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Robotic Process Automation: Adding to the Process Transformation Toolkit

The role that RPA can play within service providers and enterprises

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Summary

Catalyst

Robotic process automation describes the use of technology to automate tasks that are traditionally done by a human being. The technology itself mimics an end user by simulating user actions such as navigating within an application or entering data into forms according to a set of rules. RPA is often used to automate routine administrative tasks that typically require a human being to interact with multiple systems, but RPA technology is evolving to support the automation of increasingly sophisticated processes at scale within enterprise architectures rather than on the desktop. Over the past two years, RPA has been adopted by a number of business process outsourcing (BPO) providers and a growing number of end-user organizations are now deploying the technology themselves to create “virtual workforces” of robotic workers.

Ovum view

Robotic process automation is entering a new phase of maturity. It has moved beyond the days of basic “screen-scraping and scripting” to automate repetitive tasks for a solution that can work alongside existing EAI and BPM deployments to automate more complex processes and activities.

The adoption of RPA by business process outsourcers was originally driven by the need to reduce the costs (and errors) associated with employing people to work in service centers to perform generic or mundane IT-related tasks. The simple idea is that RPA allows you to process a large number of transactions in a highly predictable way without having to employ more staff, because instead of using humans to perform the tasks, you run one or more software robots that perform the work instead. If the number of tasks increases, instead of having to recruit, train, and accommodate more staff, you simply execute additional robots as required.

This proposition remains valid, but RPA technology has become more sophisticated. It now offers services organizations and enterprises a way to integrate systems, adapt business processes, rapidly scale, and deliver more complex services securely and robustly and with greater control. This is without requiring the investment and effort that other approaches to integration and business process management demand.

The RPA market is evolving quickly and this pace of evolution means that choosing the right RPA partner means that you must look carefully at the technology roadmap as well as the current capabilities and overall architecture of the different product offerings available.

Key messages

- RPA offers services organizations and enterprises a cost-effective way to automate many business processes.
- Enterprise RPA technology is evolving to take on more complex processes at greater scale.
- All RPA products are not equal, and the term has been adopted by vendors whose technology is more of the first generation of desktop scripting tools.
- RPA offers service providers a way to offer outcomes rather than simple labor arbitrage.

- Enterprises should see RPA as complement to rather than a clash with existing approaches to EAI and BPM.
- Change management, architecture, governance, and intelligent process management will be increasingly important features of RPA platforms.

Recommendations for enterprises

Consider robotic process automation as a lower-cost, less disruptive way to rapidly automate processes

RPA will not completely eliminate the need for enterprise application integration or business process management, but it does offer a means to automate processes for which a full-blown EAI or BPM project would be prohibitively complex or costly, thereby extending the scope of what an enterprise organization's technology suite can achieve.

RPA provides a means to quickly and non-invasively automate existing back-office processes, and can provide a platform that will enable you to improve and modernize those processes in a sustainable and scalable way.

Start with mundane or repetitive processes but then look further

Most organizations will be able to identify a number of processes that can and should be automated. These processes should be your first priority, and in many cases automating this class of process alone will justify the investment in RPA. If you choose the right RPA platform, you should be able to identify areas where new processes can be deployed that will deliver improvements in back-office productivity or, perhaps more importantly, improvements in the customer experience.

Don't limit RPA to the IT function, take it to the business

The use of RPA to automate IT service delivery is often the first encounter that end-user organizations have with the technology. However, every end-user organization Ovum talks to about RPA emphasizes the business value of RPA and the fact that business people should be engaged as early as possible in the RPA journey. The corollary to this is that where the business adopts RPA, the IT function should also be engaged as early as possible in the process, because process automation is a team effort.

Remember that "process automation" always implies "business change"

As with the broader discipline of business process management, one of the biggest challenges that end-user organizations face when automating processes relates to change management rather than technology.

When automating processes, the people responsible for them should feel as if the project is something they are "participating in" rather than something that "is done to them". It's essential that you engage with process participants and bring them with you on the journey.

When choosing a technology provider think about architecture and governance

The right RPA platform will provide you with the technical facilities that enable you to manage every aspect of process automation, from the initial discovery and definition of processes, through to testing and deployment. The technical functionality should be supported by training and support services backed by a strong change-management methodology.

