VansonBourne

NUTANIX

THIRD ANNUAL

NUTANIX ENTERPRISE CLOUD INDEX

How Healthcare Compares

Third Annual Nutanix Enterprise Cloud Index

ABOUT THIS REPORT

For the third consecutive year, Nutanix has commissioned research to learn about the state of global enterprise cloud deployments and adoption plans. In mid-2020, U.K. researcher Vanson Bourne surveyed 3,400 IT decision-makers around the world about where they're running their business applications today, where they plan to run them in the future, what their cloud challenges are, and how their cloud initiatives stack up against other IT projects and priorities.

This year, survey respondents were also asked about the impact of the COVID-19 pandemic on current and future IT infrastructure decisions and how IT strategy and priorities might be changing because of it.

This report is supplemental to the global **Third Annual Enterprise Cloud Index** master report and focuses on cloud deployment and planning trends in the **healthcare industry**. It highlights key data points gleaned from IT professionals working in the healthcare field and how they compare to enterprise cloud experiences and plans in other global vertical markets.

The **Third Annual ECI** respondent base spanned multiple industries, business sizes, and the following geographies: the Americas; Europe, the Middle East, and Africa **(EMEA)**; and the Asia-Pacific **(APJ)** region.

See the appendix of this document for definitions of terms used in the research survey and this report, as well as for complete demographic details and methodology information.

Industry Most Bullish on Hybrid Cloud Also Faces Biggest Legacy Transition Challenge

KEY FINDINGS

1 **Hybrid private/public cloud is the ideal IT operating model, according to healthcare respondents, and they're evolving their infrastructures to get there.** The healthcare industry was more bullish than any other sector about combining public and private clouds into a hybrid IT model: **94.5%** agreed that hybrid was their ideal choice, a marked increase from last year **(87%)**. The figure also far outpaces this year's global, cross-industry average of **86%**. The steps that healthcare organizations are taking on their hybrid journeys include adopting hyperconverged infrastructure **(HCI)** to simplify private cloud deployments and retiring non-cloud-enabled datacenters in favor of greater private and public cloud usage.

2 **The journey to hybrid cloud requires significant decommissioning of legacy architecture.** Currently, more healthcare organizations run exclusively traditional, non-cloud-enabled datacenters **(27%)** than any other industry; average global penetration is **17.5%**. Over the next five years, however, healthcare organizations plan to shrink that gap with an expected **21-percentage-point drop** in legacy datacenter installations and a corresponding **32-point increase** in hybrid cloud deployments.

3 **Healthcare organizations are ahead of their peers with hyperconverged infrastructure (HCI) deployments.** HCI helps accelerate cloud adoption by sharply reducing the time it takes to build the software-defined infrastructure necessary to support private cloud. It also supports the rapid capacity expansion that enables the scalability benefits of cloud technology. About **64% of healthcare respondents** say they've either fully deployed HCI or are in the process of doing so, significantly outpacing the approximately **50%** of global respondents who are using or deploying HCI.

4 **Data security, privacy, and compliance pose a significant challenge for healthcare IT shops more often than most other industries.** Just over half **(51%)** of respondents globally, across industries, described these security-related issues as a "significant challenge," while **58%** of healthcare respondents did so. Healthcare respondents also ranked cost control **(45%)** and business continuity **(45%)** more often as significant challenges than any other industry.

