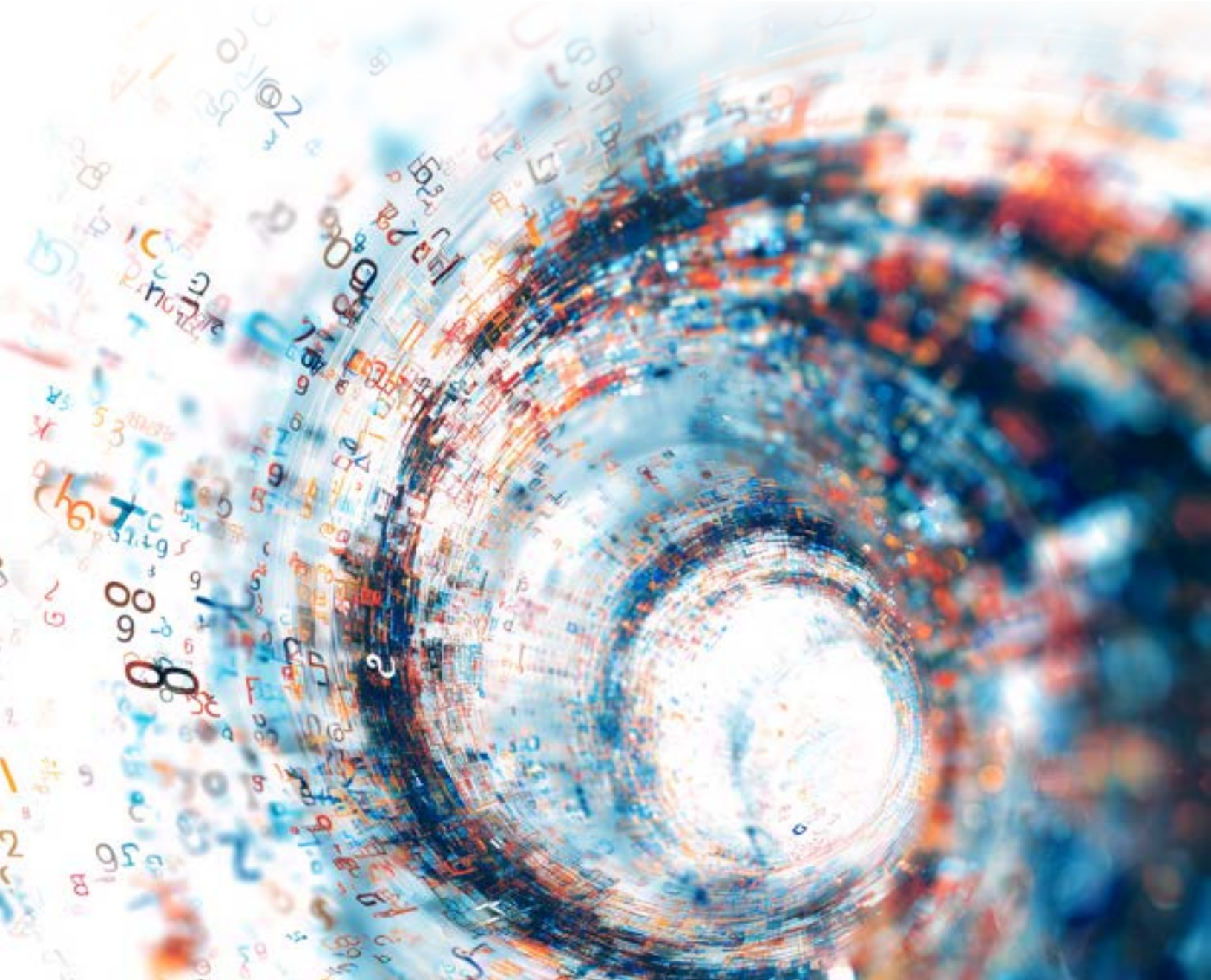




A New Era of Application Modernization

Transforming legacy applications into value-creating, future-ready assets with AI-powered continuous modernization



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Continuous Modernization as a Value Driver

Application modernization plays an essential role in cost and risk management. Yet it has traditionally involved trade-offs, with budget and resource constraints forcing enterprises to prioritize short-term fixes over ongoing improvement. Today, this is changing. Artificial intelligence (AI) technologies enable modernization to happen continuously, reducing technical debt while accelerating software delivery and unlocking value.

