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Mission-Critical Software, Delivered:

Harnessing the Synergy of Low Code and GenAI

Daniel-Zoe Jimenez
Vice President, Digital Innovation, CX & Software, DNB/Start-ups, SMBs, Consumer and Channels Research, IDC Asia/Pacific

Dhiraj Pramod Badgujar
Senior Research Manager, IDC Asia/Pacific

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Executive Summary

The push for faster application development to match the pace of digitalization has changed the face of software development. The synergy between low-code platforms and AI has created a powerful combination.

While low-code platforms can streamline software development by enabling faster application creation with minimal coding, AI-powered low-code platforms take a step further by automating complex processes and providing intelligent insights to enhance efficiency and innovation. Together, AI and low code bring automation capabilities and user-friendly interfaces to support the creation of new applications as well as the modernization of legacy environments, enabling organizations to meet the evolving demand for rapid application development while ensuring application performance in high-stakes environments.

IDC research shows that over 60% of Asia/Pacific applications are legacy, creating challenges like rigid systems, maintenance burdens, skill gaps, and technical debt accumulation. Modernizing these systems is crucial, albeit often challenging due to low developer productivity and outdated architectures, which make them inflexible and difficult to modify. To enable more rapid software development, organizations are adopting modernization approaches such as integration with modern tools like low code, replatforming, and refactoring. AI-powered low-code platforms empower organizations to reap transformative benefits in terms of increased operational efficiency, improved productivity, and accelerated developer velocity for both software development and legacy modernization.

This InfoBrief explores this synergy, with a focus on GenAI. Learn how organizations can beneficially leverage low-code platforms with native AI features. This InfoBrief demonstrates how AI-powered low-code solutions with native AI capabilities can empower organizations to drive greater productivity, agility, and security, streamline modernization, and accelerate application development life cycles more efficiently.

Asia/Pacific Outlook

Asia/Pacific enterprises are ready to unlock the potential of low-code and GenAI in software development environments

Legacy modernization

68% of businesses in Asia/Pacific consider integration with modern development tools (e.g., integrated development environments [IDEs], low code, DevOps) as the top modernization strategy.

Low-code development

33% of Asia/Pacific enterprises believe that low code is a critical development environment for delivering enterprise automation solutions to future-proof the business.

In-app GenAI integration

25% of Asia/Pacific enterprises focus on app developer tools when it comes to integrating GenAI into existing applications or business processes.

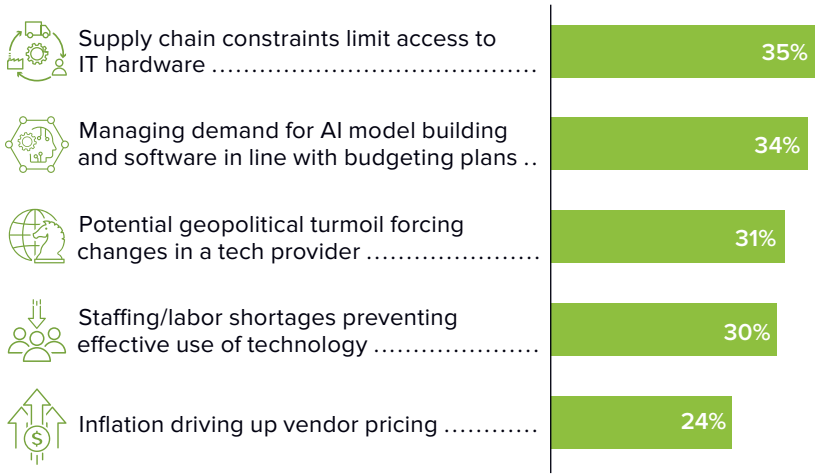
AI, Automation, App Development Projects are Still a Priority Despite Macroeconomic Constraints

Amidst macroeconomic pressures impacting technology budgets, AI and automation projects remain immune to budget reductions. Organizations must accelerate their innovation efforts to become resilient, agile, and adaptable. This is why application development and deployment are a priority for organizations to support future business growth.