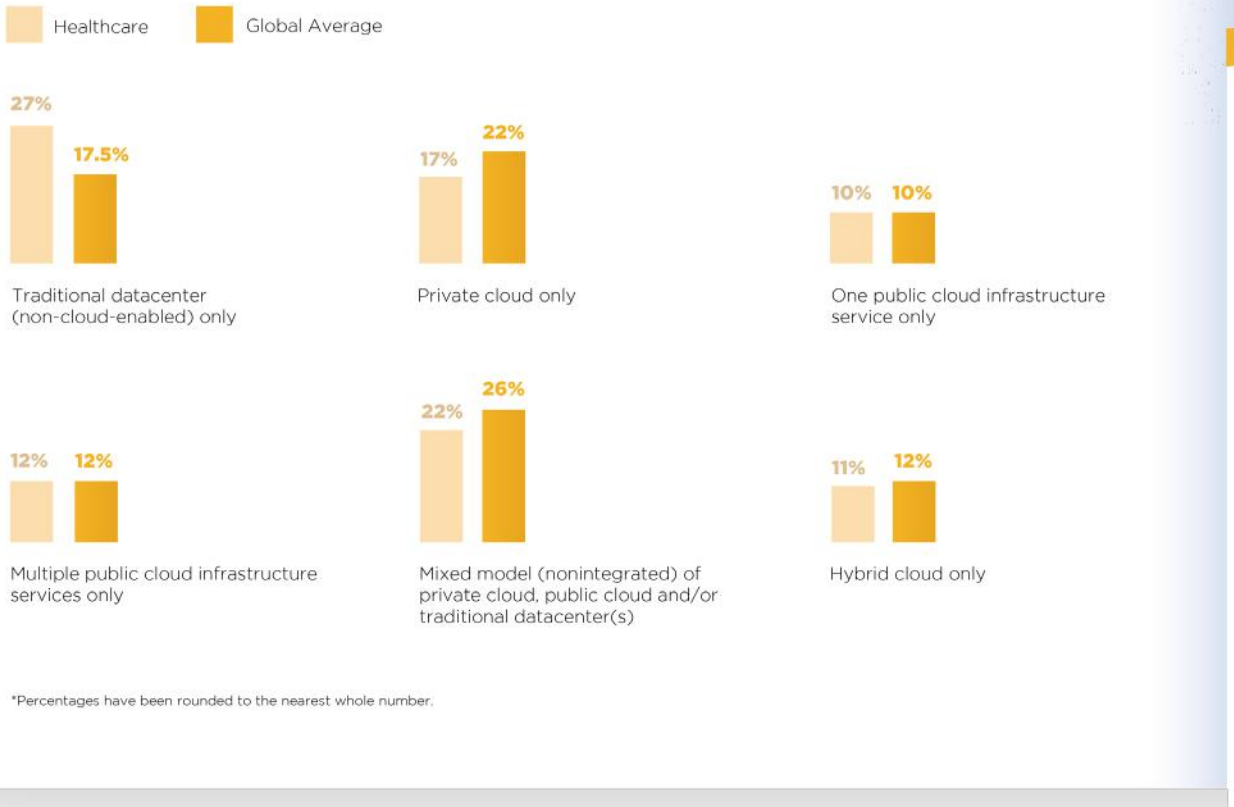
5 **When deciding what IT infrastructure(s) to deploy, healthcare organizations cited cost advantages as a gating factor more often than most other industries.** All industries, including healthcare, indicated that security, privacy, and compliance solution strengths were highly important to infrastructure decision-making. However, healthcare was one of three that ranked cost advantages more often than security as a decision factor; the others were consumer services and energy/oil & gas/utilities. That said, more healthcare respondents cited security concerns **(49%)** as a specific challenge of maintaining a hybrid cloud environment than any other factor.

IT MODELS IN USE AND ON DECK

Third Annual Enterprise Cloud Index research revealed global enterprise plans to aggressively shift investment to hybrid cloud architectures during the next five years. Healthcare IT respondents fell directly in line with that trend, with intentions to boost their use of hybrid cloud by **32 percentage points** during that time.

As noted in the **Key Findings**, healthcare organizations are fairly united in their enthusiasm for hybrid cloud, with **94.5%** agreeing it's the ideal IT model for their organizations. They substantially surpassed the **86%** of the global cross-industry respondent pool that said hybrid was their ideal model. However, healthcare organizations have some miles to go on their journey to reach their hybrid goals: more respondents in the healthcare sector than in any other market also said they currently run traditional, non-cloud-enabled data centers exclusively **(Figure 1)**. These infrastructures will have to be transitioned to private clouds or replaced by public clouds to form components of the hybrid cloud model, unless healthcare IT shops can cost-justify continuing to support traditional datacenters alongside new hybrid clouds.