AI is both a catalyst for modernization and the reason why it can no longer be sidelined. Generative AI (GenAI) and agentic AI make modernization processes faster, cheaper, and more effective. In parallel, AI readiness is now a priority for many organizations, creating data demands that only modernized systems can meet.

Modernization Moves up the Agenda

If your business previously put off application modernization in favour of projects with greater urgency or more immediate returns, you're not alone. However, it's time to re-think priorities. Modernization has never been more relevant, or important, to corporate success. It should be seen as an iterative process spanning everything from technology stabilization to the reinvention of systems and processes to unlock new opportunities for monetization.

This whitepaper introduces Amdocs' Five-Pillar Application Modernization Framework. Designed to streamline the modernization journey, it draws on decades of expertise, proven methodologies, and the power of AI to transform legacy applications with technologies that simplify integration and reduce costs.



Modernization is not a one-time event; it's an ongoing journey to maximize applications' performance and value. Today, advances in AI make it easier to adopt the continuous modernization mindset.

This whitepaper introduces Amdocs' **Five-Pillar Application Modernization Framework**. Designed to streamline the modernization journey, it draws on decades of expertise, proven methodologies, and the power of AI to transform legacy applications with technologies that simplify integration and reduce costs.

A decorative background graphic at the bottom of the page featuring flowing, wavy lines in shades of blue, purple, and pink, with small glowing particles scattered throughout.

Solving Problems, Unlocking Value

Amdocs helps global organizations address tough technical challenges and realize business value via legacy application modernization. Classic examples of problems we solve include:



Monolithic architectures – decomposing legacy applications into modular, cloud-ready components to improve agility and scalability.



Technical debt – addressing inefficiencies in code, architecture, and infrastructure to enable fast, cost-effective delivery of new features.



Brittle integrations – leveraging AI to identify fragile, poorly documented connections between systems so they can be managed effectively.



Legacy-cloud friction – resolving compatibility and integration challenges of legacy and cloud platforms for seamless interoperability.



Siloed data – modernizing and integrating data platforms to ensure data availability, unification and consistency.



Operational drag – deploying automation and optimizations to reduce delays, remove bottlenecks, and improve overall efficiency.



Skill gaps – using AI-driven tooling to overcome issues linked to the shortage of expertise in older programming languages used in legacy applications such as those built on mainframes.

The Application Modernization Journey

The modernization process typically involves three elements which enterprises may move between or address in parallel, according to their needs:

- **Stabilize core systems for reliability.**
- **Adopt modern practices for efficiency.**
- **Reinvent business models with AI and new revenue streams.**

Amdocs' value-led approach starts by mapping an organization's high-level ambitions for modernization, emphasizing the business value to be achieved. In other words, we focus on understanding the 'what, where, and why' before defining the 'how'.



Amdocs meets you where you are on the modernization journey, helping you accelerate progress and amplify value.

Understanding a client's position on the modernization journey, along with their business drivers and wider goals, is key. These factors can vary widely between different units and applications in the same organization. Figure 1 shows how business value escalates as the journey continues.