The platform should provide a single console that allows you to monitor robot instances as they are running, initiate new instances when they are required, and shut them down when they are no longer needed. As RPA platforms take on increasingly sophisticated processes, they should also be capable calling services provided by other platforms (including BPMS engines) and of being called by them. Compatibility with your existing operating model is also essential. Aspects such as platform governance, access management, process security, and change control are key factors in delivering a capability that leaves a positive legacy rather than a collection of disparate automations that are difficult to control and manage.

Recommendations for vendors

BPO or BPS vendors that haven't invested in RPA should do so, promptly

RPA offers BPO organizations a way to save costs on one hand, and to keep the often made and seldom kept promise of process transformation on the other. The ability to deliver higher value in the form of helping your clients adapt and enhance their existing processes is key to making the transition from "BPO" to "BPS".

Services organizations should focus on domains where they can add value

While the early adoption of RPA by services organizations enabled them to continue to offer enterprises a cost benefit over retaining processes in-house, the increasing adoption of RPA by enterprises is eroding this advantage. Services organizations therefore have to be ready to deliver greater value in the form of domain expertise, insight, and reporting, change-management support, and process improvement in order to remain attractive to enterprises.

For many services organizations, partnering will be better than developing your own RPA platform

While some organizations will be able to draw on existing internal development efforts to assemble an RPA platform, this is a domain that is evolving rapidly, with a growing number of RPA vendors that are 100% focused on extending the capabilities of their offering and a strong sense of how their platform will evolve over time.

Unless you are confident that you can commit the same effort and passion as the pure-play RPA vendors into research and development, you should consider partnering with one rather than trying to build your own platform.

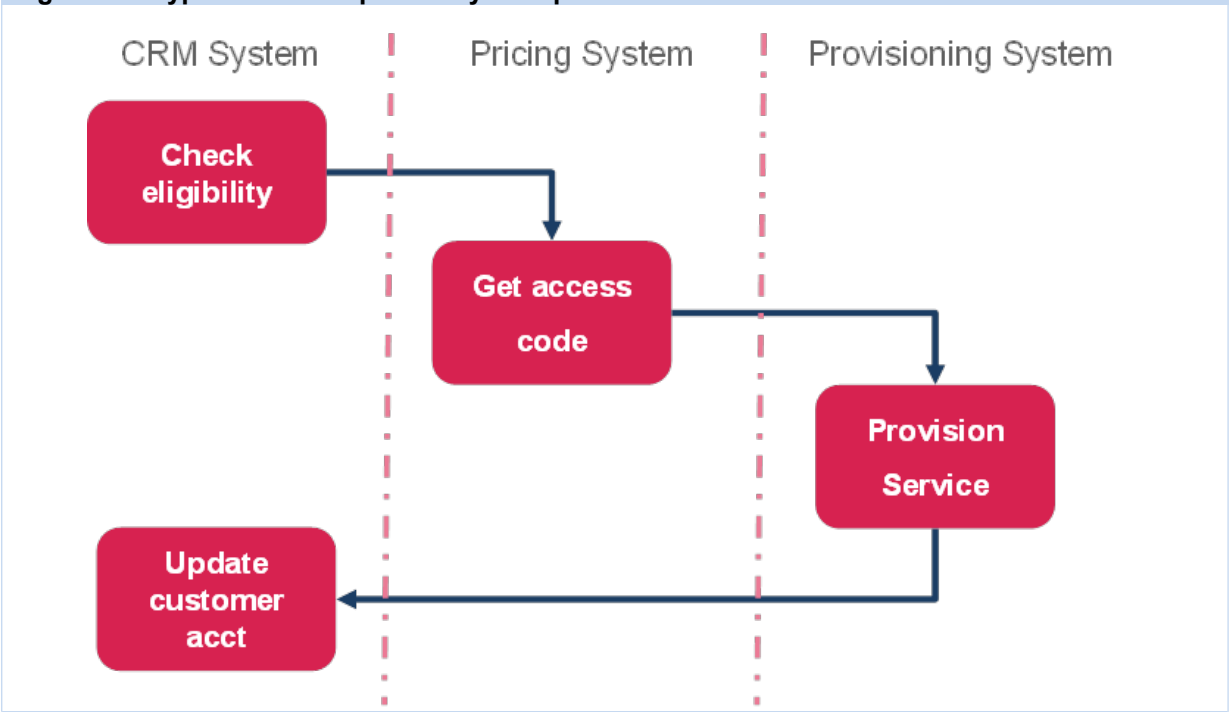
RPA offers services organizations and enterprises a cost-effective way to automate many business processes

Robotic process automation has its roots in the automation of routine processes

Many organizations have to support processes that are mundane and repetitive on the one hand, while being essential to the delivery of service on the other. In many cases, these processes require multiple systems to be queried and/or updated in order to complete the task.

