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MIT Executive Study Uncovers Top Healthcare Trends Shaping IT Resilience

How the pandemic drove unique transformation in healthcare

Strategic Insights from Healthcare IT Organizations

As healthcare organizations worldwide battled COVID-19 on the front lines, they had sudden, dramatic proof of the value of digital technologies. Now as leaders across the globe strive to make their healthcare organizations resilient, new enterprise technology priorities are emerging. It turns out that healthcare organizations that are "future ready"—possessing technologies that are highly flexible and capable of fully supporting patient care anywhere—are best positioned to succeed in the uncertain times ahead.

Here are the top 8 takeaways from a survey and series of selected in-depth interviews with 80 healthcare executives as part of 600 respondents about the pandemic's effect on IT conducted in June 2020 by the MIT Technology Review in partnership with VMware.

In this survey, digital transformation is defined as "the incorporation of modern technologies into a healthcare organization's processes and strategies to achieve business goals, such as improving patient outcomes or operational agility." Examples include migrating applications to the cloud and automating operations.

Strategic Insight #1

COVID-19 Removes Decades-Long Barriers to Digital Transformation

89% of healthcare leaders surveyed are accelerating their digital transformation.

A full 89% of healthcare leaders in the MIT Technology Review study are accelerating their digital transformation. COVID-19 is a catalyst for speeding implementation plans for next-generation technologies. Across industries, healthcare organizations over financial services, retail, and others were the most likely to cite accelerating digital transformation due to the pandemic.

Takeaway: Healthcare IT organizations are pivoting quickly as digital technologies become a necessity to serving sick patients in pop-up and overflowing hospitals while keeping healthy patients safe.

The goal is to become future ready. Healthcare organizations that achieve this status possess digital foundations supporting any cloud, any app, and any device so they can better respond to change—ensuring business continuity as well as

resiliency. Of the 11% of healthcare organizations that have not accelerated digital transformation, there are two possibilities. Either they were already moving fast to seize digital-first initiatives that no acceleration was necessary, or their technology infrastructures are so antiquated they are hard-pressed to know where to begin. The former healthcare organizations are well on their way to resiliency. The latter are unlikely to survive in the long run.

Strategic Insight #2

Consumerization and Patient Experience Is the New Business Differentiator

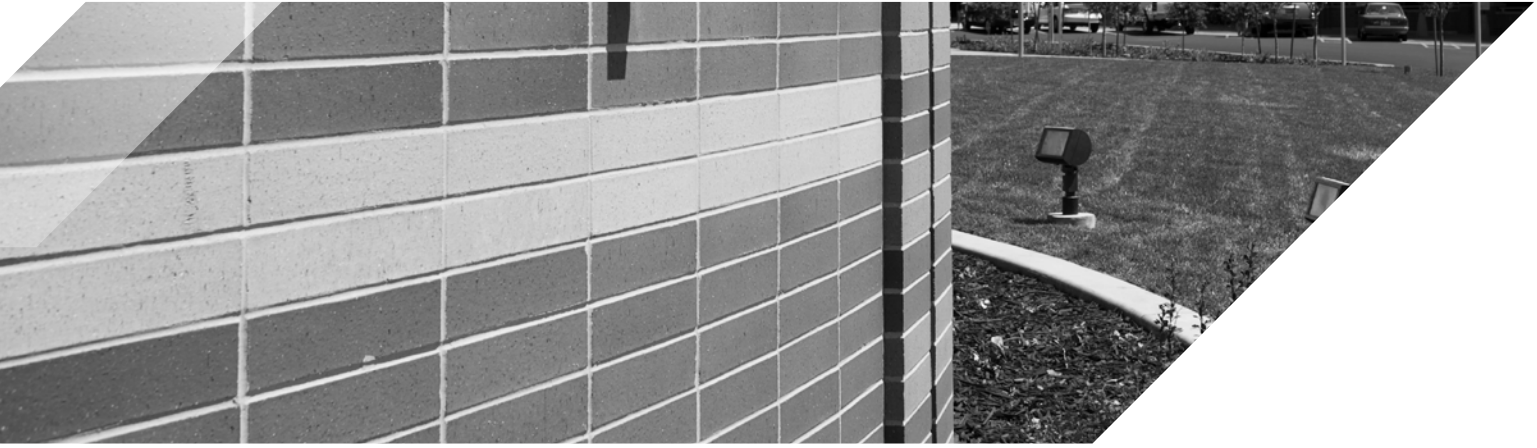
39% of healthcare respondents have accelerated adoption of a cloud-based platform to support modern application development as a result of the pandemic.

More than half (51%) of healthcare organizations surveyed are increasing patient experience investments. The most obvious has been the ballooning of telehealth services worldwide. Improving the application portfolio is key to improving the patient experience, according to a recent Forrester survey of global healthcare CIOs and SVPs.[1] One of the first signs of changing priorities resulting from the crisis is that nearly four

in ten healthcare respondents (39%) accelerated adoption of a cloud-based platform that supports modern application development. Moreover, a majority (54%) indicate that they have expanded their Agile practices and continuous delivery (CD) methods in response to demands resulting from COVID-19. A third (33%) have instituted "secure-by-design" application development.

