Accelerate app modernization with Google Cloud GenAI

Brillio's GenAI capabilities augmented with Google Cloud GenAI and Classic AI can revamp legacy app modernization processes and tailor modular products at scale.

What's missing in application modernization today?

Organizations are increasingly facing challenges in maintaining and sustaining legacy applications to meet the demands of digital businesses. Application modernization aims to improve functionality, scalability, security, performance, and user experience. Its success relies heavily on a well-defined strategy that aligns with an organization's broader goals and stakeholder buy-in. Legacy code, integrations, protocols, evolving security and regulatory aspects and skill gaps make modernization processes complex. Additionally, domain and subject matter experts are crucial in steering modernization efforts due to their comprehensive understanding of business requirements, budget constraints, user needs, and technical debts. Identifying risks associated with data migration, compatibility, and business continuity requires

an end-to-end understanding of an application. Without the necessary expertise, gaps in envisioned technical solutions and business goals could arise, affecting high-quality delivery and performance in shorter spans, thereby impacting the success of modernization projects.

Furthermore, inadequate documentation creates ambiguity as teams need to pay more attention to potential risks, dependencies, and legacy system constraints. This lapse impedes decision-making, leading to poor evaluation of trade-offs with additional resources and time for due diligence. In this context, generative AI has the potential to resolve several hurdles associated with modernization significantly. Modernizing applications with Google Cloud GenAI solutions helps enterprises enhance key business metrics, including faster time to market, cost-benefit realization, and improved customer experience.

Google Cloud GenAI: A change agent for application modernization

Generative AI has sparked a paradigm shift in how enterprises approach complex challenges in their digital transformation initiatives. Google's Gemini Pro, a performance-optimized large language model (LLM) exhibits strong reasoning and broad multi-modal capabilities across a wide range of use cases. Similarly, Google's Vertex AI has several differentiating GenAI features. These encompass machine learning, model garden foundation models, Vertex AI Studio, Vertex AI search and conversation and Gemini for Google Cloud, function calling, and its long context understanding, multi-step reasoning promises potential to enhance and enable efficiency and accelerate innovation. Gemini LLM model's versatility in sophisticated reasoning, advanced coding, processing, and robust workflow integration catalyzes application modernization strategy and legacy system transformation in the following ways:

Automated document generation: : Increase the development and delivery velocity using Google's flagship AI Gemini capability to understand, generate, and explain high-quality code assistance to create comprehensive documentation, including system architecture diagrams, API documents, user manuals, by analyzing the existing codebase, system behavior, and user interactions.

Code analysis: GenAI's natural language processing capabilities powered with Google Code Assist code completion, code generation, and code explanations usher in a new era of productivity, understanding of large codebases, insights into system functionalities, dependencies, and risks, fostering informed decision-making. Gemini has the ability to rewrite legacy code to modern code snippets, modules, or entire components, replicating a legacy functionality with enterprise security and privacy protection. Iterative improvements and continuous learning enhance generated code quality over time, accelerating modernization processes.

Decision support: : GenAI enhances decision-making by analyzing data from various sources, including code repositories, issue trackers, and user feedback, driving productivity levels to new heights. Google Gemini Pro API streamlines seamless integrations for search, analytics, and other functionalities similar to processing of up to 30,000 lines of code, allowing customizations for specific context and use cases to identify trends, patterns, anomalies, and the complete circle of workflows, helping stakeholders make informed decisions despite the lack of information.

Knowledge transfer: GenAI can facilitate knowledge transfer by creating interactive tutorials, code walkthroughs, and training materials based on analyzing existing code and system behavior. New team members can then hit the ground running by quickly understanding the intricacies of the legacy systems.

Automated testing and validation: Google Cloud Code Assist Agents with the ability to handle longer, more complex reasoning chains assist in automated testing and validation by generating test cases, executing tests, and analyzing results. By leveraging ML techniques, GenAI can identify critical test scenarios and prioritize testing efforts even without detailed documentation.

