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What Source-to-Pay Leaders Need to Know About Robotic Process Automation

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Executive Summary

Robotic process automation, or RPA, has made a rapid entry onto the agenda of procurement and purchase-to-pay organizations. While most of the actual deployments of robotics to date have been industry-specific (e.g., financial services, utilities, telecom), business services such as HR, procurement, IT and finance are scrambling to gain a better understanding of the technology and its potential to improve their efficiency and effectiveness. RPA has great potential for opportunistic, business-led deployments, especially for global business services organizations and business process outsourcers.

Understanding Robotic Process Automation

RPA vendors emphasize their products' capacity to replace human operators, using terms like "digital workforce." In simple terms, RPA is a software application that runs on an end user's computer, laptop or other device, emulating tasks executed by human operators, just like a user would perform the task through the application interface. Not all RPA products are alike. Some physically deploy robots to a desktop. Others execute on a central server and, depending on what the robot is doing, may connect to a remote or virtualized desktop that has the application within which it is automating a task. Its purpose is to integrate or automate the execution of repetitive, rule-based tasks or activities. RPA neither requires development of code nor any form of direct access to the code or database of the applications.

The Difference Between RPA, Cognitive Computing and Artificial Intelligence

Technology automating human-like tasks that require some level of intelligence and interpretation of information is sometimes referred to as software robotics. However, The Hackett Group draws a distinction between RPA and artificial intelligence (widely known as AI but also called cognitive systems). In our view, RPA refers to the automation of routine, repeatable tasks through existing user interfaces, permitting the execution of simple rules-based logic in situations where there is no room for interpretation. An intelligent or cognitive system applies more complex rules to determine the best next step. It performs tasks that otherwise would require some level of human judgment. For example, pattern recognition to categorize spend is a common form of AI in sourcing

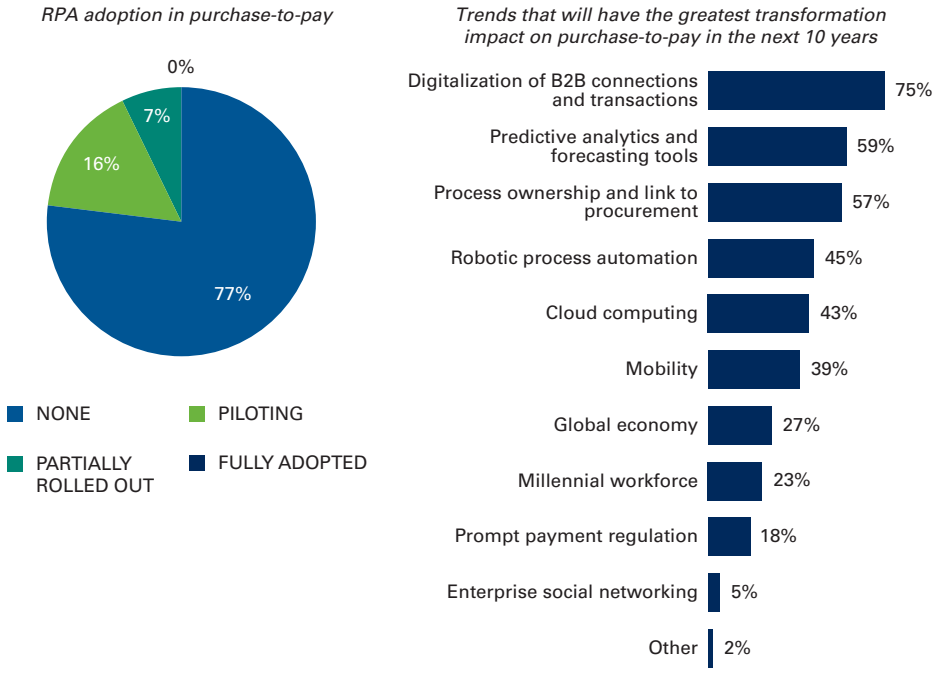
organizations. Working in tandem with human experts, AI also has an element of self-learning, which allows for continuous improvement and refinement. AI also typically works with unstructured data to convert it into structured data. RPA usually comes into play only once the data has been structured. RPA and cognitive systems can also work together. For example, a robot might collect data from external sources and feed it into a cognitive system for pattern recognition.

