

Navigating growth in a dynamic software market

Insights from 300 European
and UK CTOs

2024

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This report, presented by EY-Parthenon's Software Strategy Group (SSG) through a comprehensive survey of 300 CTOs across Europe and the UK, offers crucial insights into the dynamics of the software industry. Four key findings stand out. First, the software market remains fiercely competitive and fast-paced, characterized by continuous disruption from emerging startups. Second, growth is driven by mergers and acquisitions (M&A) to unlock product and cost synergies. Third, rapid growth often creates low technological maturity within software companies due to challenges in codebase management, technical debt, and fragmentation in hosting. Fourth, despite its nascent adoption, GenAI presents significant opportunities for companies to gain a competitive edge in a rapidly evolving landscape.



Introduction

The software and technology markets have faced several headwinds since the end of the COVID-19 pandemic. Global supply chain disruptions impacted the production and distribution of tech products, economic downturn led to reduced demand for non-essential tech products and services, and necessary restructuring processes led to layoffs.

These shifting market conditions caused a downturn in mergers and acquisitions (M&A) in the sector. In 2023, deal volume fell by ~25% and deal value dropped by over 60%. This steep decline was a result of record-high deal multiples fueled by low interest rates during the pandemic, followed by a period of higher interest rates and geopolitical turmoil. Investors became cautious, increasing holding periods for assets.

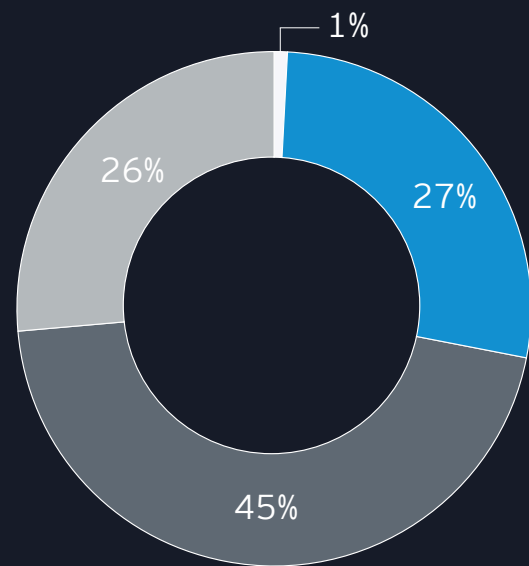
Despite a slight rebound in deal volume and value, the market has not made a full recovery. How can companies become more resilient in these uncertain times? Is there still room for growth? And how can tech leaders capture emerging opportunities?

EY-Parthenon advises investors and enterprises on product, technology, and overall growth strategies, focusing on scenarios where software is a critical competitive asset. EY-Parthenon's Software Strategy Group (SSG) conducted a survey of 300 Chief Technology Officers (CTOs) from software companies across Europe and the UK to understand the current state and future direction of the market.

This report delves into the key insights from the survey, highlighting what's top of mind for CTOs these days. It explores (inorganic) growth in the software sector, technological maturity in software companies, and the role of Generative Artificial Intelligence (GenAI) in shaping the future. It sheds light on the opportunities for innovation and growth, helping businesses make informed decisions about product development, investment strategies, and market positioning.

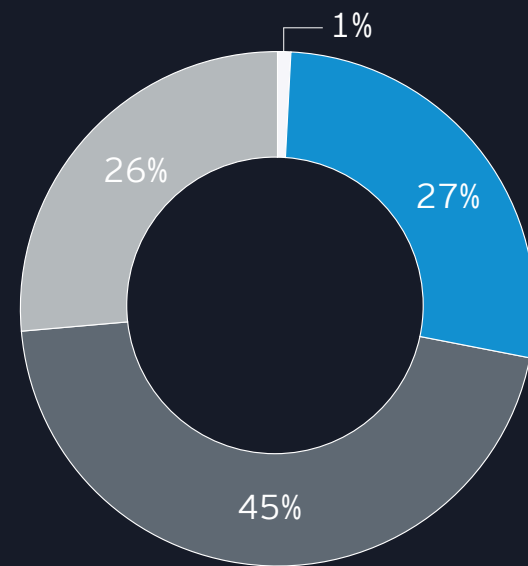
Survey demographics, N=300

Age of respondents



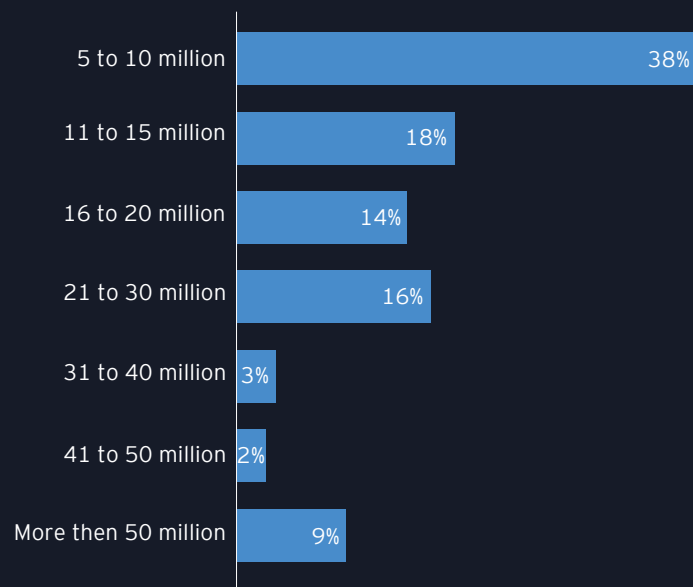
■ 26 to 35 years old
 ■ 46 to 55 years old
■ 36 to 45 years old
 ■ 56 to 65 years old

