

CIOs Reveal Their Priorities and Successes in IT Transformation



Digital business success has become heavily dependent on IT modernization and automation. CIOs point to progress on several fronts as they share their key technologies and operational challenges.

Companies today understand there are significant business benefits to modernizing and automating their IT processes. By doing so, they can improve operational efficiencies, boost productivity and agility, reduce costs and — with the resultant savings — invest in new initiatives and innovations to become even more competitive.

But how do you go about transforming IT infrastructure and operations, and how do you measure progress? After all, efforts to harness IT transformation as an engine to drive business transformation have been underway for years and will continue into the foreseeable future.

Fortunately, a ready source of detailed IT transformation insights exists. For nearly a decade, Dell EMC and VMware have helped CIOs define and prioritize the steps needed to transform their IT organizations as part of a series of IT Transformation Workshops with their customers¹.

¹ Based on anonymous customer data from Dell EMC and VMware IT Transformation Workshops executed from 2010 to 2017.



IT Transformation Priorities and Successes

Every organization has its own IT transformation objectives, challenges, and successes. Dell EMC and VMware have identified several IT goals that are common among CIOs and IT decision-makers who have participated in IT transformation workshops. Among the top goals:

- ▶ Finding better ways to support business unit users. Two of the key IT capabilities supporting this objective are:
 - having a self-service portal with a catalog of automated services; and
 - being able to provision IT resources dynamically or within a single day.
- ▶ Speeding the development and deployment of applications to meet evolving business needs. This objective is driving adoption of continuous delivery and DevOps techniques and practices.
- ▶ Reducing IT costs and optimizing the use of cloud platforms. This objective is reflected in the strong adoption of hybrid cloud solutions.

Organizations are making slow progress toward reaching these goals. Meanwhile, they are attaining some of their overall IT transformation objectives. Among the top performers (those in the top 20 percent for achieving targeted goals), successes include:

- ▶ Achieving nearly 100 percent computer infrastructure virtualization.
- ▶ Enlisting full executive and line-of-business support for IT transformation initiatives, and creating a documented strategy and roadmap for that transformation.
- ▶ Using next-generation, platform-as-a-service, cloud-based systems such as Cloud Foundry.
- ▶ Taking no more than a week — in many cases, taking less than a day — to provision IT resources.

This paper draws from that deep trove of data to provide a picture of how IT transformation initiatives have evolved over the years — and where they stand today. It shows CIOs' top IT priorities, their progress toward reaching those goals, and steps they want to take toward IT transformation.

An evolution in IT transformation: Trends and objectives

Not surprisingly, as business needs and objectives have evolved over the years, so have the top concerns and IT initiatives of CIOs.

The need to reduce IT complexities and control costs persists, but it has become seen as a way to fund more strategic business requirements, including:

- ▶ **increasing customer satisfaction and loyalty.**
- ▶ **boosting employee productivity.**
- ▶ **speeding development times and time to market.**
- ▶ **improving decision-making.**
- ▶ **responding rapidly and dynamically to both market opportunities and competitive challenges.**

Nowadays, achieving all these goals depends heavily on a modern and sophisticated IT infrastructure built on a virtualized computer, storage, and networking foundation. Increasingly, organizations are turning to hyper-converged infrastructures (HCIs) that leverage elements that have been pretested, pre-integrated, and optimized for performance, cost effectiveness, and flexibility requirements. HCI solutions — which usually employ industry-standard servers and advanced technologies such as all-Flash storage — speed infrastructure deployment, ease management burdens, and can greatly accelerate IT transformation initiatives.

Infrastructure virtualization, process automation, and a comprehensive service strategy have helped companies break free from dedicated and inflexible IT silos that couldn't be easily — or affordably — repurposed to fluidly address changing workload demands.

Now that server and storage virtualization has reached critical mass, organizations are embracing network virtualization. They are taking advantage of its ability to reduce manual processes and to more easily manage the security of data center assets. Nearly 70 percent of the CIOs in 2017 said they hoped to eventually have at least 40 to 60 percent of their networks virtualized. It's a

substantial goal: 77 percent said they had achieved, at most, 20 percent network virtualization.

Transforming organizations and practices

Not every aspect of IT transformation is technology-based. For example, 73 percent of the CIOs in 2017 said they want to move away from functional IT silos toward “one team, one mission” to provide the highest quality services to their business at the lowest costs. Yet, only 4 percent have actually realized this IT organizational preparedness objective — the same percentage as in 2010.



Many IT transformation priorities have held steady over the years, while some have faded and new ones have emerged.

Ultimately, one of the most critical factors aiding IT transformation initiatives is strong backing from the business. One aspect of this is the inclusion of CIOs in strategic business decisions. Almost all (93 percent) CIOs have said they desire either full executive and line-of-business support for IT transformation, or at least getting such support to create a partial or fully documented transformation strategy and roadmap.

