

A CTO's Guide to Balancing Innovation and Stability

The role of the Chief Technology Officer (CTO) has evolved significantly, expanding in both complexity and scope. As organizations have embraced digital transformation and emerging technologies like artificial intelligence (AI), the vital role has continued to expand.

Modern CTOs are strategic business partners who align technical initiatives with company-wide goals, drive innovation, maintain product quality, and ensure system reliability. Success in the position demands strong leadership skills, an understanding of technical and business strategy, and the ability to foster collaboration across the organization.

Aligning engineering objectives with business priorities

CTOs **bridge the gap** between technical and non-technical teams, translating complex concepts into business value. They provide strategic guidance within the C-suite, using their technical insight to influence product development, customer engagement, and competitive positioning.

By collaborating with leaders and other key stakeholders across the business, CTOs break down functional silos, foster a culture of innovation, and leverage collective expertise to address business priorities and challenges. Additionally, understanding interdependencies between teams allows CTOs to align technology investments with strategic goals and highlight the value of engineering teams.

Balancing innovation and stability

CTOs must carefully balance the benefits of innovation with the need for stability. While driving new product features and innovation is crucial for staying competitive, addressing technical debt and infrastructure challenges is crucial for long-term operational success.

A recent survey found 91% of CTOs identify managing technical debt as their biggest challenge, highlighting the ongoing struggle to balance innovation with the need to maintain and refactor existing systems.¹ CTOs should work with CIOs to assess and allocate resources for maintaining robust, scalable systems.² As organizations transition from cloud-first to cloud-smart

strategies, CTOs must optimize cloud environments to improve scalability and reduce costs while maintaining a holistic view of their entire IT landscape. This shift is complemented by the rise of AI and automation in DevOps, with AI-driven automation expected to further streamline processes and reduce the burden of manual tasks.

Keeping pace with emerging technologies

Rapid advancements in emerging technologies like AI and machine learning (ML) are reshaping the technological landscape. To meet customer expectations and maintain competitive advantage, CTOs must regularly assess these technologies to understand their opportunities and risks, using their findings and assessment of organizational readiness to inform strategic planning.

Integrating emerging technologies requires careful planning and execution to avoid disrupting existing systems and processes. To manage the complexity and address the business need for these technologies, CTOs should initially address critical pain points within the organization to drive meaningful outcomes. For example, **AI-driven insights** and **intelligent automation** empower organizations to optimize their technology stack, improve service reliability, and accelerate innovation, balancing the need for stable systems while driving technological advancement.

¹ <https://www.digit.fyi/what-will-be-the-biggest-challenge-for-ctos-in-2024/>

² <https://medium.com/@jsteyn/your-first-year-as-a-cto-a-comprehensive-guide-99a441715aaf>



Fostering agile and DevOps practices across teams

CTOs increasingly focus on adopting agile and DevOps practices to enhance engineering efficiency. Today, 83% of developers engage in DevOps activities, reflecting its critical role in modern software development.³ The DevOps market will grow from \$10.4 billion in 2023 to \$25.5 billion by 2028, underscoring the importance of aligning technology choices with broader business goals.⁴

To keep up with the rapid pace of technological change, CTOs should promote agile methodologies and DevOps practices across their engineering teams. Many IT leaders cite a lack of DevOps skills as a top challenge, highlighting the need for continuous upskilling.⁵ These practices increase delivery speed while improving collaboration and accountability. By **cultivating a “build it, own it” culture** where teams are responsible for the end-to-end lifecycle of their products, CTOs can ensure higher quality and more reliable software.

Involving champions in technology decisions

Selecting the right tools and technologies is essential for maintaining a competitive edge. Effective CTOs understand the value of involving key stakeholders

in technology decisions. By identifying and engaging champions at both the decision-maker and practitioner levels, CTOs can get a different perspective on business needs and challenges.

This collaboration fosters a shared sense of ownership and drives widespread adoption of new technologies. It also helps CTOs anticipate and address potential resistance and upskilling requirements. By developing this collaborative approach, CTOs build a more resilient and adaptable organizational culture, improving the quality of technical decisions and ultimately contributing to the company’s overall success.

Partnering with PagerDuty to drive operational excellence and innovation

As the essential platform for managing critical operations, the PagerDuty Operations Cloud helps organizations build operational resilience, scale service ownership, ensure reliability, and accelerate innovation and growth.

³ <https://cd.foundation/blog/2024/03/21/state-of-devops-report-2024/>

⁴ <https://spacelift.io/blog/devops-statistics>

⁵ <https://binmile.com/blog/devops-trends/>

Contact us today to learn how PagerDuty can enhance efficiency while reducing costs and mitigating risk, ensuring engineering efforts align with broader company-wide objectives.