**Gartner for IT Leaders Tool**

Chief Technology Officer Sample Job Description

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# General Information

## Guidelines for Writing a Compelling Job Description for a CTO

The purpose of a job description should be to find qualified applicants and sell the job to them. It should provide a clear description that outlines the objectives for this role, and what is required to succeed. We have often reviewed job descriptions that are excessively detailed and include every responsibility and skill that the organization could conceivably want in a CTO. Therefore, we recommend keeping the job description reasonably concise. If necessary, develop two versions of the job description: an internal version for HR that covers the required job details and an external version that aims to make the job sound attractive to prospective candidates.

## Introduction to the CTO Role

The CTO role is accountable for providing the right technology vision, strategy and roadmap to enable the organization’s digital business transformation ambitions. This individual is usually accountable for identifying key emerging trends and technologies, evolving the architecture to support new, emerging technologies, and modernizing the infrastructure. This usually means that they lead most or all of the organization’s technology innovation activities. In recent years, CTOs have frequently been involved in new corporate initiatives such as sustainability (see [A CTO’s Guide to Achieving Sustainability Leadership](https://www.gartner.com/en/documents/4006204)) and equality.

## The Four CTO Personas Present in End-User Organizations

The precise focus of the CTO role in an organization can vary according to the organization’s digital business ambitions and technology needs. Gartner has defined four CTO personas (present in end-user organizations) to help CEOs and CIOs determine the right CTO for their organization’s needs (see [Demystifying the Many Personas of the CTO](https://www.google.com/url?q=https://www.gartner.com/document/code/743805?ref%3Dddisp%26refval%3D743805&sa=D&source=docs&ust=1651751641758735&usg=AOvVaw3VnT2nNBYQ9nVnXCtRmi7Y)).

### CTO as Digital Business Leader

This kind of CTO focuses on leveraging innovation technologies to transform business models, products or services. This person is responsible for creating the organization’s digital business technology strategies, leading the teams that will architect the required digital platforms to support these initiatives.

The CTO as digital business leader typically holds an executive-level position with visibility at the most senior levels of an organization’s business and technology divisions. This person may hold the title of chief digital officer (CDO).

### CTO as IT Innovator

This CTO type is a technology visionary and change agent for IT, providing leadership to groups that include enterprise architects, innovation managers, expert technology specialists and professionals in shared IT services in large to extra-large businesses. In fact, this CTO persona may also be the head of architecture, guiding the architectural impact of IT innovations. This individual leads teams that architect the required digital initiatives of IT innovations.

The CTO as IT innovator is usually an executive position within IT. As an IT innovator, this CTO drives technology innovation and transformation in IT and leads Agile/DevOps teams. This individual often leads cloud transformation initiatives and brings newer technologies, such as APIs, microservices, containers and Kubernetes, into IT.

### CTO as Business Enabler

This CTO persona is responsible for maintaining and optimizing the existing technology estate across business and IT, including business applications, transactional websites, operational technology and employee devices.

This role is more a peer or augmentation of the CIO, rather than performing the CIO role. In these cases, the CIO is more likely to be focused on running the IT organization (including resources, finances, investments and SLAs). The CTO is working across business and IT to govern and guide technology (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 they have core IT responsibilities.

The CTO as business enabler includes CTOs in organizations where technology underpins the business model — including operational technology (e.g., telecom or engineering). This type of CTO might lead R&D and a team of product engineers.

### CTO as COO of IT

This CTO persona is commonly found in organizations with a large IT staff that is focused on the day-to-day operations of IT. This is the more traditional CTO, running and staffing day-to-day IT operations and to meet agreed-on delivery of IT services to support the current business model. This type of CTO is likely to be heavily involved in IT purchasing and procurement decisions for technologies and technology services, as well as managing technology vendors.

CTOs focused on IT operations will also be involved in supporting and guiding the analysis of requirements, planning and design, as well as managing large-vendor relationships. They often directly lead efforts in business process optimization, and focus on guiding IT architecture and IT service catalogs, and managing IT finance and HR.

