



Accelerating AI, Automation, and Innovation in Modern Enterprises

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Executive Summary

With growing IT complexity, increasingly prevalent skills shortages, and mounting pressures to modernize legacy infrastructure and introduce AI applications, organizations are seeking solutions that can alleviate these challenges. Automation and generative artificial intelligence (AI) are leading the way as critical enablers for improving processes and supporting innovation initiatives, all while helping to combat problems such as time spent on repetitive, manual tasks; the learning curve and skills gaps across growing technology stacks; and even ensuring ongoing operational efficiency.

Solutions such as Red Hat Ansible Automation Platform aim to enable organizations with the automation needed to support their business objectives such as operating system configuration, cloud management, network automation, virtual infrastructure management or application delivery, all of which free up valuable resources to focus on high-priority projects and desired innovation initiatives. Additional features, such as Red Hat's generative AI service, Ansible Lightspeed with IBM watsonx Code Assistant, can further accelerate automation development. It lowers the barrier to entry so less experienced automation developers can start writing automation content faster while helping to improve the productivity of more experienced users.

Through its solutions, Red Hat aims to position itself as a leading provider of enterprise-wide automation by addressing these challenges that organizations face today.

Addressing Modern IT Challenges Through Strategic Automation

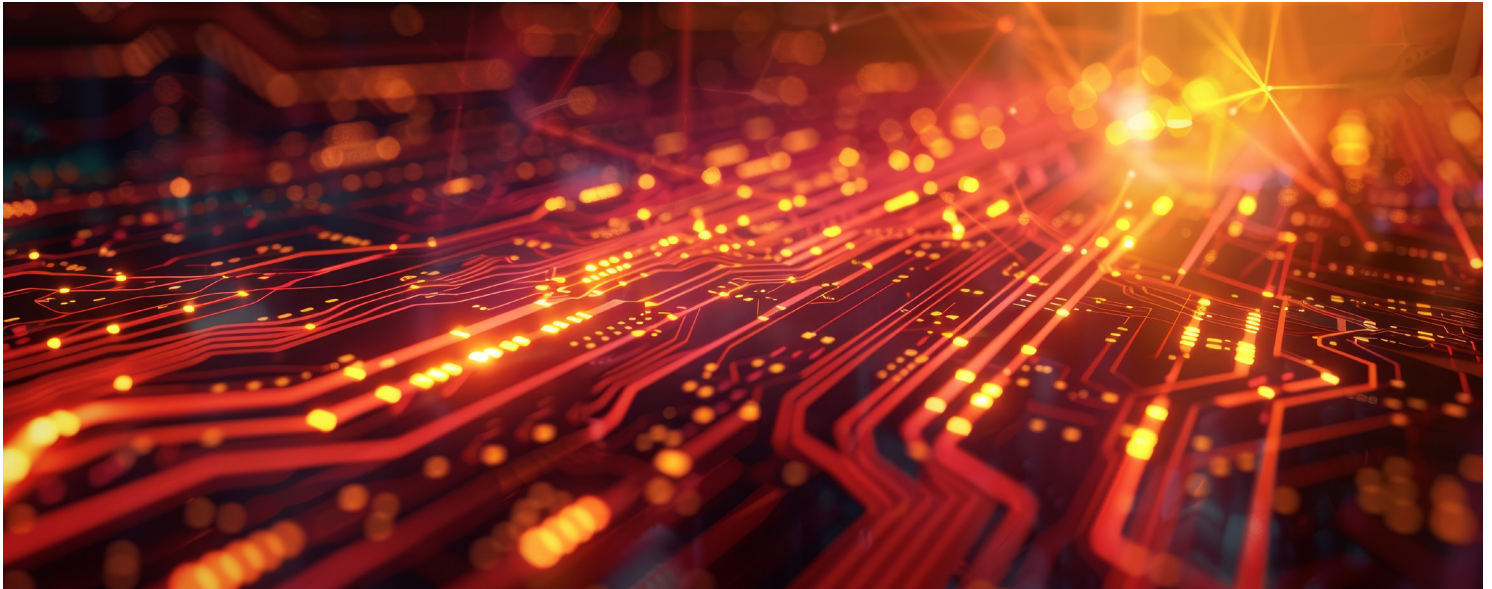
Organizations must address a growing range of technical challenges, including managing heterogeneous infrastructure, staying in front of security risks, and integrating complex new technologies with existing systems. Such challenges can hinder operations, increase exposure to security threats, and impede efficiency.

