

# How Chief Technology Officers Can Deliver Value by Using Our Four Personas

Published 6 December 2022 - ID G00769348 - 12 min read

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Initiatives: [Digital Innovation and Enablement Function](#)

CTO roles vary in scope, from managing IT operations to leading digital transformation, and CTOs often have trouble determining where to focus. CTOs should use our four CTO personas to clarify responsibilities, because this will increase the odds they will meet their organizations' technology needs.

## Additional Perspectives

- [Summary Translation: How Chief Technology Officers Can Deliver Value by Using Our Four Personas](#)  
(18 January 2023)

## Overview

### Key Findings

- Different organizations define and understand the roles and responsibilities of chief technology officers differently. Consequently, CTOs and relevant stakeholders are often unclear about the CTO's responsibilities.
- To achieve their digital ambitions, many enterprises are shifting their CTOs' focus from daily IT operations to using innovative technologies to transform the business model, products and services.
- Enterprises need CTOs to focus more on optimizing and transforming business operations, to improve the total experience — i.e., the combination of customer, employee, user and multiexperience.

## Recommendations

CTOs responsible for digital business and technology innovation initiatives should:

- Clarify their responsibilities, objectives and metrics by identifying which of Gartner's four CTO personas most closely matches their role.
- Increase the likelihood that they will successfully deliver on their responsibilities by being specific about the CTO persona and the responsibilities it entails.

## Introduction

The CTO role is critical to identifying, strategizing and maximizing the value of technology. This role is also crucial to realizing business innovation and transformation, while ensuring resilient and adaptable IT operations. Such resilience and adaptability of operations requires composable underlying technology assets and the application of combinatorial innovation to transform and scale.

CTOs face a broad range of accountabilities, which may include:

- Evolving architecture
- Modernizing infrastructure
- Building a digital business platform
- Driving trendspotting
- Developing digital products
- Digitizing the customer experience
- Managing technology talent
- Managing external partnerships

CTOs face demand for new technologies that improve organizational agility; however, the lack of appropriate technologies designed to respond to disruption remains a major challenge for organizations. This makes it hard for CTOs to determine where to focus to meet the organization's technology needs and succeed in their roles.

Gartner has identified four CTO personas in end-user organizations (see Figure 1). Using Gartner's four CTO personas, CTOs can identify how to focus their role to deliver value in the context of the organization's digital business transformation and scaling goals. The four CTO personas are:

- **Digital Business Leader** — Accountable for the digital business technology strategy and building/architecting the required digital platforms.
- **Business Enabler** — Accountable for optimizing technology to support the current business operations and business model.
- **IT Innovator** — Accountable for leading technology innovation and transformation in IT.
- **COO of IT** — Accountable for running daily IT operations to support the current business model.

