ROBOTIC AUTOMATION EMERGES AS A THREAT TO TRADITIONAL LOW-COST OUTSOURCING

Cheap, easy-to-develop software robots will eventually supplant many offshore FTEs

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Executive Summary

Why outsource when you can automate? For most organizations, the answer is IT bureaucracy. Budget bottlenecks and IT's ability to convolute any process improvement with massive waterfall technology implementations, even when the need is immediate, make automation a challenge. Yet automation looms as the right solution for the majority of rules-driven processes that are being outsourced today.

HfS Research has spent some time examining a new technology called robotic automation, pioneered by UK-based vendor Blue Prism, that enables non-engineers to automate certain business processes quickly and cheaply. The technology appears best suited for processes that are highly rules driven, and the requirement for which is too tactical or short-lived to justify development by IT organizations that favor service-oriented architecture (SOA) and tools like business process management (BPM) suites. Beyond breaking through the IT development bottleneck, the use of software robots to handle routine business processes has another attraction: it allows enterprises to reduce their reliance on offshore outsourcing. The economics are eye-popping: while an onshore FTE costing $80K can be replaced by an offshore FTE for $30K, a robot developed with the Blue Prism toolkit can perform the same function for $15K or less – without the drawbacks of managing and training offshore labor.

This paper examines Blue Prism's robotic automation technology (the first entrant we've identified in what we expect will eventually become a crowded vendor market), places it in the context of traditional IT-driven development process and complementary use of outsourcing, and draws on interviews with early adopters to

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illustrate its benefits. We examine the compelling business cases that have driven the adoption of robotic automation so far, some limitations on its use, and the challenges of implementing it in the face of internal skepticism and resistance. We conclude with some thoughts on its long-term ramifications, as we believe that robotic automation has the potential to be a highly disruptive and transformative technology for both buyers and the outsourcing industry as a whole.

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The Rise of Robotic Automation

Business units are constantly finding new ways to improve business processes, and so generate many requests to IT for corresponding custom applications or modifications to existing applications. But such requests often hit a wall of cost and priority: IT-based software development is driven by a fairly cumbersome (albeit admittedly valuable) set of standards and tools, and focuses first on long-term projects with high strategic impact to the organization. This makes it difficult to respond to tactical requests in a way that is cost-effective or timely enough to address business unit needs.

When IT cannot address these requests, business units typically create their own manual workarounds, often with the help of desktop tools like spreadsheets and unstructured databases. These workarounds allow these units to implement the desired process modifications, but the result is not integrated into the enterprise's larger IT framework, and can be brittle, error-prone, and vulnerable in terms of security. Any ad hoc processes developed this way typically are not reusable for new projects. Reporting and auditing are laborious where not impossible – a potential problem for enterprises in regulated industries that are subject to compliance scrutiny. Process analysts can generally calculate average times to complete a process, but identifying bottlenecks for optimization is hindered by a lack of granular activity tracking in each of the component steps.

To help lower process execution costs – particularly in response to an unanticipated increase in workload – business units often turn to outsourcers, hiring relatively inexpensive offshore FTEs to do the work manually. But as HfS Research readers well know, outsourcing entails its own problems, including the political unpopularity of sending jobs offshore, the hidden costs of overseeing remote operations, and the complexities of managing differences in business cultures.

Blue Prism's novel idea is to give business units a tool to automate these ad hoc processes on their own, addressing their custom requirements without relying on an expensive, lengthy IT development process, or hiring costly onshore workers for which they have no budget, or shipping the work offshore. It calls this concept "robotic automation," and refers to the custom applications produced by its software and methodology as "robots."

These terms appropriately convey the notion of a technological replacement for a human worker – in this case, implemented as fast, cheap software that runs as a web service, a scheduled task on a virtual machine infrastructure (including environments like cloud services), or a dynamic trigger-based process using existing BPM, workflow, or messaging systems.

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Robot Development vs. Traditional IT Development

Several features distinguish the robotic automation development approach from traditional approaches to automating new business unit requirements, as summarized in Exhibit 1.