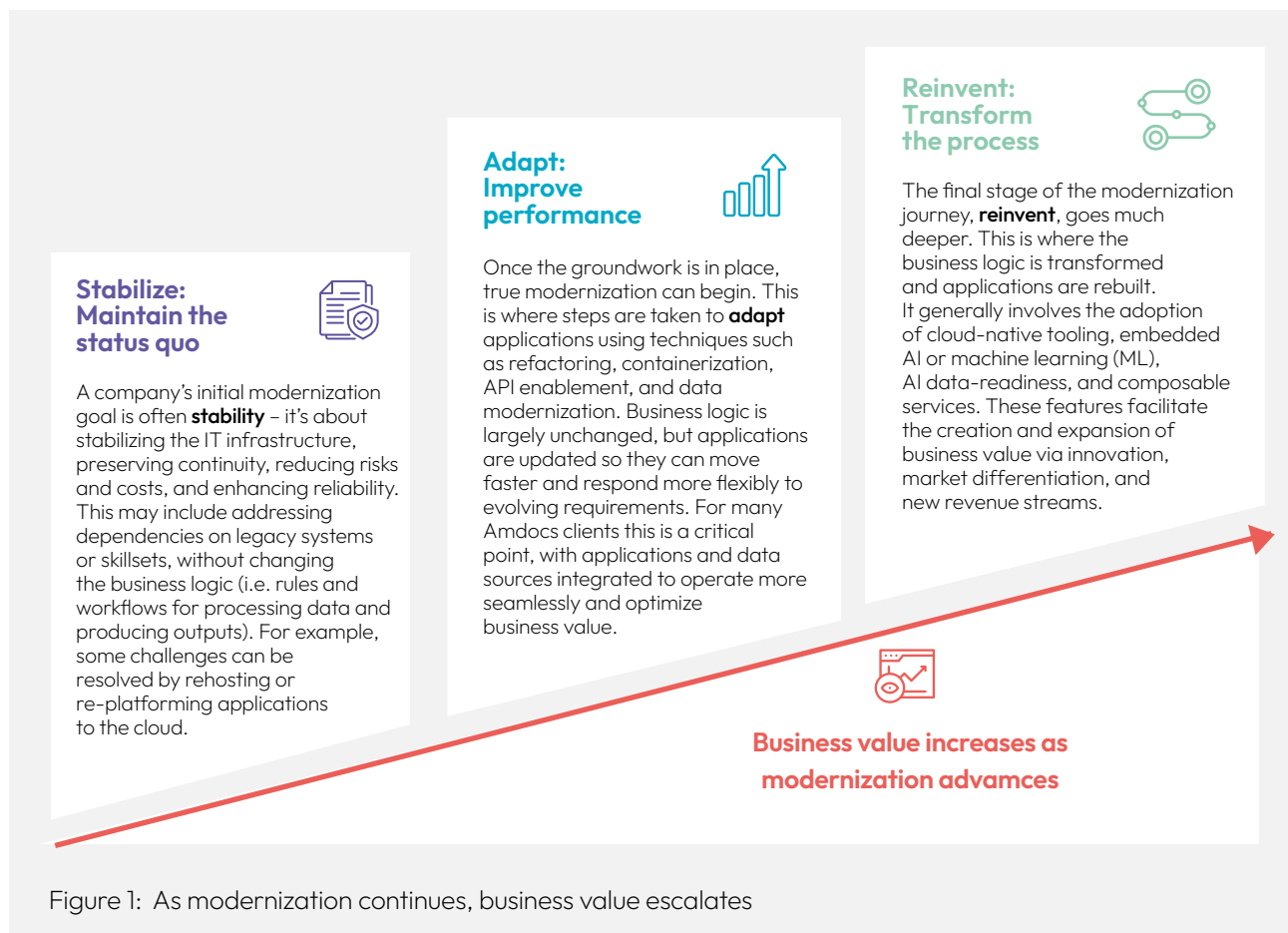
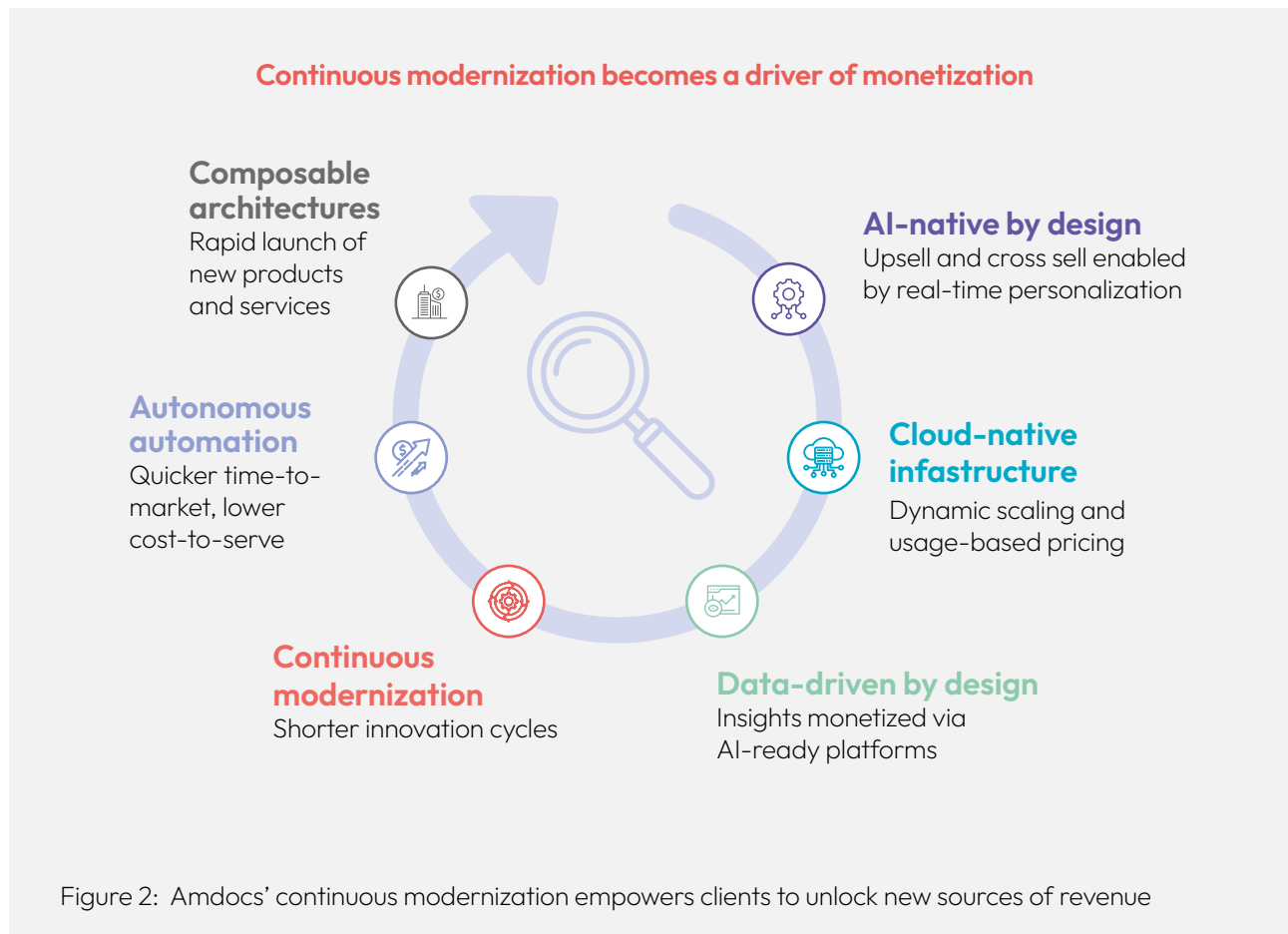