Examples of Current RPA Use

The high level of media attention being given to RPA does not necessarily indicate high adoption levels. Nor does it say anything about the maturity of the market or technology. The most current RPA implementations are found in industry-specific processes such as logistics (scheduling and tracking of shipments), claims processing in insurance, risk management in financial services, and customer service in utilities. However, over the last 12 months, demand for RPA has increased, as enterprises embark on initial RPA projects. These processes and their associated tasks are usually high-volume, structured, repetitive and implemented on old – sometimes even mainframe-based – technology. Normally, the processes are extremely stable. There is no technology migration or modernization roadmap involved, and IT-led integration would be difficult and expensive.

At present, the leading non-industry-specific RPA application is the financial close and consolidation process. A number of technology vendors offer RPA technology to automate repetitive rule-based accounting tasks like account reconciliations. In purchase-to-pay, 23% of companies are at the earliest stages of adoption, i.e., either in pilots or partially rolled out (Fig. 1). The remaining 77% have no immediate plans for RPA adoption. Despite RPA's low adoption level today, 45% of purchase-to-pay organizations believe it will be one of the areas with the greatest impact on the way its work gets done in the next decade.

FIG. 1 RPA trends



Source: Purchase-to-Pay Key Issues Study, The Hackett Group, 2016

The Best Processes for RPA

It is not the specific business process that makes it a good candidate for RPA, but rather the characteristics of the process, such as the need for data extraction, enrichment and validation. Activities requiring integration of multiple screens, as well as self-service inquiry resolution are also ripe for RPA. The key is that RPA is best deployed in a stable environment where no changes to the processes are on the horizon.

Other possible choices include processes requiring multiple software applications to execute different but repeatable activities and tasks. For example, in an end-to-end purchase-to-pay process, the payment portion of the process may require an approval activity, which consists of multiple tasks, like extracting accounts payable information from an ERP system, parsing out approver information in a spreadsheet, sending emails to approvers, obtaining approvals, updating records in the ERP, and authorizing payment. In this example, the payment approval activity requires three applications: ERP, spreadsheet and email.

In source-to-pay, candidates for RPA include supplier master maintenance and consolidation across systems, catalog and item master maintenance, contract master maintenance (creation/upload and ongoing maintenance), invoice processing (data entry, three-way matching and posting), and inbound supplier and stakeholder inquiry routing/prioritization.

RPA Use Case Evaluation Criteria

Findings from The Hackett Group's analysis of RPA imply a number of critical success factors for RPA deployments. These are based on evaluation criteria for potential uses of RPA (Fig. 2). Business support functions (e.g., finance, HR, IT, procurement) and global business services organizations must develop a structured evaluation model for RPA business cases using these criteria. Below and in the following pages, we look at each criterion separately.

FIG. 2 RPA use-case evaluation criteria

BUSINESS VALUE DRIVERS
Volume
Volume variance/peaks loads
Cost (total/labor component)
Variance/exceptions
Auditability value
Analytical capability value
Error rates
Cycle time
Labor cost drivers (training requirement, turnover)
RPA projected life-cycle
PROCESS ATTRIBUTES
Stability
Process variance
Digitization
Standardization
Process model complexity

DATA ATTRIBUTES
Stability
Variance
Digitization
Standardization
Quality
Data model complexity
TECHNOLOGY ATTRIBUTES
Application landscape complexity (number of systems, number of instances)
Platform stability (maintenance, release upgrades, etc.)
Integration cost/complexity
Application modernization roadmap
Systems' scalability/transaction volume
SERVICE DELIVERY MODEL ATTRIBUTES
Centralization, organizational location (GBS)
Sourcing model (internal, outsourced)
Process ownership model

Source: The Hackett Group

Business value drivers

The business value drivers for RPA include both the benefits and the cost side of the value equation. Benefits revolve primarily around the cost-savings potential of RPA deployments. These are dependent on the volume of work, the amount and cost of labor involved in manual execution of the work, the percentage of "cases" that can be fully automated (i.e., that will not be handled as exceptions), and the projected life span of the deployment. Other value drivers in the business case are current error rates and cycle times, as well as RPA's potential to improve these performance metrics. The value from increased auditability of the work itself must be assessed, plus the benefit of improvements to analytical capabilities. The processes that are best suited to RPA are high-volume, low-complexity and stable.

