

Accelerating Outcomes Through AI-Powered Application Modernization

Accelerate the path to innovation while reducing reliance on human staff and driving down operational costs by leveraging IBM Consulting Advantage tools for digital software engineering

Federal customers are balancing new technologies in AI, cloud, low-code, data, and security with the pressure to become more efficient. Digital technologies and technical excellence are critical components of the digital experience.

A key component that allows agencies to improve customer experience, reduce technical debt and establish self-services while improving security, increasing productivity and enabling the workforce to innovate is **AI-powered application modernization**. AI-powered modernization allows customers to improve the efficiency of the current workforce through agents (digital workers), build secure platforms to rapidly deliver capabilities through intelligent automation, and provide transformation services to deliver outcomes that allow customers to re-invest in innovation.

Streamlining modernization. AI assistants and digital workers (i.e., agentic AI) can take on simple, repetitive software maintenance tasks, like code review and bug detection, and even offer suggestions for code improvements, freeing up human developers to focus on more complex coding and design aspects.

IBM Consulting Advantage is a series of tools to facilitate the stages of application modernization throughout the modernization lifecycle from Discovery, to Design, Planning & Building, and ultimately Ito Deploy & Manage. Our suite of tools also enables compliance with the new NIST 800-218 and CISA Secure Software Factory Framework.

We also provide software intelligence and illumination to help measure cloud maturity of applications, provide disposition recommendations, and scan legacy code to make recommendations on new microservices, and helps developers generate modern code.

PDE Factory will provision standard cloud environments with all authority to operate (ATO) controls and policy enforcement in place, all infrastructure configurations, access and I/O controls, as well as tools integration and full observability.



By using Infrastructure as Code, Configuration as Code, Compliance as a Service, and DevSecOps-as-a-Service solutions infused with AI agents and assistants, we can reduce the system maintainer footprint.

Delivering business value. AI-powered modernization can help reduce over \$2.4T in technical debt and operational inefficiencies, allowing agencies to reinvest in innovation. But modernization must bring business value beyond cost reduction.

AI has the potential to reduce cost, reimagine the developer experience, and modernize applications by automating code refactoring, streamlining repetitive tasks, and accelerating quality assurance processes. For example, AI tools can help automatically evaluate your agency's application portfolio and identify apps that are cloud-ready.

AI can't fully manage all aspects of application modernization on its own, but with the help from AI, teams can dramatically accelerate the modernization process and reduce repetitive and complex tasks. AI can optimize re-factoring by identifying places where code should be rewritten, detecting dead code, and mapping out the entire application to explain the purpose of its code.

Government Client Success. IBM is partnering with a large tax agency to modernize its decades old technology. The agency is already realizing the value of our outcome-based approach to AI-powered modernization. Our solution has resulted in **70% more efficiency** than standard AI tooling alone, achieved a faster time to value, modernized 1960s software, and **saved over \$100M** in cost compared with a competitor's approach.

AI tools, like IBM watsonx Code Assistant™, can be used to develop new code, and agentic AI, like IBM's Product Design Engineer Builder, can be used to automate the entire CI/CD pipeline, build and optimize Infrastructure as Code, configure and deploy containers, and create policies to meet security requirements to supercharge productivity. The outcomes—more value for the business, improved experience and a more efficient modernization.

Each agency is at a different place in their modernization journey. Agencies are rapidly adopting new technologies that often integrate developers and business with AI, robotic process automation (RPA), data, and cloud, and serve them up to consumers more rapidly than traditional applications. These technologies allow agencies to reduce cost and time to market while replicating an *eCommerce like experience*.

To create that digital experience, a successful modernization should have several key components to help the organization modernize with existing or reduced workforces at scale:

1. **Value Frameworks** – Through our IBM Garage and genAI, cut across Strategic Initiatives to measure trade-offs between efficiency and value.
2. **Lean Governance and FinOps** – To scale across the organization and allow for self-services while managing costs.
3. **AI-Powered Cloud Transformation**- IBM's Consulting Advantage delivers AI enabled discovery, assessment, planning, and architect for modern cloud delivery.
4. **Cloud-Native Platform Engineering** – Using IBM's PDE's agentic AI, users can automate the deployment, CI/CD, containers and landing zones creation with security by default.
5. **Data Modernization** – Modern data architectures that help future proof organizations.

Key takeaways. Avoid the “if you build it, they will come” fallacy. Costly modernization efforts do not always yield expected results and can cost more in the long-term.

Scale existing versus building new. Capitalize on proven assets operating in the federal space today. The IBM platform is operational and ready to scale.

Future proof through long-term commercial partnerships. Beware of static technology-only solutions that are quickly out of date. Leverage partnerships to provide continually modernized services.

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Learn more about IBM's application modernization consulting and services.