Figure 1: As modernization continues, business value escalates

Modernization to Monetization

Each stage of the modernization journey should deliver business value. It's a cumulative process, and the nature of the value shifts from efficiency gains to strategic commercial growth. As Figure 2 shows, implementation of advanced capabilities can be directly mapped against opportunities for monetization.



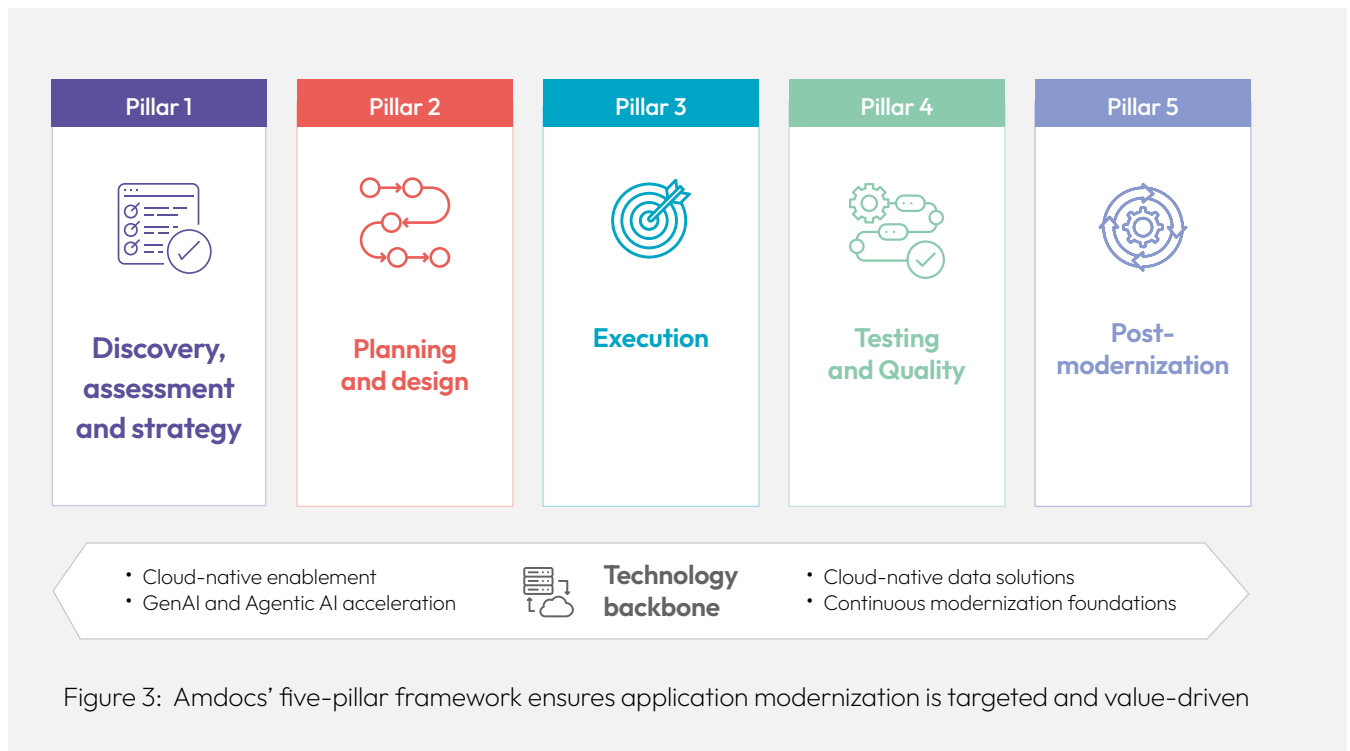
Amdocs' Five-Pillar Application Modernization Framework