Exhibit 1: Summary of Robot Development vs. Traditional IT Development

Issue	Robotic Automation	IT Development via SOA and BPM
Development skills required to address new business unit requirements	Modest; can be done by process modelers and analysts with a few months of training with robotic automation tools	Extensive; requires software architects and engineers with years of experience with relevant programming languages, BPM tools, and enterprise application suites
Development methodology	Lightweight; takes advantage of the presentation layer of existing applications and their underlying logic and security	Heavyweight; requires complex application-layer integration or potentially brittle data-layer integration
Component re-use	High; functions can be reused to develop new robots	High, though comparatively expensive to develop

Source: HfS Research

What Robots Do Well

In essence, Blue Prism has created a toolkit that enterprises can use to quickly and cheaply develop custom robots to automate business processes. It is not a general-purpose tool; rather, it is optimized for automating business processes that are:

» **Highly rules-driven** – Typically a rote, repetitive back-office process that does not require human judgment or sophisticated exception handling. Examples include data entry, account review and maintenance, creation of online access credentials (user IDs and passwords) for new employees and customers, issuing of purchase orders based on material requirements planning system outputs, and general ledger account maintenance.

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- **Important and urgent for the business unit to address, but not an IT development priority** – IT's traditional software development process is better suited to strategic process improvements, while robotic automation is well suited to processes that are too tactical or short-lived to suit IT's primary mission. Good examples are a project with a fast-approaching start date and/or limited duration, such as a seasonal promotional program; a back-office application modification to support a new product launch; a new business process that requires "swivel-chair" access to multiple existing systems; or a required response to a one-time regulatory action such as a privacy breach that can incur compliance sanctions if not met within a 90-day window.

- **Problematic to send offshore** – Robotic automation can serve as a substitute for the offshore labor that the current political, business, and regulatory climate has made increasingly unpalatable. As robots can run in pretty much any location the organization desires, they can also be helpful in scenarios where regulatory restrictions make moving work offshore problematic for security and compliance reasons.

How to Identify a Promising Business Process Candidate for Robotic Automation

Our interview subjects identified a handful of key characteristics that mark a business process as a promising candidate for robotic automation:

- **Location in a stable environment** – The business process should reside in a functional area and set of platforms that are fairly stable from an enterprise applications perspective and not subject to the disruptions of a major new IT-driven, SOA-based development effort. A period of 12 to 18 months in which no major changes are anticipated is ideal.

- **Need to access multiple systems** – The process should normally require an employee to access multiple independent systems to complete it. This is attractive because such a process doesn't present particular challenges to Blue Prism's presentation-layer integration approach, which exploits the similarities of the presentation layer across different platforms. By contrast, automating such a process as would IT – using application- or data-layer integration – would typically be much more expensive, time-consuming, and in the case of the latter, more likely to break in the event of changes to any one of the component systems.

- **Easy decomposition into unambiguous rules** – The process should be one that business analysts and process modelers can decompose into a clearly defined set of business rules – a logical flow with no ambiguities as to decisions and required inputs and outputs for each step of the process.

- **Limited need for human intervention** – The process should have no gray areas that require the intervention of a human worker to make decisions based on analysis, judgment, perceptual, or interpretive skills, e.g., handwriting recognition.

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- **Limited need for exception handling** – The process should have as few exception cases to handle as possible. The tool has sophisticated capabilities for rules-based exception handling, but the more exceptions the robot has to handle, the longer it will take to automate, test, and optimize. Simpler processes with fewer exceptions are especially preferable for the proof-of-concept and pilot phases.

- **Clear understanding of the current manual costs** – Automating the process should yield a projected benefit of at least 200 percent of the anticipated cost in 12 months or less – a common minimum standard for getting approval to go forward with the pilot of a new technology. To make this case, it helps to have a defensible breakdown of what it costs for your organization to deliver the business process by current in-house or offshore methods so you can clearly quantify the expected savings. (More on this below.)

- **High transaction volumes (but maybe not)** – High transaction volumes often will help the business case for automating a particular business process, but are not essential. Tasks that are high in value but low in transaction volume, or low in volume but still business-critical, can also be good candidates for automation. For example, automating the process of handling certain customer transactions on holidays to meet a service-level claim of 24/365 availability can eliminate human FTEs that would require expensive holiday pay. Also, low transaction volumes almost always weaken the business case for traditional IT software development to meet the requirement.