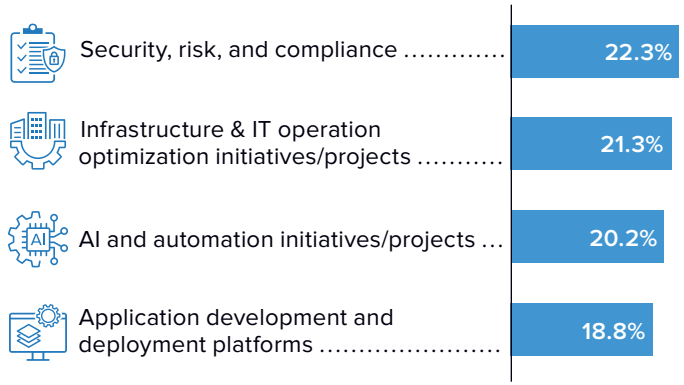
of Asia/Pacific enterprises believe that annual GDP will increase by less than 1% in 2025 above current projections due to current macroeconomic uncertainties and headwinds

of Asia/Pacific enterprises noted that continued economic uncertainty could negatively impact 2025 IT budgets

Top Risk Factors for Tech Strategies and Budgets for the next 12 months



Technology Investment Areas Most Immune to Budget Cuts

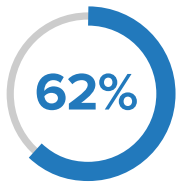


Source: Future Enterprise Resiliency & Spending Survey, Wave 3, IDC, March 2024, n = 300

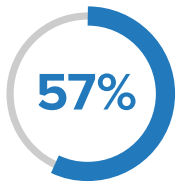
Application Modernization is Essential for Sustained Growth and Success in Today's Dynamic Business Environment

Legacy modernization is critical to maintain both business and technological resilience, especially when macroeconomic constraints affect technology expenditure. Hence, most organizations are focusing on making application modernization a key strategic goal in the coming year to drive future business growth. Embracing modern development tools such as IDEs, DevOps, low code, is increasingly preferred as a vital strategy by organizations in the region. This approach can improve their capabilities and fuel products and services innovation without significant IT constraints.

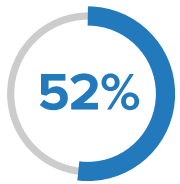
Top Application Modernization Initiatives that Asia/Pacific Enterprises are Most Likely to Pursue in the next 12 Months



Cloud migration: Migrating enterprise applications to the cloud to access cloud-native capabilities



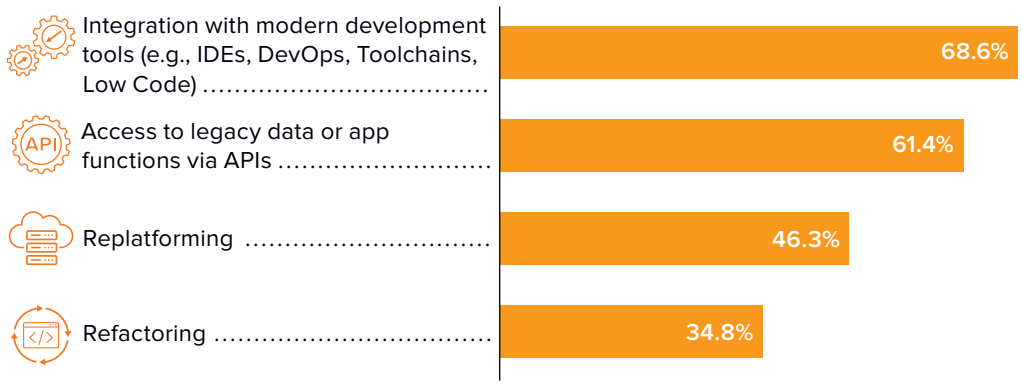
Infrastructure modernization: Upgrading the underlying infrastructure running applications



Mainframe modernization: Migration of code and functionality to a platform that is based on newer technology and/or host

25% of enterprises in the region stated that issues with integrating into back-end or legacy systems are one of the reasons for not completing their digital projects, apart from cost and technology scalability.

Top Modernization Strategies Preferred by Asia/Pacific Enterprises



Source: IDC Asia/Pacific Software Survey, 2023, n = 550

Skills Shortage and Legacy Modernization Concerns Among Key Challenges Hindering Innovation and Growth

Legacy modernization is crucial. Legacy technologies pose a significant challenge to innovation due to their outdated nature, complexity, lack of security, and high maintenance costs. Replacing these systems could lead to data loss and disrupt modern business strategies, making them costly and time-consuming. Declining developer productivity and efficiency add to the problems associated with modern software development initiatives.