Here again, however, progress has been slow. The segment of CIOs reporting that their transformation strategies have won full business support has fluctuated between 9 percent and 16 percent since 2010. On the flip side, those reporting some support for a documented transformation strategy and roadmap grew from 10 percent in 2010 to 28 percent in 2017.

Gaps in IT transformation priorities and achievements

Many IT transformation priorities have held steady over the years, while some have faded and new ones have emerged. Through the Dell EMC workshops, CIOs have given visibility into both these shifts and the next steps they must take to further their IT transformation goals.

IT service delivery and operating models

Among the greatest areas of importance to CIOs are those associated with their organizations' service delivery and operating models. These IT transformation

elements also face some of the steepest paths to travel, given the gaps between their current and target states.

Transitioning to a service delivery model is a multifaceted undertaking that requires everything from acquiring new IT skills to improving core processes such as change management and resource provisioning. For each of these IT transition components, Dell EMC has identified five levels of adoption or evolution, with Level 5 being the most advanced state. (For more information, see “Methodology for Assessing IT Transformation” sidebar on page 6.)

Figure 1 show the service delivery and operating model transformation progress. The table illustrates the percent of workshop participants whose organizations have already attained the top levels, and the percent who hope to reach the top levels — or a “target state.” Many companies have a lot of ground to cover in these areas of IT transformation, each of which can be critical elements in achieving desired business outcomes.

Figure 1 CIO's Top Transformation Goals

Operating Model Initiative	Target State
Metering for Consumption Automated IT service metering	85%
Analytics Automated analytics with trending	88%
Capacity and Performance Proactive, predictive capacity and performance management	93%
IT Skills Cloud-optimized IT service management skills	78%
Resource Provisioning 1 day to provision infrastructure	73%

Source: Based on anonymous customer data from Dell EMC and VMware IT Transformation Workshops

A top operational goal for many companies is the ability to rapidly provision IT resources to meet changing requirements. As shown in Figure 1, nearly three-quarters (73 percent) of the CIOs said they want to reach a point where resource provisioning takes less than a day or is completely elastic and dynamic.

Also on their target list: the ability to track IT usage to fairly bill business units for their share. Indeed, as shown in Figure 1, companies have made more

progress in this goal than in any of the other service delivery and operational categories measured. Even here, however, only 17 percent have been able to partially automate IT service metering or achieve a fully automated and transparent metering system.

Despite this modest progress, 85 percent of the 2017 workshop participants rate this as a top goal. It's a tall order, given that 32 percent of the CIOs said they have no ability to perform this task at present.



The hybrid cloud approach allows companies to use on-premises infrastructure for critical workloads.

While adopting service metering and other operational objectives is a priority, the most-desired capability among the service delivery and operational categories is capacity and performance management. A whopping 93 percent of CIOs in 2017 said their target state is to proactively address capacity and performance issues through alerting or with automated responses. And yet, only 12 percent had attained one of these levels of sophistication.

Cloud computing plays an important role

IT transformation encompasses a wide range of disciplines and elements, but many of them relate to the powerful and prolific trend of cloud computing. Among other benefits, delivering IT as a service via the cloud model can reduce CapEx and OpEx, improve efficiencies and response times, support self-service objectives, and help provide IT cost transparency for budgeting and bill-back processes.

Placing some operations and data on hybrid cloud infrastructures also can aid another important goal: business resiliency. Here again, intentions are strong, yet a gap remains. In 2017, 70 percent of CIOs said they want 60 percent or more of their critical applications to be protected via modern, automated recovery processes. So far, only 25 percent have achieved this level of protection.

Some transformation objectives are explicitly cloud-related, including the adoption of hybrid cloud architectures that give companies the option to deploy applications in either public or private clouds. For example, the hybrid cloud approach allows companies to use on-premises infrastructure for critical workloads, while marrying that

infrastructure to public cloud environments for scalability, flexibility, resilience, and other operational benefits.

Of the 2017 CIO workshop participants:

- ▶ 48 percent had reached an initial evaluation stage in their hybrid cloud journeys.
- ▶ 60 percent are targeting 20 percent or more of their production applications for hybrid cloud environments.

Many companies don't have a prioritization strategy for moving applications onto cloud platforms. That is changing, however; 27 percent said they soon expect their workload recommendations for hybrid cloud to be fully validated by the business.

As shown in Figure 2, there are several initiatives where at least two-thirds of the workshop CIOs are struggling and have significant gaps between their actual and desired states.

Figure 2 CIOs Identify Challenging Initiatives

	2016/2017	2015	2014
Self-Service Portal/ Service Catalog	78%	77%	71%
Continuous Deployment	74%	n/a	n/a
Analytics and Predictability	73%	n/a	n/a
DevOps	70%	n/a	n/a
IT Skills	68%	69%	69%
Hybrid Cloud Workloads	67%	68%	64%

Source: Based on anonymous customer data from Dell EMC and VMware IT Transformation Workshops

The figure also reveals another important aspect of IT transformation efforts: New technologies arise that modify plans. Four of the initiatives that have large gaps between current and target states weren't measured in earlier workshop years; they have emerged as new priorities with widespread attention and focus.

