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The Evolving Role of the CIO in the Era of Digital Transformation

AUTHOR

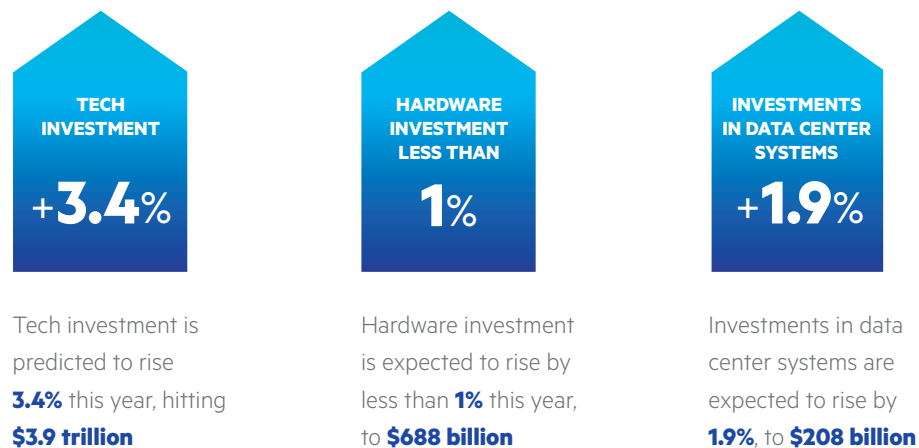
Ed Diver

Chief Information Officer at Digital Realty

Are you feeling the burdens of KLTO (Keeping the Lights On)? IT decision makers are tasked with juggling legacy infrastructure, KLTO, risk mitigation, competitive differentiation through technology while reimagining business processes across the organization. In fact, according to IDG's 2020 State of the CIO report¹, 67% of CIOs say that the creation of new revenue-generating initiatives is among their job responsibilities.

65% of firms globally remain in the three lowest maturity levels of digital transformation², and new investments around digital transformation are growing the complexities every day.

Gartner predicts³:



Creating space and time for digital transformation is no small feat. So how does an IT decision maker keep up with performance demands, ensure security structures are stable, and create a cohesive data strategy? They'll need to develop strategic plans across three pillars: technology, process, and people.

Technology is driving us forward and keeping us back.

As the usage of technology and applications increases, so does the need for the CIO to safeguard the massive amounts of decentralized data that accumulate.

Too often, a CIO is bogged down by mismanaged and aging technology. When you are charged with maintaining systems, you know that as soon as you deploy any system, you have to keep it running for the undetermined future. Each new system added to the stack draws time and resources. Not to mention, networking and server infrastructure with many multiprotocol label switching (MPLS) networking points can leave companies facing many single points of failure as a risk. In many enterprise environments, they are considered a secure transport mode because they run on a virtual private network (VPN).⁴ Companies using MPLS face the unique risk of invisible hosts and rogue devices connecting to the network and leading to network vulnerability.⁵

As technology and application use increases, so does the need for the CIO to safeguard the massive accumulation of decentralized data. It is equally critical to apply a single version of the truth to master transactional data in order to optimize data exchange. The biggest challenge for digital transformation is not the technology itself, but the data gravity barriers⁶ that result from the massive amounts of data that accumulate and cause added complexity—possibly preventing digital transformation from happening at all. So, IT strategies have to address decentralized data and accommodate distributed workflows that vary by participant, application, information and location-specific needs.

As technology systems age, they draw more resources. The result is poor network performance and application operation. Application failures can cause irreparable damage to the IT department's credibility among all business partners within an organization.

Leaving legacy to drive value.

CIOs need a bridging strategy to link KTLO infrastructure with the emerging technologies that create competitive advantage.

Adaptation for survival.

The momentum of new tech is fueled by evolution. Adapting to new technologies used to be a competitive advantage. However, it's no longer acceptable to automate business processes, ensure cloud storage, and call it a day. The core of the shifting CIO role includes owning the technology that serves the customer experience. *"To support the creation of new revenue-generation projects, CIOs are learning about customer needs, creating teams focused on innovation and creating business case scenarios with defined costs and benefits."*⁷

According to *CIO Magazine*,⁸ Anheuser-Busch uses a combination of mobile applications and algorithms for ordering. It's serving to "change the conversation between the sales rep and the store owner" to focus more on new products with store owners. McKesson, a leading healthcare company, is working to "shift data warehouses to the cloud" with the hopes that they can provide prescriptive recommendations right to the patients.