Total cost of ownership[1] is a function of process complexity, the stability of processes and systems, and the cost of the RPA technology and solution development.

Process attributes

The Hackett Group's research emphasizes the importance of evaluating process complexity, stability, standardization and variance as factors determining the suitability of RPA to automate activities or tasks. Robots are defined to work within fixed parameters. Depending on the nature of the automated activities, a percentage of tasks will fall outside these parameters, requiring exception management. The lower the process variance, the more suitable the activity or task is for RPA.

Process digitization is another important attribute. RPA activities must be part of a sequence of digitized activities, integrated with other digitized upstream and downstream activities in the process flow.

Data attributes

The need for stability, standardization and quality applies to data as well as processes. Out-of-tolerance data, or data that fails validation steps due to errors, results in exceptions. The value of RPA will depend on how many exceptions must be handed off to human operators; too many of these will begin to erode the value proposition of RPA. Moreover, RPA input data must be manually entered into a computer system or be structured and fully digitized. For example, in a purchase-to-pay process, invoice data must be captured via OCR from a paper invoice to feed a series of tasks automated though RPA.

Technology attributes

RPA automates the execution of tasks implemented in multiple siloed systems and also external data sources such as suppliers' websites and portals. Modifications to any of these underlying systems will result in the need for maintenance of the robot. As a result, application environments subject to frequent modification and upgrades are less suitable for RPA-based integration. However, updating or modifying robots can be done relatively quickly and is significantly faster than other integration approaches. For example, supplier portals may change and new ones may need to be integrated, but robots built with a no-coding approach can adapt to these business requirements. This is common in industries such as logistics, where new partners are constantly being added. New robots can be built in roughly a week.

Still, this dependency underscores the importance of rigid governance and coordination of modifications to any system integrated though RPA. While the business may develop a first release of an RPA deployment with limited IT involvement, maintenance of the robot throughout its lifecycle requires mature version control and configuration management practices.

[1] Comprises all components of cost (labor, technology and all other) throughout the full lifecycle of an asset, including development, implementation and maintenance.

Alternative integration and automation approaches

RPA is one of a number of different approaches to application integration and task automation. An alternative route is traditional, IT-led application integration. This approach does not integrate applications at the user interface layer, but may use application program interfaces (APIs), database access, application integration tools, middleware, workflow or business process management software. Some RPA products also have the flexibility to integrate with applications and data sources using traditional methods.

Another approach is consolidation and/or modernization of the application landscape.

Because application consolidation or modernization can achieve many of the same integration and automation objectives *(see sidebar at left)*, RPA business cases hinge on technology strategy, and specifically business application roadmaps. Companies running siloed, legacy back-office systems that are slated for replacement with integrated business application suites should be very cautious about investing in RPA for the short term.

Service delivery model attributes

Centralized processes located in a GBS center are more suitable for RPA than decentralized processes. Most RPA initiatives are driven from within a GBS organization, so candidate processes tend to be those executed in the GBS. Other SDM-related considerations are sourcing model and process ownership model.

RPA Pricing Trends

The pricing model for RPA is still evolving. Today, many vendors are pricing RPA based on the cost of the FTE it is replacing. For example, an RPA vendor may quote a price per robot that is one-third the cost of an offshore resource doing the work. Onshore FTE pricing is being quoted closer to one-ninth, or 11%, of the cost. This pricing model, developed to compare the cost of outsourcing a process versus automating it with RPA, essentially positions RPA as a service, not a software solution. In contrast, other RPA vendors are pricing and licensing based on expected usage – number of robots, frequency with which they are run, and robot business complexity. This type of usage model will accelerate adoption of RPA in an organization, whereas models that simply align with the cost of an FTE set up barriers and slow down adoption.