In Figure 1 we describe a relatively simple provisioning process, which requires an operator to access three separate systems to perform a simple action such as the provisioning of a service to a customer.

Figure 1: A typical multi step/multi system process



Source: Ovum

In this scenario, a customer has called to request access to a particular service, and the agent in the call center then uses the pricing system to look up an access code that determines the pricing of the service. The access code is then used to provision the service, after which the customer's account is updated.

In order to complete this activity, the agent needs to perform a number of steps. First, the customer's record is accessed to determine eligibility for the service. The customer number is then used, perhaps in conjunction with other information such as the current service plan, to look up the eligibility code in the pricing system. In practice, this might involve the operator writing down the data from the first system so that it can be entered in the second system, or the operator may flip between both applications using copy and paste to enter the data. Once the access code is found, the operator then uses this (along with the customer number) to update the third system in order to provision the service. Again, this might be done by writing down the code or by flipping between applications and copying and pasting the relevant information into the provisioning system. Finally, the operator might

return to the first system to update it with the necessary billing information, which may require some manual or ad-hoc calculations not performed by either system.

While this is a hypothetical case, most organizations would recognize examples of this kind of process within their own environments. Nearly every organization has some processes that are: rules-based, predictable, or replicable; high or highly variable in volume; reliant on multiple systems and not addressed by existing processes; or required to be completed reliably and accurately.

One approach is simply to recruit, train, and accommodate the staff necessary to perform these activities, but this approach requires staff to be recruited and trained, and makes it difficult to quickly scale up the process in the face of spikes in demand.

Business process outsourcing offers one way to reduce the cost of these routine but essential processes

Throughout the 1990s and 2000s many organizations looked to BPO and offshoring as a way to reduce the cost of fulfilling these activities. The proposition of the BPO providers was that they could deliver these activities offshore using lower cost labor, passing the cost-saving on to the client. This approach certainly delivered savings, but as the wage differential between local and offshore resources began to shrink, the marginal benefit of this approach declined.

BPO providers have responded in two ways: first, by looking for further ways to cut costs from the system, and second, by offering customers greater value by promising to help them improve the processes rather than simply offering to run “your mess for less”.

One response to the cost of labor is to automate the processes and eliminate the need to hire staff to perform them. The challenge is that traditional approaches to process automation require a significant (sometimes major) investment in time and technology. While the use of EAI or BPM technology might be justified for some processes, many organizations struggle justify the cost of full-blown integration, so another approach to automation had to be found, and RPA emerged as an alternative to heavyweight integration.

Robotic process automation simulates a real end user by interacting with applications at the presentation layer, reusing the screens, validation, and business rules as they are presented via a virtual desktop. Predecessors to RPA, such as scripting and macro recording, used simple commands to transfer information between a form in one application into another. Then specific applications emerged that offered more sophisticated functionality by providing tools to describe processes and turn them into scripts that the robot could execute, and then running them in a controlled, auditable, and secure environment.

One way of differentiating between the use of traditional EAI or BPM as a means of integrating processes versus RPA is to think of EAI as open heart surgery in which the internal components of the systems that are being integrated need to be modified, while RPA is the equivalent of key hole surgery, significantly limiting the complexity and risk of achieving the same result.