Note that a business process need not meet *all* of these requirements to be a suitable candidate for robotic automation. These are simply markers that the process may yield a more compelling business case and be comparatively quick and cheap to automate.

Under the Hood of Robotic Automation

The Blue Prism product consists of four nested development components:

- **Application Modeller** – This tool uses a wizard-based point-and-click interface to map every onscreen element used by every existing application that will be involved in the business process to be automated. After all onscreen elements have been mapped, the tool generates an Application Model that functions as a repository for all reusable service components.

- **Object Studio** – This tool creates reusable Business Objects via a flowchart interface. It takes Application Models created by the Application Modeller tool and maps them to context-sensitive triggers that activate when a particular application scenario occurs. These triggers initiate sequences of data retrieval, updating, validation, and exception handling via control of the target application's user interface. This enables the orchestration of legacy systems with newer applications based on SOA architectures.

- **Process Studio** – This tool links Business Objects created by the Object Studio tool with external data sources such as web services, databases, messaging systems, and workflow systems, again using a flowchart interface. This enables the development team to configure the necessary business logic and business rules; the resulting output effectively is the automated version of the business process.

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- **Control Room** – This tool controls the execution of the automated business process in any of several ways: as a web service within an existing SOA framework; as a scheduled task on a virtualized application infrastructure; or as a dynamic trigger-based process using existing enterprise assets like BPM, workflow, and messaging systems to initiate process automations.

In concert, these four tools form a technology platform that allows the development team to design, build, test, deploy, and support a newly automated process while keeping it within the bounds of existing IT and security infrastructure controls and governance. The toolkit is further augmented with modules for workflow, scheduling, Active Directory integration, secure credential management, web services integration, reporting, analytics, auditing, and process optimization.

In interviews with HfS Research, veteran Blue Prism users assert that the tool works as advertised, providing a complete development environment that business unit staffers with fairly limited IT skills (specifically, no software engineering experience) can quickly master to automate business processes. That said, there is a non-trivial learning curve that must be essayed to gain comfort with the conceptual flow of building the structure of application models, structuring models into objects, structuring objects into processes that interface with external systems, using the execution control tools to test and optimize the processes before taking them live, and performing ongoing analysis and optimization after the robots are in live operation.

An initial ramp-up period of three to four months from analysis to prototype is typical, with another month of testing before going live. But once the team has achieved basic mastery of the toolkit, automation of subsequent processes becomes much faster. It's not unusual to rapidly get to cycle times of six to eight weeks to automate each new process. Further, incremental efficiency gains in implementation speed are realized as the group's library of reusable modules grows.

Real Stories of Robots Unleashed on the World

In the process of interviewing some of Blue Prism's early adopters – all of which are large enterprises or service providers with widely-recognized brands – HfS gained confidence that Blue Prism has created a stable, functional product, developed a proven methodology for rapid robotic automation, and invested appropriately in professional services, training, and support resources. More important, we got a firsthand look at the lapel-grabbing business case that Blue Prism provides these customers. We interviewed the primary evangelists of the Blue Prism solution at their respective companies – business unit leaders who had identified a tactical business requirement for which their IT organizations had declined to develop a custom software solution, citing lack of resources or priority.

We had many questions for our interviewees about their astonishing business cases. What obstacles did you face in introducing this approach to the organization? How did you get buy-in for it from stakeholders at the executive level and in IT? What did the initial ramp-up involve? How did you choose which processes to automate? What was the development process like, and who did it? How did the resulting robots fit into your existing IT and security

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infrastructure and governance? What new skills did you have to acquire or hire to manage your development process and new robotic FTEs? We'll explain their answers in the following two case studies.

Robots Tame a Government Eligibility Process for a BPO Service Provider

Company: BPO services provider with a line of business focused on the government sector.

Target Process: Citizen applying for a national government insurance benefit administered by a local government agency, getting vetted for eligibility, and being issued an approval letter if qualified. The process involves swivel-chair access to three separate systems: one owned by the BPO services provider, one by the national government agency, and one by the local government agency.