Department



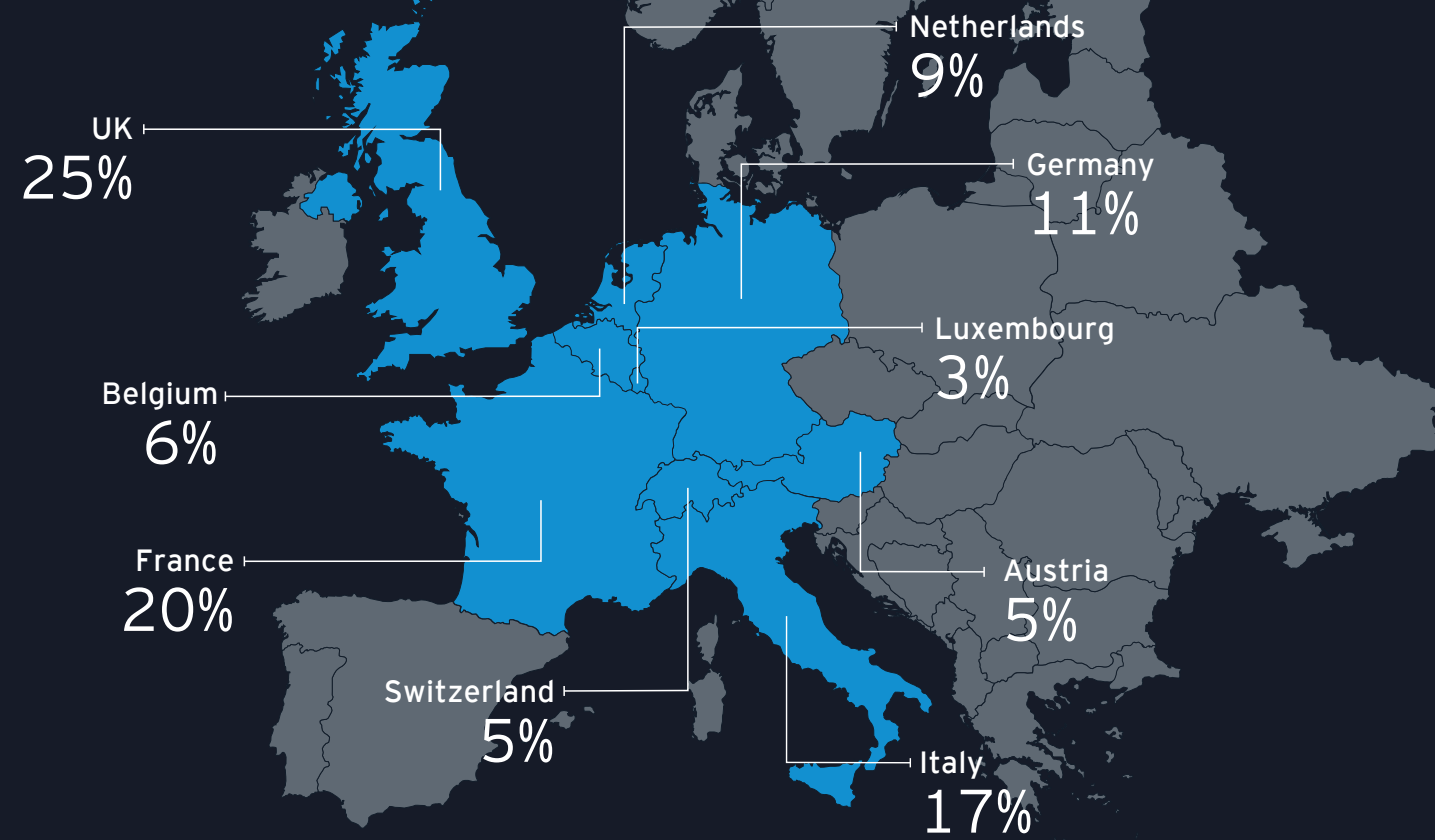
■ Product management
■ Research & development

Revenues

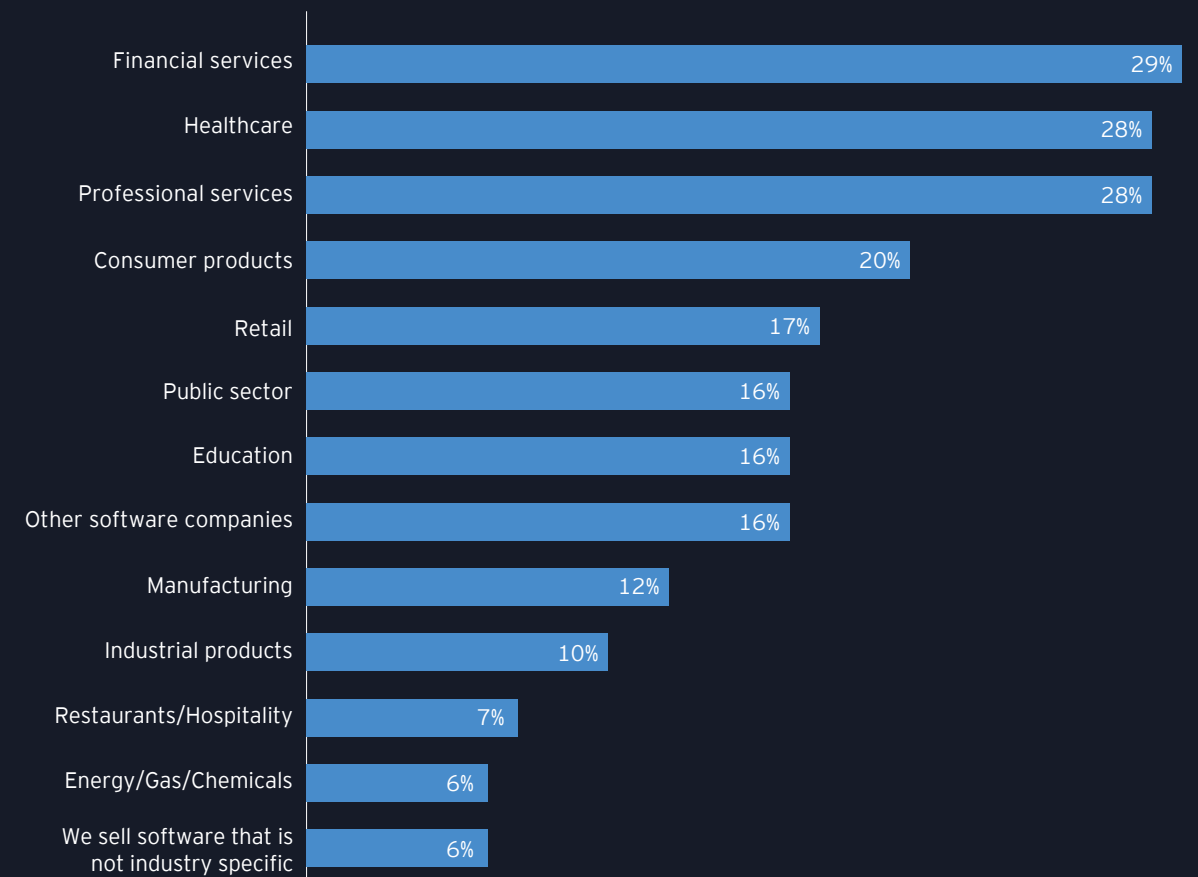


Vertical	Percentage
Infrastructure software (e.g., database/data management, BI and analytics, EAI and data integration, security, monitoring, cloud infrastructure/middleware)	33%
Enterprise applications (e.g., ERP, CRM, marketing automation, BPM, HCM)	30%
Consumer applications (e.g., photo editors, video games, personal productivity software)	14%
Vertical applications (e.g., FinTech, engineering software, EdTech)	12%
Healthcare IT (e.g., EHR/EMR, RCM, point solutions, population health analytics, practice management)	12%

Age of respondents



Industry



The state of the software market today

Almost half of all CTOs surveyed describe the software market as highly competitive, fast-paced, and disruptive due to the continuous influx of innovative start-ups. Only 10% of CTOs think that the market is mature and stable. These findings underscore the dynamic nature of the software industry, characterized by the continuous emergence and advancement of technologies and solutions. If companies want to remain competitive, they must prioritize innovation, invest in research and development, and prepare their workforce with future-proof skills.