RPA technology is evolving to take on more complex processes

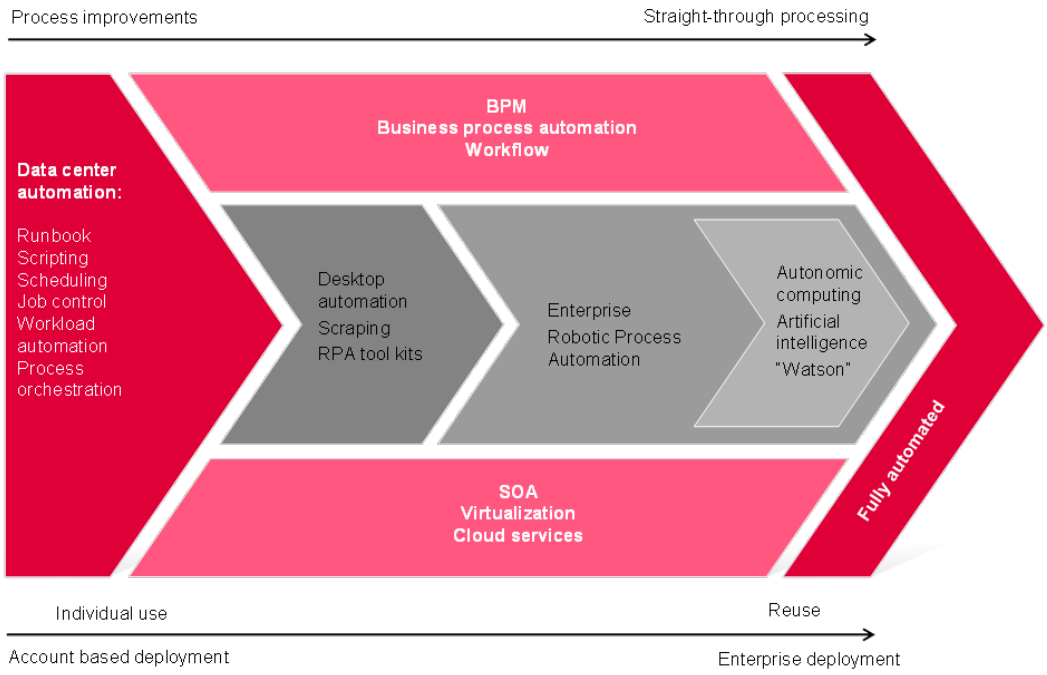
Predecessors of RPA offered relatively basic automation capabilities, but over time some of the vendors in this space have matured their offerings beyond basic scripting to offer much more sophisticated functionality that can perform within the demanding context of enterprise organizations.

The pace of change within this market segment means that there are significant differences between many RPA offerings.

Not all RPA products are the same

Figure 2 sets out the evolution of RPA products from basic macros and scripting to what we now classify as “Enterprise RPA”.

Figure 2: Continuum and evolution of process automation



Source: Ovum (Beyond the Hype: Assessing the Evolution of Robotic Process Automation)

The more basic approaches still have value, and are particularly applicable to many of the very basic and standardized processes that take place in contact centers and back-office departments. The real potential of RPA, however, lies in its ability to support much more complex processes, which have traditionally been the domain knowledge workers.

In order to support these processes, RPA platforms need to be able to integrate with existing systems, either as a consumer of services or as a provider. While the basic support for rules that is present in simple scripting tools is sufficient for simple processes, enterprise RPA platforms allow the definition of richer logic. Decision-making is often rule-based, but depends on access to data from different sources, so the ability to call out to external systems and apply logic to the data that is returned allows more complex processes to be supported.

This ability to process more complex logical rules leads naturally to the development of much more sophisticated RPA platforms that are capable of using AI or analytics platforms to support the decision-making process.

To claim “enterprise” status RPA products need to offer enterprise-grade services

Enterprise RPA products don’t just need to offer excellent support for interaction automation, they also need to provide a set of services that support the deployment of the solution at enterprise scale. When evaluating and comparing enterprise RPA offerings, potential adopters need to consider the services the platform provides both at design time and at run time.

Key design-time services

In order to be used at scale, an enterprise RPA platform needs to provide a framework that allows the definition, audit, and management of a significant number process models. In many environments, support for team development and collaboration will be important features as the number of stakeholders grows.

The ability to reuse models and combine them is also likely to be important as the complexity of the processes that are being automated rises.

Key run-time services

Enterprise RPA solutions should be able to run in virtualized environments, and should provide services to enable the management of multiple virtual machines so that the solution can scale up and down in the face of changing workloads.