Total Development Time: Five months. This included four months of initial ramp-up (to learn the Blue Prism toolkit, select a process to automate, and configure a cluster of virtual machines in the data center on which to run it); three weeks to model the process and build the robot; and two weeks to do quality assurance and testing before going live. The robot was performing 49 percent of the process at launch; four weeks of ongoing optimization work brought the robot's share of the process to 70 percent, with 80 percent considered an optimum target.

Having gotten past this initial learning curve, the provider now achieves cycle times for automating other processes of similar complexity in about two months. It expects to automate 10 to 15 percent of its total business operation within two years, and is achieving reuse of processes across multiple BPO clients already.

Challenges: For the critical pilot project, the business leader looked carefully for a process that was not overly complex, not too taxing to automate, easy to demonstrate that the robots were doing the work in a recognizable way, and easy to account for the costs of executing the process before and after automation.

Business Case: Prior to automation, human FTEs took an average of 12 minutes to complete the process. Robots were able to cut the total transaction time down to four minutes, although analytics revealed that 45 seconds of this was idle time waiting for one of the systems to become available. The net result was three times the transaction volume for one-tenth of the FTE cost, not counting the initial ramp-up costs. The provider calculated that it achieved payback for its initial Blue Prism investment within six months just by automating this one process.

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Robots Handle a Massive Influx of Handset Upgrades for a Major Wireless Company

Company: Major mobile telecom services provider.

Target Process: A variety of customer service functions necessary to migrate existing mobile customers to a highly coveted next-generation handset, including accepting customer upgrade orders, upgrading internal systems with new contract dates, and issuing replacement SIMs.

Total Development Time: As a veteran Blue Prism user, the company can automate most processes and take them live in four to six weeks, with an additional two to four weeks of optimization work based on how the robot responds to real-world workloads.

Challenges: The company's IT organization is strongly committed to development based on SOA and BPM tools, and insisted on an opportunity to quote this project using its own resources. It concluded it could complete the project in 12 months at a cost of $800,000, expecting a return on that investment in three years.

Business Case: The business unit leader accurately estimated that the Blue Prism solution could address the same requirement using robotic automation at a development cost of $80,000 and, as important, within the six-month window required to meet the new handset's launch date.

Much more dramatic costs savings were realized by replacing 45 offshore FTEs handling various associated back-office processes at an annual cost of $1.35M with 10 robotic FTEs at an annual cost of $100,000. This freed up $1.25M that enabled the company to bring 12 FTEs back onshore to do higher-value work. While this ratio of replacing 4.5 offshore FTEs with a single robotic FTE is impressive, the business leader believes that a replacement ratio of 6:1 is achievable as his group gains more experience with the Blue Prism toolkit, continues to build its component library, and gets better at process optimization.

The Benefits of Living in a Roboticized World

Early adopters of the Blue Prism solution have identified a wide range of benefits, both expected and unexpected.

- **Better use of expensive human resources** – Cheap, quickly developed robots handle dull, repetitive, rules-based processes. Humans in the business units become free to do higher-value, more engaging work that requires analysis, problem solving, and complex exception handling; this improves job satisfaction and employee retention. Expensive IT software engineers get to focus on more strategic development projects.

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- **The tirelessness of machines** – Robots aren't just cheap: they work faster, more efficiently, and with fewer errors. They don't need coffee breaks, holidays, or health insurance, and can work around the clock. One robot typically replaces the work of 1.7 humans.

- **Granular process monitoring** – Developers can record and analyze every action of a live robotic process, quickly identifying bottlenecks on which to focus optimization efforts. This fine-grained monitoring also eases auditing and reporting for security and compliance purposes.

- **A more lightweight integration approach** – Robotic automation's presentation-layer integration approach avoids the complexity, expense, long time-to-market, and potential brittleness of application- or data-layer integration.

- **Business unit independence** – Business units gain more control over their fate, reducing their dependence on IT for help with tactical requirements.

- **No signal loss** – Business processes are automated by people that know them intimately. No requirements are lost in translation between the business unit and the development team, because the business unit is the developer.

- **Shorter time-to-market** – Business units can deliver a robotic automation proof-of-concept in a few months, and, having learned the tool, automate subsequent processes in a matter of weeks. This makes it possible to automate processes with a short fuse, brief duration, or low strategic value, e.g., for a fast-approaching product launch.