## How to Use These Personas to Shape the CTO Role(s) in Your Organization

Gartner’s CTO personas can be used to help identify the primary focus of the CTO your organization needs. It helps to clarify what the CTO’s key responsibilities should be, as well as the core skills, experience and resources, key deliverables, and metrics required for the role. This helps to navigate and reduce the complexities of the different ways in which the CTO role seems to be implemented in various organizations. Deciding on a CTO persona, the organizational structure, and the specific responsibilities for your organization should depend on the level of change and the needs of the organization. The CTOs themselves can also drive selection of persona type, shaping and evolving their roles and responsibilities to align with a persona that better matches their organizations’ needs and aligns with the overall business strategy.

It is possible that one person may fulfill one persona, but the organization may have multiple CTOs. Often larger organizations have multiple CTOs covering different regions or lines of business. Conversely, one individual may assume multiple personas. Sometimes, an individual may be transitioning from one CTO persona to another. This insight comes from the many CTO job descriptions we have reviewed, and conversation with clients either stepping into a new CTO role or looking to hire a CTO into their organization. These personas can be used to refine the scope of the CTO role to a more manageable set of responsibilities, while identifying opportunities to other CTO personas that the organization needs. This approach will help ensure that CEOs and CIOs set up the CTOs they hire for success.

### How the CTO Role Relates to Other IT Executive Roles

The type of CTO personas your organization needs, and the set of responsibilities the CTO fulfills, will also depend on the set of responsibilities carried out by the CIO, chief data officer and chief information security officer. Ideally, all these roles should work together to drive the organization’s digital business transformation initiatives. However, not all organizations may have all four roles — that is the CTO, CIO, chief data officer and chief information security officer (CISO) — present. In some cases, the teams or functions handling data management and governance and/or data and analytics, information security, and risk management may report to the CTO or CIO. The key point is to identify the essential responsibilities and capabilities required for your digital business transformation initiatives and divide them up between these roles according to the individual’s skills and experience, rather than expecting a CTO or CIO to deliver it all.

# CTO Job Description Template

## Key Job Information

**Salary grade/band:** Company-specific

**Organization/department:** C-suite

**Job family:** C-level executive (or IT senior leadership and management)

**Reports to:** Frequently reports to CEO or CIO

**Direct reports:** Company-specific

**Effective date:** Company-specific

## Position Summary

Digital business transformation is requiring more organizations to place a stronger focus on innovation and emerging technologies and how they are implemented and managed within the enterprise. To address this challenge, companies have introduced — or redefined — the title of CTO to their executive leadership teams.

The role of the CTO is a broad and diverse one. Ideally the role should be tailored to meet the organization’s technology needs by developing the enterprise technology strategy, investing in emerging technologies and managing the technology life cycle. The majority of CTOs are responsible for activities that include technology infrastructure modernization, technology operations management and technology innovation (see [CTO Insights: Identify Your Focus to Succeed as CTO](https://www.gartner.com/document/4001515?ref=lib)). These activities span the spectrum of technology management, from the identification and sourcing of technologies to technology operations and people upskilling.

CTOs are often responsible for other disciplines, such as EA, aspects of data and analytics, information security and risk management (IS and RM), software development, and new product development. Often this depends on two factors: the organization’s technology requirements and how these are shared between the CTO, CIO, chief data officer and CISO. If the latter two roles are present in the organization, then data and analytics and IS and RM responsibilities will fall under these two roles, respectively.

#### What a Successful CTO Will Look Like in Our Organization

A prospective CTO needs to understand how well he or she will fit into an organization culturally, operationally and technically, so it’s helpful to write a few sentences to illustrate the organization’s vision of a successful CTO. This is an important way to sell the job to prospective candidates, and also encourages the employer to articulate what sort of CTO they want and how a new CTO will deliver value. This may extend to giving examples of the kind of personal attributes and values the company is looking for in candidates. The details will depend on the type of CTO being recruited. Gartner has identified four CTO personas that exist in end-user organizations:

* CTO as digital business leader, responsible for digital business technology strategies to drive business model innovation
* CTO as IT innovator, responsible for the enterprise technology strategy, including cloud strategy and infrastructure modernization, to transform and innovate IT operations
* CTO as business enabler, responsible for optimizing business operations to support the current business model
* CTO as COO of IT, responsible for daily IT operations and technology investment to support the current business model

The following example is for a CTO in the IT innovator persona.