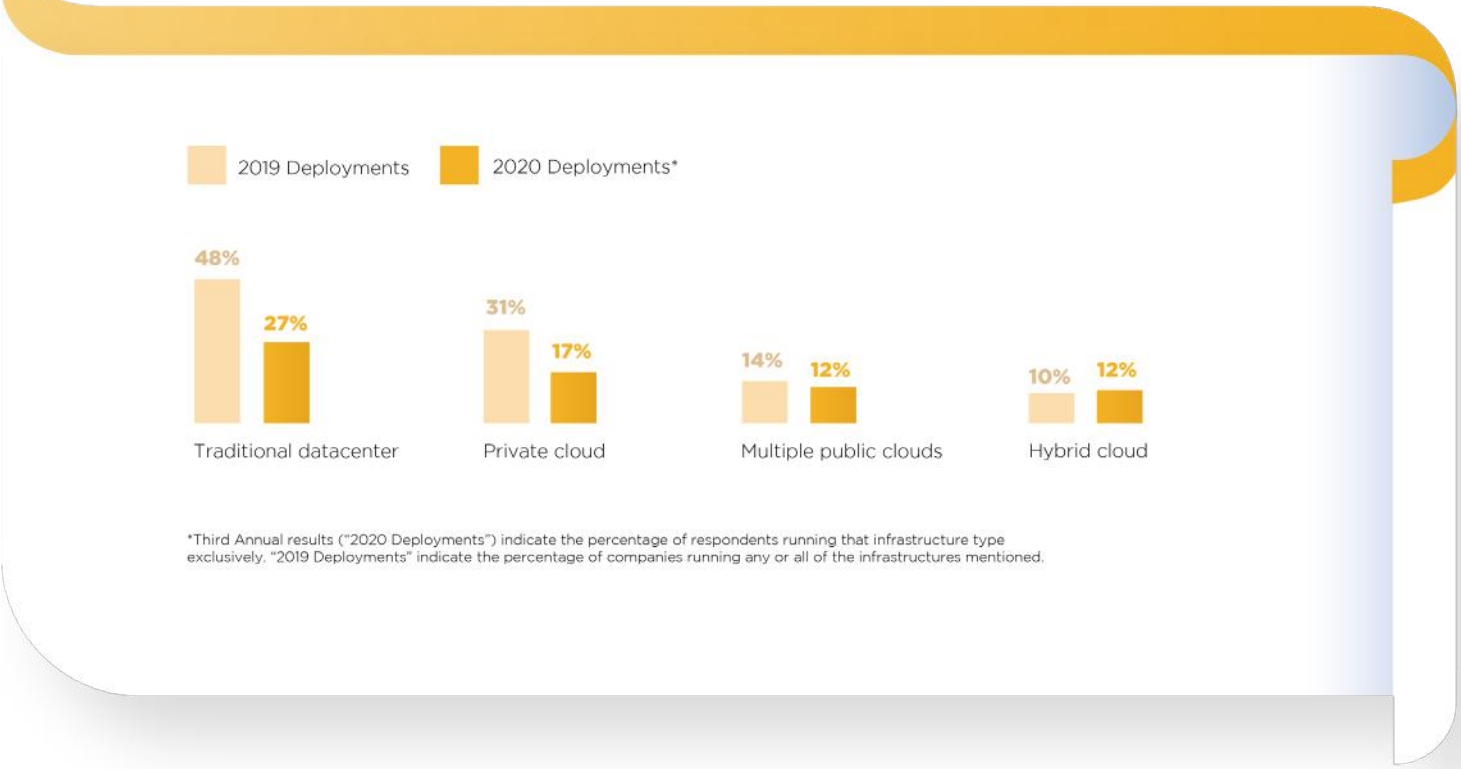
Figure 1. Comparative State of Healthcare IT: What's Running Today*



*Percentages have been rounded to the nearest whole number.

Figure 2 shows the comparative progress of IT infrastructure transition made by the **Third Annual ECI** healthcare respondent pool from 2019 to 2020. The responses indicate that all infrastructure models except hybrid cloud have been decreased. A caveat here is that **Third Annual ECI** results in **Figure 2** marked "2020 Deployments" represent the percentage of respondents running that infrastructure type **exclusively.** "2019 Deployments," by contrast, represent the percentage of companies running any or all of the infrastructures mentioned. It's possible, then, that more of each type of infrastructure listed in the "2020" column is in operation today, running in parallel with other models.

