A low-angle, upward-looking photograph of several modern skyscrapers. The buildings are illuminated with warm, golden light, likely from the setting or rising sun, creating a dramatic silhouette effect against a clear, light blue sky. The perspective is from a low vantage point, making the buildings appear to converge towards the top of the frame. A bright yellow rectangular box is overlaid on the left side of the image, containing the main title text.

Five ways CDOs  
can usher in a new  
era in business

The EY logo consists of a yellow chevron pointing upwards and to the right, positioned above the letters 'EY' in a bold, white, sans-serif font.

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## Emergence of the chief information and digital officer: the new leaders defining the future of the enterprise.

### In brief:

01

CIO roles can evolve in many directions.

02

CIOs and CDOs are increasingly consolidating into the CIDO role.

03

Now is the time for CIDOS to take the lead.

No matter the geography or sector, businesses are experiencing a time of significant disruption and upheaval driven by the unprecedented evolution of technology and the proliferation of data. Those organizations, and their leaders, that can effectively sense and rapidly act on market changes by leveraging technology to create distinct and enduring value will be the most likely to emerge as winners.

Technology executives have already been transitioning along a “CIO role evolution horizon,” growing from having an IT service delivery and back-office mindset to building business partnerships and supporting innovation.

CIO roles can potentially evolve in many directions – CDOs, CTOs, other business executive roles. In this era of generative artificial intelligence (GenAI), leading CIOs can position themselves as the technology and business leaders of the future as chief information and digital officers (CIDOS). CIDOS are primed to inform and influence the board and C-suite, steering business strategy by evolving the IT transformation from service delivery and business enablement to setting business strategy and leading transformation. While CIOs aspire for many roles (e.g., CDO, CTO), the CIDO role is unique as it lets them drive business strategies through a digital lens while continuing to stay close to technology. Another variant of this CIDO role is where business strategies and P&L responsibilities reside within the business units while CIDO continues leading both front-end (product/platform engineering, digital product development) and back-end technology areas (e.g., ERP).



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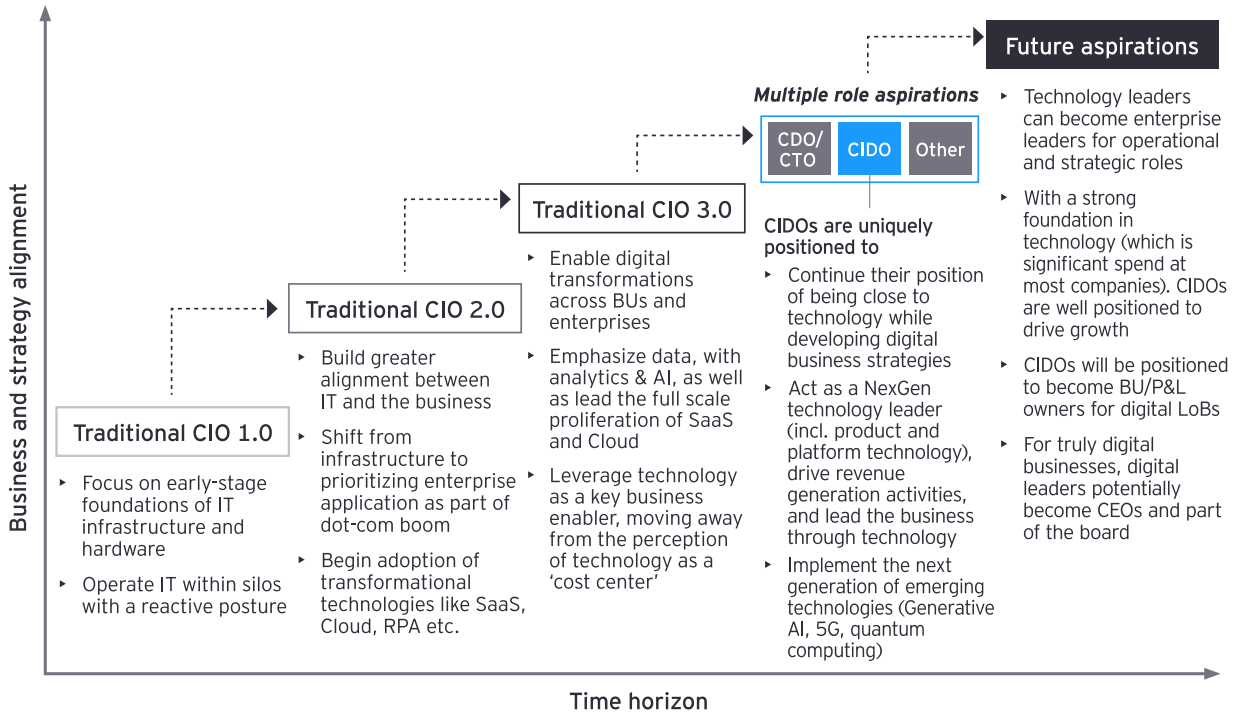