Takeaway: Today's patients have more choice than ever about where to go for their care and healthcare organizations are actively digitizing to attract and keep patients.

The MIT Technology Review study reveals that modernizing applications and cloud adoption go hand in hand. Legacy healthcare application development and delivery models are costly and ill-equipped to support cloud-native and other modern apps. Applying continuous integration/continuous delivery (CI/CD) models when developing applications helps healthcare organizations more easily support changing requirements, especially when developing apps to enhance the patient experience. And, as outside events continue to drive digital transformation, flexible, automated technology environments allow healthcare organizations to become more fully digital and swiftly move to software-defined infrastructure.



Strategic Insight #3

New Digital Services Are Creating Greater Cyber Risk

52% of healthcare leaders indicate they are allocating a "significant" share of their IT budgets to security and threat management.

The number one priority is protecting against cyberattacks and securing protected health information (PHI) according to healthcare leaders surveyed. As healthcare organizations adjust to new risk realities, more than half (52%) of healthcare leaders indicate they are allocating a "significant" share (more than 25%) of their IT budgets to security and threat management. And 58% of healthcare respondents indicate they will put more emphasis on defending against cyberattacks over the next 12 to 18 months—particularly endpoint risks.

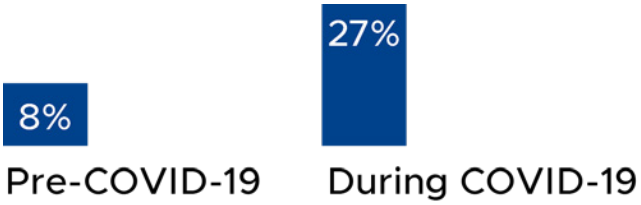
Takeaway: Healthcare organizations are under attack from cyber criminals seeking to steal data and disrupt services. Global organizations saw a 148% spike in ransomware attacks early in the pandemic.[2]

Future ready healthcare organizations recognize that growing telehealth practices and distributed workforces widen potential attack surfaces and have moved to strengthen their security postures with zero-trust, least-privilege policies and controls across on-premises, cloud, and endpoint devices. They leverage intrinsic security to automatically embed protection everywhere. This is a fundamentally different approach from "bolting on" security products. By deploying intrinsic security, healthcare organizations looking to fortify operations can pivot to a strategy that leverages infrastructure and control points in new ways across any app, any cloud, and any device. When combined with threat intelligence, healthcare security teams can shift from simply reacting to proactively protecting their environments from positions of strength.

Strategic Insight #4

Telehealth and Distributed Work Capability Goes From Nice-to-Have to a Must-Have

Estimated % of remote workforce (industry average)



Unlike other industries, much of healthcare is hands-on work. While during COVID-19, the size of distributed workforces across industries rose from 8% to 27%, on average, most essential healthcare providers continued to work in physical locations. Yet telehealth practices have increased significantly, filling a much-needed gap in serving healthy populations. There's little question patient and employee experience remains a top priority for healthcare (see #2). Leaders want the best outcomes for patients while retaining and attracting top talent and ensuring back-office staff are empowered to do their best work. A key challenge for business and IT leaders around digital experience is centered on providing the physical equipment necessary to be productive remotely (55%).

This is different from manufacturing where 73% of IT and business leaders place employee efficiency and workflow automation as the highest priority now. And also contrasted with financial and government respondents who believe their organizations' top challenge is protecting IP and data in the new remote-access world.

Takeaway: Healthcare organizations have proactively been shifting to embrace mobility for care providers but many stopped short of telemedicine initiatives focused on caring for healthy populations and remote work policies empowering back-office staff.

So even for healthcare leaders, the increase in distributed workers was dramatic. Those with the most flexible and employee-friendly digital platforms were best positioned for success. Collaborative tools and platforms such as the digital workspace unifying device management and identity are becoming essential to care providers, telehealth practices, and serving a host of new distributed workers as IT enables real-time patient-caregiver engagement and information sharing while allowing users to choose their preferred platforms—all keys to business agility.

Strategic Insight #5

Investment In Transformative Digital Technologies Is Rising—In Healthcare More Than Other Industries

44% of healthcare respondents anticipate increases in their IT budgets as a result of the pandemic.

Almost all healthcare respondents (98%) say they hope to stay the course throughout the crisis by continuing to invest in the adaptable technologies required to achieve digital transformation. More than half (54%) report that their current year IT budgets will be the same, and another 44% anticipate increases as a result of the pandemic.

In contrast, 42% of global respondents across industries only considering digital transformation but not yet implementing, are cutting budgets. About half (54%) of decision makers

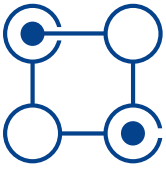
industry wide did not find their business-continuity plans effective while most (68%) healthcare organizations did (see #8). This theme of digital-forward organizations preserving or increasing IT budgets is different across industries: healthcare as well as government and telecommunications providers are the most likely to maintain or increase their digital investments while manufacturing shows signs of pulling back in response to the crisis.