Per-robot pricing may not always align to actual value. For example, a $10,000 investment might be appropriate for one type of automation task but not another. Companies often start with a set computing power for an initial project, but have the flexibility to design other robots that they can fit into their available resources by scheduling them to run at a set time.

Today, the cost of the technology is absorbed by the business function it supports. Over the longer term, as RPA is considered for more enterprise-wide deployment, we predict that the expense will shift to the IT budget.

The RPA Value Proposition

Purchase-to-pay organizations that are implementing RPA expect benefits in higher productivity and lower operating costs **(Fig. 3)**. These benefits are realized in a number of ways, including:

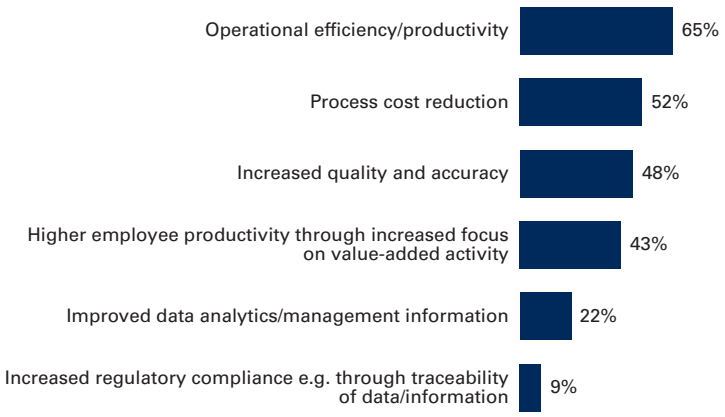
- Ability to solve purchase-to-pay business issues with limited IT involvement: In many companies, the IT organization is heavily backlogged with commitments to large, complex projects or high-priority, client-facing applications. Despite their high potential to improve efficiency, many application integration projects in procurement and purchase-to-pay will never make it to the top of the IT change-request queue. Because RPA does not require IT development resources and needs a very limited technical infrastructure, businesses are able to undertake these projects by themselves.

  However, a big lesson learned from early pilots is that IT needs to be involved in some capacity early in the project, even though this may bring in extra bureaucracy and potentially slow down progress. Getting IT to sign off on performance demands, system availability, security infrastructure, etc., will pay dividends later when RPA is in production. This is especially true in highly regulated industries where data security is paramount and RPA-completed tasks must be tracked and audited. It is also worth noting that RPA is not limited to the business. Some RPA vendors offer software development kits that IT can use to create applications to help run the business better on an enterprise scale.

Measuring RPA cost savings

Reported savings from RPA deployments vary greatly, depending on which activities and tasks are included in scope of the measurement. As an example, assume a subprocess consists of five activities and that each activity consumes one-fifth (20%) of process cost (mainly labor). If two out of the five steps can be automated with RPA, eliminating 80% of the cost of those activities, savings for the subprocesses are 32% (i.e., 80% x 40%).