- **Scalability, extensibility, and reuse** – The tool's reusable component orientation scales much better than approaches using screen scraping, macros, or scripts. The resulting automation is much less brittle; components can be individually modified without breaking adjacent components. Over time, this approach builds a library of components that can be reused to help automate other processes within the business unit and elsewhere.

- **Avoidance of traditional outsourcing's headaches** – These include political issues (the unpopularity of shipping jobs overseas), operational challenges (coping with language barriers, cultural alignment issues, relocation costs for executives), and assorted risks (geopolitical issues, foreign exchange and wage rate fluctuations, the question of long-term viability implicit in the "race to the bottom" on labor arbitrage).

- **Onshoring benefits** – The use of cheap robots can reduce reliance on offshore FTEs, and the resulting savings can be used to protect onshore FTEs and hire new ones.

- **IT infrastructure reuse and flexibility** – Robots run on existing enterprise IT infrastructure, work with existing data repositories and applications (both homegrown and packaged), and can be located anywhere, including private data centers, shared services environments, and on private, public, or hybrid cloud services.

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- **Support and governance advantages** – Robots leverage existing IT frameworks for infrastructure planning and support, security and risk management, and IT governance. Their development requires less IT support than traditional SOA-based process automation, and their operational servicing costs are much lower than those incurred by human FTEs.

- **Benefits to BPO providers** – Robots give BPO providers a tool with which to deliver innovative services that mix human and robotic FTEs. Robots make BPO contracts stickier: the provider can choose to keep any robots it has developed, making the client's option to take back its human FTEs without the robots much costlier. Modular robot components are eminently reusable at other clients with similar platforms, horizontal processes, and/or vertical sectors. Service providers can better address buyers' compliance and security risk concerns by taking advantage of the extensive auditing and recording features of robots. And robots present some interesting potential for capacity scaling, e.g., through the use of robots to manage groups of robots.

How to Prepare Your Organization to Accept Their Robotic Peers

Our interview subjects shared their unique and occasionally unexpected challenges around introducing, implementing, and managing robotic automation, as it exhibits some stark differences from the typical IT system implementation or outsourcing transition. We identified four critical areas in which to prepare your organization:

#1: Sell the Concept to (Human) Executives

One early adopter spoke of the challenges of introducing a novel technology for addressing the custom requirements of his business unit. *"The best place to start is at the top, as the thumbnail business case for the cost of robotic FTEs vs. in-house or offshore FTEs should get immediate buy-in from senior executives. When I explained them to my C-suite, they responded that if we delivered anywhere near our projections, they would be thrilled. But you can expect IT to have some sensitivity to the idea. Our IT group feared that such a project might make them look unresponsive or inefficient, and fretted about the uncertainty around how much infrastructure and support resources they would have to provide. It smelled like a skunk-works project run by amateurs to them."*

"I concluded that my usual approach to getting funding and stakeholder buy-in – a consultative approach that laid out a detailed business case, implementation plan, budget, risk assessment, and so forth, showing all my cards up front and getting the necessary approvals before moving forward – would take too long and carried an ultimate risk of rejection. I opted instead for something more like a viral marketing plan. My motto was 'Think big, start small, work fast.' I quietly got the minimum resources together that I needed for a proof-of-concept, identified a simple but high-value process to automate that IT had already declined to develop on our behalf, got my staff trained to the point where it could get the PoC working in about four weeks, and let word-of-mouth spread on its success."

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"By the time IT started to ask questions, I already had a credible, working demonstration process and a good handle on the costs, which worked out even better than we had anticipated, thanks to our ability to optimize the process to squeeze even greater efficiencies from the robots. Getting permission to build a full-fledged pilot and garnering the necessary support from IT was comparatively easy after that."

#2: Prepare to Work with IT in New Ways

One early adopter identified another challenge related to working with IT: *"Getting the buy-in of IT is essential to project success. You still need them to provide traditional infrastructure planning, support, security, and so on. You will encounter technical challenges that you cannot solve without strong allies there. My team suddenly had to confront issues that had been invisible to us before: capacity planning and failover for servers and storage, licensing of virtual machines, network latency and response times. To get the right level of IT support, it helps if you can speak with basic competence to these technologies."*

"The issue got even more complicated when we determined that the best place to run certain robots was in the data centers or on the desktops of some of our partners and customers. Now you have an IT operation that doesn't know you that well, and satisfying their security people that you are not going to introduce some new threat into their environment is also daunting. The cost savings are a great carrot, but you can expect the process of persuasion to take significantly longer than within your own company."

