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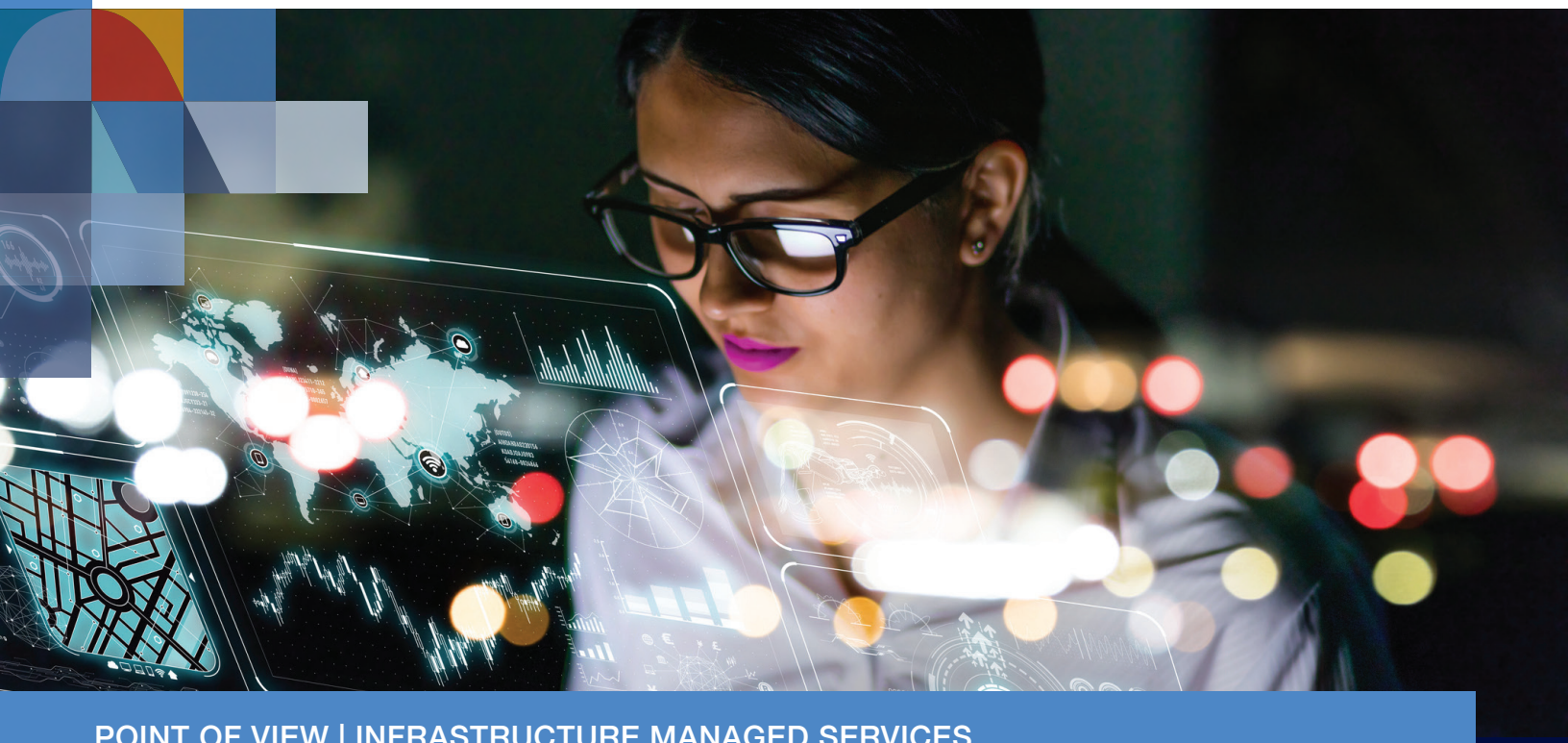

POINT OF VIEW | INFRASTRUCTURE MANAGED SERVICES

# Intelligent Automation in IT Infrastructure


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# Introduction

Organizations today must cope with an unprecedented pace of change: In this age of digital transformation, the marketplaces in which enterprises must compete are evolving at breakneck speed. Those organizations capable of keeping up with this velocity of change have exciting opportunities for growth; those that get left behind face an increasingly bleak future.

So how can organizations embrace the opportunities of digital transformation — while facing down the existential threat it poses?

They must become more agile and nimble. Organizations need to recognize that IT has become the fuel for enterprise growth, and the primary driver of strategy across all industries and customer profiles. In particular, industrialized automation of IT infrastructure offers a way to deliver higher quality customer outcomes more quickly and at a lower cost.