Security and audit services

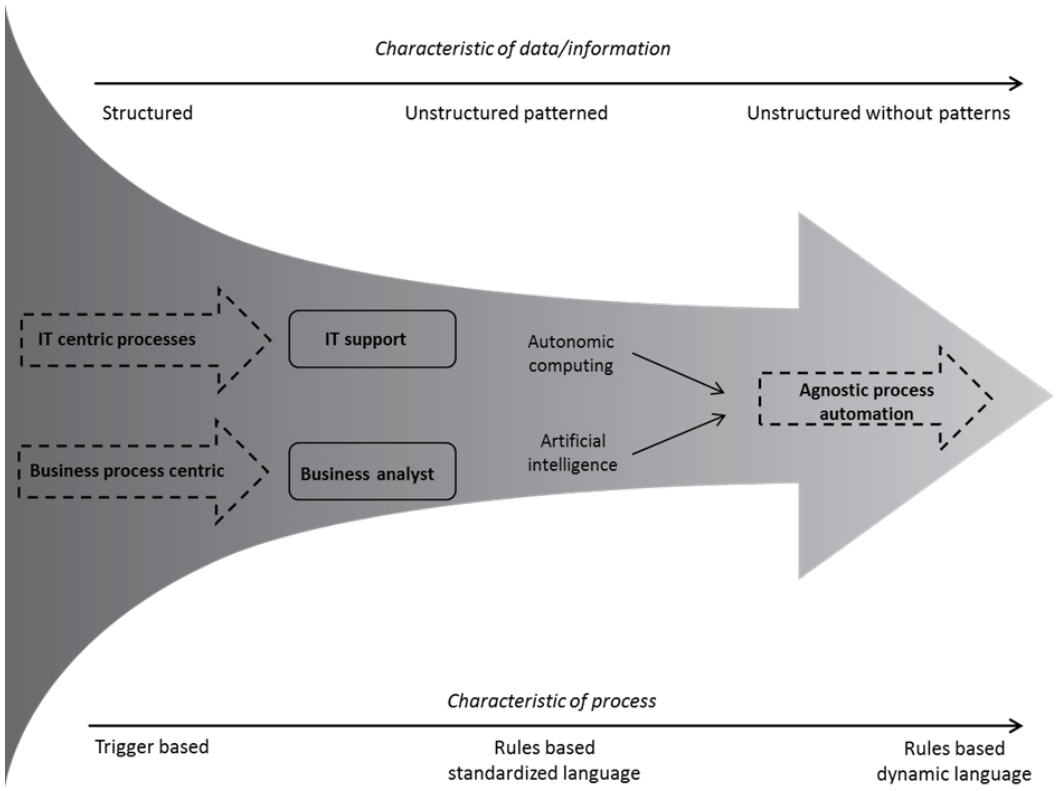
Many back-office processes are commercially sensitive, so it is important to ensure that the processes that are deployed meet the organization’s security requirements. Integration with enterprise directories should make it easier to manage authentication and authorization, and the virtual machines that run the robotic processes must be secured against tampering. These security measures also need to be backed by a robust auditing service that makes it possible to review the actions taken by the RPA platform.

Integrating various process automation innovations

The RPA technology ecosystem represents an evolution of automation technology from two different points of origin. The first relates to the automation of the IT-centric processes, in the domain of service management and provisioning typically found in the IT help-desk. The second point of origin lies in the automation of business-centric processes typically found in the customer call center.

The two approaches are converging and the bifurcation of IT-centric and business process-centric approaches will be supplanted by a converged approach through building out autonomic computing as well bundling artificial intelligence. This will lead to “agnostic” process automation where the key aspect will be knowledge capture and the automation engine, as well as the capture, scheduling, and execution of tasks.

Figure 3: Convergence of process automation approaches



Source: Ovum

Tackling more fuzzy processes

Most approaches focus on rules-based methodologies based largely on clearly defined (and relatively static) standard operation procedures (SOP). Increasingly though, RPA providers are looking at ways to extend the capabilities to allow more dynamic processes to be described and executed. These approaches will speed up the emergence of agnostic process automation.

RPA offers service providers a way to offer outcomes rather than simple labor arbitrage

The ability to replace human operators with software "robots" enables service providers to reduce the number of staff they need to employ, and to pass some of these cost savings on to the customer. By automating these tasks, service providers can manage fluctuations in demand simply by scaling up or down the number of robot instances that are running, and the costs associated with training and quality assurance can be cut significantly. This allows service providers to continue to promise to save their customers money, but it also creates the potential for the service provider to break out of the cost-containment cul-de-sac by enabling them to offer process improvement services.

The evolution of business process services

Business process outsourcing providers are moving to offer higher value services by evolving their proposition and the way they present it to the market. The term "BPO" is increasingly being replaced by "BPS", replacing "outsourcing" with "services". While customers are always right to regard attempts

to rebrand with some reservation, this change recognizes that BPO has had to evolve beyond its origins in lift-and-shift cost-reduction programs into one that promises greater value in the form of agility and transformation.