#3: Make the Business Case

One buyer offered this observation on proving the new technology's value: *"Our executives loved my description of Blue Prism as 'a strategic tool for tactical automation', but at some point you have to get beyond aphorisms and down to cases. And on this score, it helps to have a fine-grained understanding of the actual current costs of the business process that you want to automate: how long it takes per transaction, the loaded cost of your in-house and offshore FTEs, the associated IT and physical infrastructure costs, and so forth. It is difficult to prove how much you've saved with a robot if you can't quantify what it cost a human to do it before."*

#4: Develop Skills Needed to Run a Robotics Shop

Gaining basic fluency in the language of IT operations was not the only new skill some buyers found they needed: *"We already had many of the skilled people in-house that we needed to go forward with Blue Prism, like excellent project managers and sophisticated business process analysts and modelers. But we had to learn or hire additional skills in the area of testing and quality assurance, since in some respects we had become our own software development organization. You want 99 percent of the bugs worked out before you go live. There's plenty of worthwhile optimization work to do after you go live, too. Some bottlenecks won't become evident until your robots are executing the process at scale and are subjected to the variables of live virtual machine environments, network latency, and other real-world factors."*

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Cheap Robots: A Threat to Outsourcers, and an Opportunity

For buyers, robotic automation has obvious appeal. It lets them quickly and cheaply automate business processes that don't reach IT's strategic development threshold – without having to send jobs offshore. Empowering business units to knock down their own tactical requirements reduces pressure on IT, letting it focus its expensive development resources on major software projects with high strategic value. Reducing the use of offshore FTEs frees up budget for more onshore hiring. The attractive business case explains how a relatively unknown company like Blue Prism has been able to garner its impressive roster of big-name customers to date.

HfS Research believes that these early adopters represent a fair and realistic sample of what can be achieved with robotic automation. From there, it does not take a great leap of imagination to envision this technology having profound ramifications for the outsourcing industry, including the ecosystem of consultants, integrators, and advisors that surround it. **In short, giving non-engineers the ability to quickly automate a rules-driven business process with a robot that costs less than half of an offshore FTE is a significant threat to every outsourcing firm whose value proposition rests on low human labor costs.** In particular, we think robotic automation has the potential to wreak some dramatic, painful changes on the Indian outsourcers who are the current bulwark of the industry.

HfS Research also sees robotic automation as a golden opportunity for BPO providers, management consultancies, and integrators to garner new customers and expand their business in their existing ones. With this tool, providers can help clients find an optimum mix of human FTEs (both onshore and offshore) and robots. A provider could enter this market quickly by providing strategy consulting, business process analysis and modeling, and implementation and support services. Robotic automation vendors like Blue Prism will surely seek such partnerships in order to scale quickly to address the market opportunity.

For BPO providers seeking ways to take knowledge capital developed for one customer and resell it to many others, the modular design of Blue Prism – specifically its ability to accrete libraries of reusable process components – is a dream architecture. Its ease of reuse makes it possible to conceive of entire practices built around robotic automation for specific back-office platforms, horizontal applications, vertical industries, and combinations thereof. The opportunities for packaging with related services are also rich, e.g., private or public cloud services to host robots, ongoing robotic automation development and support, managed exit services from offshore providers, and so on.

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BPO Service Providers: Keep Your Friends Close, But Your Robots Closer

For low-cost outsourcers, robotic automation represents a significant threat, giving buyers a very cheap alternative to offshore FTEs with none of the political disadvantages. HfS sees a few ways for providers, especially the Indian outsourcers who are still the leading players in this category, to respond:

- Develop your own robotic automation product in a hurry and start planning for a strategic change that relies less on your ability to marshal vast number of human FTEs and more on your ability to source selectively between humans and robots.

- Partner with an early market entrant like Blue Prism to jump into the robotic automation fray now, avoiding the likely two- to three-year development cycle it will take you to catch up with your own product and all the associated opportunity costs. Blue Prism has already brought on partners to provide industry-specific solutions as well as assessment, pilot, and implementation services.