How CTOs describe the EU software market

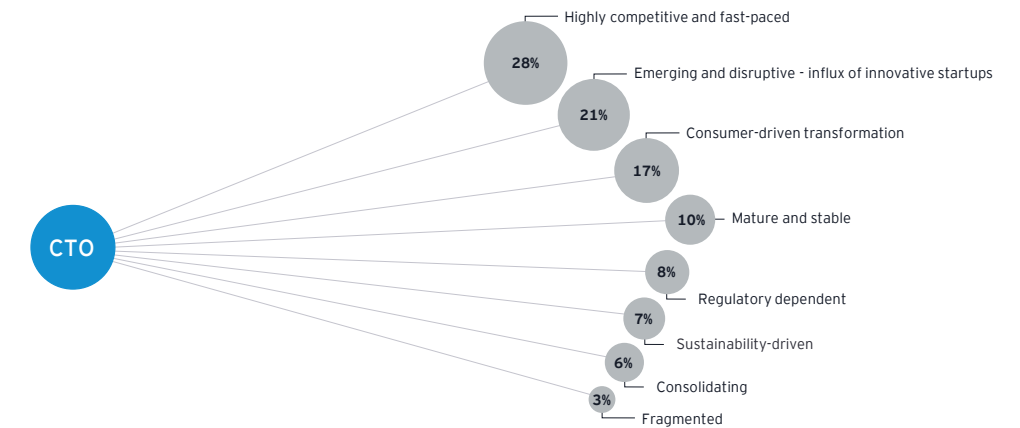


Fig 01: How CTOs describe the software market [source: potloc]

CTOs are adopting a wide variety of approaches to maneuver this market, with primary focus on cybersecurity, data-driven decision-making, and optimizing the Software Development Life-cycle (SDLC). With cybersecurity, CTOs are protecting their company's data and systems from increasing cyber threats, helping ensure business continuity and customer trust. With data-driven decision-making, CTOs are leveraging the growing amounts of operational and customer data to drive strategic business decisions and gain a competitive edge with informed analysis. Lastly, CTOs are working on improving their SDLC by streamlining operations, adopting new technologies, and increasing automation. This enables them to reduce time-to-market, enhance software quality, and improve efficiency. In the fast-paced software industry, delivering value quickly is key to success.

Adaptations to market-dynamics

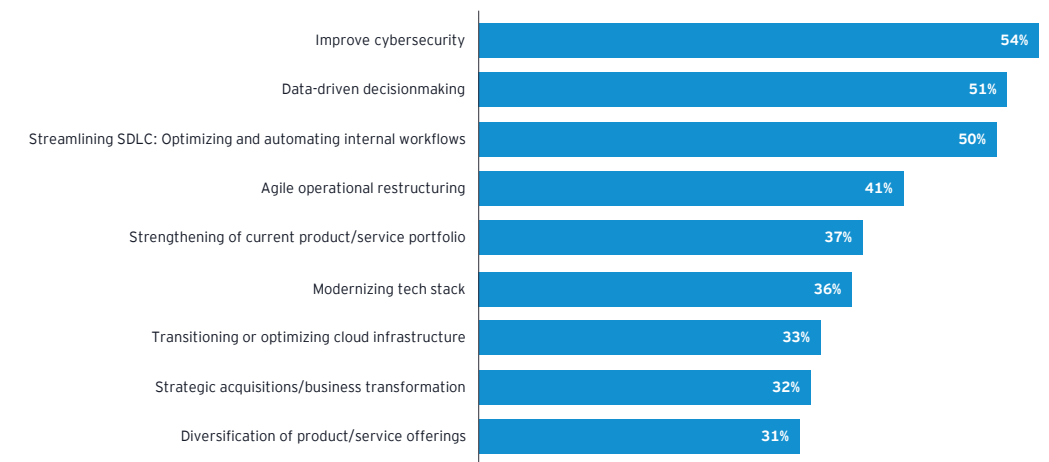


Fig 02: Adaptation to market dynamics [source: potloc]

1. The inorganic path to expansion

Software companies often grow inorganically, with about 54% of companies engaging in M&A. This strategy is driven by the dynamic nature of the market, characterized by rapid innovation and evolving customer demands. M&A activities allow companies to bring new talent, increase their market share, and quickly acquire new technologies which might otherwise take years to develop internally. This approach not only accelerates growth but also helps companies stay ahead in an industry where agility and adaptability are essential for success.

M&A activity in the software industry

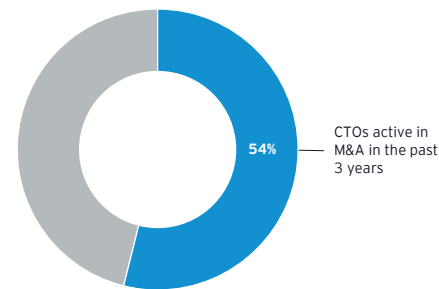


Fig 03: of CTOs who have performed an acquisition in the last three years [source: potloc]

Acquisitions: a three-year overview

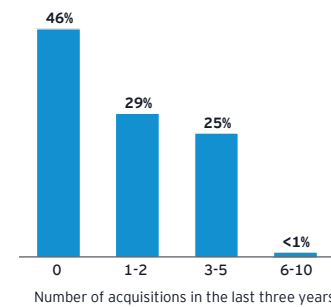


Fig 04: of acquisitions performed in the last three years [source: potloc]

Why companies choose M&A

The key drivers of M&A in the software market are product and cost synergies. Product synergies may involve developing new and differentiated customer value propositions, integrating features, and building integrations or unified platforms to enable cross-sell. Cost synergies, on the other hand, are achieved through streamlined operations and consolidation of resources post-transaction. Larger companies are more likely to possess the resources and strategic opportunities to pursue a merger or acquisition, helping them create a significant impact on market consolidation and competitive dynamics.