While cost reduction will continue to be a key driver, BPS providers are more willing to be measured on broader indicators than simply cost. Outcome-driven deals, while still more talked about than actually signed, are becoming more common, and providers are investing in the development of their own intellectual property so that they can bring elements of innovation and transformation to the discussions they have with clients.

The creation of differentiating IP has been taken a step further with the emergence of BPaaS, in which service providers create a platform that enables clients to consume the processes as a cloud-delivered service.

RPA has seen significant uptake by BPO organizations as they look to offer these higher-value services to clients. The appeal of RPA lies in the combination of cost reduction, which often justifies the project, with the ability to deliver value-added services in the form of pre-packaged solutions and processes. Firms such as Xchanging, Sopra Steria, Accenture, and GenFour have all established partnerships with Blue Prism, one of the leading vendors in the RPA segment.

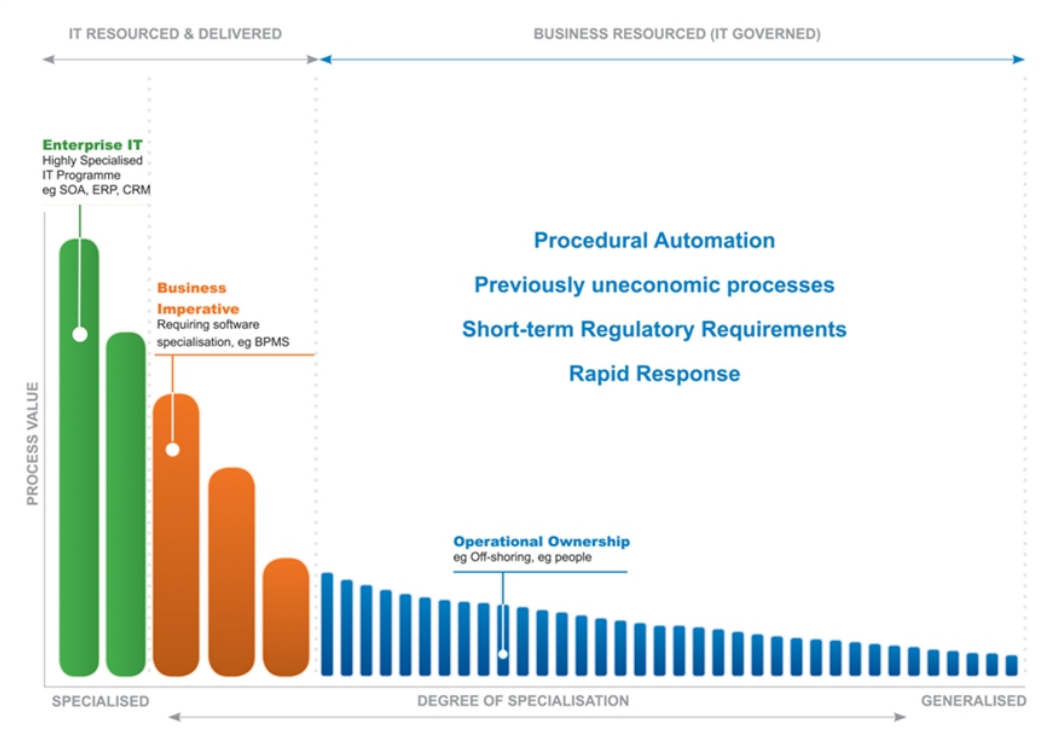
GenFour has completed a number of engagements with clients including the Cooperative Energy, NHS Scotland, and the RAC. The RAC engaged GenFour using Blue Prism to help it to deliver efficiencies in its back-office processes. While the initial driver was cost, the RAC cites wider benefits, including improved quality of service delivery, and the fact that staff can now focus on more value-added activities, improving the experience of RAC's employees as well as its customers.

Enterprises should see RPA as complement to rather than a clash with existing approaches to EAI and BPM

RPA is not a replacement for EAI or BPM, nor does it necessarily overlap with an organization's core integration and process management initiatives. RPA can complement these initiatives by providing a lower cost way to address the automation of processes that would be too costly or time-consuming to automate using EAI or BPM.

Blue Prism, one of the leading and longest-standing vendors in the RPA market, talks about "long tail" processes that fall outside the domain of hardcore EAI or BPM initiatives, but which collectively account for a significant cost to the business, and if they could be adapted and managed effectively, an even more significant opportunity to deliver process and service improvement.