Top Legacy Modernization Concerns

1. Architecture is rigid and not flexible enough to keep up with security concerns
2. Technical debt accumulation
3. Lack of scalability and limited integration capability
4. Lack of skilled developers

Developer-Specific Challenges

Agility: Slow responsiveness from software development & delivery team

Productivity: Need to be more productive

Skills: Access and availability of relevant skills

- The scarcity of competent developer talent is a challenge given the rapid pace of application development that is expected to occur in the next several years.
- Developer skills are among the top 5 most sought-after technology skills. About 66% of Asia/Pacific organizations find it “very or extremely difficult” to fill software developer positions.

Low-code platforms provide visual development tools, AI toolsets, pre-built components, and full stack development features. They enable enterprises to increase developer productivity, reduce maintenance costs, and enable seamless integration of modern solutions with existing infrastructure, while reducing the risks and difficulties of legacy technology replacement.

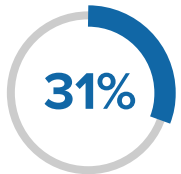
Source: IDC Asia/Pacific Software Survey, 2023, n = 550, IDC Worldwide Developer Forecast: 2023–2027

More Asia/Pacific Organizations Prioritize Low Code to Accelerate Innovation and Growth

Low-code development technologies and platform tools can enable Asia/Pacific organizations to build their own unique applications, addressing rising competition, legacy modernization issues, developer scarcity, and costs. IDC predicts that by 2025, over 60% of businesses will enable users to create applications and automate processes using low-code technologies, enhancing operational performance.

Benefits of codeless development powered by low code:

- A key benefit of low-code platforms is business agility, achieved through multiple features and capabilities. These platforms speed up application development and deployment with visual modeling, drag-and-drop interfaces, reusable components, and support for cloud-native applications.
- Low-code platforms support DevOps practices, AI automation, and phased modernization, reducing security concerns by providing efficient and effective testing, and offering better visibility into code.
- Additionally, low-code technology enhances collaboration between IT and business users, simplifies data flow, supports scalable and flexible application development, and streamlines maintenance through standardized components and automated workflows.

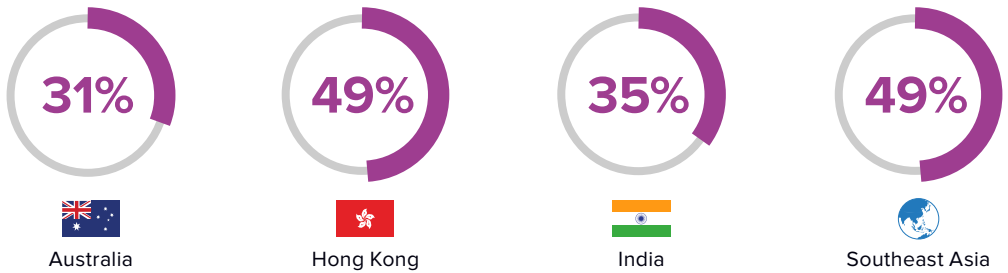


of Asia/Pacific enterprises cite their ability to accelerate innovation as a top business priority for 2024–2025, underscoring the importance of improving the time to value in software development for impactful results.

of Asia/Pacific enterprises believe that low code is a critical development environment for delivering enterprise automation solutions to future-proof the business.

Region View

Percentage of enterprises prioritizing low code for delivering future-ready enterprise automation solutions



Source: IDC Asia/Pacific Software Survey, 2023, n = 550

Low-Code Platforms Enable Organizations to Address Development Challenges

In the region, 32% of enterprises are deferring maintenance or upgrades of legacy IT systems to free up developers for new custom software projects. Low-code platforms are intuitive to use, motivating more people to get into the application development process, thereby reducing the digital skills gap.

Top Strategies to Address Development Challenges

46%

Hire more developers in the IT department (full-time, part-time, crowdsourcing)

45%

Give more developer duties to staff outside the IT department (e.g., using low code and RPA)