The concept of automation isn't new, and executives well understand the case for stripping out manual processes. Already, three-quarters of enterprises are actively pursuing automation within their IT operations, according to a study from Everest Group.[1]

So far, however, many organizations have failed to capture the full benefit of automation, mainly because their efforts have fallen short of the industrialized automation their businesses now require. They've often focused on functional silos, driving automation in some areas but not others. They've prioritized automation without first assessing the quality of the process. And they've made limited new uses of advanced automation technologies, including autonomics and cognitive automation.

By contrast, true infrastructure automation requires a more holistic approach that leverages the full potential of emerging and evolving automation solutions. The prize for those enterprises capable of making this leap is considerable: the ability to remain relevant and competitive despite the accelerated pace of change that now surrounds them.

# Toward intelligent infrastructure automation

If the arguments for infrastructure automation are clear, the roadmap to achieving the benefits on offer is anything but.

The Everest Group study also reveals that many CIOs are confused by emerging technologies and disappointed by the results of their existing automation projects. While 91% of these CIOs say their current IT operations and processes require significant redesign and standardization, 73% have witnessed a number of failed IT infrastructure automation project failures, and 68% concede they don't clearly understand the role of autonomics and cognitive computing in IT infrastructure management.[1]

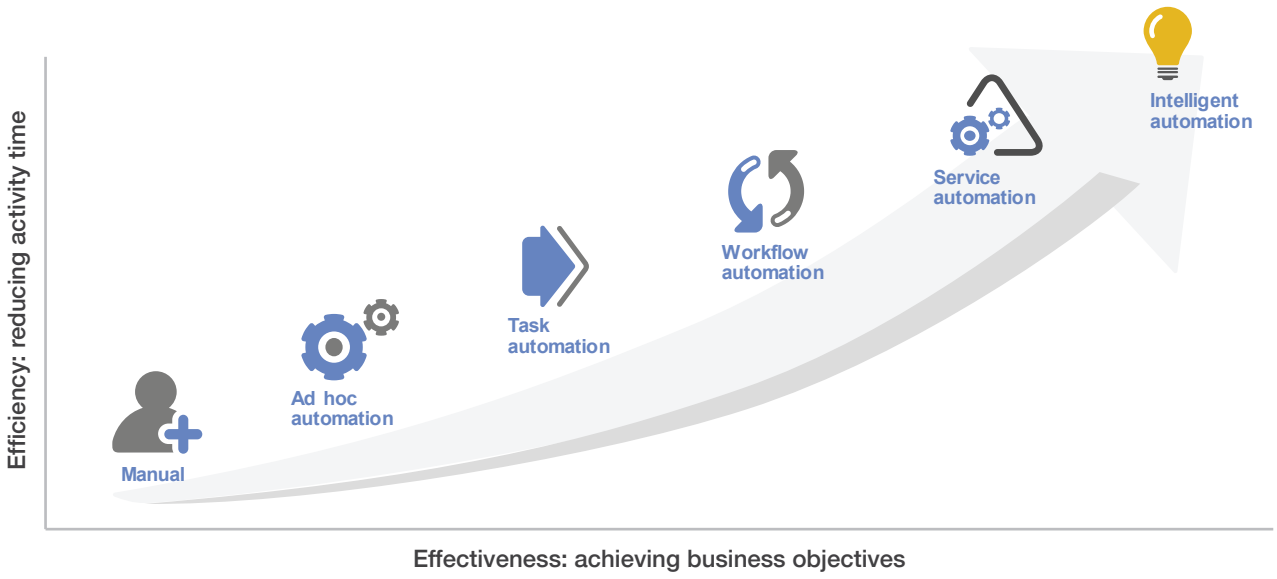
This must now change. Knowing that automating broken or inefficient processes makes little or no business and economic sense, a more holistic approach to automation combined with a renewed focus on process optimization will deliver significant benefits. Harnessing the power of evolving automation technologies multiplies the gains.

These technologies go well beyond the robotic process automation (RPA) and discrete automation solutions that many organizations have been utilizing successfully for some time. While these solutions deliver significant returns on investment — notably cost savings, process efficiency and reduced error — their applications are relatively limited; they work best in standardized environments and with the most simple and individual processes.

Already, some organizations are stepping up from tactical RPA tools to embrace intelligent autonomics solutions. These technologies leverage machine learning resources to combine and consolidate the workflows and scripts underpinning RPA. This means they can confront more complex tasks, operating flexibly and autonomously to manage less predictable processes — and combinations of processes.

In time, the most advanced organizations will progress to intelligent automation solutions that go beyond the human characteristics of judgement and decision-making to manage much more complex workflows (see Figure 1). Powered by machine learning and artificial intelligence, intelligent or cognitive automation represents a step forward, offering the potential for full-scale infrastructure automation.

**Figure 1: The evolution of automation**



# Skills and resources required for cognitive automation

This evolution is an exciting prospect, but it can only be achieved if organizations think carefully about the broader capabilities and competencies that drive cognitive automation.