A strategic enterprise automation approach provides a solution to these challenges through streamlined operations and improved productivity. Such automation allows organizations to reduce manual tasks, minimize the possibility of human error, and create consistent, repeatable processes across the IT environment. This enables organizations to scale operations, all while incorporating modern, advanced technologies such as AI.

As an enterprise automation strategy is developed, organizations should first conduct a comprehensive review of the organization's current IT environments. Doing so can help identify legacy systems in need of modernization, infrastructure

bottlenecks, and areas that could benefit from optimization. By gathering a holistic view of the organization, the implementation of automation strategies can maintain alignment with long-term objectives and can be prioritized for maximum impact.

The potential benefits of implementing such a strategy cannot be overstated. But in order to ensure the ongoing success of the program, organizations should also focus on employee training and upskilling. Continuous learning is crucial for realizing the benefits automation can provide while enabling teams to push forward with innovation and maintain a competitive advantage.



Taming IT Complexity for Scalable Growth

The growing complexity of modern IT systems creates significant challenges in maintaining efficiency, security, and scalability, making it essential for organizations to simplify and optimize their technology infrastructure. The proliferation of new technologies and applications has only compounded these challenges, meaning managing complexity has become a critical issue, often slowing innovation and impacting efficiency and speed of delivery.

Automation offers a powerful solution to address the increasing complexity of IT environments. By automating routine and repetitive tasks, organizations can streamline processes, reduce manual intervention, and minimize the risk of human error. For example, according to Futurum Group research, 36% of organizations have already shifted skilled resources away from manual tasks¹, allowing AI to handle them, which not only improves efficiency but also frees up IT staff to focus on more strategic initiatives.

While 24% of companies aim to release code on an hourly basis, only 8% can achieve this due to the complexities of their development environments. Automation tools, such as those integrated with AI, can alleviate these bottlenecks by optimizing processes and reducing manual workloads. By simplifying and managing complex systems more effectively, automation enables businesses to remain agile and competitive.

¹ Source: The Futurum Group, State of the Market 2024 - 1H 2024 – Application Development & Modernization Market

Bridging the Skills Gap with Automation and AI

Skills gaps in the workforce can significantly impact the implementation and utilization of new technologies, leading to decreased productivity and potentially missed opportunities for innovation. In fact, IBM estimates that 120 million workers in the world's largest economies will need to be reskilled in the coming years to keep pace with advancements in AI and automation².

Additionally, a study by The Futurum Group³ highlights that employers find it increasingly difficult to recruit talent with the necessary technical expertise to manage complex IT environments.

The need for more skilled IT professionals continues to grow, which is creating significant challenges for organizations that are trying to manage the complexity of modern IT infrastructures. Between rapid digital transformation and the introduction of AI technologies, the issues are compounded. Out of businesses surveyed in the same Futurum Group study, 50% admitted that they do not have sufficient skill-development strategies in place to address this gap in their organizations⁴.

Automation, alongside generative AI, is understandably being viewed as a strategic solution to bridge this skills gap. Automation can not only handle routine and repetitive tasks with minimal oversight and error, but it frees time for IT staff to focus on more strategic and business-impacting initiatives. According to The Futurum Group's research, automation tools that use low-code platforms and AI capabilities further simplify automation development, allowing non-experts to create automation content. This, combined with AI's ability to generate automation using natural language prompts, reduces the technical expertise required and ensures consistent, accurate execution of tasks every time.

To further support the skills gap issues while upskilling teams in automation capabilities, Red Hat offers comprehensive training programs for all skill levels. These programs, combined with the automation tools Red Hat offers, enable IT teams to manage complex environments while helping organizations remain competitive despite the skills shortages. Furthermore, by leveraging AI and automation together, organizations can navigate these challenges while driving innovation and maintaining operational efficiency.