45%

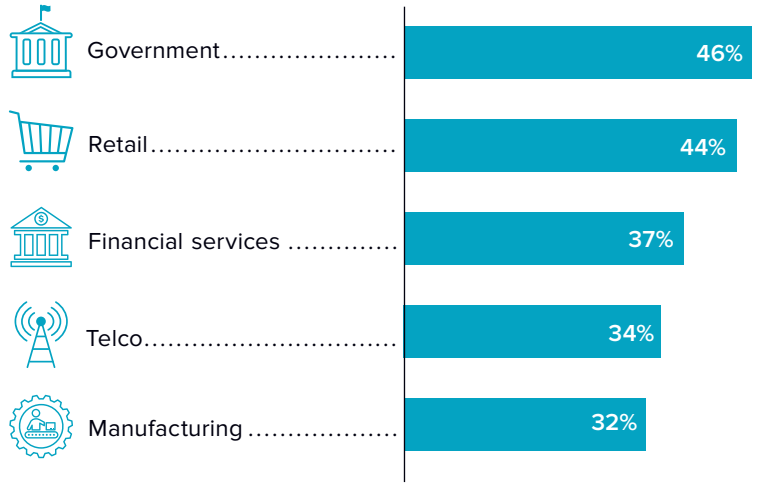
Adopt new approaches, languages and/or tools that will allow for more rapid custom software development

42%

Initiate an open-source software effort and get community support to build solution

Suitability of Low Code Across Industries

Low-code platforms are one of the most important tools or technologies for fostering digital innovation



Source: Future Enterprise Resiliency & Spending Survey, Wave 11, IDC, December 2023, n = 250

Transition Toward Software-Driven Automation Powered by Low-Code Technologies

Integrating software-driven automation into application development has become essential for improving efficiency, with a significant proportion of enterprises in less technically intensive industries now considering adopting low-code software development.

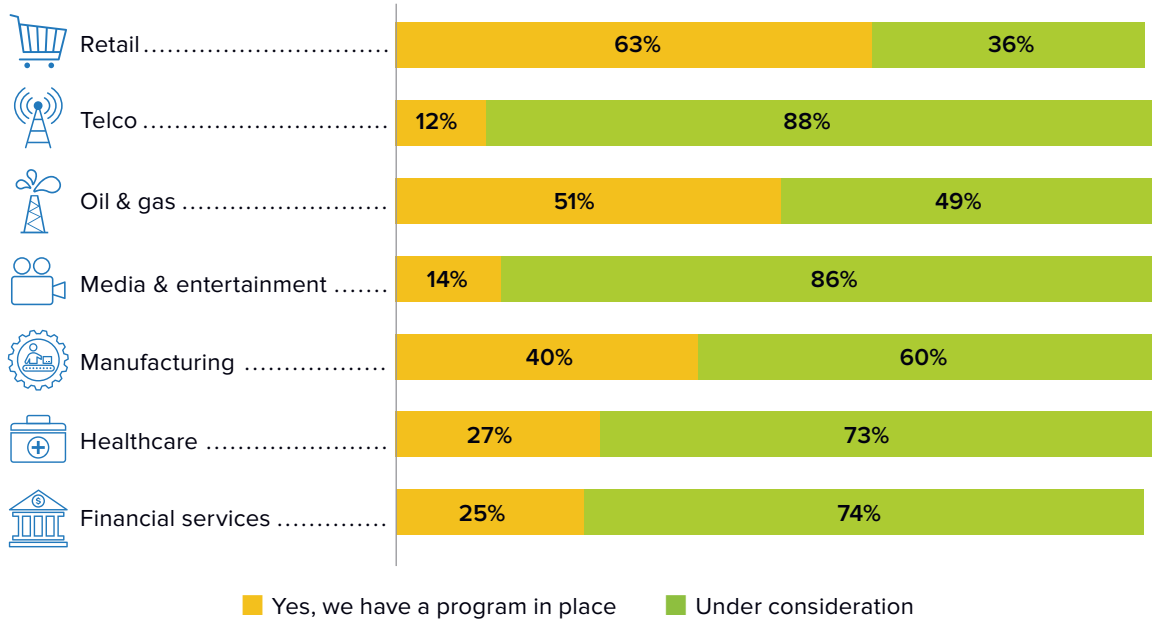
Over **40%** of Asia/Pacific enterprises consider low-code application delivery methodologies as one of the most important technologies to foster their innovation activities.

73% of healthcare enterprises are considering low-code software development for building applications and workflows.

63% of enterprises from the retail sector have low-code development programs in place already, assisting retailers in developing software solutions for business process difficulties, ranging from supply chain management (SCM) to delivery tracking, at greatly reduced costs.

Asia/Pacific Industry View

This graph represents the suitability of low code in enabling organizations across industries to build applications, automation scripts, and workflows.