**Example:** *Our IT organization has laid a strong foundation for digital transformation by modernizing our applications and infrastructure. We are now ready to explore bringing more innovative technologies into our organization to tackle the next stage of transformation. What we need now is an enthusiastic CTO who can accelerate technological transformation in IT without alienating staff who’ve got a great understanding of our business. Our new CTO will be seen as a respected expert on a wide range of IT technologies and will be able to evangelize them to both IT staff and nontechnical business peers. We’re looking for a CTO to bring new ideas and have a strong vison about the future opportunities for IT while being diplomatic enough to implement change without alienating staff.*

Although often omitted, a job description must define how the success of the new CTO will be measured. Detailed metrics will be the subject of discussion between the CTO and his/her manager. However, high-level metrics in the job description will help the employer to quantify what they mean by success, and the candidate to understand if his/her skills are aligned with the job. Gartner surveys show that CTOs are measured in many different ways, including metrics based on efficiency of operations, innovation, quality, revenue and cost reduction. A job description should provide at least an outline of the CTOs success metrics even if the details will be the subject of negotiation.

**Example:** *The success of our CTO will be measured in four primary ways: (1) adoption of new development tools and service-oriented architectures; (2) improving IT performance in terms of operational cost and agility; (3) agility in delivering new software releases (software/release velocity) and new digital products; and (4) customer (i.e., business user) satisfaction.*

## Organization Summary

Describe who the CTO reports to and who reports to the CTO. Describe also any key dotted line responsibilities.

**Example:** *The CTO will report to the CEO and will be responsible for an office of the CTO (OCTO) consisting of around 20 staff, including the enterprise architecture team, the chief data officer, the CISO and his/her security staff, and a small three-person technology innovation team. The CTO will also be a member of the business innovation council.*

# Key Responsibilities

The key set of CTO responsibilities will depend on which CTO persona the advertised CTO role aligns to most closely. In some cases, the role may relate best to two personas. Below we list the common core set of responsibilities found in most CTO roles, followed by key set of responsibilities for each of the four CTO personas

## Responsibilities for All CTO Personas:

* Define the technology strategy, vision and roadmap in alignment with the organization’s digital business strategy.
* Identify emerging technologies that would help the organization deliver its digital business strategy.
* Lead technology innovation to explore how these emerging technologies can transform the business.
* Leverage trendspotting to anticipate how technological and non-technological trends could help the organization prepare for and navigate change and disruption.
* Decide which technologies to invest in and procure, including making the business case.
* Evolve the architecture to support the introduction of new technologies to enable the digital business strategy.
* Create new digital business technology platforms or provide the technology to build them.
* Assess the potential risk of bringing new and emerging technologies into the organization and determine how to mitigate it.
* Manage technology vendors for the software and hardware procured.

## Additional Responsibilities for CTO as Digital Business Leader

* Partnering with CIOs so they can work with business executives to identify, rationalize and roadmap new digital business models and capabilities, and how technology can enable them. *This CTO persona is usually at the EVP or SVP level and a peer to the CIO, but this may not be universally true*.
* Leading the organizations that drive innovative and strategic thinking for the company such as enterprise architecture, 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 understand customer and market requirements in order to translate them into digital products and services that enable new business models and drive strategic business outcomes.

## Additional Responsibilities for CTO as IT Innovator

* Determining how mainstream and emerging technologies can be used to advance business strategy using trendspotting techniques
* Serving as the central point for technology innovation within IT
* Determining the enterprise technology strategy, leveraging both mainstream and emerging technologies to transform IT operations. This usually includes the cloud strategy
* Serving as the central point for technology innovation within IT
* Leading a team of software engineers, who have adopted an agile, DevOps-orientated approach
* Making key decisions on technology investments
* Becoming involved in piloting and building digital business platforms
* Infrastructure modernization, including hybrid multicloud, edge computing, containerization and automated, programmable infrastructure