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# CIO role evolution horizon



## Accessibility chart description

“This image depicts the CIO role evolution horizon, including the business and strategy alignment and time horizon. It shows the correlation between the traditional CIO 1.0, traditional CIO 2.0, traditional 3.0 through multiple role aspirations and future aspirations”

From their vantage point at the confluence of technology, growth, and operations, CIDOs have a tremendous opportunity to ignite the vision and champion the adoption of new business models that will transform operations through the application of new technology and data.

While different leaders will find themselves at different points along this journey, more are finding themselves ready to make the next leap. The EY Center for Executive Leadership found that the number of Fortune 100 Chief Digital Officers (CDOs) has increased by 13 times, or 1,300%, in the past decade. CDOs are also arriving with more diverse sets of experience, with 49% having served as a business unit head prior to becoming a CDO, equipping them with a richer cross-functional skill set.

Historically, CIOs and CDOs were seen as separate entities, but these roles are increasingly consolidating into the CIDO role, including overseeing the platform and engineering responsibilities of the CTO, giving the CIDO the capabilities necessary to harness the full technology spectrum. CIDOs can emulate the reporting relationships of CDOs (with 76% of F100 reporting directly to the CEO according to the EY Center for Executive Leadership) to continue to serve the needs of the technology, product/platform functions while partnering with other executives who drive enterprise strategy. This can help CIDOs work closely with other strategy leaders who set the business strategy and P&L goals and translate that into technology and digital goals for their teams to drive toward.

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The role of Chief Information and Digital Officer allows for a true horizontal view of the firm, cutting across multiple business units and corporate functions. This allows for a natural connection with other BU leaders and members of the c-suite, resulting in powerful partnerships to solve critical business problems through technology. While this provides a wide array of opportunities to a CIDO, the key to being successful is to have a commensurately broad and flexible skillset. This flexibility allows the CIDO to lean in on the enterprise's priorities, whether that be traditional IT responsibilities, supporting a new product launch or advancing digital transformation initiatives. However, while it may appear to be easy to shift gears between topics in theory, in practice, CIDOS find extreme demands on their time and attention. It is absolutely imperative to have strong support from the CIO or CTO to reduce noise and enhance the CIDO's ability to focus on other topics. As technology leaders aspire to the CIDO role, preparation is critical. Joining boards as a technology specialist, further enhancing the technical toolkit with skills like digital proficiency and product engineering, and augmenting the existing professional network with business leaders all help build a foundation to be a successful CIDO.

Mark Murphy  
CIDO at 3M

# 01

## Why now is the right time for CIOs to take the lead

Many CIOs may not have traditionally had a leading role in enterprise transformation.