M&A activity in the software industry

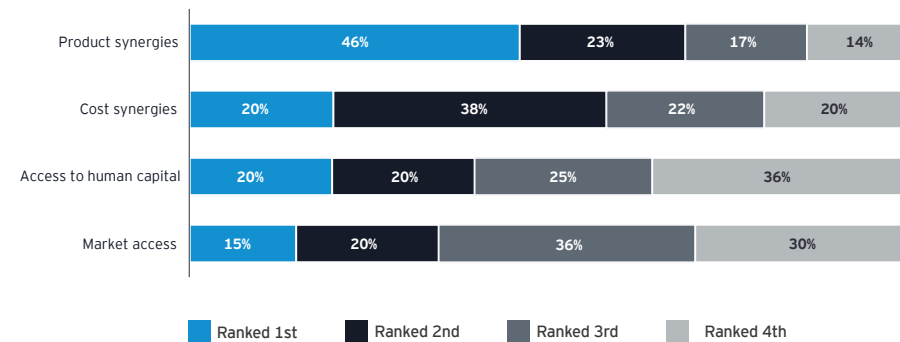


Fig 05: Key reasons CTOs pursue acquisitions [source: potloc]

The imperative of structured integration

To realize the product and cost synergies of an acquisition, the acquired company needs to be integrated in the organization. The complexity of this endeavor is largely determined by three factors: the degree of integration, the speed at which the integration should be performed, and the level of operational changes required. Integration timelines can range from under 6 months to over 3 years, with an average duration of approximately 1.5 years. Almost all CTOs indicate that they use support from external advisors to deal with these challenges.

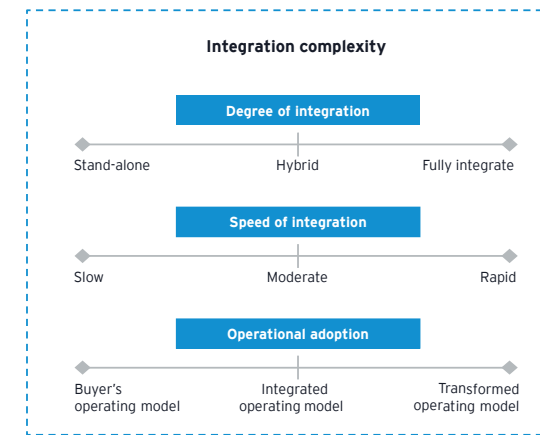


Fig 06: Integration complexity dimensions [source: potloc]

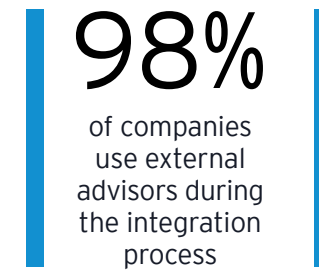


Fig 07: Use of external advisors during the integration process [source: potloc]

EY-Parthenon's software integration framework offers comprehensive insights into the different levels of integration that software companies can achieve. The framework assesses integration from two important dimensions: product/technology and organization/processes. By leveraging this framework, CTOs and software investors can conduct a thorough assessment of the current integration status of acquired companies. They can identify gaps, understand the impact of integration on business operations, and determine the necessary steps to achieve a smooth and efficient integration process, ultimately driving the success of the acquisition.

M&A activity in the software industry

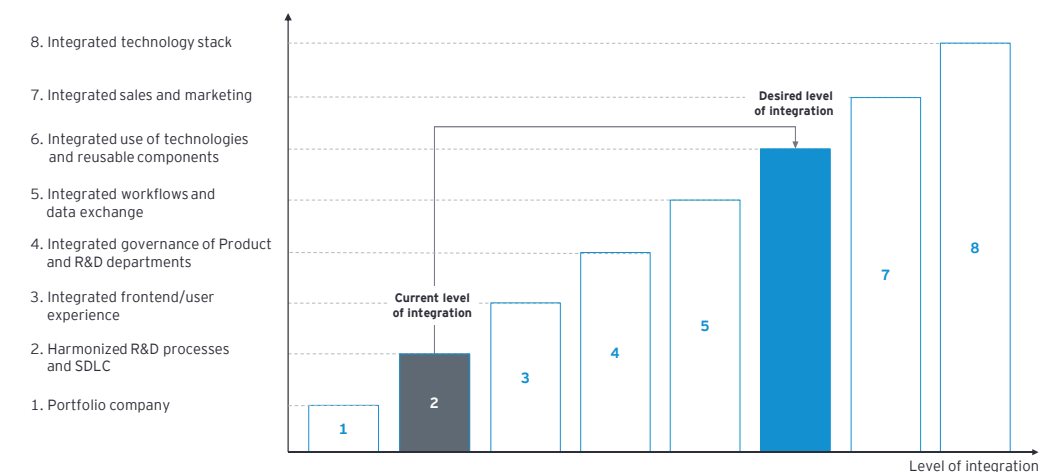


Fig 08: EY-Parthenon's software integration framework, with an example of current and desired levels of integration

Degree of integration

Product synergies are a key driver of M&A for CTOs. 70% of CTOs unleash these synergies by integrating product frontends and harmonizing user experience across products, enabling cross-sell opportunities. 59% think that integrating Product and R&D governance allows companies to focus development efforts on key features that drive topline growth. Integration of workflows and data exchange between products is also an enabler of product synergies. However, with only 43% of CTOs pursuing this integration, its ROI is less clear. The low number of CTOs integrating sales and marketing materials indicates that most product synergies can be realized without fully integrating go-to-market strategies.

Product synergy integration dimensions

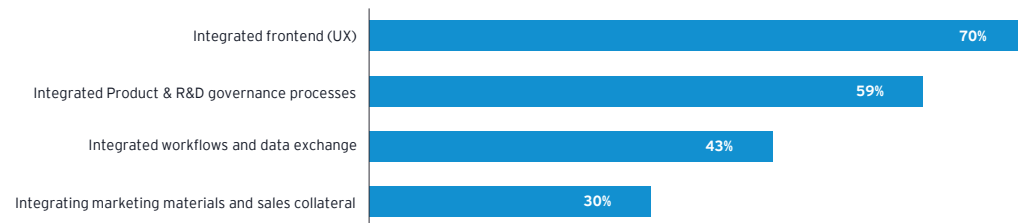


Fig 09: How CTOs unleash product synergy [source: potloc]

Cost synergies are primarily realized by integrating R&D processes. This typically includes harmonizing policies and processes, sharing best practices between teams, and centralizing functions such as architecture, QA, and security. Additionally, 41% of CTOs implement similar technologies and reusable components to reduce development effort for individual products. Notably, harmonizing tech stacks is not a priority, with only 28% of CTOs considering it an important dimension in the integration process. This is likely due to the significant effort required to fully integrate technology stacks, and because most product synergies can be achieved without this step. CTOs seem to accept the negative impact of maintaining multiple stacks on cost synergies to avoid the additional effort required in harmonizing them.

Cost synergy integration dimensions

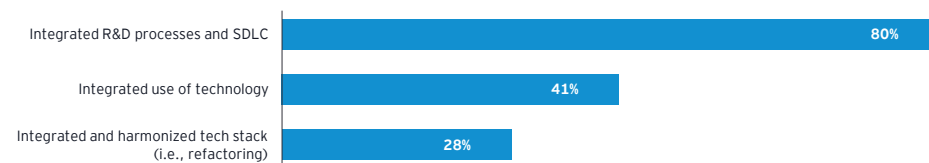


Fig 10: How CTOs unleash cost synergy [source: potloc]

Success in integration is measured by operational Key Performance Indicators (KPIs) that track product and cost synergies, followed by quality and compliance metrics. Interestingly, CTOs do not regard overall financial metrics, such as EBITDA and ROI, as primary indicators of integration success. This suggests that while financial metrics are crucial, CTOs place greater value on the operational effectiveness of the integration.