**Figure 1: Four CTO Personas in End-User Organizations**

### Four CTO Personas in End-User Organizations

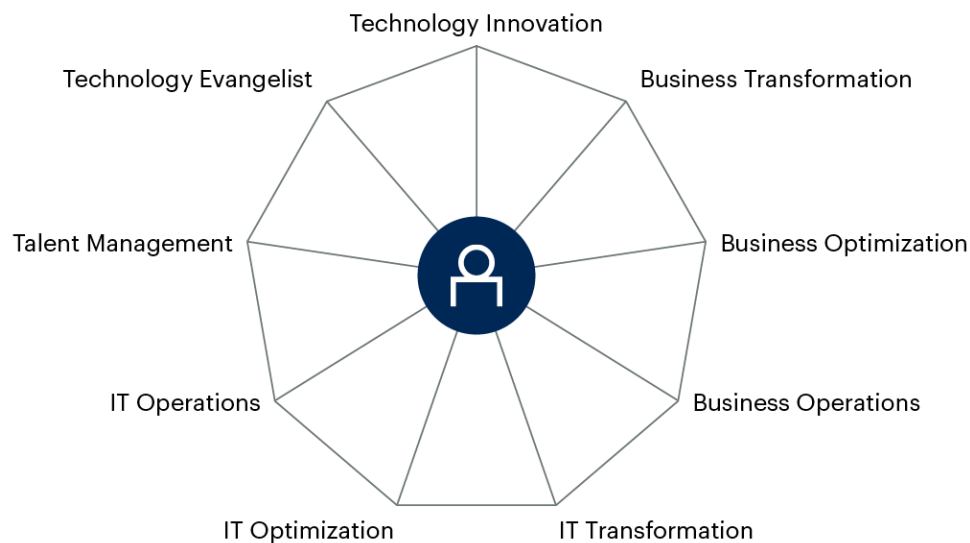


Source: Gartner  
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**Gartner**

Our personas vary in the extent to which they focus on driving technology innovation, acting as technology evangelists, transforming or optimizing business and/or IT operations, and managing talent (see Figure 2). CTOs should use our personas to identify how they can provide value to their organizations.

Figure 2: The Areas on Which CTOs Focus to Deliver Value

**The Areas on Which CTOs Focus to Deliver Value**

Source: Gartner  
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Each persona represents a set of key CTO responsibilities, aligned to a particular CTO focus, so it also helps CTOs clarify their responsibilities and determine which teams should report directly to them. It's possible for one person to fulfill one persona; however, organizations may have multiple CTOs. Conversely, one individual may assume multiple personas. Sometimes, an individual may transition from one CTO persona to another.

**Analysis****Use Gartner's CTO Personas to Clarify Your Responsibilities, Objectives and Metrics**

Study our four CTO personas to see which most closely resembles your role. Shape your role by focusing on the responsibilities for the persona with which you most identify.

**CTO as Digital Business Leader**

This CTO persona focuses mainly on using innovative technologies to transform the business model, products and services. It requires:

- A deep understanding of technology and technology trends.
- Insight into how other organizations use these technologies to innovate.

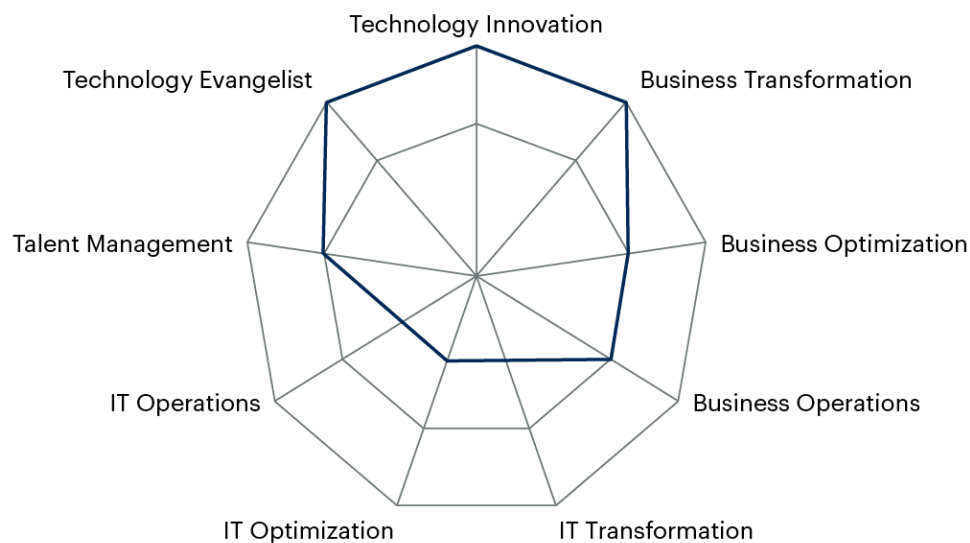
- Knowledge of how these technologies can be applied to the organization's evolving business models, products and services.