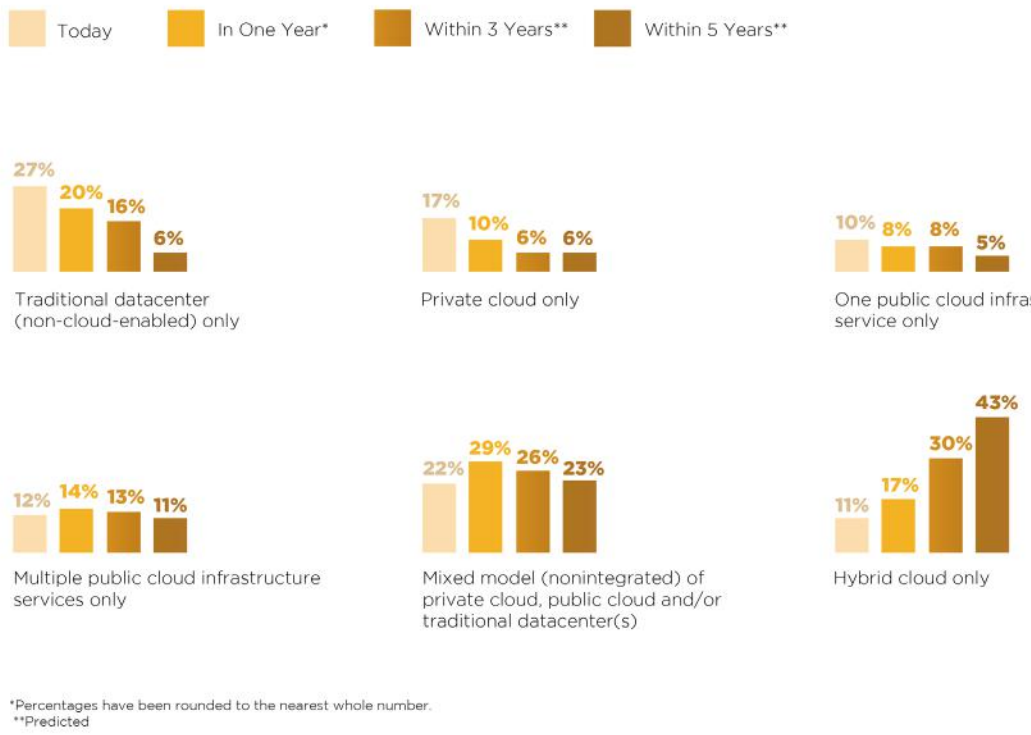
Figure 2. Healthcare IT Deployment Changes, 2019 to 2020



*Third Annual results ("2020 Deployments") indicate the percentage of respondents running that infrastructure type exclusively. "2019 Deployments" indicate the percentage of companies running any or all of the infrastructures mentioned.

As **Figure 2** shows, while hybrid deployment has been sluggish among healthcare respondents, it's the only model to see positive growth over the past year, albeit a tiny amount. **Figures 3 and 4** provide context for how infrastructure changes made from 2019 and 2020 helped position healthcare organizations today for IT transition over the next several years.