2. Technological maturity of European software companies

The rapid inorganic growth and integration strategies of European software companies leads to lower technological maturity, primarily due to codebase and hosting-related challenges.

Codebase hurdles

The first area of reduced technological maturity stems from the various technology stacks that companies must maintain following acquisitions. Most software companies end up managing two to four technology stacks, which requires a broad variety of skills and capabilities within the R&D organization. This diversification often necessitates a larger team to cover all different competencies, increasing the minimum size of the organization. More technology stacks may also limit the interoperability of a company's products and increase the risk of knowledge loss and inefficiencies as key R&D employees build specialized knowledge.

Product synergy integration dimensions

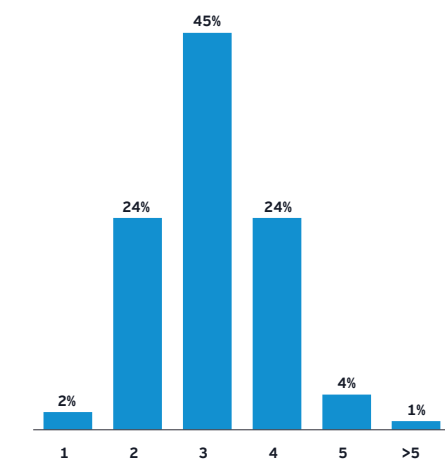


Fig 11: Number of tech stacks organizations maintain for client-facing software [source: potloc]

Second, most companies accrue technical debt due to skill-gaps in the development team, insufficient testing practices, and dependencies on open-source code. Managing technical debt consumes 19% of development time. Moreover, it is spread across different teams within the organization, creating challenges in maintaining the overall quality and performance of software systems.

Product synergy integration dimensions

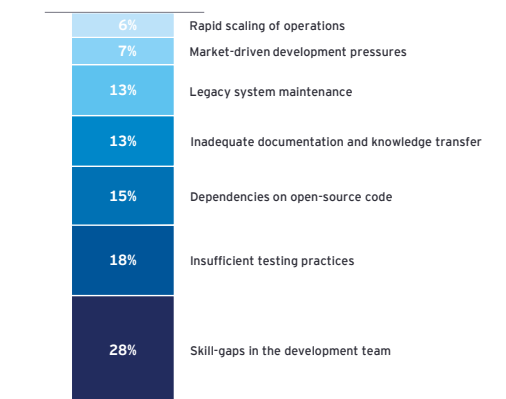


Fig 12: Reasons for technical debt [source: potloc]

Third, the survey revealed that 84% of companies have customers actively using a product release with custom source code. Employing custom source code creates multiple versions of the same product, making maintenance, testing, and development more difficult and resource-intensive. This problem can be addressed by integrating configuration options into products to cater to customer needs. In this way, a single product version can be released to all customers, allowing them to prioritize different features to suit their needs.

Developer time allocation

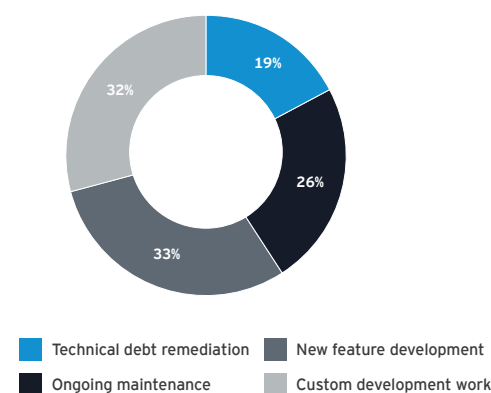


Fig 13: Time allocated to types of development work [source: potloc]

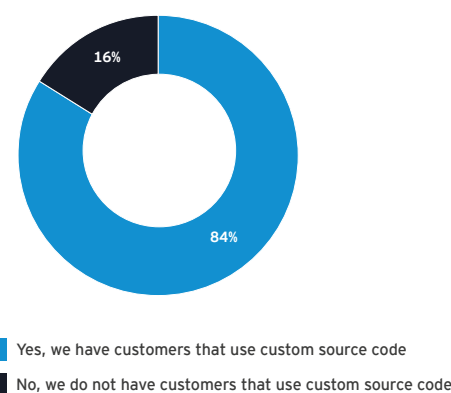


Fig 14: Production releases with custom source code [source: potloc]

Hosting challenges

M&A activities often lead to a fragmented hosting landscape. The key challenges that CTOs face with the integration of hosting solutions revolve around data sovereignty (data storage in specific geographies), compliance, flexibility and scalability, and security and protection.

Hosting integration challenges

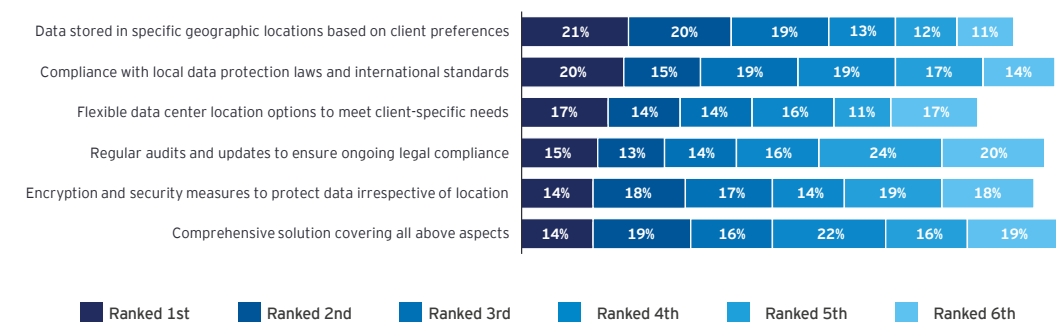


Fig 15: Hosting integration challenges, ranked in importance to CTOs [source: potloc]

These challenges vary depending on the hosting model CTOs deploy for their products, which they usually choose based on needs such as:

- ▶ Performance, latency, and geographic reach
- ▶ Scalability, reliability, and cost
- ▶ Security, compliance, and data sovereignty
- ▶ Flexibility, customization, and degree of control

Hosting deployment

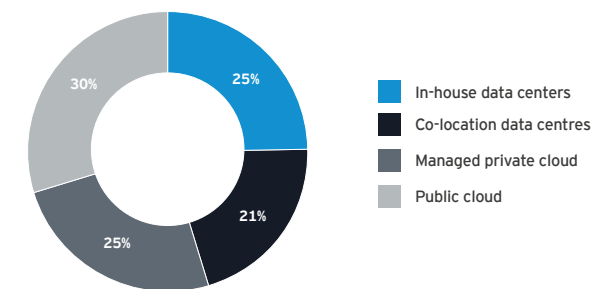


Fig 16: Software deployment method split [source: potloc]

The survey results indicate that software companies tend to use similar deployment models regardless of their size. Thus, a company's deployment approach is more likely based on its long-term strategy and constraints (such as regulatory requirements), rather than being a major factor in enabling or limiting the company's growth. In other words, as software companies scale, they generally do not need to change their deployment model.