This type of CTO often “pushes” technology toward the main business functions and frequently oversees how these technologies are deployed architecturally in the business. This CTO is responsible for creating the company's digital business technology strategies, along with leading the teams that will build the required digital platforms.

A CTO with this persona sets up and runs experiments to test and develop innovations through technology. This is an individual with the skills and time to focus on innovation, which not every CIO may have. These kinds of CTOs typically hold executive positions with visibility at the most senior levels of an organization's business and technology divisions. They partner with CIOs to use technology to develop the organization's business model to achieve competitive advantage. These CTOs (see Figure 3) are commonly in industry sectors that have been, or will be, heavily driven by market disruptions — such as those in retail, technology, media, telecom and financial services.

**Figure 3: The Focuses of the CTO as Digital Business Leader**

### The Focuses of the CTO as Digital Business Leader



Source: Gartner  
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**Responsibilities Typically Include:**

- Partnering with CIOs so they can work with business executives to identify, rationalize and roadmap new business models and capabilities. This CTO persona is usually at the EVP or SVP level, and is a peer to the CIO.
- Leading the organizations that drive innovative and strategic thinking for the company, such as enterprise architecture (EA), innovation management and R&D, while supporting other innovation efforts throughout the business.
- Holding the funding and decision-making authority for innovation-driven technology investments.
- Working with business functions to identify customer and market requirements, and translate them into digital products and services that enable new business models.

## **Recommendations for the CTO as Digital Business Leader:**

- Track and monitor innovative new technologies, and use services (e.g., Gartner, industry and academic sources) to remain up-to-date with emerging thinking and business models.
- Participate in your organization's detailed strategy and business model, and work with your CEO, CIO and key business executives to identify areas of opportunity.
- Work with business architects to explore and understand the potential value (and risk) that emerging technologies may have for enhancing existing business models and developing potential new ones.
- Collaborate with other senior business and technology executives to contribute a digital strategy for your organization; use that strategy to clarify expectations for digital innovation (see [CTO Insights: How to Build the Right Executive Partnerships to Scale Digital Business](#)).
- Pilot and build digital business platforms (see [Building a Digital Business Technology Platform Requires Clear Goals and a New Team With Cloud Skills](#)).

## **CTO as Business Enabler**

This CTO persona commonly works in organizations in which technology underpins the business model — including operational technology (OT). Technology must be responsive and available, and must change in lockstep with the business. Ensuring that business and customer needs are met is a high priority. A coordinated, responsive IT delivery mechanism, with focused leadership and chain of command, is essential. A CTO of this type enables the CIO to ensure the high levels of support and focus the business needs, so that the CTO can concentrate on business relationships, strategy and planning.

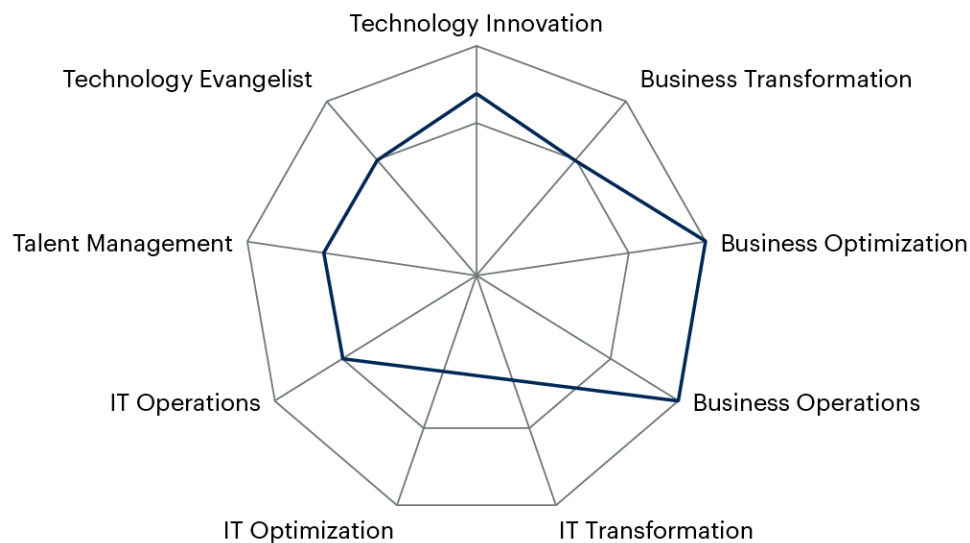
This CTO persona focuses on optimizing and maintaining technology that supports the current business model and operations. This CTO is responsible for maintaining the existing technology estate across business and IT, including business applications, transactional websites, OT and employee devices.