Source: IDC Asia/Pacific Software Survey, 2023, n = 550

Entry-Level Low-Code Versus Enterprise-Grade Low-Code Platforms

Organizations at the early stages of digital business maturity often find themselves in need of robust software development to modernize their operations. However, traditional software development mechanisms need updates, assistance, and modernization to stay ahead. Basic low-code platforms offer visual development and interfaces, but enterprise low-code platforms are essential for mission-critical business applications, automating complex workflows and operations, and modernizing outdated technology. This is why enterprise-grade low-code platforms, which ensure high performance, are ideal for companies with complex needs.

	Entry-Level Low Code		Enterprise-Grade Low Code
Scalability	It provides limited scalability and availability for internal, workgroup-style applications.	VERSUS	It is ideal for web and mobile applications, supporting hundreds of millions of users and mission-critical enterprise applications. It features a cloud-native architecture optimized for containers, allowing apps to scale up to hundreds of millions of users.
Power	Basic low-code systems improve productivity by restricting developer capabilities.		Enables developers to create apps with full control over traditional tools, allowing multi-experience development, reusable code, pixel-perfect interfaces, code updates, and easy integration of existing code libraries.
Security	Basic security with little governance, compliance, and version control over the source code. Stringent compliance requires additional updates to the security system.		Provides robust security features for mission-critical customer apps, including built-in checks, AI analysis, specialized infrastructure, disaster recovery support, and vulnerability identification without impacting application uptime.
Agility	It offers improvement in productivity but often struggles to keep pace with change and manage the full software development life cycle (SDLC).		It utilizes AI and automation to expedite the SDLC and streamline code reuse across apps, reducing technical debt and enhancing application monitoring.

GenAI Imperative — Integration of AI With Low Code

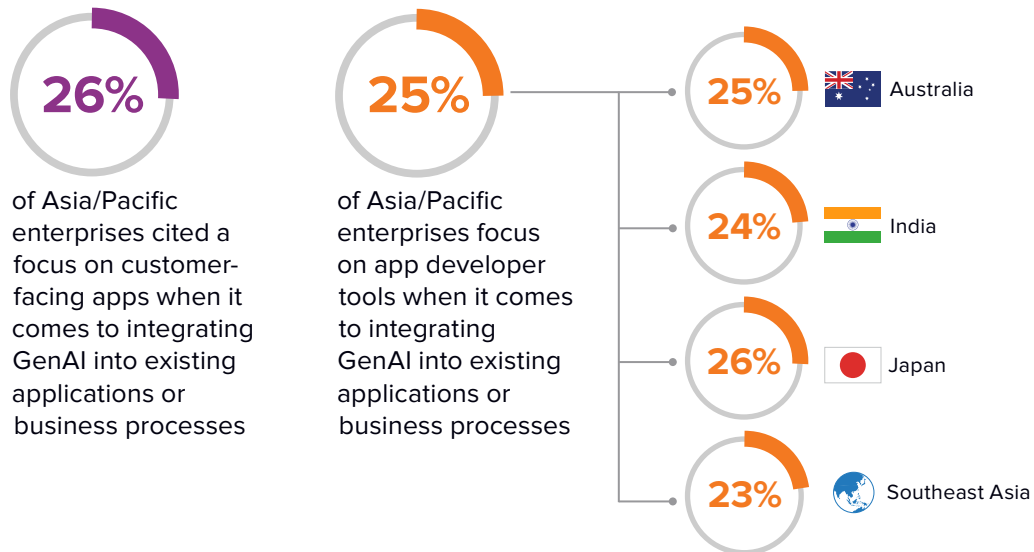
AI powered low-code platforms transform app development, simplify AI access, and foster innovation. GenAI boosts low code, speeding up development and giving a competitive edge. GenAI-powered platforms will bring transformative benefits to both software development and legacy modernization. This use case will enable shorter development cycles, higher quality, better cooperation, and lower costs. The AI powered low-code platform will provide rapid code refactoring, seamless data migration, robust integration capabilities, and enhanced security.

Impact of AI on Software Development

Customer insights
Incorporate AI-driven analytics and recommendation engines into low-code applications to gain a deeper understanding of customer preferences and create customized offerings.

Productivity and efficiency
In the near future, natural language interfaces, alongside visual and command line interfaces, will further boost developer productivity and efficiency, and improve product outcomes for businesses.