For companies that host a majority of their products in data centers (co-located or in-house), data storage in specific geographies based on client preferences and compliance with local data protection laws are the biggest challenges. As they need to manage a broader scope, encryption and security are also prevalent issues.

Public cloud offers a wide range of geographic locations and the ability to quickly scale up or down, helping tackle challenges related to flexibility and scalability. Partnering with cloud providers that have a global presence can help meet client-specific needs, while maintaining the ability to adapt to changes in demand or regulations. However, it may introduce vendor lock-in.

To minimize cloud vendor lock-in, CTOs should use open standards and APIs, implement a multi-cloud strategy, containerize applications, and maintain data ownership. Focusing on open technologies, diversifying usage, abstracting applications, and proactively ensuring portability helps leverage cloud benefits while reducing over-dependence on proprietary ecosystems.

To maintain global performance, CTOs have implemented certain initiatives, that are similar for companies with different primary deployment setups. These initiatives include:

- ▶ **Real-time performance monitoring and dynamic adjustment (66%).** By collecting and analyzing data in real-time, organizations can gain immediate visibility into performance levels and identify potential issues or bottlenecks as they occur.
- ▶ **Optimized routing and network performance for seamless connectivity (58%).** By optimizing network infrastructure and management practices, organizations can minimize latency, maximize throughput, and ensure reliable connectivity for all users and devices.
- ▶ **Content Delivery Networks (CDN) for faster localized content delivery (54%).** By leveraging CDNs, businesses can accelerate content delivery, improve site performance, and provide a seamless user experience to geographically dispersed audiences.

Hosting integration challenges

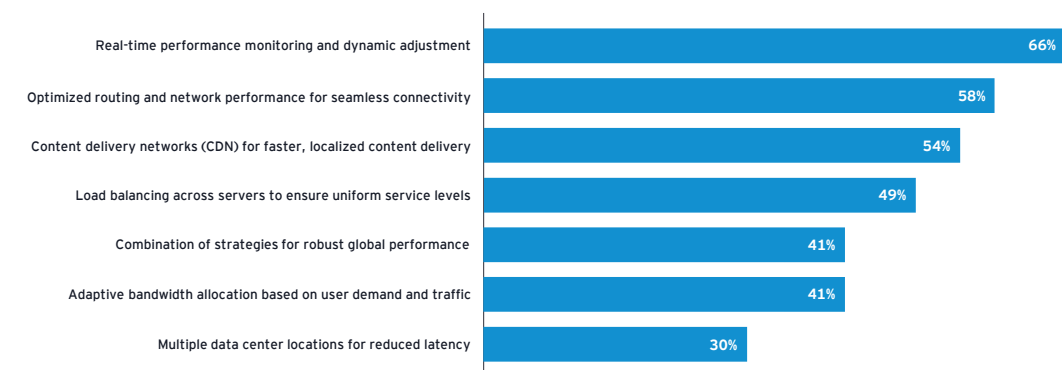


Fig 17: Initiatives to ensure global performance [source: potloc]

CTOs face a variety of hosting challenges, yet the optimal solution varies case-by-case. By ensuring hosting optimization and simplification, software companies can focus on their core competency: developing software.

3. The role of GenAI in shaping the future

As the European software market continues to evolve, GenAI may provide much-needed innovation. It holds the potential to revolutionize the software industry by increasing development efficiencies, creating new best practices, and improving quality assurance (QA) functions. Companies that successfully integrate these tools into their operations could gain a significant competitive advantage, driving the next wave of technological advancement and market leadership.

While many companies feel prepared for GenAI, its full-scale adoption is low due to unclear use cases and uncertain ROI. Nonetheless, software companies are experimenting with GenAI, with CTOs anticipating a 15% efficiency increase. GitHub Copilot is a widely adopted product due to its clear use case.

Anticipated GenAI efficiency increase

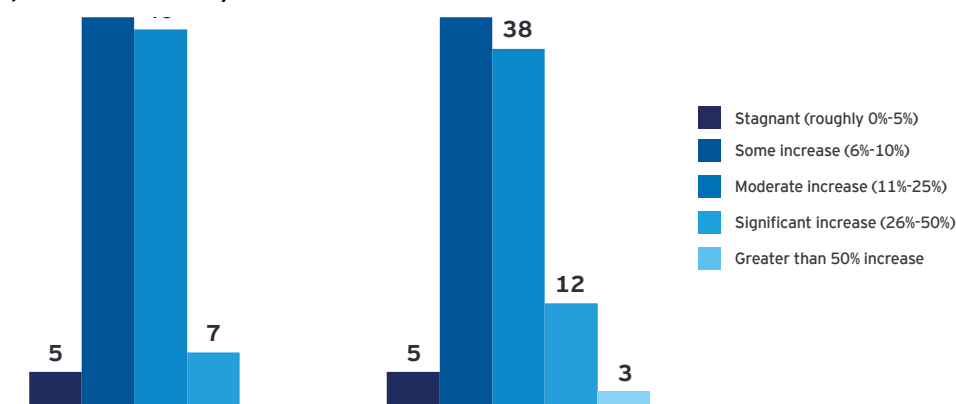


Fig 18: Anticipated GenAI efficiency increase by solution provider [source: potloc]

GenAI is expected to make the most significant impact in cybersecurity testing and user behavioral analytics. In cybersecurity testing, it will automate the discovery of vulnerabilities and simulate advanced attack scenarios, ensuring system robustness against emerging threats. For user behavioral analytics, GenAI will enhance anomaly detection and predictive insights, allowing for more accurate and personalized security measures. Larger companies, with their higher maturity in implementation, primarily aim to enhance operational efficiency through these advancements.