Figure 3. A Look Ahead: Current and Planned Healthcare Deployments*

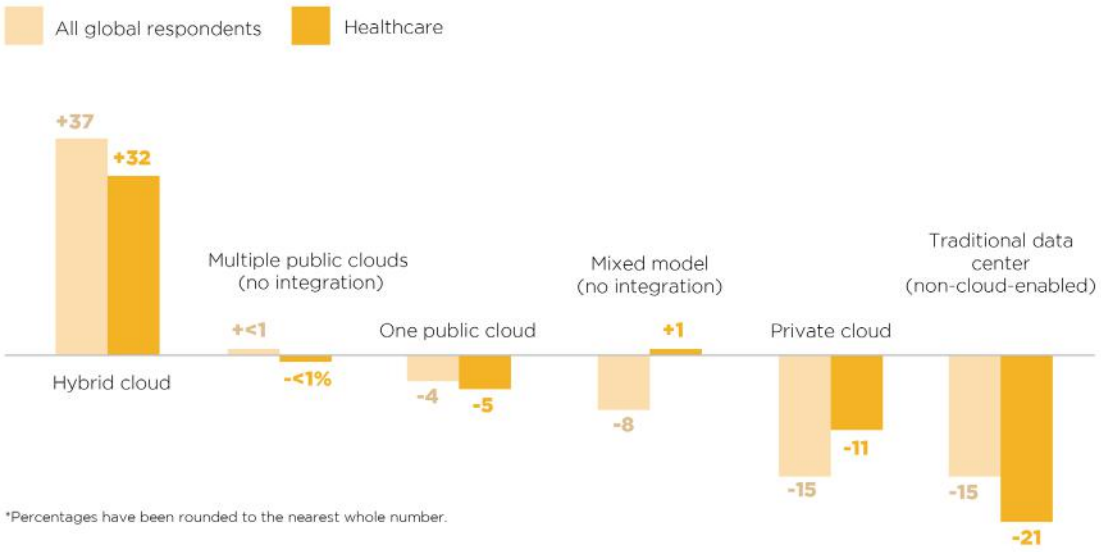


*Percentages have been rounded to the nearest whole number.
**Predicted

During the next five years, organizations running exclusively datacenters, private cloud-only, and one public cloud infrastructure-service only will drop to single digits, as **Figure 3** indicates. Hybrid cloud sees the greatest growth during this time period. And while mixed-model environments will also see a modicum of growth, that can be explained by the fact that a step organizations need to take en route to the hybrid model is to adopt both private and public cloud services, which are the components that ultimately become integrated into the hybrid infrastructure. Notably, healthcare organizations respondents are also expecting an increase in the use of multiple public clouds, or multicloud, in the year ahead. Among healthcare respondents, **32%** of organizations are currently using two or more public cloud while the number grows to **49%** in 12 months' time.

Figure 4 shows these trends for the healthcare sector as they compare to the global response pool average, which accounts for all 3,400 ECI respondents polled across 13 industries.

Figure 4. Expected Infrastructure Deployment Changes by 2025*



*Percentages have been rounded to the nearest whole number.

MILESTONES ON THE HYBRID JOURNEY

Whether or not a single IT model ends up being the one and only infrastructure, it's clear that healthcare organizations and others have embarked on a journey to significantly ramp up hybrid cloud use.

Legacy Influences and Market Trends

The steps they need to take involve decommissioning traditional, non-cloud-enabled datacenters as they adopt private and public clouds, which they will in turn integrate into a cohesively managed hybrid environment. This part of the journey is a bit more complicated than it sounds: **customization** is required because each enterprise has unique business and IT demands that drive how the company designs its cloud environment and consumes resources.

In addition, large, established businesses tend to have **legacy infrastructure to depreciate and migrate** before all applications, data, workloads, development, and processes are ultimately ported to the new environment. The result, for a time, is a hodge-podge of infrastructure referred to in this report as a "mixed model" of non-integrated infrastructure. Healthcare organizations are running moderately less mixed-model infrastructure this year than average **(22% vs. 26%)**, but the **mixed-model** also represents the **second-largest category of infrastructure** in place at healthcare shops after traditional datacenters.

The journey to hybrid cloud has also been affected by industry and macro trends, both pro and con.

For example, **management tools that work across dissimilar cloud platforms** are still maturing, and IT shops seek cross-platform **cloud talent** that's currently challenging to find. To illustrate, **41%** of **Third Annual ECI** healthcare respondents reported they were short on the IT skills necessary to manage hybrid cloud environments, and **36%** said they lacked cloud-native and container skills, such as Kubernetes—technologies that help ease application portability and inter-cloud integration. These issues have contributed to organizational struggles to fully adopt hybrid cloud.

In addition, the **COVID-19 pandemic** has influenced IT priorities. It moved many businesses' IT focus from planned initiatives to remote infrastructure buildouts to support home workers; however, in doing so, it has boosted cloud use almost universally among **Third Annual ECI** respondents. The rapid adoption of public cloud services as remote infrastructure was largely focused on the remote worker support use case in the face of the pandemic. However, it has helped spur the **growth of underlying cloud infrastructure** that's essential to hybrid cloud plans and, more broadly, to corporate digital transformation initiatives.