Amdocs has developed a comprehensive framework for application modernization, validated by analysts at global advisory firm HFS Research. The framework, which can be applied during any phase of the modernization journey, overcomes challenges around complexity, scale, and risk.

We start by assessing applications and their operational environment, defining business needs as well as opportunities for value creation and ROI. Once the business vision is established, we move on to AI-led discovery and impact analysis. This involves mapping application dependencies, evaluating cloud readiness and compliance, and aligning technical performance metrics with measurable business targets. Data is a central consideration – we seek to understand how it flows through the business, and how it generates value.

GenAI and agentic AI are leveraged at critical points to automate and accelerate core processes. For example, agents are used to scan, analyze, and map legacy application portfolios, prioritizing modernization efforts based on business impact and technical fit.

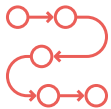
Our Five-Pillar Application Modernization Framework for structured, measurable modernization is summarized in Figure 3 below.





Pillar 1: Discovery, Assessment and Strategy

Deep engagement with business and IT stakeholders ensures we understand organizational goals, regulatory constraints, and digital ambitions before defining the modernization opportunity. This means the strategy is tied to clear business outcomes such as faster product delivery, enhanced compliance, or improved customer experiences.



Pillar 2: Planning and Design

With the opportunity defined, we move from 'what' to 'how'. Foundations are established, and a path set out for scalable, sustainable modernization. GenAI is harnessed to generate blueprints, design modular, composable architectures, and define cloud-native operating models. Continuous compliance and platform governance are also prioritized and embedded from the start, along with data-readiness, privacy, and data lineage.



Pillar 3: Execution

To enhance execution, Amdocs' deep expertise is combined with automation-driven, AI-powered methods. GenAI and agentic AI are used to automate code review, refactoring, and conversion, which releases engineering time for higher-value work. Alongside this, infrastructure-as-code templates and automated deployment pipelines accelerate secure environment creation while reducing friction and risk.



Pillar 4: Testing and Quality

Amdocs embeds testing into the fabric of delivery to foster 'quality by design'. AI-driven automation ensures performance, compliance, and security standards are satisfied at every stage. This approach accelerates delivery without compromising control. Any issues are detected early, which avoids the need for rework.



Pillar 5: Post-Modernization

Modernization doesn't stop when the application goes live. Amdocs uses AI-driven feedback loops to optimize ongoing performance, costs, and resilience. Focusing on continuous improvement and risk management ensures applications evolve with the business.



For industries managing thousands of legacy applications, the shift from manual to autonomous operations can make large-scale modernization economically viable.

Core Technology Enablers

Amdocs' Five-Pillar Application Modernization Framework is powered by a robust technology foundation, purpose-built to support every stage.