Technology disruption has created a clear inflection point. With the commoditization of infrastructure, proliferation of software-as-a-service (SaaS)-based applications, rapid accumulation of enterprise data sets, digital-first customer experience and AI's launch into the mainstream, technology leaders, like CIOs, are well-positioned to take an active role in developing, driving and supporting the enterprise strategy.

Sources and means for generating value are changing across industries, with technology and data capabilities driving this evolution. Transformative CIOs are positioned to revolutionize how organizations activate this orchestration; they develop a vision of how their company can harness technology and transform to meet the demands of customers and industry disruption, including the following market trends:

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### Advanced manufacturing and mobility (AM&M)

As industrial manufacturing companies seek to become connected industrial platforms, technology becomes a critical asset to connect operations, service management and process improvement.

### Consumer products and retail (CP&R)

As consumer organizations seek to create consumer value and rapidly develop and deploy products through their channels, technology becomes the accelerator of consumer insights needed to inform product and supply chain strategies.

### Healthcare

As organizations across the health care continuum seek to realize value-based care, technology becomes the key to developing a longitudinal view of patients with integrations across the network of patients, payers and providers.

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In this new environment, technology is a core element of the business agenda. The EY Digital Investment Index published by EY-Parthenon in April 2022 reported an increase in spending on digital from 3.5% to 5.8% of revenue in recent years. Successful companies no longer view technology as only a means to digitize their business. Instead, they develop a holistic view of the role of technology in the enterprise. Crystallizing this strategy requires discerning leadership that understands the dynamics of the business, operates as a change agent, and has the technical expertise to make it real. In other words, this new leadership opportunity is the calling of the CIO.

The next wave of transformation will be different from those that have preceded it. Digital as a game-changer is nothing new, but CIOs trying to achieve industry-defining transformations will need to operate differently. Identifying and executing incremental digital change is no longer a sufficient approach, as it can lead to never-ending disruption and fatigue across the organization, which can inhibit the full realization of the transformation. CIOs can bring the technical expertise to advance a cohesive vision of the future, developing a unified technology blueprint that incorporates customer interaction channels, data platforms, and enabling product architecture and roadmap to guide a strategic approach.

## Case study

A legacy global manufacturing firm needed to reinvent itself and shift from a highly physical business to one with a dynamic, digital value chain. This change was led by a technology executive who exemplified the power of multiple roles: CIO, CTO and CDO. With the R&D, Digital, and IT departments all within the same organization, the company was quickly able to drive value by digitizing its supply chain, embracing B2B e-commerce, and expanding to new digital service offerings. The firm partnered with leading technology companies to roll out new physical and digital products consistently and at scale. While doing this, the technology executive also led growth and expansion of multiple research centers including one in Silicon Valley. This overarching transformation of a traditional business emphasizes the potential impact that a CIDO can have.

02

## Five key priorities for CIDs

What do CIDs need to do to fully capitalize on their evolution into this more strategic role?

Here are five ways CIDs can find success:

### 1. Develop a value creation and collaborative mindset.

CIDs will need to foster an inspirational, forward-thinking attitude to seek technology-driven value creation opportunities, rather than one that is reactive and operationally focused. This will help CIDs advance from being perceived as “order takers” to having a seat at the table helping drive the enterprise agenda. CIDs should consistently be thinking of the three traditional pillars of value creation:

- ▶ Automating/optimizing existing operations to improve margin
- ▶ Launching new revenue-generating products by working with other business leaders who might have P&L responsibilities
- ▶ Enhancing capital efficiency to promote flexibility

Only 41% of respondents from the 2022 EY-Parthenon Digital Investment Index reported measuring the return on digital investments; however, to demonstrate the effectiveness of their value creation efforts, CIDs must keep quantifying their impacts top of mind.