Emerging challenges and opportunities in IT transformation

An important aspect of IT transformation efforts is that new initiatives and technologies arise that modify plans.

Several initiatives have emerged as priorities in recent years. Among the most impactful include:

- ▶ **Continuous deployment:** Continuous integration (CI) and continuous delivery (CD) are essential for any organization that seeks to rapidly deploy software. CI is the process of automatically building software after new bits of code are integrated into a shared repository. CD uses automation to provide a consistent method of deploying these software artifacts, along with configuration changes.
- ▶ **DevOps:** DevOps focuses on regularly shipping quality software that meets business needs by avoiding the traditional handoff friction and delays between product development (Dev) and IT operations (Ops) through greater collaboration, communication, and joint responsibility for the success of software delivery. It requires consistency and repeatability in processes that are streamlined and automated to eliminate unnecessary manual intervention.

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These elements are quickly moving up CIOs' IT transformation priority lists, along with third-generation application platform initiatives such as platform-as-a-service (PaaS) and container-as-a-service (CaaS).

The reason? Digital business relies on new software and features that address the dynamic needs of customers; yet, for most companies, developing and deploying software takes too long. As of 2017, 32 percent of CIOs said it took from six to 12 months to complete a new application development cycle, and 29 percent said it took more than 12 months. Their targets: 41 percent want the process to take less than three months, and 24 percent are aiming for less than two weeks.

CI, CD, DevOps, and application platforms like PaaS and CaaS are key enablers that can help organizations speed the development lifecycle and release software faster.

Figure 3 breaks out the adoption levels of these initiatives and shows the current and target states for each.

Figure 3

CIO's Emerging Priorities	Current State		Desired State	
Continuous Deployment	Little to no CD capabilities	88%	CD standardized, adopted, and driven by business requirements	89%
DevOps	Little to no adoption of DevOps	77%	DevOps pervasive across the enterprise and used by more than ½ of app pipelines	87%
Application Platform	PaaS not used or limited to database and middleware as a service	85%	PaaS, CaaS in use to create scalable, resilient apps	69%

Source: Based on anonymous customer data from Dell EMC and VMware IT Transformation Workshops

IT transformation becomes a business imperative

IT transformation is a natural process that has been occurring within companies for decades. Organizations have adopted new generations of technology from mainframe and minicomputers through PCs, client-server computing, the internet and, most recently, cloud computing.

Today, fast-emerging technologies, including the Internet of Things and artificial intelligence, are driving new IT imperatives. At the same time, IT practices and cultures have also progressed, most notably with IT departments moving from isolated, technology-centric units to become more business focused and integrated.

What has changed most over time is the urgency and importance of IT transformation initiatives. Most business activities and goals have become fully dependent on, and inseparable from, IT operations. Companies that hope to survive and prosper in today's digital world can do so only by aggressively modernizing and automating their IT infrastructure, adopting new deployment models such as cloud computing, and fine-tuning their operational practices and IT skills.

Methodology for Assessing IT Transformation



Launched in 2010, the IT Transformation Workshops from Dell EMC and VMware provide a window into how IT activities and goals have evolved in recent years. The CIOs and IT decision-makers all over the globe attending these workshops gave details about their organizations' current and desired states for approximately 30 key performance indicators (KPIs) that are critical components of transformation initiatives.

Some of the KPIs cover specific IT technologies, while others involve organizational structures or operational practices. They span multiple disciplines, including IT infrastructure, applications, service strategies, and operating models.

For each KPI, Dell EMC identified five levels of accomplishment, with Level 1 being the most rudimentary and Level 5 the most advanced. Workshop participants provide self-assessments of their current levels of achievement for each KPI, and their desired target states. A gap is defined and noted when there are two or more levels between current and target state.

The workshop attendees asked to participate, and sought help with their transformation programs and plans. Their achievements, objectives, and challenges provide powerful insights into the state of IT transformation and can help other companies determine where to focus their own transformation efforts.

As the CIOs in the workshops have made clear, IT transformation is no simple thing. It requires companies to tackle a wide variety of organizational challenges while also keeping pace with ongoing technical advances across a range of disciplines.

The first step is identifying the many diverse elements that together power IT transformation. Also important is understanding the progress being made by industry peers, and the challenges commonly faced.

CIOs participating in the long-running Dell EMC and VMware IT Transformation Workshops provide a clear window into today's landscape and how it continues to evolve. These peer insights can provide IT decision-makers with critical knowledge as they shape their own transformation initiatives.

For more information on IT transformation and how Dell EMC can help you realize your IT transformation goals, visit DellEMC.com/ITTransformation.