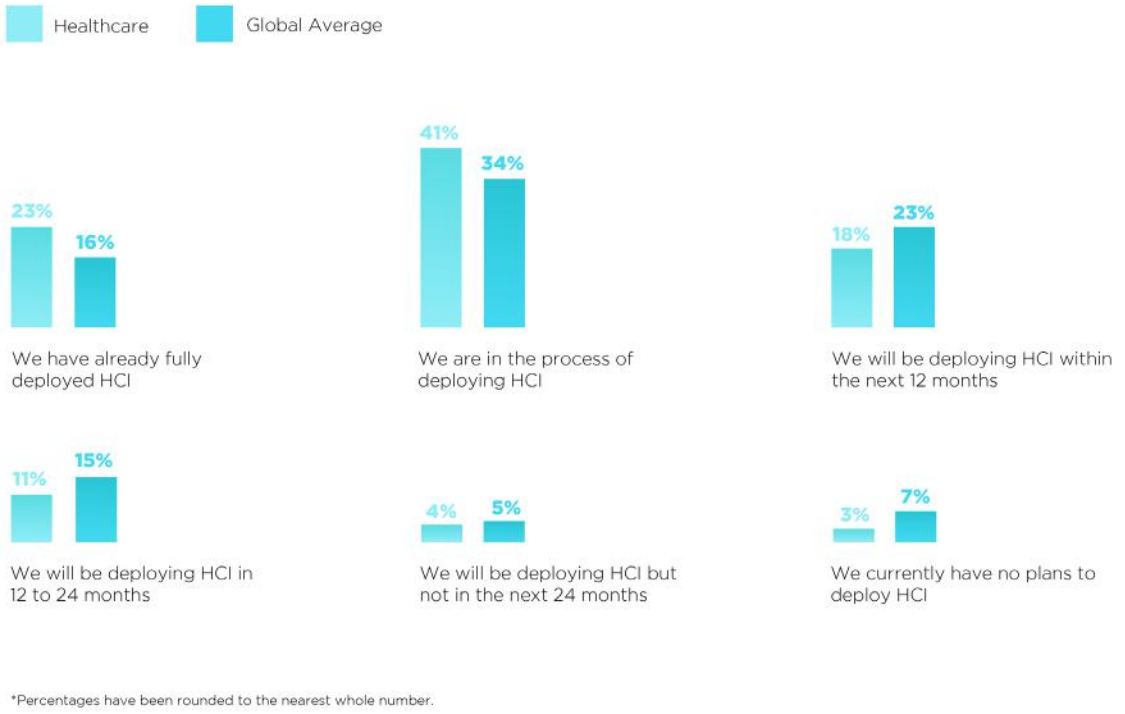
HCI Accelerates Deployments

As part of the transitional IT journey to hybrid cloud, adoption of **hyperconverged infrastructure (HCI) in private data centers** appears to be emerging as a pivotal step. Most respondents who currently run on-premises infrastructure **(93%)** have deployed HCI or say they plan to deploy it.

HCI virtualizes and integrates datacenter compute, storage, and networking devices in standard, off-the-shelf server hardware. As such, it sharply reduces the time it takes to build the software-defined infrastructure necessary to support a private cloud. It also enables the rapid capacity expansion that underlies the scalability benefits that cloud infrastructure promises.

Half **(50%)** of all **Third Annual ECI** respondents with on-prem infrastructure have deployed HCI or are in the process of deploying HCI. And of those who have adopted hybrid cloud, the number jumps to more than two-thirds **(69%)**. As **Figure 5** shows, healthcare respondents are ahead of the averages by **7 percentage points** when it comes to HCI adoption. Their HCI underpinnings should accelerate their transition of traditional datacenters to cloud-enabled components of a hybrid cloud infrastructure.

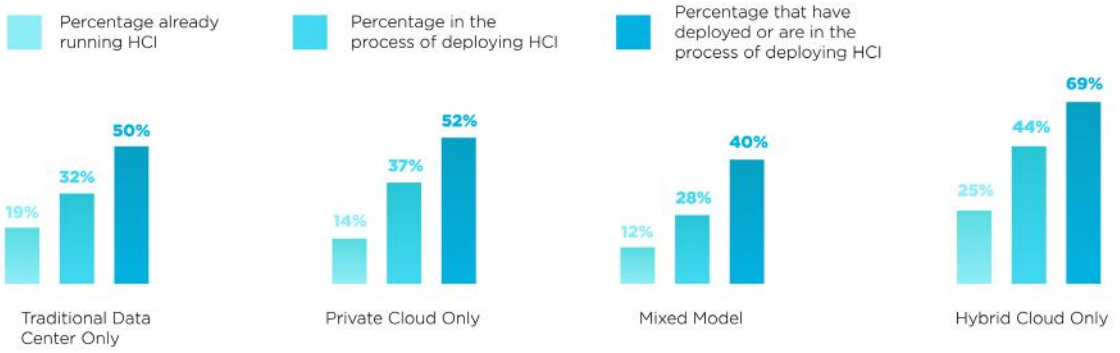
Figure 5. Comparative Strides with HCI Deployments*



*Percentages have been rounded to the nearest whole number.

Figure 6 compares HCI deployments based on what type of infrastructure respondents are running. As shown, far more respondents who have adopted hybrid cloud have also deployed HCI.