- Start acting on HfS's longstanding advice to refocus your business on helping buyers achieve real business process innovation, not just lower labor costs. Look at robotic automation the way buyers do: as a tool for optimizing the use of expensive human FTEs. For example, robots may help you reduce your high employee churn rate by taking on the kind of work that humans quickly find dull and unsatisfying.

Note that none of these options involves conducting business as usual and hoping that Blue Prism and its ilk just go away.

Recommendations

For Buyers

- Start looking for business processes that fit the suitability requirements for robotic automation outlined above, including processes that you may have moved to offshore labor already.

- Consider tools like Blue Prism as a means to replacing human FTEs with robots to handle these processes. If you're not comfortable test-driving such a product, ask one of your outsourcing providers to do so on your behalf; if it is reluctant to do so, find one that isn't.

- Start thinking about what you will do with the onshore resources you will be able to protect or rehire once you have realized the costs savings of moving routine, rules-driving business processes from in-house or offshore FTEs to robots.

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For Providers

- Recognize that you've had a good run of 20-plus years in the offshore labor arbitrage game with little competition, but that robotic automation is about to undercut a big chunk of your business.

- Choose a robotic automation strategy – build, buy, or partner – fast. Early movers will enjoy a great advantage both in harvesting the low-hanging fruit and establishing the advantages of incumbency that serving up a mix of human and robotic FTEs affords.

- Get past the idea of robots as a cataclysmic threat, and start looking at them the way that enterprise early adopters have: as a clever way to make more effective use of human FTEs. Then start thinking about the new ways you might exploit the technology to create innovative service offerings to automate processes beyond the obvious early market opportunities we've outlined here.

Bottom Line

In retrospect, we in the outsourcing business perhaps should have foreseen cheap, easy-to-develop software robots as an inevitable next step in the evolution of business process automation – a logical tool to help human minds focus on the sophisticated analytical work we do best while letting machines do the dull, rote stuff. Now that robots have arrived, low-cost outsourcers may soon be forced into an unpleasant choice: cannibalize your own business, or let an innovative new entrant do it for you. The tech landscape is littered with the bones of companies that chose the latter.

In technology cycle after technology cycle, some incumbents have recognized and confronted the threat of disruptive new technologies, while others have chosen to pretend that there is no proverbial monster under the bed. We encourage outsourcers to take a closer look at economics of robotic automation, and recognize it as a challenge and an opportunity to take their industry in a new, more innovative direction.

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About the Authors

James Slaby

James R. Slaby is Research Director, Sourcing Security and Risk Strategies for HfS Research. His research examines IT security and corporate risk as dimensions of business augmentation services like BPO, IT outsourcing and cloud services. His primary research goal is to help buyers select services providers and negotiate contracts and SLAs that more intelligently accommodate security and risk issues.

Slaby focuses on evaluating services providers, examining a broad range of governance, compliance, and security operations issues, and developing tools and metrics to help buyers evaluate a provider's physical security regime, IT security infrastructure (including identity management, data privacy, application security and infrastructure security), and business continuity mechanisms. His research agenda also explores emerging issues like cloud security, the security of new mobile platforms, and breach management.

Slaby is a fifteen-year veteran of the high-tech research and infrastructure security industry. Prior to HfS Research, he served as managing director of the security and networking practices at TheInfoPro, where he focused on Fortune 500 technology adoption plans, feature and spending priorities, and perceptions of leading vendors. He also held senior analyst roles at Yankee Group, Forrester Research, and Giga Information Group, where he ran research and consulting practices in network security, enterprise networking and telecom services. He has published more than 350 research articles, spoken at scores of industry conferences and symposia, and been widely quoted in the business and technology press.

On the vendor side, Slaby has specialized in launching new vertical and solutions marketing programs for such infrastructure manufacturers as Sonus Networks, Acme Packet, Bay Networks, Motorola, and others. He holds a bachelor's degree from Dartmouth College.