## Additional Responsibilities for CTO as Business Enabler

* Determining how mainstream and emerging technologies can be used to advance business strategy and optimize business operations
* Making key decisions on technology investments
* Piloting and building digital business platforms
* Improving and/or digitalizing the customer experience
* Leading or working collaboratively with the product and engineering teams on the development of new products, product enhancements and product redesign
* Establishing and communicating requirements in 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 operational technology into the organization
* Setting up risk management actions so that internal and external systems are safe and secure

## Additional Responsibilities for CTO as COO of IT

* 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 developing 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 actively monitoring and responding to incidents that might affect highly available and performant systems
* Engaging in major decisions and procurement of technology centered around technology modernization, optimization and consolidation, and major IT systems, such as CRM or ERP

# Job Requirements

## Experience

It’s usual to discuss experience in terms of what will be expected and what would be nice to have. However, one of the key mistakes we see in CTO recruitment is to describe experience in terms of a shopping list of technical skills. This is invariably wrong, because:

* The CTO needs to understand the potential impact of technologies (in both business and IT terms) and the issues involved in their adoption. This doesn’t mean he/she has to be a practitioner.
* Technical practitioners may struggle to become effective CTOs, because they may be weak in soft skills such as business acumen, communication and relationship building, which are key to a great CTO.
* CTOs are increasingly involved in customer experience and issues such as business architecture, and digital transformation, which aren’t obtained by being a technology expert.
* The technology shopping list approach may deter candidates who might be great CTOs, but don’t have knowledge of everything on the list.

If what the organization needs is purely a senior technology expert then it might be better to appoint a technology architect rather than a CTO. In many cases, it’s as important for a successful CTO to be able to understand new technologies as current ones. The key when listing technologies as required skills for a new CTO is to focus on those few that are critical to the business and where weak decisions would have major consequences.

Concisely describe the required experience and knowledge in terms of what will be needed to be a success given the organization and metrics that will define the role. Try to keep this list under 10 bullet points to ensure the overall description is concise. Also, don’t overspecify as this risks eliminating some candidates who might make excellent CTOs, even if their experience isn’t exactly what you’re envisioning

**Example:** *Required experience and knowledge we’re looking for in a CTO:*

* *Educated to degree level with experience of working in a large, private-sector IT organization.*
* *Strong knowledge of the AWS IoT stack in the context of large-scale IoT product deployments. Consumer-facing mobile app design, development, and support using principles such as design thinking.*
* *Identification and successful deployment of new IT technologies and development processes in a medium to large IT organization.*
* *Staff management, ideally running a department of 10 or more individuals with an annual budget of more than $1 million.*
* *A wide understanding of IT technology and vendors combined with the ability to evangelize new developments to both technical and nontechnical audiences.*
* *Strong business acumen.*

*Knowledge that would be nice to have, but isn’t essential.*

* *Experience in leading digital business strategy. An MBA would be desirable, as would knowledge of the healthcare industry.*
* *Management of vendor relationships and negotiating with vendors.*
* *Business capability modeling and customer journey mapping techniques.*

## Competencies

Every role consists of competencies, a set of skills the individual must possess to perform effectively in the role. We outline below which competencies are most critical for each CTO persona.

We have grouped the CTO competencies into three categories:

* **Business and Information —** Based on business knowledge and awareness *(know what)*
  + Includes knowledge of technology, business management and relationship management
* **Behavioral —** Based on personal attributes and characteristics *(know why)*
  + Includes people-orientated skills, persona traits and creative skills
* **Technical —** Based on technology skills *(know how)*
  + Includes solution design, analysis, IT operational skills and domain knowledge

We therefore recommend using similar groupings when you list the key competencies required for the CTO position you are seeking to fill. Figure 1 below shows how these three competency sets differ by CTO persona.