² Source: <https://newsroom.ibm.com/2019-09-06-IBM-Study-The-Skills-Gap-is-Not-a-Myth-But-Can-Be-Addressed-with-Real-Solutions>

³ The Futurum Group, State of the Market 2024 - 1H 2024 – Application Development & Modernization Market

⁴ Source: ibid



Modernizing Heritage Systems for Future Scalability

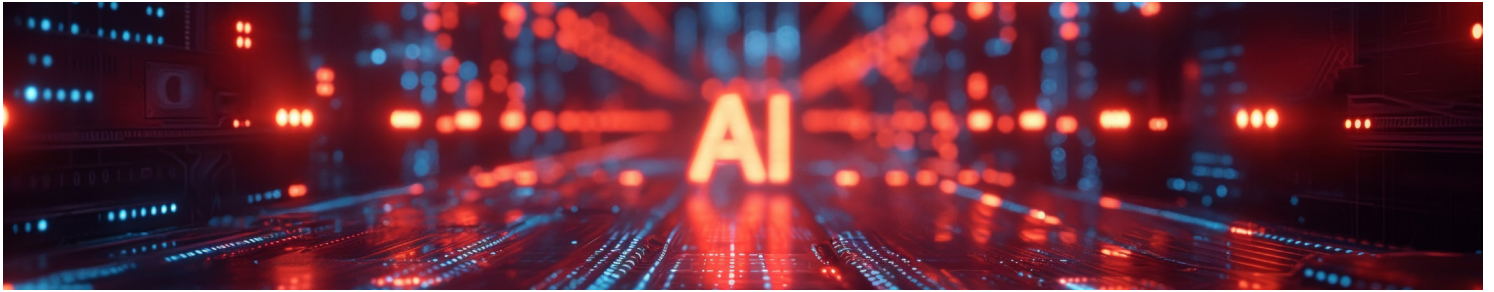
Modernizing legacy tech stacks is crucial for improving efficiency, scalability, security, and relevancy within organizations. In part, this modernization includes adding AI-based applications that support the business in some way. Many organizations face steep challenges in modernizing legacy IT infrastructure due to the increasing complexity and technical debt that has accumulated over the years, which contributes to the challenge of modernization.

The Futurum Group's research highlights that technical debt attached to legacy systems is one of the main hurdles within the modernization journey. Many organizations struggle to justify the cost and effort needed to refactor these systems. This technical debt impedes organizations from adopting more modern, scalable architectures. This challenge is further exacerbated as organizations begin looking to incorporate AI components into existing business applications or create altogether new AI-based applications. According to a recent Futurum Group study, 54% of enterprises leverage AI in production applications⁵.

With AI being a driving force in modern infrastructure, automation solutions are needed to manage the infrastructure demands of these new applications. At the same time, legacy applications and infrastructure must be managed— as well as new modern infrastructure supporting new AI-based applications.

Event-driven automation also plays a role in providing resilience to these infrastructures when they can automatically respond to changing conditions. By enabling systems to automatically respond to real-time events, organizations can reduce downtime and achieve faster mean time to resolution (MTTR). Automation tools can further assist in migrating legacy systems to modern platforms, improving scalability and reducing the complexity of the modernization journey.

⁵ Source: ibid



Red Hat's Strategic Approach to Automation and AI

Red Hat's automation solutions are designed to help organizations overcome many of the challenges they face in today's technology-driven environment. It provides the scalability, flexibility, and resilience needed to support complex operations without overburdening IT teams.

When it comes to AI, Red Hat offers a two-pronged approach. By leveraging generative AI within Red Hat Ansible Automation Platform, organizations can accelerate the development of automation solutions, empowering non-developers to build complex automation content and bridge the skills gap.

Additionally, Red Hat's automation technology handles the complexity and scale of managing AI applications deployed across the IT environment, ensuring resilient operations even as systems grow more intricate. This dual approach helps organizations to enhance efficiency while maintaining robust, scalable IT operations.

By using automation to create repeatable processes, organizations can focus on driving innovation and performance without being bogged down by either everyday complexity or the added management demands of AI. Red Hat's platform ensures organizations have the tools and support to remain competitive and keep pace with an evolving IT landscape.