FIG. 3 Benefits expected by purchase-to-pay organizations with RPA



Source: Purchase-to-Pay Key Issues Study, The Hackett Group, 2016

- **Shorter, less expensive development cycle time:** The typical timeline to develop and deploy RPA is six to eight weeks, dramatically less than traditional, IT-led application integration projects. The latter's cost to design, program, test and maintain system interfaces is significant; in some instances it can exceed the cost of the software itself. The ability to link systems through the user interface layer in a non-invasive way without these costs is core to RPA's value proposition. The cost of projects may even fall over time, as companies develop a library of RPA utilities and start to reuse pieces of previous deployments where it makes sense to do so.
- **Labor cost savings:** The Hackett Group's interviews have determined that savings can be significant at 20%-30% *(see sidebar)*. It is important to understand that RPA automates individual activities and tasks, but not entire processes. An major aspect of RPA implementation (in addition to the development and deployment of the robot itself) is the process standardization needed to meet the RPA's requirements for very low levels of process variance.
- **Increase auditability and consistency while reducing error rates:** Routine tasks executed by humans are prone to errors and inconsistent application of rules. Robots apply the same set of rules consistently and operate without errors. Furthermore, all tasks executed by robots are recorded, and these execution logs are auditable.
- **Improve scalability:** Human capacity is difficult to scale in situations where demand fluctuates, leading to inefficiencies such as backlogs or overcapacity. In contrast, robots operate at whatever speed is demanded by the work volume. Multiple robots can be deployed when demand exceeds the capacity of a single robot. However, an RPA must still work within the performance limitations of the software it is designed to interact with. For example, if purchase-to-pay software caps the number of concurrent users or performance is tuned based on assumptions about the load on the system, RPA must work within those constraints or the software needs to be reconfigured.

Looking Ahead

Leaders of source-to-pay processes should consider the mid- to long-term software roadmap and where systems are on the replacement or modernization docket, and then determine whether the potential short-term efficiency gains are worth the RPA investment. Also, it should be noted that much that has been written about robots displacing human workers is grossly exaggerated. We predict that RPA will have an impact on the number of people needed to perform mundane, repetitive tasks. Ultimately, this is a good thing, because many of these resources can be reassigned to more rewarding activities and job satisfaction will increase. And, this can be an effective stopgap for every company that needs to raise productivity without adding FTEs.

That being said, when autonomous, self-learning AI technology matures to the point that it becomes pervasive, there will be more significant implications relating to talent and the way work is executed. We advise companies to begin developing a vision for the long-term implications on their own workforce. This should lead to a discussion on how talent will be transformed to take full advantage of automation, not how automation will take the place of talent. It is not that jobs are disappearing, but the nature of the work being done today will change, and employees will need to develop the skills required to best leverage this new technology. This is where there are more far-reaching ramifications: assuming that all rote, repetitive tasks are done by machines, the need for employees skilled in lateral thinking, creativity and innovation will become much more pressing.

These changes will largely unfold over the next four or five years, making their impact felt on the next generation of workers, who are currently in their teens. With entry-level jobs mostly performed by computers, what roles will be filled by new hires? What does a career path in the digital age look like? How will training and development needs change? These are the questions that source-to-pay leaders must begin to address as they develop their future talent strategy.

Fortunately, this shift in the profile of source-to-pay talent is consistent with the direction that procurement has been heading in for some time, moving away from transaction work to more of a trusted advisor and partner to the business. This will require complex problem-solving abilities, interpersonal skills, emotional intelligence and intellectual curiosity. There will also be a strong need for people who understand how to orchestrate a combination of automation solutions to get the best results.

Related Hackett Research

"Understanding Robotic Process Automation, Part 1: Maturity, Adoption and Future," June 2016

"Understanding Robotic Process Automation, Part 2: Value Proposition, Deployment Model and Use Cases," June 2016

About the Advisors

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Senior Research Director

Mr. Connaughton leads the development of The Hackett Group's intellectual property in the areas of strategic sourcing and procurement. He has over 15 years of experience in supply chain and procurement research and advisory roles. He has published groundbreaking research in areas like spend analysis, contract life cycle management, supplier risk assessments and services procurement. Prior to joining the company, he was principal analyst at Forrester Research, where he focused primarily on helping executives mitigate risk through more effective supplier relationship management. Previously, Mr.Connaughton was a consulting manager at Manhattan Associates and Accenture.

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Mr. Dorr has over 20 years of experience in consulting, research and advisory roles in information technology strategy, enterprise application suites and business process reengineering. Before being named to his current position, he was Senior Enterprise Research Director. Prior to joining The Hackett Group, he held a number of senior management positions, including Vice President of IT at a global manufacturing company, where he was also a member of the executive leadership team.

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