Figure 4: The long tail of change



Source: Blue Prism

RPA is already being adopted by end-user organizations

A number of end-user organizations have seen significant benefits from the adoption of RPA. In every case, the initial driver was efficiency, but every organization Ovum has spoken to talks about process transformation, agility, and service improvements alongside the cost benefits achieved.

Telefonica-O2 uses Blue Prism to automate a number of back-office tasks, such as swapping SIM cards, unlocking phones, and migrating clients from one contract type to another. Before automation, these activities required a team of 150 staff, who would perform the multiple steps across multiple systems that these activities required. By using RPA, O2 staff can spend more time speaking to customers than wrestling with back-office systems. In addition, error rates have declined, and the time taken to complete these processes has fallen dramatically.

In the banking sector, Barclays, one of the world's largest banks, uses robotic process automation in its back offices, enabling it to rapidly scale its ability to process certain customer requests according to customer demand. A customer of Blue Prism for nearly a decade, Barclays has automated a range of processes, ranging from fraud detection and risk monitoring, to the automation of account opening. Another financial sector organization, the Co-operative Banking Group, has also used Blue Prism to automate over 130 processes with robotic automation including complex CHAPs processing, VISA chargeback processing, and other back-office processes that support sales and general administration.

RPA can be deployed alongside BPMS and EAI solutions

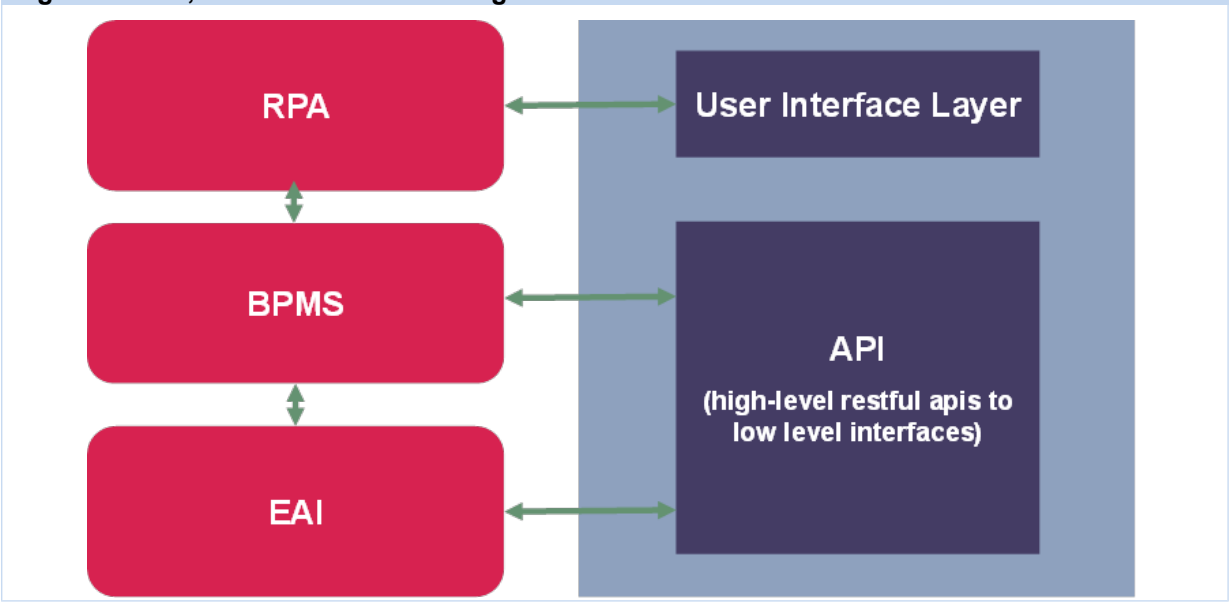
RPA provides a non-invasive way to integrate systems and processes. EAI and BPMS solutions interact with applications directly, and while the tighter coupling of this approach confers benefits in

terms of performance and throughput, the task of integrating at a low level requires a considerable amount of development effort. While most modern business applications provide pre-build APIs, relatively few legacy applications have clean, accessible interfaces that can simply be plugged in to an EAI or BPM platform.

The cost associated with direct integration makes it prohibitively expensive for the long tail of processes that an organization has to support.

The fact that RPA operates at the user interface layer means that it doesn't require developers to develop interfaces and adaptors to connect to the applications, and the user interface can effectively be wrapped as an API.

