. As part of this vector, your organization should consider assessing your RPA program planning efforts, project scoping, process oversight and technology integration, decision making, and resourcing.

   Questions to ask your organization:
   - Have we developed a robust RPA development plan that aligns with our strategy, has been approved by executive management and includes the tactical detail to enable our organization to successfully launch an RPA function?
   - As part of our RPA strategy and bot development, how are we assessing what criteria should be included in Return on Investment calculations and monitoring to ensure these goals are accomplished?
   - Do we have the necessary skill sets in-house to establish and manage an effective RPA organization or do we need to contract with an outside service organization?

Conclusion

In healthcare today, organizations are racing to unlock value from the next generation of digital technologies, including digital labor, which has moved far beyond using macros on a spreadsheet. RPA is one form of digital labor, which utilizes software bots to automate processes. RPA bots are easy to configure, require little IT expertise and can be quickly trained and deployed to automate manual tasks. They can perform activities such as copying and pasting data between applications, reconciling and cross-referencing data between different systems and conducting high-level decision-making at key points in the business process. RPA is even being used in more dynamic settings, including activities that involve direct interactions with customers and employees, such as processing customer insurance claims or setting up new employees with the right level of IT access.

While today's RPA platform solutions have simplified the development of bots, deploying effective RPA solutions within Internal Audit requires foresight, planning, and investments of both time of money. Taking a risk-based approach, and building internal advocacy will be critical during your initial RPA program launch. Internal Audit plays a key role in helping the organization have the independent oversight to maintain consistency and quality, without bogging down the progress expected from these innovative technologies.

Audit program steps also need to be reassessed to consider the impact of automation on process areas, IT, and the organization's overall strategy. We have provided some guidance around structuring these risk areas to help focus on what is important -- be it the roll-out of automation in the right areas and achieving ROI, or understanding the potential change to the design or execution of a control in a newly-automated process.

The high-value talent that you have will be important to help move your organization forward. Automation will allow you to take better advantage of human decision-making and experience. Further, as we strengthen the digital skill sets of the team, it helps to find further improvement opportunities within Internal Audit and across the organization.

The potential impact of automation on a company's operations and competitive positioning is significant on a number of fronts: economic value, workforce advantages, quality improvements, flexible execution, speed, and agility. These technologies are helping to further Internal Audit's seat at the table and drive more value to the business. In many cases, Internal Audit is becoming an innovation leader in helping to identify opportunities for the organization to improve efficiencies, reduce risk, and drive more data insights.

Ryan Martin, PwC Principal, Digital Risk Solutions Intelligent Automation Leader

Ryan is a Principal with PwC, and leads the Intelligent Automation practice for Risk Assurance. The practice provides risk and control services over Robotics Process Automation (RPA), machine learning, and artificial intelligence. These services help clients understand the enterprise impact, transform their approach, and identify and take advantage of opportunities for Intelligent Automation technologies. Ryan has extensive experience working with clients to establish their automation strategy, build effective governance programs around automation, and develop robotics at scale. He has spoken at multiple industry events, authored thought leadership pieces on robotics and AI, and has worked with a broad range of clients on the journey of their automation programs. Ryan holds CRISC and CISA certifications, a BS in Computer and Systems Engineering from Rensselaer Polytechnic Institute, and an MBA from Boston University.

Jack Flaherty, PwC Director, Risk Assurance and Digital Risk Solutions

Jack is a Director with PwC's Health Industries Risk Assurance practice, where he assists payer and provider organizations with internal audit, compliance and risk management solutions. He leads the Pacific Southwest region's Health Industries Robotics Process Automation (RPA) efforts to assist clients gain greater risk coverage and operational costs through the use of Robotics and Intelligent Process Automation. Jack has experience assisting organizations in understanding the impact of RPA on their risk and control environment, including assessing, designing and implementing controls to effectively mitigate risks associated with RPA to ensure the necessary controls are in place across the enterprise. Jack holds a BS in Business Administration from Marist College and an MBA from Pepperdine's Graziadio School of Business and Management.

Kent Hansen, PwC Director, Digital Risk Solutions

Kent is a Director in PwC's Digital Risk Solutions practice. He has been building automation and analytical solutions around audit for 14 years, starting with tools like Excel VBA, .NET, XML, SQL Server, Monarch, and adding more recent innovative tools like UIPath, Automation Anywhere, Alteryx, and Tableau. He has been focusing on healthcare-specific automation solutions over the past 2 years, although he has been working with health industries clients for most of his 14 year career. He also continues to play a large role within PwC's own digital initiative, helping to automate audit tasks and bring more value and insights to clients around risk using technology. He graduated from Brigham Young University with a BS in Information Systems.

About AHIA

The Association of Healthcare Internal Auditors (AHIA) is a network of experienced healthcare internal auditing professionals who come together to share tools, knowledge, and insight on how to assess and evaluate risk within a complex and dynamic healthcare environment. AHIA is an advocate for the profession, continuing to elevate and champion the strategic importance of healthcare internal auditors with executive management and the Board. If you have a stake in healthcare governance, risk management and internal controls, AHIA is your one-stop resource. Explore our website for more information. If you are not a member, please join our network, www.ahia.org. AHIA white papers provide healthcare internal audit practitioners with non-mandatory professional guidance on important topics. By providing healthcare specific information and education, white papers can help practitioners evaluate risks, develop priorities, and design audit approaches. It is meant to help readers understand an issue, solve a problem, or make a decision. AHIA welcomes papers aimed at beginner to expert level practitioners. This includes original content clearly related to healthcare internal auditing that does not promote commercial products or services. **Interested? Contact a member of the AHIA White Paper Subcommittee.**

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