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Phil Fersht

Phil Fersht is Founder and Chief Executive Officer of leading global analyst authority for the services industry, HfS Research. He is an acclaimed author, analyst and visionary in Global Business Services and Outsourcing, the Digital Transformation of enterprise operations and talent strategies. Fersht coined the term "The As-a-Service Economy" which is HfS Research's vision for the future of the global services and outsourcing industry and has become widely adopted by the global services industry.

Fersht founded HfS Research in 2010 and has masterminded the development of the HfS organization as a leading analyst for the provider, in addition to steering the business operations. He is also author and creator of the most widely-read and acclaimed blog in the global services industry, entitled "Horses for Sources" and now entering its ninth year, attracting over a million visits per year across the globe. At HfS, he directs the provider's research, advisory and global knowledge community, which today totals over 100,000 professionals and is served by a respected global analyst team.

Under Fersht's stewardship, HfS Research has become the leading industry analyst provider for growing influence and value, based on the results of 1093 industry participants in the 2014 Analyst Value Survey. He was named "Analyst of the Year 2011" by the Institute of Industry Analyst Relations (IIAR), winning the premier analyst award for a second successive year - the most coveted global award for industry analysts in technology and services industry. In 2012, the International Institute of Analyst Relations (IIAR) awarded HfS research as Most Innovative Analyst Provider.

Over the past 20 years, Fersht has lived and worked in Europe, North America and Asia, where he has advised on hundreds of operations strategy, outsourcing, and global business services engagements. During his career, Phil Fersht has worked at Gartner Inc. (AMR Research), directing the provider's BPO and IT Services practices and served as market leader for Deloitte Consulting's BPO Advisory Services, where he led numerous outsourcing and offshoring advisory engagements with Fortune 500 enterprises. He began his career with IT analyst IDC.

Fersht contributes regularly to media such as Wall St Journal, Business Week, Economist, The Times of India and CIO Magazine and is a regular keynote speaker at major industry events, such as NASSCOM, Sourcing Interests Group and the HfS Blueprint Sessions.

He received a Bachelor of Science, with Honors, in European Business & Technology from Coventry University, United Kingdom and a Diplôme Universitaire de Technologie in Business & Technology from the University of Grenoble, France. He also has a diploma from the Market Research Society in the United Kingdom.

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About HfS Research

HfS Research is the leading analyst authority and knowledge community for the global services industry.

In addition to researching business services and technology services strategies, HfS educates and facilitates discussion among the world's largest knowledge community of services professionals, currently comprising 120,000 subscribers. HfS provides a collaborative platform for the largest, highest impact, and most frequently visited professional community in the global services industry, offering rapid and insightful commentary on, analysis of, and debate about enterprise shared services, outsourcing, and global operations dynamics.

In 2011, HfS was awarded Outsourcing, BPO and Services Analyst Firm of the Year by the International Institute of Analyst Relations (IIAR), the premier body of analyst-facing professionals, and runner-up for overall Analyst Firm of the Year. Led by recognized industry expert Phil Fersht, HfS Research differentiates itself with its global team of expert services analysts with real industry experience, provocative and opinionated research, unrivalled market analytics, and a view of technology as an enabler for business process improvement. Its on-demand expertise relationship model helps clients leverage HfS knowledge and strategic insight in a rapid, responsive and engaging manner.

HfS Research also manages the HfS 50 Sourcing Executive Council, the premier peer discussion group for enterprise outsourcing and business services executives. This by-invitation-only program fosters networking, debate and best-practices sharing among the most senior sourcing executives of large global enterprises. This powerful forum is shaping the strategic direction of the sourcing industry, influencing other buyers, service providers and intermediaries across BPO, ITO and shared services domains. HfS hosts and facilitates regular meetings, webinars, introductions and peer networking opportunities for HfS 50 members, and its analysts contribute to these interactions with candid, unbiased opinions based on current, relevant research, benchmarking data and deep sourcing governance expertise.

Now in its sixth year of publication, HfS Research's acclaimed blog "Horses for Sources" is widely recognized as the leading destination for collective insight, research and open debate of sourcing industry issues and developments. The thriving HfS LinkedIn community includes over 17,000 industry professionals who share views and information daily. More information about HfS Research can be accessed at www.HfSResearch.com. The company can be followed on Twitter at www.twitter.com/horses4sources and LinkedIn by joining The BPO and Offshoring Best Practices forum.

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