Whether engaging customers, launching new digital products, or employing technology to enable upselling opportunities, CIDs should consistently focus on technology-driven value creation. The most impactful opportunities will arise from the collaboration of technology with other business functions such as operations, sales, and marketing. A multi-disciplinary team can co-create solutions leveraging enterprise data and innovative technology: AI/automation, internet of things (IoT), blockchain, and more. When opportunities are identified, CIDs must mobilize quickly to prove out the new capability through pilots and proofs of concept and actively work to scale up, accelerating the momentum.

See the latest EY thinking on technology in value creation here: [Three tech pillars driving value creation for PE portfolio companies | EY - US](#)

## 2. Take ownership of data and treat it like the gold mine that it is

Companies are gathering more data about customers, operations and products. From IoT devices on factory lines to real-time patient monitoring in health care, businesses can now gain a comprehensive view of their business from every angle. With direct access to these valuable data streams, CDOs can proactively drive strategic decisions at every level of the business.

In addition, this stockpile of data can now open new top-line growth opportunities, transforming IT from a cost center or strategy enabler to a revenue generator. As an example, a biotechnology company that sells individual specimens with varied genetic characteristics can aggregate sample data across hundreds or even thousands of samples to develop a rich data set that is valuable to its customers in digital pathology research.

CDOs may begin leading the effort to identify opportunities to productize and monetize valuable data using existing data sources as a starting point.

Data is even becoming a key fixture in M&A activities as companies pursue acquisitions with primary or secondary motives of acquiring valuable data. We have seen a health care provider acquire an asset with a primary goal of leveraging its sophisticated patient data platform. CDOs have an opportunity to help manage these acquisitions. Data can be a key driver of the deal thesis, but these assets may not realize the full projected value or – even worse – may prove to be fraudulent if not fully vetted.

## 3. Lead the charge in the implementation of AI and machine learning

Going hand in hand with the explosion of data, GenAI (like ChatGPT) holds the potential to democratize AI, enhancing accessibility and usability for day-to-day users from different business functions. Executives are demanding to know how they can leverage these tools to remain competitive. CDOs are well-positioned to seize on the role of strategic advisor and change agent to enable, monitor, and enhance these implementations in an ongoing collaboration with the rest of the business.

Meanwhile, AI ethics and data strategy should become core competencies for CDOs. Companies are generating and buying data at a rapid pace to help improve their AI models. While more data can improve some models, it does not always do so, nor does it always do so safely. Adding bad data to models can also open up potential cases of bias, which can quickly have a negative impact on performance and become a significant liability for the company. Internal accountability agents will be critical to ensure that CDOs maintain control over AI and machine learning as it proliferates through the organization.



#### 4. Create a partner ecosystem strategy to be able to focus on the priorities

To enable themselves to pursue key strategic initiatives, CDOs must build a strong partner ecosystem, driving strategy through execution.

CDOs must identify which core capabilities to perform in-house, and which non-core capabilities can be supported by a partner ecosystem. For example, some companies may stand up an in-house technology incubation center to test ideas and develop prototypes and proofs of concept, but leverage external partners to scale up and develop an enterprise-class solution.

Being deeply involved in infrastructure operations may not be a priority for some, while others - like those in the defense sector, for example - may require an enhanced focus to ensure compliance with complex regulations. Additionally, partners can be used to support innovation - not just

commoditized functions - accelerating the stand-up of new capabilities, rather than beginning a potential lengthy process of competing for in-demand talent.

Outsourcing is a tool with a "cost-reduction" connotation, but it often delivers just as much value in releasing the burden of managing certain day-to-day tasks, which allows for a greater focus on critical value-creation opportunities. The impact that cloud has had is an excellent example of this.

To further this approach, CDOs must develop a flexible partnership network with the necessary specializations and scalability. Achieving this requires developing a strong vendor management framework in-house to ensure that these partners meet SLA and quality standards, staying productive and cost-effective.

#### 5. Build a strong talent pipeline to enable execution, exploration and experimentation

Sustainable success begins with identifying core competencies, aligning the operating model to them, then assessing whether existing people at all levels of the organization are capable of both operating and innovating within their roles, and then recruiting the right resources to fill the gaps.