Most importantly, the ability of an intelligent automation ecosystem to make good judgements and smart decisions depends on the data flowing into the system and the analytics tools available to parse this information. It's incumbent on organizations embracing cognitive automation to simultaneously implement an integrated data strategy. By combining improved collection, storage and management of both structured and unstructured data with enhanced analytic capabilities, organizations can have a solid foundation to support the move to cognitive automation.

It's equally important to recognize that this technology may not necessarily replace existing RPA solutions; it may, for example, employ these tools as it integrates systems and processes to drive better execution and service delivery. As such, it's also important to remain focused on service orchestration; a variety of tools may be required to fully automate an infrastructure in an operations environment.

For organizations capable of making the transition to cognitive automation, the potential for enhanced speed, efficiency and quality is significant, as a more holistic infrastructure cuts across siloed functions and business units.

Nevertheless, it's vital to focus on the use cases for these technologies, rather than the technology itself. By working with key business stakeholders to better understand critical processes, organizations can identify how — and where — to drive value.

Clear use cases are already emerging for organizations that quickly implement these tools. For example, autonomics tools are now in use across a broad range of functions, and these tools have become a key driver of software-defined data center advances. In areas such as customer service desks, full-scale cognitive automation tools are increasingly in use.

# Avoiding common pitfalls

In moving beyond RPA or discrete automation enablement solutions to more holistic automation, organizations must overcome some of the pitfalls that threaten to undermine their process improvements and the successful adoption of new technologies.

**Crucially, organizations that lack the skillsets to properly implement new automation initiatives are unlikely to secure the hoped-for benefits.**

This is often the most significant problem faced by organizations implementing automation initiatives. Without the resources and expertise in place to support adoption and implementation, these initiatives are doomed to failure.

Another potential challenge is focusing too much on problem-specific use cases. While the transition to greater automation should start with the use case, rather than the technology, it's crucial to see the bigger picture: Automation initiatives focused on one individual problem may not work well in the context of the organization's broader needs. Look for a strategic approach, rather than a more tactical response, to a particular issue.

Similarly, organizations must work hard to avoid functional or person-specific dependencies. Where individual IT functions are automated through complex scripting and workarounds, the effect may be to tie the organization to its current infrastructure — automation work in one area may impact what's possible elsewhere. Equally, where only one person or

team has ownership or understanding of this complexity, the organization is vulnerable to their departure.

A related problem is that organizations often choose to automate within a single domain without addressing the gaps between processes and departments. This may mean introducing manual elements to end-to-end processes, adding time and inefficiency — and undermining the organization's ability to move toward more sophisticated automation frameworks.

HfS Research argues that organizations that don't make technology choices within the context of holistic automation risk forcing themselves into unnecessary siloes.[2] They end up with a bias toward, for example, front-end interfaces based on natural learning processes or back-office RPA tools. Stitching these different technologies together to deliver coherent infrastructure automation may be very difficult.

# Getting started with cognitive automation

How do companies begin implementing autonomics and cognitive automation solutions throughout their IT infrastructure? The first step is assessing the current IT infrastructure.

For many organizations, this exercise identifies a disparate set of systems, technologies and frameworks operating in parallel but separately — with back-office functions, for example, working in different ways to customer-facing parts of the business.

This underlines the transformative potential of infrastructure transformation: By building a common, standardized and automated IT framework, the opportunity is to automate and optimize throughout the business — and to drive value for all stakeholders.

Figure 2 illustrates what that framework might look like. It's constructed through a step-by-step process that keeps the big picture in mind, including the processes that may need to be perfected before automation.