People power change.

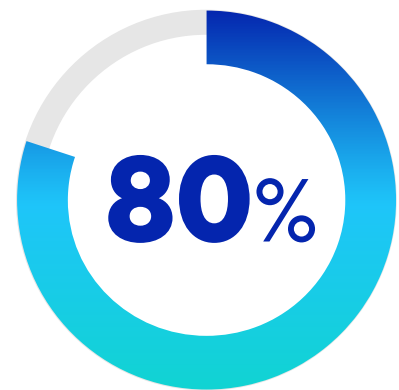
The CIO's people problem is two-fold. First, one of our top priorities⁹ is aligning with business owners across the organization to ensure that technology is serving the internal and external users. Every business unit should be able to leverage all aspects of technology to do their job while IT drives digital transformations. If you don't have the business engaged, you won't drive the necessary change. Investing in relationships across the organization evaluates the perception and the execution of IT's role in the organization.

**"To support the creation of new revenue-generation projects, CIOs are learning about customer needs, creating teams focused on innovation and creating business case scenarios with defined costs and benefits."
(IDG)**

Chief Human Resources Officers are responsible for company culture. Create a partnership with them to align your transformation initiatives with their change-management strategies. Per Gartner,¹⁰ by 2021, CIOs will be as responsible for culture change as Chief Human Resources Officers. Furthermore, by 2021, 80% of midsize to large enterprises will change their culture as a way to accelerate their digital transformation strategy. **Most importantly, in 50% of digital transformation cases, CIOs report that the main barrier is culture. Thus, fortifying this alignment will be paramount for the transformation and adoption of new technologies.**

New technologies and applications push business leaders into new realities where IT becomes a shadow department, leaving them with no support to solve problems. This creates issues for compliance, governance, and security—increasing risk to the business. New infrastructures allow the business to do what it needs to do. Fostering core partnerships in collaboration with HR can also help break down these barriers and overcome the organizational challenges brought on by new technologies.

On the other hand, as the pace of technology shifts, it's easy to feel like you never have enough people to do the transformational work. Gartner predicted in 2018,¹¹ **“by 2020, 75 percent of organizations will experience visible business disruptions due to [infrastructure and operations] skills gaps.”** One way the industry experiences this disruption is the cost of hiring highly-skilled tech workers. However, the solution could lie in reskilling. The World Economic Forum¹² estimates that more than half (54%) of all employees will require significant reskilling by 2022. It makes sense to ensure that CIOs are getting ahead of this to create a constant supply of talent in the near future.



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The SaaS Graph™

The SaaS Graph™ shows the relationship between people and SaaS apps in an organization. Each line represents an app-to-person connection.

Actual data from an anonymous company's SaaS usage, as of January 2019.

18
EMPLOYEES



81
APPS



400
CONNECTIONS

Growing Complexity

Company Size (Employees)	Average Connections
0-10	47
11-50	189
51-100	584
101-200	1,120
201-500	2,478
501-1,000	5,671
1,000+	19,848



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IT needs to bridge the gap.

A CIO has to juggle a complex infrastructure that includes managing old/new equipment, existing talent, and team cultivation while navigating the ever-changing landscape of shadow IT. Enterprise infrastructure experiences create additional complexity as business partners add more and more unvetted applications. As a result, administering IT management strategies, maintaining internal business relationships, and addressing harmful security threats becomes even more difficult without a robust decentralized infrastructure.

Then there's the disparate data storage. The use of rogue applications means that data is all over the place. Every connection is a vulnerability. **According to Blissfully's 2019 annual SaaS study, the average company with 1000+ employees has approximately 203 apps and an average of 12.5 duplicate applications.**¹³ Between existing content, business data, and customer information, data can be spread around cloud software instances, compounding IT demands with data gravity issues.

To solve digital transformation and overcome data gravity, CIOs should adjust strategies for decentralized infrastructure deployments and improve precision to scale globally. This requires an architectural integration of its physical and virtual worlds while interconnecting to digital ecosystems and adapting to the needs of the business.