**Figure 1. Groupings of CTO Competencies by CTO Persona**

Timeline

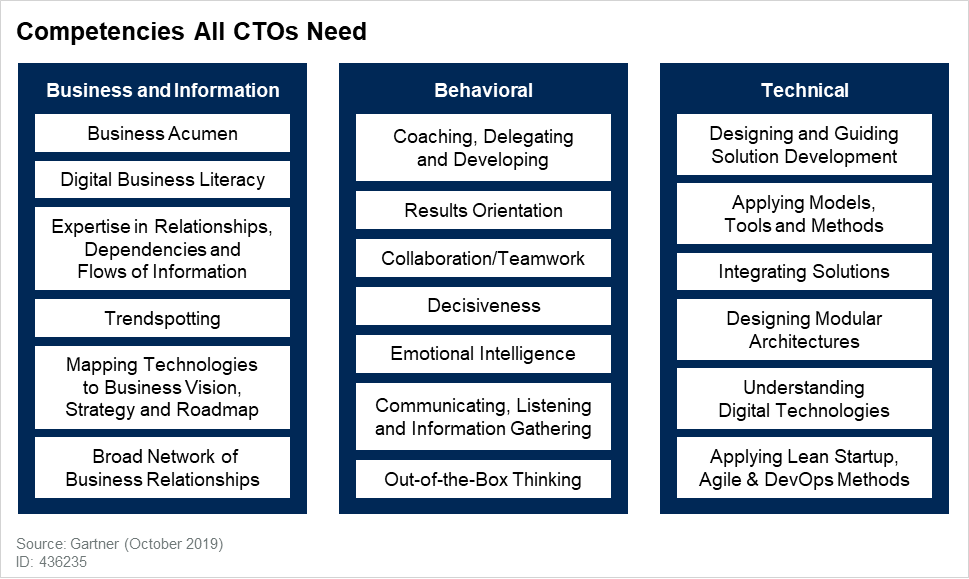
Description automatically generated with medium confidence

Beyond that, the competences should be tailored to the main CTO persona(s) that best represent the CTO role in your organization, as described below. These descriptions can be used in your job description as an outline of what competences are desired in CTO candidates.

* CTOs who are digital business leaders must be highly business-focused and committed to delivering clear business outcomes. Commercial acumen and a creative mindset is required to drive business model change. They should focus primarily on business and information competencies, followed by developing their behavioral competencies. Deep technical competencies are not usually required for this CTO persona. However, one exception might be knowledge of digital technology products and the relevant vendors. A CTO as digital business leader could benefit from being a strong technology generalist, who is able to envision how emerging tech could provide new ways to further the business goals.
* CTOs who are business enablers are responsible for ensuring technology is highly responsive, highly available and changes in lock-step with the business. These CTOs must also ensure that business and customer needs are met as a high priority. Relationship management competencies are therefore critical for this persona. The other competencies this CTO persona should focus on are technical competencies (excluding IT operations) and behavioral competencies (excluding creative skills).
* CTOs who are IT innovators must think in a creative, unconventional way and exploit emerging technologies. This persona needs the broadest set of competences; meaning all competencies, except business management. It is likely to be a challenge to find an individual who can excel at all these different competencies. Therefore, it is important to identify which competencies are existing strengths of this individual and which are areas where these competencies need to be developed further.
* CTOs who are COO of IT must concentrate on using, optimizing and managing existing data and systems. They should focus primarily on technical competencies, followed by behavioral and business and information competencies. Relationship management and people-orientated competencies might be growth areas for individuals moving into this role. Infrastructure and operations leaders are often promoted to this CTO persona. They can be more technically minded people rather than those with clear, people-orientated competencies.

Figure 2 and Table 1, Table 2, Table 3 and Table 4 summarize the key competencies required for all CTOs and each CTO persona.

**Figure 2. Key Competencies That All CTOs Require**



**Table 1. Competencies for CTOs Who Are Digital Business Leaders**

|  |  |  |
| --- | --- | --- |
| **Business and Information** | **Behavioral** | **Technical** |
| Understanding business organization, politics and culture | Strategic thinking | Understanding digital  technologies, relevant vendors and product knowledge |
| Understanding and analyzing the business model and ecosystem | Results orientation |  |
| Business model innovation | Leading, inspiring and building trust |  |
| Business acumen | Decisiveness |  |
| Strategic planning and budgeting | Accountability |  |
| Mapping technologies to business vision, strategy and roadmap | Communicating, public speaker, listening and information gathering |  |
| Leading business change | Out-of-the-box thinking |  |
| Digital business literacy | Emotional intelligence |  |
| Trendspotting |  |  |
| Ability to understand related industries |  |  |
| Knowledge of intellectual property rights and protection |  |  |
| Knowledge of data from the Internet of Things |  |  |