Goals of implementing GenAI

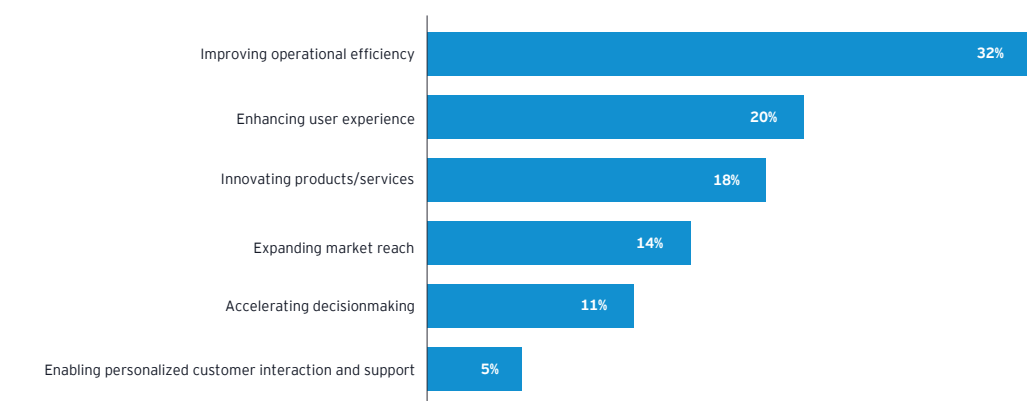


Fig 19: CTOs' goals of implementing GenAI [source: potloc]

While GenAI holds the promise of transformative change, its practical application still comes with challenges, with companies having to cautiously weigh benefits against costs. CTOs are most concerned about data privacy, system integration, ROI justification and regulatory uncertainty.

Challenges in implementing GenAI

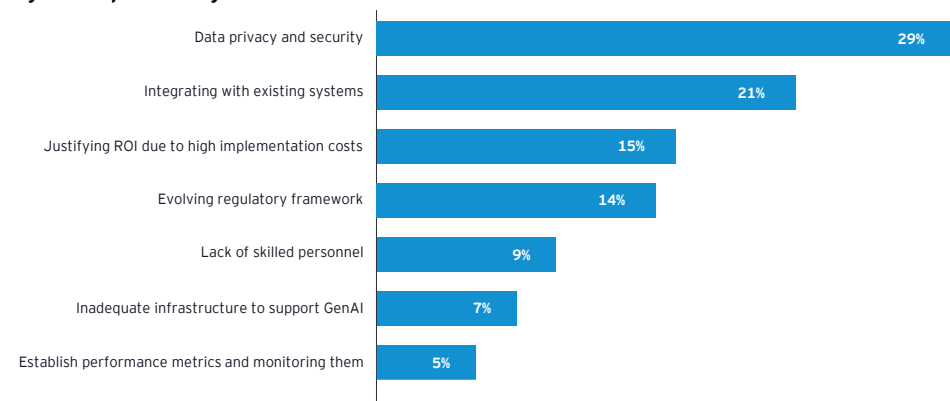


Fig 20: Challenges in implementing GenAI [source: potloc]

Lastly, GenAI plays a dual role in influencing the relationship between technical debt and its primary causes. Although the precise impact of GenAI is still uncertain, its influence will be substantial, affecting both the mitigation and aggravation of technical debt. Figure 21 illustrates how GenAI will affect the key drivers of technical debt, highlighting areas where it will either mitigate or aggravate its effects.

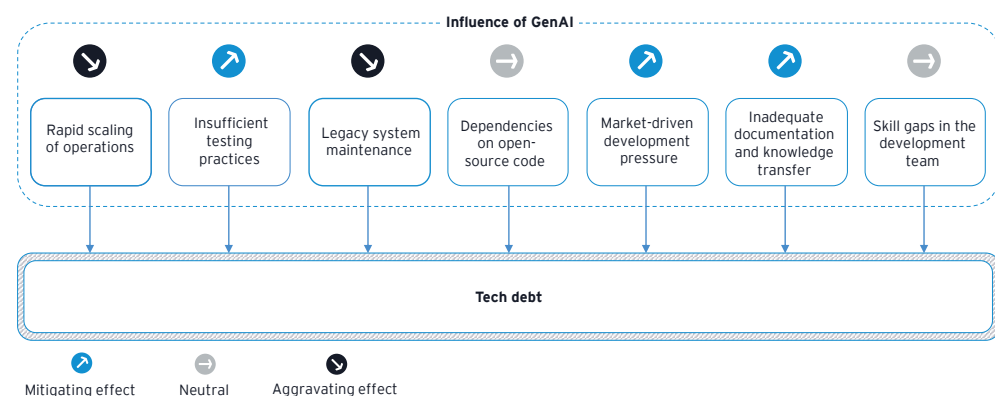


Fig 21: GenAI's influence on the drivers of tech debt [source: potloc]

GenAI holds significant potential value for software companies across various use cases. However, as we examine the priorities for CTOs in the coming year, GenAI is not their primary focus. Instead, they are thinking about cybersecurity, data analytics, and application modernization to increase the technological maturity of their companies in response to rapid growth and accumulated tech debt.

Key roadmap items in 2024

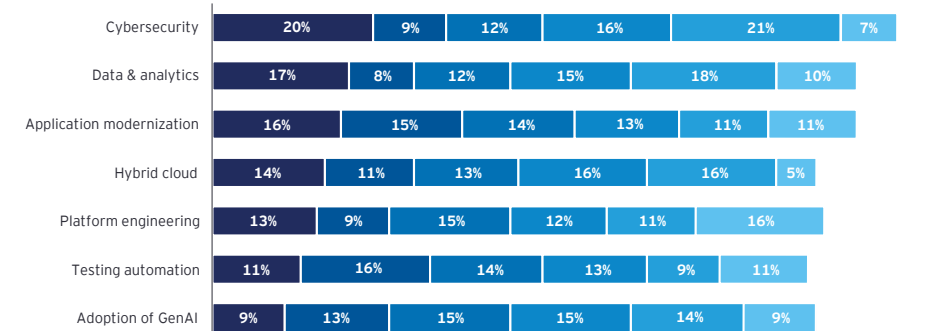


Fig 22: What CTOs are prioritizing in 2024 [source: potloc]



Conclusion

Having navigated a challenging post-pandemic landscape, EY-Parthenon's survey of 300 CTOs shows that the software industry stands to benefit from a realm of opportunities.

Innovation is paramount. With the market characterized by intense competition and continuous disruption, companies must invest in research and development to remain competitive and meet evolving consumer demands.