This CTO acts as a peer of the CIO or augments the CIO role. This leaves the CIO free to focus on running the IT organization, including resources, finances, investments and service-level agreements (SLAs). The CTO works across business and IT to govern and guide technology (e.g., products, systems and services) and the investment decisions that support the existing business model. Some organizations may even call their lead technology role the “CTO” and not the “CIO,” even though the role has core IT responsibilities.

In industries in which technology is a key part of the company’s product or delivery of the product, the title CTO often refers to the person in charge of that technology. Telecom is a good example — the CTO is often in charge of the telecom network, and the CIO is in charge of internal IT. In such cases, the CTO and the CIO often have separate reporting lines, or the CIO may report to the CTO. Other industries with this type of CTO persona include healthcare and aerospace. The CTO is often head of an R&D unit, or an innovation lab, and leads a team of product engineers (see Figure 4).

**Figure 4: The Focuses of the CTO as Business Enabler**

## The Focuses of the CTO as Business Enabler



Source: Gartner  
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**Gartner**

### Responsibilities Typically Include:

- Determining how the organization can use mainstream and emerging technologies to advance business strategy and optimize business operations.
- Making key decisions on technology investments.
- Piloting and building digital business platforms.
- Leading or working with the product and engineering teams on the development of new products and on product enhancements and redesign.
- Establishing and communicating requirements for acquiring technology applications, services, systems and equipment; negotiating and managing vendor contracts to cost, safety and performance standards.
- Ensuring that the appropriate risk assessments are made when introducing new information and OT into the organization; this could involve setting up risk management activities, so that internal and external systems are secure.