Reskilling digital talent requires organizations to incentivize employee experimentation by providing safe opportunities to experiment with innovative solutions. A participant at a recent summit shared how they were living the "fail fast" motto - rather than just talking about it - by budgeting for multiple iterations to allow for trial and error with delayed successes.

Retaining innovative talent is key and relies on [developing a culture like the type that digital native companies have used to cultivate success](#). Innovative

cultures emphasize horizontal operating structures, a willingness to embrace new technologies at speed, and a commitment to reinvesting in the business to build on early successes.

Ultimately, as talent leaders, CDOs must be responsible for leading the cultural transformation to this new digital reality. Changing "hearts and minds" across the enterprise is necessary for sustained progress, as many organizations experience resistance to technical change. The EY-Parthenon 2022 Digital Investment Index shows that only 31% of companies consider the changes needed to company culture or internal processes when mapping digital strategies. CDOs who lead efforts such as deploying an agile methodology for the whole business - not just IT - position themselves as a key factor in execution across the enterprise.

## 03

### Organizational foundations to enable CIDO success

The structure and operating model plays a critical role in helping a CIDO pursue these priorities.

Organizations must adopt new execution models and ways of working that dovetail with the skills and thought leadership approach envisioned by the CIDO. CIDOs should champion the adoption of end-to-end, agile models to improve enterprise dexterity. Leaders will also need to determine the value streams that will enable business and technology leaders to activate change. In this way, CIDOs become the transformer of legacy “muscle memory” and act as the champion of transformation.

For sustained success, organizations also need to include technology representation on the board and establish open and routine channels of

communication with the CIDO. Organizations where this access is missing are already falling behind the curve. For those companies, it is critical that the CIDO recommend adding a board member with the relevant data and technology experience.

This representation brings clear benefits: According to MIT Sloan, boards with digitally savvy members reported 17% higher profitability, 38% faster revenue growth, 34% higher market cap growth, and 34% higher ROA.

## 04

### What technology leaders need to consider as they look ahead

CIDOs should avoid the common trap of waiting to develop a “perfect” foundation.

While ensuring that the fundamentals are in place to support the transformation is important, CIDOs should focus on championing a top-down vision with multiple pathways for achieving their strategic priorities. This will entail devising an operating model that develops foundational capabilities in parallel (with some overlap) with incubating and implementing growth-related, value-creation opportunities.

CIDOs will also need to be mindful of partnering with functional and business leaders who, out of necessity, are steadily growing more technically savvy and also own the P&L. These partnerships can be beneficial as the organization looks to mature

its digital capabilities to growth and execution. At the same time, it poses potential risks if leaders without the necessary technical skills attempt to act independently on technical projects or claim ownership of the technical strategy.

Ultimately, this remains an exciting time for CIOs, CDOs, CTOs and CIDOs. There is an imperative for companies to not only engage in digital marketplaces, but to excel within them. Technology leaders who prepare their organizations to compete and win in this environment will position themselves for roles with ever-increasing responsibility, which could serve as a steppingstone to greater responsibility in the C-suite.

#### **To accelerate this, these leaders may consider executing the following immediately:**

- ▶ Formally announce digital goals and intentions along with the projected bottom-line impact.
- ▶ Present a digital/technology strategy to the board, aligning it with the core future of the business.
- ▶ Develop a roadmap to translate your talent strategy (e.g., partner ecosystem) into a company-wide talent strategy.
- ▶ Define the future of data and analytics at the company, including identifying “gold mine” data sources.

Scott Galloway, Shashi Shrimali, Anandaraj Krishnan, Michael Rath, Gordon A Wissinger, Andy Youn and Daniel McCarthy also contributed to this article.

# Summary

CIDOs hold the key to unleashing impact as their organizations pursue digital maturity. The time to seize the opportunity is now.

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