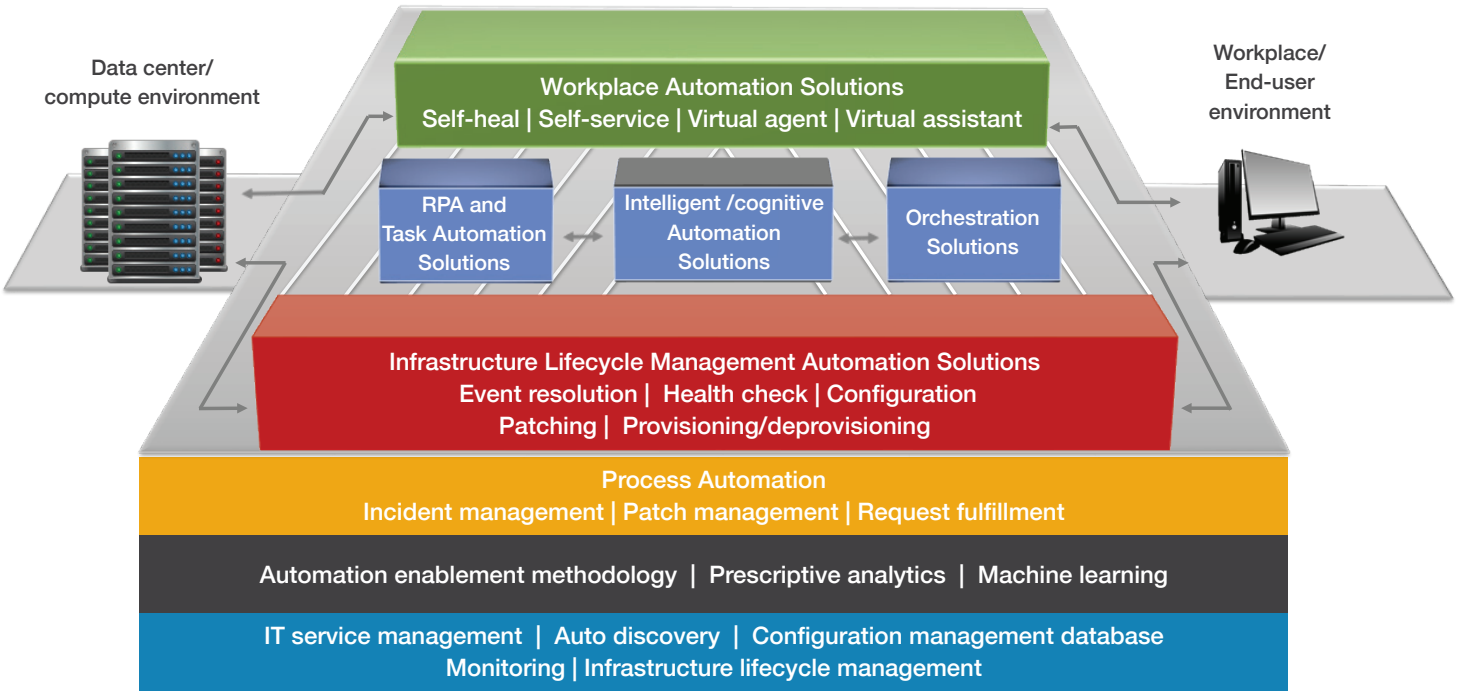



Figure 2: Solutions for Intelligent Automation (SIA) framework

Overall, the point here is to focus on true cognitive automation, rather than focusing on the narrower solutions of RPA and task automation. As organizations continue to embrace the as-a-service economy, this intelligent automation will require new ways of thinking.

However, cognitive automation shouldn't be regarded as a solution to the organization's legacy IT issues. And adoption requires careful orchestration to drive better service delivery across business units and functions. It's vital to keep use cases and the user in mind throughout planning and implementation. Ultimately, cognitive automation provides a way for these users to exert much greater control of the processes they own.

# Beginning the journey

Our recommendations for organizations that want to transition toward an intelligent automation framework include:

- **Setting clear and holistic goals for an automation strategy.** Cognitive automation breaks down functional silos, providing a coherent and standardized IT infrastructure that underpins automation and standardization throughout the organization. Look to break down the barriers between infrastructure, platforms and applications, and between users and the data center. Be prepared to fund this strategy and to measure its progress against clear goals.

- **Leveraging IT skills.** Existing IT talent are the primary agents of change. Build feedback mechanisms to capture their advice and best practices, put structures in place to reward success and support IT with new resources where these are required.

- **Investing in new talent.** Look to build a core cognitive automation team with a broad-based skillset that encompasses process automation as well as technical expertise in emerging technologies.

- **Embracing design thinking.** Work with change experts and process consultants to reimagine processes, rather than seeking to fix problematic processes with automation tools.

- **Putting data and analytics at the center of automation strategy.** Invest in new data and analytics solutions to maximize value creation from infrastructure automation.

- **Collaborating with key stakeholders across the business.** Leverage the expertise of process owners within the organization to help them reimagine and optimize their processes for automation. Prioritize the organization's communications strategy with initiatives that go beyond generic communications to provide specific use cases that resonate with process owners.

- **Reassessing existing automation.** Look at whether the organization has exploited workflow automation to the maximum potential, and whether processes have been deconstructed to the most granular level possible. Look at automation through a new lens, with multiple processes in mind.

- **Inducing self-learning capabilities.** Seek to enable machine-based actions that enhance skills and drive productivity.

- **Focusing on the user.** Use self-service design concepts that prioritize the user in process design and automation. Self-heal automation and virtual agents are powerful tools, but they must be deployed with the user perspective at the forefront.

Above all, the key is to be both strategic and tactical in the approach. While automation may take place in incremental steps according to the organization's priorities, keep the big picture in mind as deployments take place and focus on the key benefits: higher quality customer outcomes delivered more quickly and at lower cost.

# About the authors

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