Event-driven automation is another key component of Red Hat's offerings, enabling organizations to respond automatically to alerts, changes, and events. This proactive approach ensures that businesses can adapt to current circumstances in real time. Additionally, Red Hat's virtualization solutions improve flexibility and efficiency, simplifying the management of a broad variety of IT environments, handling complex "Day 2" operational demands and allowing for seamless integration of a range of IT infrastructure technologies.

Ansible Automation Platform, a powerful automation tool provided by Red Hat, automates a wide range of tasks, including operating system automation, cloud automation, network automation, application delivery, and virtual infrastructure management. As organizations explore the maturity of various automation use cases, they can unlock significant benefits, from increased productivity to enhanced innovation. Automation also empowers businesses to tackle complex work that was previously difficult or impossible to automate, pushing the boundaries of what's possible.

Addressing the skills gap is a crucial consideration as automation becomes more prevalent. Red Hat provides flexible solutions that help organizations upskill their workforce, ensuring that employees are equipped to thrive in an automated environment. With Red Hat's generative AI service, Ansible Lightspeed with IBM watsonx Code Assistant, organizations can accelerate the development of automation solutions while addressing the skills gap. Now available with full Ansible playbook generation, Ansible Lightspeed simplifies the process of creating automation and accelerating adoption, allowing teams to adopt advanced tools, even if they lack automation expertise. While AI introduces additional complexity to the technology stack, Red Hat's flexible automation and training resources prepare teams to manage these changes and continue driving innovation.

Simplifying IT Complexity and Accelerating Innovation

Red Hat's solutions address the challenges of IT complexity, scalability, and skills gaps by providing automation, AI, and virtualization tools that enhance efficiency and adaptability. These offerings can allow organizations to respond quickly to changes, automate complex tasks, and effectively manage diverse IT environments to help organizations remain competitive as technologies evolve.



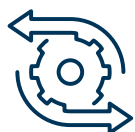
1. Enterprise Automation Strategy: The ability to manage diverse IT environments through automation broadens the applicability of Red Hat's solutions. This is important as it allows organizations to have a unified approach to IT management and application delivery, ensuring smooth operations, better resource utilization and faster innovation.



2. Complexity and Efficiency: By offering comprehensive IT automation with generative AI, Red Hat helps organizations to reduce the complexity of managing IT environments. This is crucial because simplified, automated processes improve efficiency, reduce the risk of errors, and free up valuable resources for more strategic tasks.



3. Scalability and Flexibility: Red Hat's platform provides the scalability and flexibility needed to support growing businesses from the cloud to on-premises solutions in public cloud, private cloud, cloud-native, and virtualized environments. This matters because as organizations expand, their IT needs evolve, and having a platform that can easily adapt ensures continued ability to manage within and across the IT stack without disruption.



4. Responsiveness to Changing IT conditions: Event-driven automation allows businesses to respond quickly to changes and events. This is vital in a fast-paced market where the ability to react quickly can be the difference between capitalizing on opportunities and falling behind competitors in a world where applications drive business.



5. Addressing Skills Gaps: By emphasizing the importance of preparing the workforce for automation, Red Hat helps organizations close skills gaps. This matters because technology advancements, such as generative AI, require that employees are equipped to maintain productivity and innovation.



6. Automation of Complex Tasks: Red Hat's solutions enable the automation of complex tasks that were previously manual or too challenging to automate. This is significant because it not only saves time and resources but also enhances the accuracy and consistency of critical processes.

Automation is a strategic function that supports organizations with efficient operations, response times to market dynamics, and preparation for future advancements, which are key to maintaining a competitive advantage. Red Hat Ansible Automation Platform acts as a "force multiplier" by allowing organizations to maximize their existing technology investments. By automating a wide range of technologies, from Cisco devices to Linux and Windows to cloud-native and virtualized environments, organizations may streamline operations to reach greater scalability. This approach may not only enhance efficiency but also position organizations to better adapt and thrive. Additionally, Red Hat Ansible Certified Content Collections with these technology partners enable organizations to take advantage of the proprietary AI solutions already integrated into these vendors' products via AI orchestration.

Important Information About this Report

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