**Source: Gartner**

**Table 2. Competencies for CTOs Who Are Business Enablers**

|  |  |  |
| --- | --- | --- |
| **Business and Information** | **Behavioral** | **Technical** |
| Mapping technologies to business vision, strategy and roadmap | Communicating, public speaker, listening and information gathering | Understanding digital technologies, relevant vendors and product knowledge |
| Digital business literacy | Results orientation | Designing and guiding solution development |
| Strategic planning and budgeting | Emotional intelligence | Applying lean startup/agile methods |
| Knowledge of customer behaviors, needs and expectations | Decisiveness | Integrating solutions |
| Broad network of business relationships | Accountability | EA methodologies |
| Knowledge of social and ecosystem data | Coaching, delegating and developing | Digital product development and management |
| Social analysis | Influential and persuasive | Information security |
|  | Collaboration/teamwork | Business continuity management and disaster recovery |
|  | Out-of-the-box thinking | Configuration management systems |
|  | Creative solution-building | Designing modular architectures |
|  |  | Web application knowledge |
|  |  | Database knowledge |

**Source: Gartner**

**Table 3. Competencies for CTOs Who Are IT Innovators**

|  |  |  |
| --- | --- | --- |
| **Business and Information** | **Behavioral** | **Technical** |
| Mapping technologies to business vision, strategy and roadmap | Strategic thinking | Understanding digital technologies, relevant vendors and product knowledge |
| Digital business literacy | Creative and innovative thinking | Designing and guiding solution development |
| Strategic planning and budgeting | Conceptual thinking | Applying lean startup/agile methods |
| Trendspotting | Decisiveness | Integrating solutions |
| Knowledge of intellectual property rights and protection | Accountability | EA methodologies |
| Knowledge of data from the Internet of Things | Communicating, public speaker, listening and information gathering | Digital product development and management |
| Social analysis | Out-of-the-box thinking | Information security |
| Expertise in relationships, dependencies and flows of information | Coaching, delegating and developing | Business continuity management and disaster recovery |
|  | Influential and persuasive | Configuration management systems |
|  | Collaboration/teamwork |  |
|  | Results orientation |  |
|  | Emotional intelligence |  |

**Source: Gartner**

**Table 4. Competencies for CTOs Who Are COOs of IT**

|  |  |  |
| --- | --- | --- |
| **Business and Information** | **Behavioral** | **Technical** |
| Mapping technologies to business vision, strategy and roadmap | Results orientation | Understanding digital technologies, relevant vendors and product knowledge |
| Digital business literacy | Emotional intelligence | Designing and guiding solution development |
| Strategic planning and budgeting | Collaboration/teamwork | Designing modular architectures |
| Trendspotting | Decisiveness | Integrating solutions |
| Expertise in relationships, dependencies and flows of information | Accountability | EA methodologies |
| Knowledge of data from the Internet of Things | Communicating, public speaker, listening and information gathering | Web application knowledge |
| Broad network of business relationships | Out-of-the-box thinking | Information security |
| Ability to understand related industries | Coaching, delegating and developing | Business continuity management and disaster recovery |
| Knowledge of social and ecosystem data | Influential and persuasive | Configuration management systems |
|  | Creative solution building | Networking |
|  | Adaptability | Programming languages, frameworks and tools |
|  |  | Applying lean startup/agile methods |

**Source: Gartner**

## Working Conditions and Requirements

In this section discuss issues such as working conditions and location and benefits such as flexible working. Mention parental leave, on-site daycare or on-site fitness facilities if relevant. If travel is a necessary or frequent requirement of this role, then state the proportion of the role dedicated to traveling and cite the nature of travel, for example “opportunities to build new working relationships with key technology partners or international business partners.”

All job descriptions should include a statement that conveys the employer’s intent to commit to equality in employment. An example is given below, but we advise clients to consult their HR and legal departments regarding the precise wording to include.

***Company X is an equal opportunities employer and promotes a workplace environment where there is no discrimination on basis of gender, race, ethnicity, national origin, age, religion, sexual orientation or identity, marital status, family commitments, veteran status or disability (whether physical or mental).***