We embed core technology enablers that make continuous, AI-powered modernization possible:



Cloud-Native Enablement

Applications are re-architected on a flexible, scalable cloud foundation. Containerization, microservices, and serverless approaches ensure agility, portability, and resilience.



AI-Driven Acceleration

GenAI and modular automation agents reduce friction across assessment, code conversion, testing, and deployment. This accelerates delivery while freeing up talent to focus on higher-value innovation.



Data Readiness and Observability

Real-time insights are enabled through enterprise observability, unified monitoring, and intelligent analytics. This ensures modernization decisions are data-driven and performance improvements are measurable.



Security and Governance by Design

Security, compliance, and governance are built into every stage of the process, not bolted on. Automated guardrails, policy-as-code, and continuous compliance checks ensure transformation happens safely and at scale.



Integration and Interoperability

Modernization succeeds when it connects seamlessly with existing investments. APIs, integration platforms, and open standards ensure interoperability across hybrid and multi-cloud environments.



Agentic Framework

AI models accelerate every aspect of the modernization cycle. This reduces costs by up to 30%, speeds up process cycles, improves accuracy, and enables the delivery of better customer experiences.

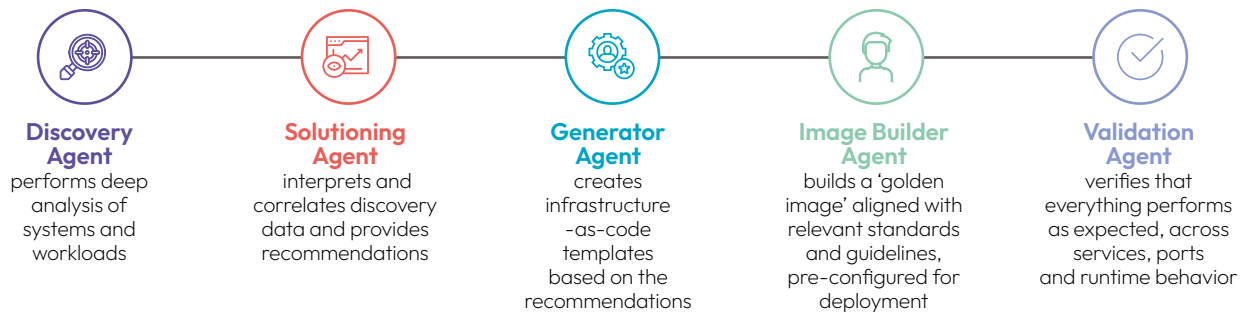


AI-driven automation enables organizations to make the move from isolated modernization efforts to portfolio-wide transformation.

Below are examples of GenAI tools and AI agents that Amdocs has developed to expedite app modernization:

Amdocs Intelligent Modernization Service (AIMS)

Our modular GenAI framework encompasses a series of plug-and-play AI-powered agents which handle specific aspects of application modernization. These are not standalone tools, they work cohesively to facilitate the leap from automated to autonomous modernization. Agents include:



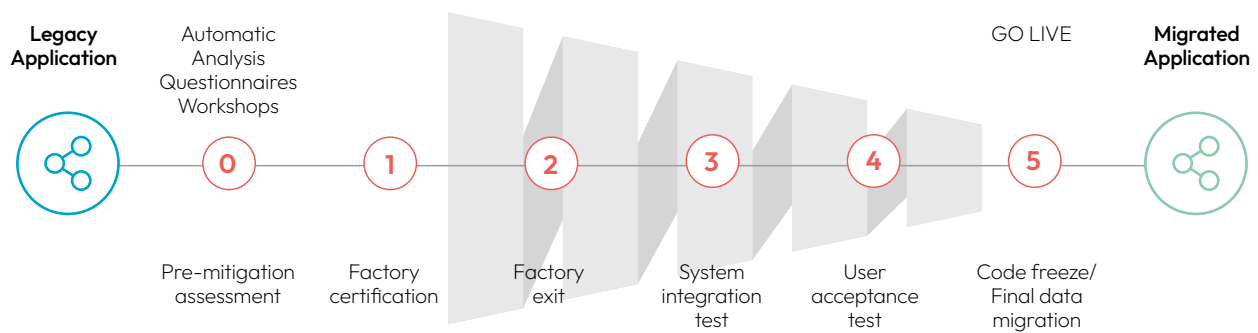
brAln: AI-Powered Quality Engineering

Our GenAI-driven testing platform – brAln – is equipped with AI agents that automate, optimize, and accelerate testing across the application modernization lifecycle:



Mainframe Application Modernization

Amdocs' FastTrack process automates code and data conversion and testing for the modernization of mainframe applications. After a pre-migration assessment to define the project scope, a five-step process is initiated which culminates in the migration of the legacy application to a new cloud environment, where it functions exactly as it did in the original mainframe environment:



Case Studies: Modernization in Practice

With decades of experience in application modernization, Amdocs has delivered successful business-led transformations across multiple industries and geographies.