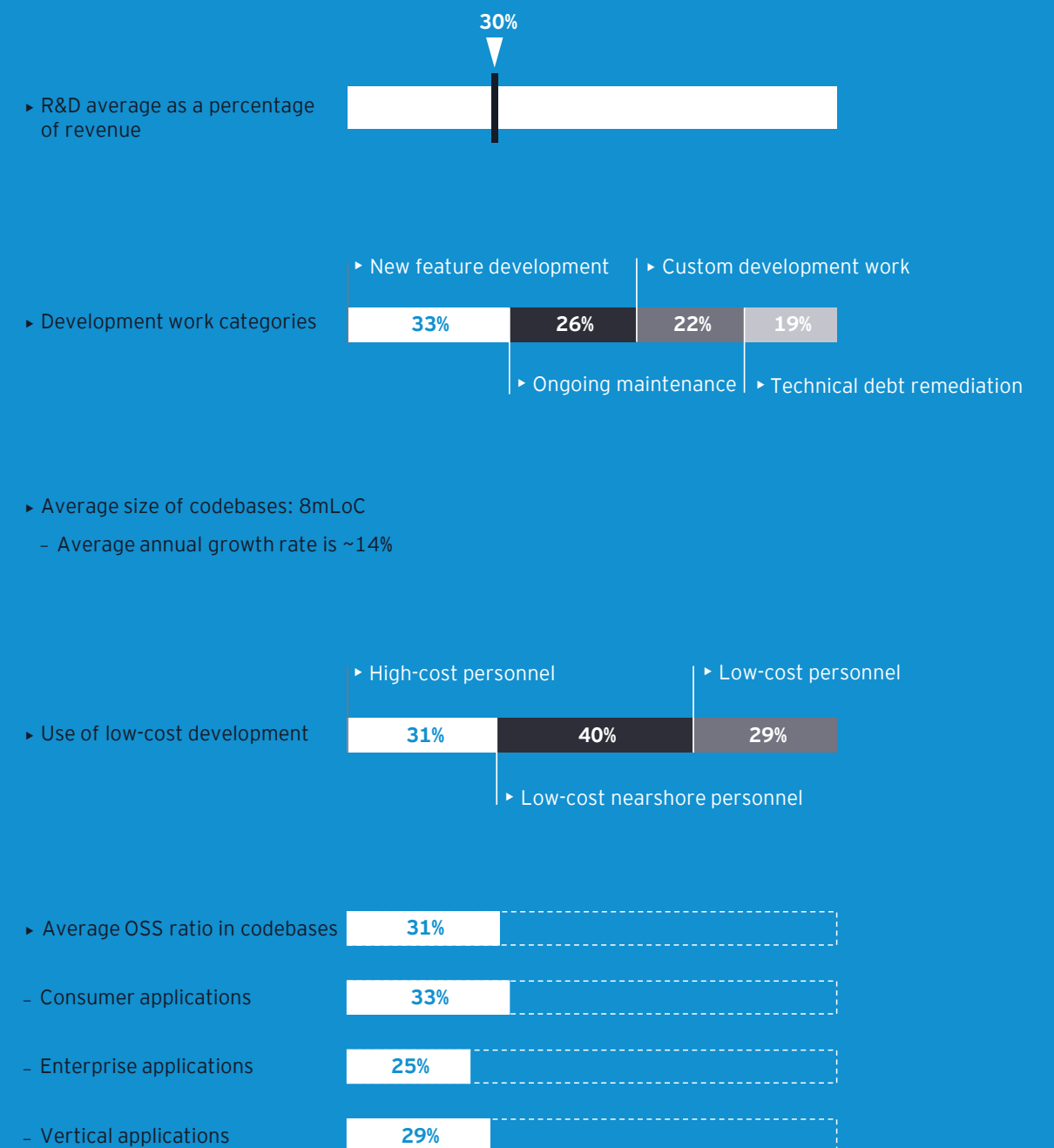
M&A has emerged as a key strategy for growth, driven by the quest for product and cost synergies. While M&A activities create extensive integration within the market, they also contribute to a fragmented technology landscape. This is because CTOs prioritize frontend integration and creating a unified user experience, while harmonizing tech stacks is seen as less important.

Rapid growth can thus lead to lower technological maturity levels, with companies accruing technical debt and working within fragmented hosting landscapes.

Lastly, the role of Generative Artificial Intelligence (GenAI) has emerged as a potential game-changer in shaping the future of the industry. Yet, full-scale adoption remains low due to unclear use cases, ROI justification and challenges such as data privacy and regulatory uncertainty.



Benchmark data



About EY-Parthenon Software Strategy Group

EY-Parthenon's Software Strategy Group (SSG) is a specialized advisory practice that provides guidance to companies and investors on growth strategies, operational improvements, product and technology performance optimization, and M&A within the software industry. Software-driven and software-enabled companies and investors look to us for guidance on how to drive value across commercial, product, technology, and R&D strategy.

Making the right decisions about software strategy and investments has never been more important. Many companies, both technology-native and historically non-technology, are now part of the software economy, where most or all of the company's differentiation and value proposition are driven by software.

SSG serves, amongst others:

- ▶ Investors, including private equity firms
- ▶ Publicly listed software companies and software-enabled services businesses
- ▶ Non-tech companies that are transforming into software companies

We help companies and investors solve their toughest challenges, including identifying investment opportunities and assessing risks across commercial, product, technology and R&D lenses through due diligence and value creation services. From developing growth strategies to executing major technology changes and improving R&D organizational effectiveness, SSG provides services that help companies to expand market share and enhance their core offering.

Contacts



Sander van Weele
Partner
sander.van.weele@parthenon.ey.com



Adrian Newby
Partner
adrian.newby@uk.ey.com



Mark Reich
Partner
mark.reich@parthenon.ey.com



Erik Oltmans
Partner
erik.oltmans@parthenon.ey.com



Jason Spencer
Partner
jspencer1@parthenon.ey.com

Survey Methodology

Potloc conducted a comprehensive survey targeting Chief Technology Officers (CTOs) or equivalent titles from March 14 to April 3, utilizing Computer-Assisted Telephone Interviewing (CATI). The study engaged 300 respondents, with 98% holding the desired CTO designation. Impressively, the average completion time stood at 40 minutes, demonstrating Potloc's commitment to engaging hard-to-reach targets and fostering meaningful interactions. Out of 411 initial survey attempts, their meticulous data quality assurance processes led to the removal of 111 responses due to quality concerns and partial completion.

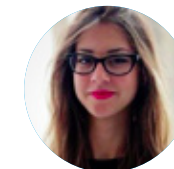
About Potloc

Potloc is the survey platform where leading consulting and PE firms collect primary insights to back decisions and boost expertise. With end-to-end AI-powered tools and guidance from market research experts, Potloc makes survey creation, sampling, analysis, and data visualization seamless.

Contact



Gaspard Delcroix
Senior Sales Director
gaspard.delcroix@potloc.com



Amal Jalel
Senior Customer Success Manager
amal.jalel@potloc.com

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About EY-Parthenon

EY-Parthenon teams work with clients to navigate complexity by helping them to reimagine their eco-systems, reshape their portfolios and reinvent themselves for a better future. With global connectivity and scale, EY-Parthenon teams focus on Strategy Realized – helping CEOs design and deliver strategies to better manage challenges while maximizing opportunities as they look to transform their businesses. From idea to implementation, EY-Parthenon teams help organizations to build a better working world by fostering long-term value. EY-Parthenon is a brand under which a number of EY member firms across the globe provide strategy consulting services. For more information, please visit ey.com/parthenon.

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