Takeaway: Today's healthcare executives and boards of directors are increasingly in favor of healthcare IT (HIT) investments that improve patient, care provider, and staff experience, speed operations, and drive new revenue sources.

Those ahead of the curve on digital transformation investments are able to more proactively plan—and execute—their technology responses. Because healthcare organizations work with tight IT budgets, they can first focus on optimizing infrastructure to gain sufficient efficiencies that free up budget for digital innovation.

Strategic Insight #6

Resilient HIT Is Key to Digital Success—Automation and Multi-Cloud Are Next



Top healthcare infrastructure efficiency initiatives:
40% Automation
38% Adoption of a multi-cloud strategy

When asked about resilience, more than half (58%) of healthcare organizations surveyed cited infrastructure efficiency as key to success, expecting to allocate a significant share (more than 25%) of their IT budgets to infrastructure efficiency. And the infrastructure efficiency initiatives that are most likely to be prioritized due to the pandemic are automation (40%) and adopting a multi-cloud strategy (38%).

Takeaway: Automated HIT infrastructure and operations can help protect care provider health and safety by boosting telehealth practices and supporting non-essential staff under work-from-home mandates not only during the pandemic but also after natural disasters and periods of unrest.

COVID-19 highlights the need for an adaptable and resilient technology infrastructure that supports all aspects of healthcare from operating, emergency and hospital rooms to billing operations. Those healthcare organizations that had already been diversifying their infrastructure to eliminate single points of failure—moving to cloud while retaining their on-premises environments—will continually be better positioned to adapt.

Strategic Insight #7

Cloud Growth Unabated—Adoption Remains Balanced in Healthcare

#1 app challenge for healthcare respondents is maintaining governance and compliance.

The MIT Technology Review study reveals healthcare organizations moving to the cloud—to infrastructure- or platform-as-a-service (IaaS and PaaS) as well as patient and care provider-facing software-as-a-service (SaaS) applications—accelerated during the crisis, and is expected to continue to rise. Public cloud workloads are growing, albeit slowly, due to COVID-19, the study shows. On average, 13% of applications in healthcare were hosted in the public cloud prior to COVID-19. This number is expected to jump to 21%

over the next 18 months. Yet healthcare's cloud adoption during the crisis has introduced challenges, especially around compliance. More than two-thirds of healthcare leaders (68%) cite "maintaining governance and compliance regulations, for example, patching apps to meet security/compliance requirements" as a top application challenge because of their expanded public cloud activities.

Takeaway: A growing number of cloud services are now available to power applications that can improve patient engagement (e.g., scheduling), and boost caregiver and staff productivity (e.g., business billing and human resources apps).

While easing operations, these mostly do not differentiate healthcare organizations but rather give them the flexibility to rapidly meet new operational needs while lowering costs. And by adopting a single, unified digital foundation, healthcare organizations can simplify cloud adoption by seamlessly extending to multi-cloud without having to reskill, refactor apps, or retool.

Strategic Insight #8

Disaster Recovery Does Not Equal Business Continuity

Only 32% of healthcare respondents had effective business continuity plans.

Although healthcare organizations were more likely to have a business continuity plan than other industries surveyed—74% of healthcare respondents indicating they had business-continuity plans in place prior to the crisis—COVID-19 challenged their readiness as many plans were oriented toward traditional notions of disaster recovery. Three in ten (32%) healthcare leaders felt their plans were less effective when attempting to cope with the pandemic.

Takeaway: Healthcare business continuity and disaster recovery (BC/DR) plans and technologies have traditionally been structured to support a quick return to operations as usual.

The pandemic is further proof that BC/DR strategies are critical aspects of a healthcare organization's overall HIT strategy. Future ready organizations incorporate BC/DR into all of their operations to respond quickly to crises, adapt to new realities, and accelerate innovation. Only when all healthcare organizations can respond swiftly and effectively to crises will they be ready to make the more radical changes required for digital transformation.

1. *Forrester Consulting, commissioned by VMware. "Forrester Study Finds Modernizing Apps Improves Patient Experience," April 2020.*
2. *VMware Carbon Black. "Amid COVID-19, Global Orgs See a 148% Spike in Ransomware Attacks; Finance Industry Heavily Targeted," April 15, 2020.*

Looking Forward

Keys to healthcare agility and resilience include adaptable technology architectures, patient and care provider empowerment, and a comprehensive cybersecurity approach, according to the MIT Technology Review study. The COVID-19 crisis is the latest—albeit most severe—test of healthcare organizations' abilities to respond and succeed during adverse times, and it has shown that those with future ready strategies are best positioned for success.

Understanding IT and pandemic resilience trends can help your healthcare organization be better prepared for what's next. To learn more, visit *vmware.com/go/healthcare*.