Incorporating GenAI into Existing Applications or Business Processes



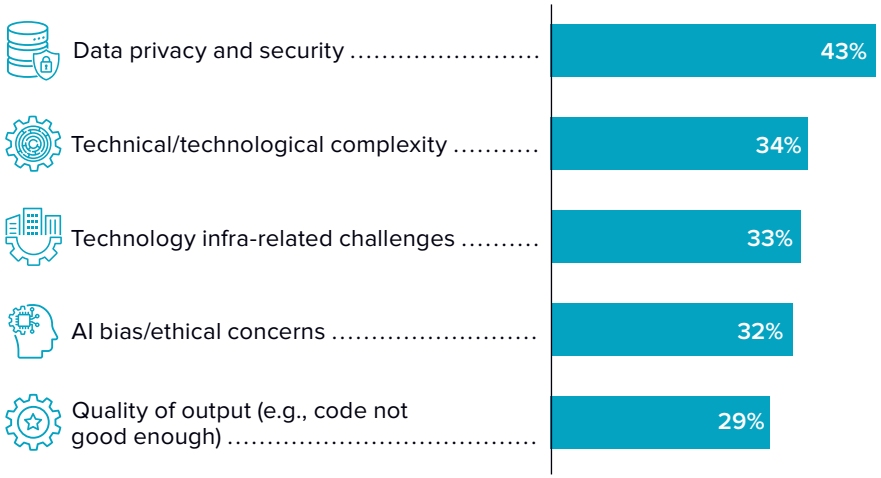
By 2026, **40%** of net-new applications will be intelligent apps, in which developers incorporate AI to enhance existing experiences and form new use cases. AI-powered low-code platforms drive operational efficiencies, enhancing customer experience and closing digital gaps.

Source: Future Enterprise Resiliency & Spending Survey, Wave 1, IDC, APJ, January 2024, IDC FutureScape: Worldwide Developer and DevOps 2024 Predictions — Asia/Pacific Implications

Enterprises are Moving Toward AI-First Development Methodologies

Enterprises are exploring the potential of AI-powered app development to enhance productivity, accelerate development, and achieve greater efficiency. However, they are also taking into consideration the importance of data privacy and ethical considerations.

Top Challenges of Using GenAI



Top Impact Areas of GenAI in Software Development and Design

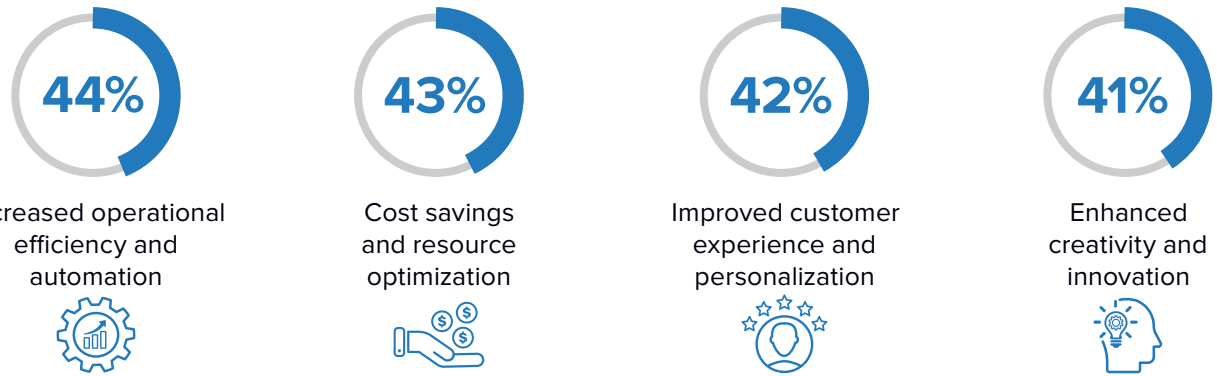
- Intelligent developer solutions driven by AI foundation models are rapidly being embraced in the workplace for generative purposes, such as coding, writing, and digital asset production.
- These models could revolutionize the application development life cycle as they mature. However, enterprises face adoption challenges, such as legal issues, a shortage of expertise, and governance policies.

Source: IDC Asia/Pacific Software Survey, 2023, n = 550, IDC US — Generative AI, April 2023

GenAI is at the Forefront of Innovation, with Organizations Acknowledging Its Value

The ability to deliver AI and GenAI capabilities in modern applications has become a critical factor in enabling Asia/Pacific enterprises to become software-powered digital businesses.