Continuous optimization: GenAI can support consistent optimization by monitoring system performance, identifying improvement areas, and recommending code refactoring or optimization strategies. GenAI can identify technical debt by analyzing code patterns and user interactions.

Cloud technologies with AI

GenAI's adaptive learning algorithms, ability to reason, plan, generate, reflect, and relearn can enable continuous improvement that adapts to evolving business needs, ensuring your applications remain robust and aligned with your business objectives.

As businesses increasingly prioritize agility and scalability with cloud technologies, GenAI emerges as a transformative force in driving successful application modernization initiatives.

Deriving value from Google Generative AI entails covering an end-to-end spectrum that enables developers to integrate advanced AI solutions and capabilities into applications, contributing to faster modernization. Overall, cloud and AI empower enterprises to modernize their applications holistically using a scalable infrastructure and advanced AI capabilities to deliver innovative solutions that are credible, scalable, repeatable, secure, safe, and easy to operate delivering real value to clients.

The speed and cost advantage

Anticipate challenges, optimize resource allocation, and make informed decisions that enhance efficiency and cost savings. More importantly, GenAI can help you accelerate the modernization timelines, reduce development costs, and achieve greater agility in adapting to a disruptive market and evolving business needs.

Redefining traditional software practices requires a shift in mindset to embedding AI into every aspect of your application modernization pipeline.

Gemini for Google Cloud supports users of all skill levels with intent-driven assisted development, operations, test Data, test cases, and security for higher quality application development, IT effectiveness, threat-analysis & remediation and get insights from data faster. Here are some essential considerations for leveraging GenAI for application modernization:

- **Intent-based prompt engineering:** Carefully craft prompts to guide AI models by defining clear and specific intents aligned with the modernization project tasks, ensuring that the prompts are unambiguous and contextually relevant. Additionally,

incorporating diverse examples and edge cases into prompts helps elevate the AI model's robustness. Integrating intent-based prompt engineering into an iterative software development process will foster agility and responsiveness to evolving business requirements.

- **Human intervention:** Human oversight at every stage of the training and validation phases is crucial to endorse AI outcomes and accountability. During model development and deployment, human intervention will ensure that the AI-driven decisions align with business objectives. Regular monitoring and auditing of AI models allows for timely recourse in case of adverse impacts on users or systems.
- **AI as an enabler at every step, not an accelerator:** GenAI can expedite tasks through automation and predictive analytics. However, it is imperative to remember that AI complements human intelligence and experience. Its primary role is to empower teams, improve efficiency, and facilitate informed decision-making throughout the modernization journey.

Ensure that the benefits outweigh the risks

It's essential to be precautionary regarding AI security bias to ensure the integrity and safety of modernized applications. Implement robust measures to identify, mitigate, and prevent biases in AI algorithms used during modernization. Conduct thorough audits and evaluate AI models to detect anomalies or disparities in outcomes. Furthermore, organizations must prioritize diversity and inclusivity in data sources, ensuring that training datasets are representative and balanced to mitigate unfavorable outcomes. Moreover, post-deployment, ongoing monitoring and validation of AI systems are crucial countermeasures in swiftly addressing emerging biases or security vulnerabilities. Timely verification will safeguard the integrity and reliability of your modernized applications.

Propel your organization to the pinnacle of success with us. Here's how.