### Recommendations for the CTO as Business Enabler:

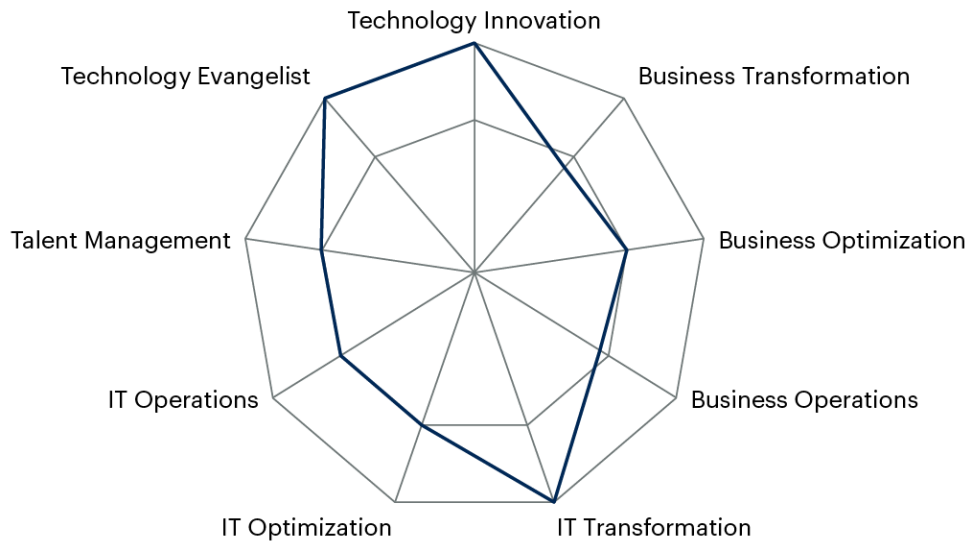


- Seek opportunities to work with business unit technology teams and citizen developers by creating centers of excellence (COEs) — for example, for business intelligence (BI), CRM or integration.
- Define clear business outcome metrics that are linked to the business, OT and IT delivery metrics to ensure that your value and impact are demonstrable.
- Engage with your EA team and use its future-state deliverables (such as business outcome statements, business capability and ecosystem models) to ensure that investments are in line with the longer-term business vision.
- Establish a digital product management team, if one doesn't already exist (see [Prepare Now for the Future of Digital Product Management](#)).
- Track technology innovations and trends, identifying the opportunities your organization can exploit.

## CTO as IT Innovator

This CTO persona is a technology visionary and change agent for IT. This type of CTO provides leadership to groups that include enterprise architects, innovation managers, expert technology specialists and professionals in shared IT services in large to extra-large businesses. This CTO persona may also be the head of architecture, guiding the architectural impact of IT innovations. Such a CTO typically holds an executive position in IT, reporting to the CIO, rather than the CEO or other executives. As an IT innovator, this CTO drives technology innovation and transformation in IT (see Figure 5) and leads agile/DevOps teams. This individual often leads cloud transformation initiatives, and brings newer technologies into IT, such as APIs, microservices, containers and Kubernetes.

Figure 5: The Focuses of the CTO as IT Innovator

**The Focuses of the CTO as IT Innovator**

Source: Gartner  
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Gartner

**Responsibilities Typically Include:**

- Determining how the organization can use mainstream and emerging technologies to advance business strategy.
- Serving as the central point for technology innovation in IT.
- Determining the enterprise technology strategy, using both mainstream and emerging technologies to transform IT operations; this usually includes the cloud strategy.
- Serving as the central point for technology innovation in IT.
- Leading a team of software engineers that has adopted an agile, DevOps-oriented approach.
- Making key decisions on technology investments.
- Piloting and building digital business platforms.
- Modernizing infrastructure, including hybrid multicloud; edge computing; containerization; and automated, programmable infrastructures.

**Recommendations for the CTO as IT Innovator:**

- Work with the CIO and business executives to gain a clear understanding of the organization's strategy, business model and direction. Ensure that your efforts align with the implications of the business strategy and model.
- Work with the EA function to understand the business outcomes and business capabilities the organization is seeking to create. Establish a future-state architecture that will enable the organization's strategic direction and any changes in business model.
- Build a collaborative, cross-functional IT team to help drive IT innovation and transformation; create the organizational and governance model needed to drive transformation.
- Track technology innovations and trends, identifying the opportunities for your organization.
- Work with your internal IT team, key vendors and consultants to create a roadmap for technology innovation.