Adapt	Challenge	Solution	Outcome
Telco (North American) Mainframe modernization	Critical applications running on a tightly coupled mainframe, making modernization both necessary and technically challenging.	Detailed assessment underpinned the planning and execution of a targeted cloud migration with applications' code converted to Java.	The mainframe footprint was reduced by 50% and modernization of applications led to: • Reduced technical debt • Improved business agility • Increased productivity and efficiency
Telco (South American) Application migration and modernization	Several applications were nearing end of life and the data center hosting them was reaching capacity, driving the need to reduce total cost of ownership.	Migrated 27 applications to the cloud, upgraded platforms, and decommissioned the data center.	Migration was completed inside a 14-month timeframe, with modernization benefits including: • 15-20% reduction in infrastructure costs • Improved scalability for demand spikes • Innovation enabled through flexible infrastructure
Adapt & stabilize Telco (Asia Pacific) Application migration and modernization	Cloud adoption was a commercial imperative, but with 350 applications, the client didn't know where to start.	Applications were assessed to determine which to prioritize for migration, according to business value. 81 applications were migrated via re-hosting, re-platforming, and refactoring.	Migration was seamless and application modernization enabled: • 50% faster response time • 30% reduction in compute power • Deployment automation
Stabilize Telco (North American) Application portfolio modernization	Merger and acquisition activity had resulted in a fragmented, inconsistent application landscape. The client wanted to modernize the environment to streamline innovation and better serve its 30+million customers.	Applications were refactored into 200+ cloud-native microservices, then migrated to a modern, Kubernetes-based architecture. Automation pipelines were rewritten with GitLab CI/CD.refactoring.	Continuous modernization and innovation enablement resulted in: • 75% faster deployment • 425% increase in new releases per year • 60% fewer EC2 instances

**Stabilize and
reinvent****Financial services**
(UK insurer)**Application
modernization****Challenge**

The client had invested in Guidewire's ClaimCenter application for property and casualty insurers and wanted to deploy it on Azure. This complex task demanded specialist expertise.

Solution

A cloud-based platform was built to support the application's full software delivery lifecycle. Automated scaling and rapid environment provisioning accelerated development, testing, quality assurance, pre-production, and production.

Outcome

Better efficiency, productivity, and resilience resulted in:

- **25x faster** lead time for changes (50 days to 2 days)
- Quicker build time (reduced from 6 weeks to 2 hours)
- 0% change failure rate; **100% improvement** in mean time to recover

Reinvent**Food and beverage**
(North American quick serve restaurant chain)**Application
modernization**

The brand needed to deliver a convenient application-based ordering and fulfillment experience for customers while allowing franchisees the flexibility to adapt individual restaurant menu offerings.

Comprehensive front- and back-end solutions were built to streamline the customer journey. This included intuitive ordering and flexible fulfillment options, such as curb side pickup and in-store collection. Integrations with third party delivery applications were also enabled.

The solution resulted in a more robust and flexible customer experience, which led to:

- **\$1bn in app-powered revenue**
- Daily delivery revenue increase (from \$300k to \$5M)
- **4.5x growth** in delivery orders



Contact us at: cloud@amdocs.com to set up an initial consultative assessment to evaluate your application ecosystem and establish modernization goals.



Amdocs helps those who build the future to make it amazing. With our market-leading portfolio of software products and services, we unlock our customers' innovative potential, empowering them to provide next-generation communication and media experiences for both the individual end user and enterprise customers. Our employees around the globe are here to accelerate service providers' migration to the cloud, enable them to differentiate in the 5G era, and digitalize and automate their operations.

Listed on the NASDAQ Global Select Market, Amdocs had revenue of \$5.00 billion in fiscal 2024.

For more information, visit Amdocs at www.amdocs.com