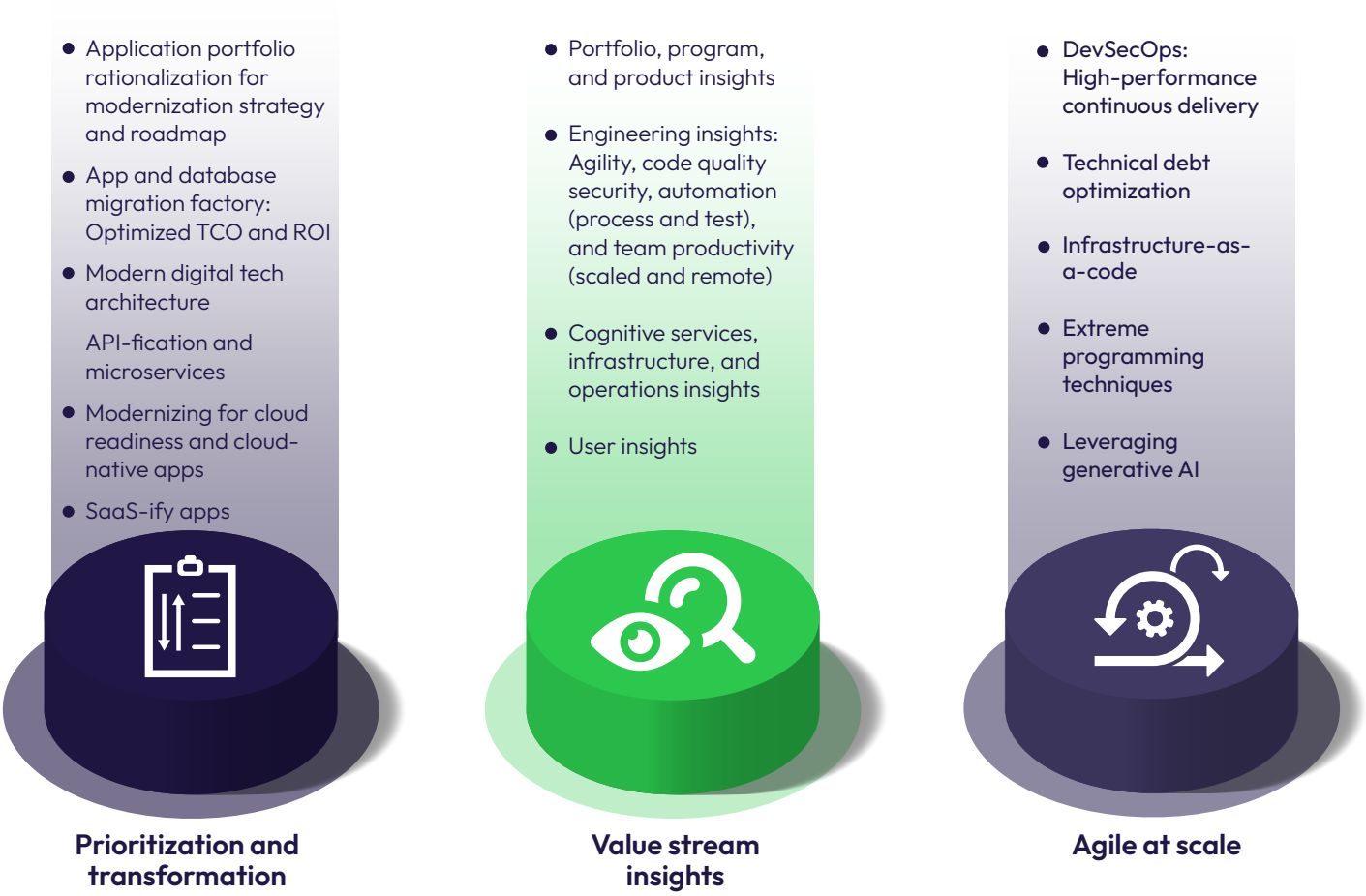
Business case

Improve key business metrics significantly, including faster time to market, cost savings, and enhanced customer experience. For example, by modernizing applications, organizations can expect to see the following business results:

- **Faster time to market for new products and features:** By implementing automation, using agile methodologies, improving engineering processes, and adopting a DevOps approach, our company can achieve an **80%** increase in faster time to market.
- **Cost-benefit realization:** Using automation to streamline process execution, we can improve team productivity, resulting in up to **5x** cost-benefit realization year-on-year and more time available to work on other initiatives.
- **Application performance improvement:** By using modern technologies and optimizing application performance, we can improve the user experience, reduce downtime, and increase productivity, leading to a **5x** improvement in application performance.
- **Cost optimization on security vulnerability remediation efforts:** We can leverage our automated security vulnerability accelerators.