Figure 5: RPA, BPM and EAI coexisting



Source: Ovum

The fact that it can be used to create an API to a legacy application without requiring developers to perform major surgery means that RPA can be provide an interface to a legacy application that might be used by a BPM solution. Where a BPM process calls for some back-office process to take place, such as, for example, the provisioning of a SIM card by a mobile operator, the BPMS can simply invoke the process that is hosted by the RPA platform. Conversely, because most modern BPMS platforms expose APIs, the RPA platform could invoke a BPMS-hosted business process using a similar mechanism.

Change management, architecture, governance, and intelligent process management will be increasingly important

As RPA evolves to support processes that are more sophisticated and dynamic, RPA vendors will have to make sure that they support a set of core requirements in order to establish a place at the heart rather than the edges of enterprise systems.

Change management becomes essential as more complex processes are taken on

While the automation of mundane and relatively stable processes doesn't imply the need for a robust and effective change management process, when more complex processes are being tackled, an effective change management process becomes essential.

While Ovum goes to great lengths with its clients to explain that change management is a discipline in which technology only plays a minor role, there are ways in which technology companies can help organizations to manage change more effectively.

Change management is fundamentally about engagement

The key to effective change management is the challenge of engaging with the different stakeholders in a business or business process. Much of this task will be independent of technology, because it's focused on the way decisions about change are arrived at, and then how these changes are deployed within the organization. Effective communication (a two-way process), leadership, and management support are all vital to any change program.

Good technology makes it easier to manage change

While the key components of change management are more about soft skills of communication, consensus creation, and sensitive execution of change, the right technology should provide tools that enable each of these things.

RPA tools should provide process design tools that enable users from any background (from developers to non-technical staff) to collaborate in the definition of processes. Ideally, there should be a means to allow multiple parties to review and comment on proposed process changes.

The ability to simulate and test processes is also very useful in validating process designs and in generating support from, and the approval of, stakeholders.

Architecture is important for scalability, security, reliability, and agility

The architectural approach adopted by an RPA vendor will have a significant bearing on that vendor's ability to keep its promises when it comes to performance, security, resilience, and adaptability. When looking at RPA platforms, we look for attributes that make it easy to deploy the technology, manage the process of creating automations, and manage these automations effectively once they are in production.

Security is a crucial factor in making it possible to use RPA for more sophisticated processes, because as the processes that are being automated become more complex, they will necessarily touch more systems, which creates the need for a robust authentication, authorization framework, backed by trustworthy audit processes.

Governance should be about enabling change not delaying it

Effective governance should provide a framework that enables change to take place quickly but in a reliable and predictable way. Governance should be applied to the whole process, from the management of the discussions about process definition and change, to the management of the deployment of the processes into production.

Some RPA vendors and consulting firms provide support in managing the overall process of governance. Blue Prism, for example, uses its Robotic Operating Model and its Enterprise RPA maturity model to help clients benchmark and improve their capability.

The technology platform should support whatever governance process the vendor recommends. The ability to audit process designs, approve them, and manage their lifecycle from design to deployment will therefore be an essential requirement when it comes to tackling more complex processes.

Intelligent process management is the next frontier for RPA

Intelligent process management is a term that has emerged to describe the next generation of BPM technologies. The addition of “intelligence” comes from the application of advanced analytics to support the specification of complex decision-making logic within a process specification. This capability is as applicable to RPA platforms as it is to traditional BPMS products.

The ability of an RPA platform to adapt as a result of real-time analytics, or to take decisions on the basis of complex logic, is key to RPA technology reaching the goal of autonomic processing (see Figure 2).

Conclusion

RPA offers organizations the ability to automate processes that have been previously “out of reach” to more capital and investment intensive approaches to process automation. As the RPA market continues to evolve, it will on the one hand have a significant impact on the way services organizations create and deliver process automation, and on the other will provide enterprises with an alternative to process outsourcing.

Appendix

Further reading

Beyond Labor Arbitrage: The Impact of Automation and Robotics on Service Delivery, IT019-003230 (June 2013)

“HP underpins re-positioning of BPO portfolio with robotic process automation”, IT019-003351 (April 2014)

“Robotic automation goes mainstream: Accenture announces agreement with IPsoft”, IT019-003323 (February 2014)

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We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Ovum's consulting team may be able to help you. For more information about Ovum's consulting capabilities, please contact us directly at consulting@ovum.com.

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