Balancing the users' need to manage their own software applications while managing risk and IT demands is key. IT teams need to be agile and flexible to gracefully manage the risks.

“By 2022, 60% of enterprise IT infrastructures will focus on centers of data, rather than traditional data centers.”

How can CIOs transition? Use architecture as the blueprint.

Architecture is the blueprint for IT and the business. While data is the critical topic, business users need to run and optimize operations. Managing business requires focusing on all architecture disciplines, not just the data.

A new enterprise architecture is necessary to support the exploding volume of digital business workflows, as well as the highly interactive traffic behaviors. This brings users, systems, and networks to the data. This removes barriers of data gravity and creates a center of data exchange to scale digital business.

Even data centers themselves are undergoing digital transformation. Per Gartner,¹⁴ *“By 2022, 60% of enterprise IT infrastructures will focus on centers of data, rather than traditional data centers.”* With data distributed from the core to the cloud to the edge, a decentralized infrastructure is needed to remove data gravity barriers and accommodate distributed workflows.

Establishing standards and understanding data.

Solutions start with understanding the data, but the sensitivity and regulation of data dictate where it needs to live. From there, you can architect solutions with requirements, regulations, and business objectives in mind. That landscape provides parameters for transforming digital processes across the organization.

Whether they are internally established standards or more widely accepted standards like ISO, building and maintaining an information architecture is more tenable when you keep them at the forefront. For example, the risk-management aspects of ISO 27001 (established controls and control objectives) and ISO IEC 200000-1 (information technology service management) help ensure a seamless, documented handoff. Operating under tried and true parameters allows you to build reliable architectures, free up people and resources to focus on innovation, and meet future business needs.

Differentiation through business capabilities.

CIOs are described as the “**digital architects of the business**” by Forrester.¹⁵ You have an obligation to ensure that the strategy drives architecture rather than the other way around. Technology-driven architecture rarely meets business needs and timelines, and it serves as a flywheel for false starts and inefficiency. Each of these factors limit the potential for technology’s ability to propel a competitive advantage in an enterprise.

Future state architecture.

Transitioning aging solutions, infrastructure, and outdated business process to emerging technology that removes the headache of managing your own data center, like the hybrid cloud, won’t be simple. To get on the right track, you must understand the full scope and nature of the data in a way that ensures it has an appropriately-secure home, and it has the right provider for your workload. Don’t pay more than you need to for the new solutions. Work with partners who have on-demand pay structures so you can easily adjust your computing capacity based on peak and lull periods. Then it’s time to plan for flexible access. Not only will you want a tool that can act as a single point-of-entry to save the time of your stretched teams, but you’ll want to craft flexible network architectures to ensure the network is as flexible as your chosen cloud selection.

Interwoven architectural disciplines.

To adequately serve the organization, the interplay between the business, information, systems, and technology architecture needs to be fully understood. When you grasp the complexities of each branch, a complete picture of the thought process, strategic position, storage maturity (cloud or otherwise), and integration approach will allow you to plan accordingly. You’ll also be better positioned to know the security risks, compliance issues, and the needed strategies to manage them. In addition, you can’t have one without the other three. The needs of the business must be supported by all of the architectural disciplines to be effective.

Business-forward approach.

Despite many considerations, the business architecture needs to be the lens in which you view all the other elements. By vetting technology decisions with the business leaders in the enterprise, you avoid the risk of failing to meet business needs and timelines. This type of business-first strategic technology architecture elevates the performance of the business and enables competitive differentiation.

“CIOs are described as the “digital architects of the business.”

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Digital Realty supports the world's leading enterprises and service providers by delivering the full spectrum of data center, colocation and interconnection solutions. PlatformDIGITAL[®], the company's global data center platform, provides customers a trusted foundation and proven Pervasive Datacenter Architecture PDX[™] solution methodology for scaling digital business and efficiently managing data gravity challenges. Digital Realty's global data center footprint gives customers access to the connected communities that matter to them with more than 280 facilities in 47 metros across 24 countries on six continents. For more information, please visit digitalrealty.com or follow us on LinkedIn and Twitter.



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