What we offer

We enhance business growth by unleashing the power of technology through our modernization value propositions powered by AI-driven accelerators and strategic partnerships focusing on improved team productivity, boosted engineering efficiency, reduced cost, and faster time to market. Our core application modernization pillars are:



Tangible business results

80% faster time to market for new product features

5x cost-benefit realization within 12 months of production deployment

5x improvement in application performance

70% cost optimization for security vulnerability remediation efforts

75% increase in customer traffic

Expected business outcomes

Our application modernization offerings help businesses to accelerate at an unprecedented pace. Organizations increasingly adopt technology-driven strategies to remain competitive in today's digital landscape.

20% ↑ improved performance within three months from the start of engagement

10% ↑ increased change stability within three months for visible improvements

15% ↑ faster return on investment in two to three quarters

20% ↑ higher quality feedback within three months to demonstrate improvements

30% ↑ higher customer satisfaction within two quarters to demonstrate improvements

Our offerings

CONSULTING

- DevSecOps blueprinting
- App operations assessment
- App portfolio rationalization assessment
- OPS optimization and roadmap
- Development value stream assessment and mapping

SOLUTIONS

Tech debt optimization	DevSecOps optimization	Portfolio rationalization	Team productivity
Containerization	Monolith to microservices migration	Data migration factory	Legacy app modernization
Low code / No code implementation	Security vulnerability automation	API - fication	Test lifecycle automation

ACCELERATORS

brillio one.ai

oneAgile · oneEngineering · oneCloud · oneCX · oneIntel · oneAutomation

STRATEGIC PARTNERSHIPS

cloudera · vmware · Azure · Xamarin · NETSUITE · teradata. · Automation Anywhere

K2 · MuleSoft · Informatica · sas · cisco · tableau · SAP HANA · paloalto networks

alteryx · Metalogix · servicenow · snowflake · IBM · CONFLUENT · amazon web services

Vision to victory: Strategize for success and win customers

Organizations must look to enhance business growth with a digital-first mindset to accelerate rapidly. Envision a modernization value proposition powered by AI-driven accelerators and strategic partnerships. It all begins with analyzing the current technology stack, business requirements, and topology of applications and then understanding what sort of modernization is required. Ensure continuous feedback cycles at every project stage by setting up relevant monitoring processes to sustain them for a more extended period to build a culture of continuous improvements.

Future-focused enterprises win big on application modernization projects when they shift their outlook to a vision of embedding AI as the enabler into every aspect of the application modernization pipeline (discovery, code generation, testing, maintenance, and support). AI-led modernization initiatives will vastly improve team productivity and engineering efficiencies while enhancing time to market and costs. Becoming a leader in modern application development entails building strategic partnerships with hyper scalers and designing proprietary AI platforms and accelerators that aid in quicker time to market for customers to realize better product outcomes.

About Brillio

Brillio is one of the fastest growing digital technology service providers and the partner of choice for many Fortune 1000 companies seeking to turn disruption into a competitive advantage through innovative digital adoption. We help clients harness the transformative potential of the four superpowers of technology: cloud computing, Internet of Things (IoT), artificial intelligence (AI) and mobility. Born digital in 2014, we apply our expertise in customer experience solutions, data analytics and AI, digital infrastructure and security, and platform and product engineering to help clients quickly innovate for growth, create digital products, build service platforms, and drive smarter, data-driven performance. With 17 locations across the U.S., the UK, Romania, Canada, Mexico, and India, our growing global workforce of nearly 6,000 Brillians blends the latest technology and design thinking with digital fluency to solve complex business problems and drive competitive differentiation for our clients. Brillio has been certified by Great Place to Work since 2021.

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