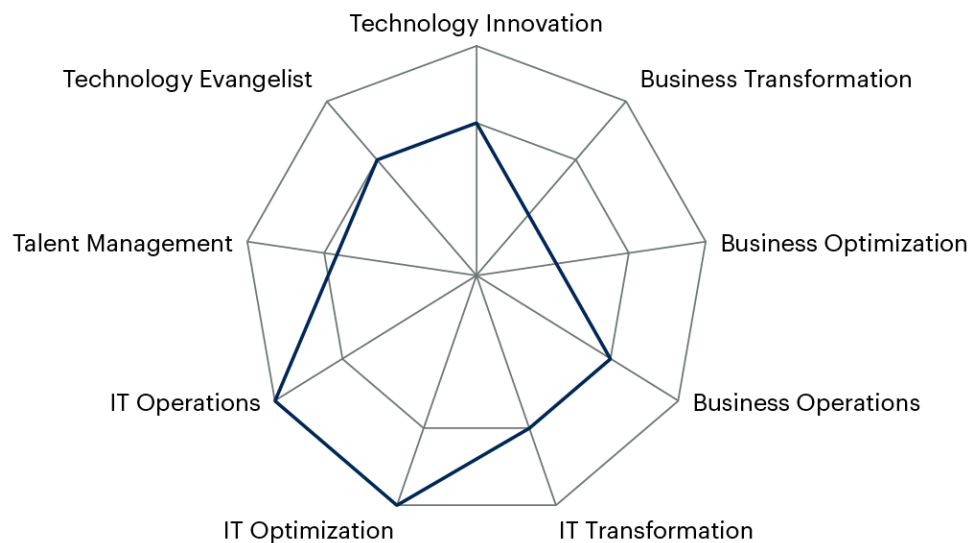
**CTO as COO of IT**

This CTO persona commonly works in organizations with large IT staffs focused on the day-to-day operations of IT. Although this CTO persona commonly works in large and extra-large organizations, it is also common in businesses in which the technology division does not provide thought leadership. Such CTOs often report to the CIO, which enables the CIO to be more of a business strategist.

The CTO as COO of IT is primarily concerned with optimizing or maintaining technology to support the current business model. This persona has influence on the systems of record and maintaining the existing IT estate. The main goal of this persona is to address the agreed-on delivery of IT services (e.g., cost, timing, functionality and scalability) in support of the existing business model. These CTOs are likely to be heavily involved in IT purchasing and procurement decisions for technologies (e.g., systems, applications and tools), as well as technology services (e.g., cloud, consulting and outsourcing).

CTOs focused on IT operations support and guide the analysis of requirements, are responsible for planning and design, and manage large-vendor relationships. They often lead efforts in business process optimization, guide IT architecture and IT service catalogs, and manage IT finance and HR (see Figure 6).

Figure 6: The Focuses of the CTO as COO of IT

**The Focuses of the CTO as COO of IT**

Source: Gartner  
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**Responsibilities Typically Include:**

- Running and maintaining IT operations through all or some of the following: IT service management (ITSM), vendor management, shared IT services, data center, telecommunications and security.
- Assisting in the development of the vision and roadmap to execute current and future company goals and objectives to provide the best technology.
- Ensuring that internal and external systems are running and performing as they should by monitoring and responding to incidents that might affect highly available and performant systems.
- Engaging in major decisions and procurement of technology centered on technology modernization; optimization and consolidation; and major IT systems, such as CRM and ERP.

**Recommendations for the CTO as COO of IT:**

- Ensure that you have clearly defined authority and responsibility for IT operations. This means clearly mapped-out governance with respect to a global CIO, as well as the business unit.

- Ask CIOs (or equivalent) to communicate this authority and support it with appropriate budget responsibility.
- Automate IT operations through the adoption of artificial intelligence for IT operations (AIOps), infrastructure as code (IaC) and approaches such as chaos engineering.
- Don't spend all your time on IT operations. Focus at least 20% of your time on business operations and innovation to avoid the risk of being outsourced, along with IT, or becoming locked into, or viewed as, an "IT as a service" role.

## Additional Research Contribution and Review

Additional research contribution and review was provided by Gartner's Secondary Research Service team, by Mohit Rane.

## Evidence

This research is based on an ongoing analysis of 350 publicly available CTO profiles (on LinkedIn and Capita IQ), as well as 150 job descriptions.

## Document Revision History

[How to Demystify the Chief Technology Officer's Many Personas - 10 May 2021](#)

[Demystifying the Many Personas of the CTO - 24 September 2019](#)

[Demystifying the Many Personas of the CTO - 7 December 2017](#)

[The Many Flavors of the CTO Role - 19 September 2012](#)

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## Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

[Tool: Chief Technology Officer Sample Job Description](#)

[Tool: How to Establish a Charter for the Office of the CTO](#)

[How CTOs Can Create Effective Technology Roadmaps](#)

[The Chief Technology Officer's First 100 Days](#)

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