Expected Business Outcomes from Adoption of GenAI



Generative AI-powered low-code developer tools will have key use cases in the form of automated refactoring, automated testing, and modernizing and transforming legacy applications. By leveraging machine learning to understand legacy code architecture and recommend modernization options, GenAI enables developers to scale their innovation efforts and drive resilience. These tools will be able to explain existing code and convert old languages like BASIC and SQL into more modern development languages.

Source: IDC Asia/Pacific Software Survey, 2023, n = 550, Future Enterprise Resiliency & Spending Survey, Wave 3, IDC, March 2024, n = 300

30% of enterprises in Asia/Pacific are willing to pay a premium of 11–20% of pricing for compelling GenAI features/ capabilities integrated into application development tools/ environments

Essential Guidance

The ability to deliver AI and GenAI capabilities in modern applications is becoming a critical factor in future software development. The question, then, is: What next? How can organizations operationalize their GenAI strategies into low-code environments to simplify, modernize, and customize the creation of digital solutions?

Involve IT. The IT team needs to play a vital role in the selection — and adoption — of low-code technologies. They have better visibility and understanding of support development initiatives in terms of innovating, modernizing, and building applications that meet their organizations' needs.

Align business with technology goals. Analyze the organizational impact of low code in the light of its potential business value. Identify key metrics and performance indicators such as IT expenditure, digital innovation/modernization progress, speed of IT request resolution, and reducing the stress factor to optimize business outcomes and value.

Establish a low-code center of excellence in collaboration with low-code platform providers to ensure governance, facilitate collaboration and reusability. This will help to support and enable legacy modernization powered by low-code development, such as ensuring system security by assessing the potential benefits and risks of proposed projects and implementing best practices, standards, and guardrails.

Drive change management. This is necessary, especially when it involves wider adoption of low-code platforms for strategic applications and business outcomes.

Collaborate with a low-code technology partner. The right partner can help address concerns around legacy technologies, AI-driven software development involving large data sets, data privacy and AI bias issues as well as to establish a transparent governance framework for modern software development.

About the IDC Analysts

Daniel-Zoe Jimenez
Vice President, Digital Innovation, CX & Software,
DNB/Start-ups, SMBs, Consumer and Channels Research,
IDC Asia/Pacific

Daniel-Zoe Jimenez is Vice President for IDC's Asia/Pacific region, based in Singapore. He leads the regional research practices of Digital Innovation, Customer Experience (CX) & Software Applications, Digital Native Businesses (DNB) & Start-ups, SMBs, Consumer and Channels Research.

Daniel provides strategic advisory services to the C-suite (CIOs, CTOs, CFOs, CDOs, CMOs, and CHROs) on how to develop and leverage technologies (e.g., AI/Analytics, Cloud, RPA, AR/VR, ERP, CRM) and new business operating models to become more agile, resilient, and competitive.

More about Daniel-Zoe Jimenez

Dhiraj Pramod Badgujar
Senior Research Manager,
IDC Asia/Pacific

Dhiraj Badgujar is a senior research manager for IDC Asia/Pacific's Future of Digital Innovation practice. Based in Bengaluru, he is responsible for leading and developing the future of digital innovation, DevOps, and enterprise software applications research programs. In this role, Dhiraj provides advisory services to both technology buyers and suppliers, leveraging primary and secondary research. He is responsible for analyzing this dynamic and fast-growing segment of the market by providing insights into trends and developments, tech-buying patterns, market sizing and segmentation, and go-to-market (GTM) approaches needed to effectively reach and engage organizations in Asia/Pacific.

More about Dhiraj Pramod Badgujar

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OutSystems is a global leader transforming how companies innovate through software, empowering IT leaders with a better way to build the software that matters most. The OutSystems platform helps companies develop, deploy, and maintain mission-critical applications by unifying and automating the entire software development life cycle. With OutSystems, organizations leverage GenAI to deliver software instantaneously, adapt faster to changing requirements, and reduce technical debt by building on a future-proof platform. Helping customers achieve their business goals by addressing key strategic initiatives, OutSystems delivers software up to 10x faster than traditional development. Recognized as a leader by analysts, IT executives, business leaders, and developers around the world, global brands trust OutSystems to tackle their impossible projects and turn their big ideas into software that moves their business, people, and the world forward. Founded in 2001, the company's network spans more than 750,000 community members, over 500 partners, and active customers in 75+ countries across 21 industries.

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IDC Asia/Pacific
The Work Project, 168 Robinson Road, Level 20 Capital Tower, Singapore 068912
T 65.6226.0330

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