Figure 6. HCI Deployments by Infrastructure Type*



*Percentages have been rounded up or down to the nearest whole number

HYBRID CLOUD: ITS PROMISE AND CHALLENGES

Why does the hybrid cloud infrastructure option continue to rank so high with IT departments? **Third Annual ECI** responses indicate that, generally, the appeal is about more than cutting costs, which was the initial draw to cloud computing when it came on the scene a dozen years ago.

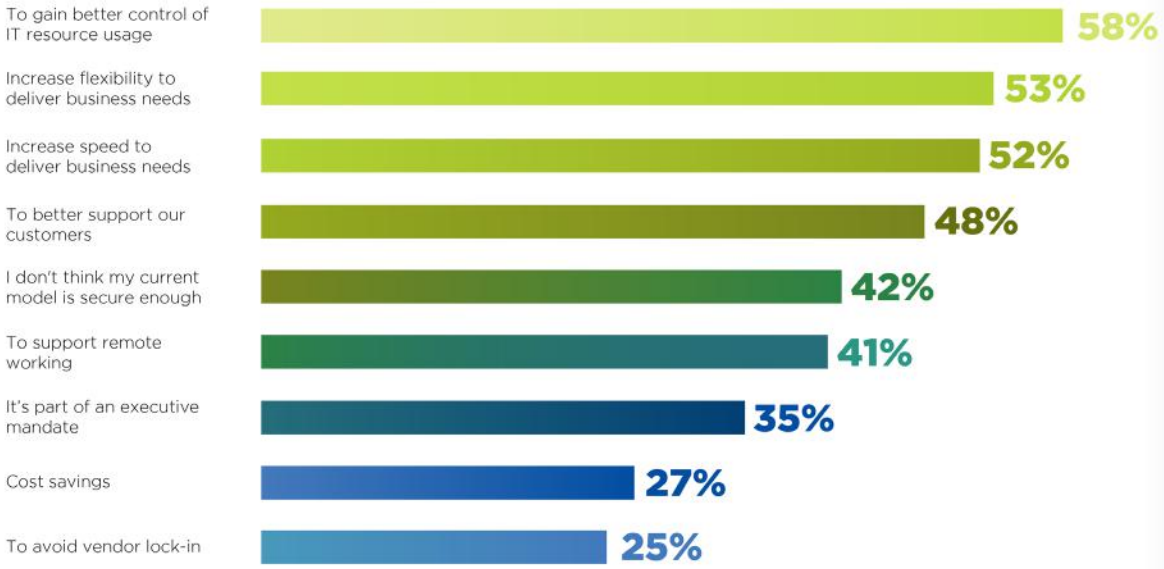
Improving Organizational Outcomes

Respondents said they're moving away from their current IT deployment models, first and foremost, to achieve better business outcomes. Among healthcare respondents, specifically, the three anticipated benefits cited most often as reasons for modifying their IT infrastructures were:

- **Greater control of IT resource usage (58%)**
- **Increased flexibility to meet organizational requirements (53%)**
- **Increased speed to meet organizational requirements (52%)**

In this respect, healthcare respondents were similar to the global averages in that the three outcomes both groups picked most often were the same. As **Figure 7** shows, slightly more healthcare respondents chose better customer support, and moderately fewer cited remote work support as reasons to change their IT infrastructures than their global peers.

Figure 7. Why Organizations are Migrating to Cloud-Enabled Infrastructure*



* Percentages have been rounded up or down to the nearest whole number.

Cost savings are less of an anticipated outcome across the board, with just over a quarter **(27%)** of both healthcare and global respondents citing it as a reason for changing their IT operating models. With these organizational goals in mind, why do healthcare IT teams associate the benefits in **Figure 7** with hybrid cloud infrastructure? The answer might at least partially lie in defining what a true hybrid cloud is and does.

Optimizing Workloads

Global organizations have consistently indicated for some time that they want the freedom to run workloads in the cloud infrastructure best suited to them based on fluctuating criteria. The "best" location could be dynamically determined by IT resource demands, compliance requirements, time-to-market pressures, cost, and other variables.

The ideal cloud of the moment might be private or public, and organizations want the agility to move workloads among them as requirements change. Private and public cloud infrastructures that can interoperate to support this application and workload fluidity with common management and uniform security are considered a hybrid cloud foundation. As such, they make borders between cloud environments all but invisible to employees and IT personnel alike.

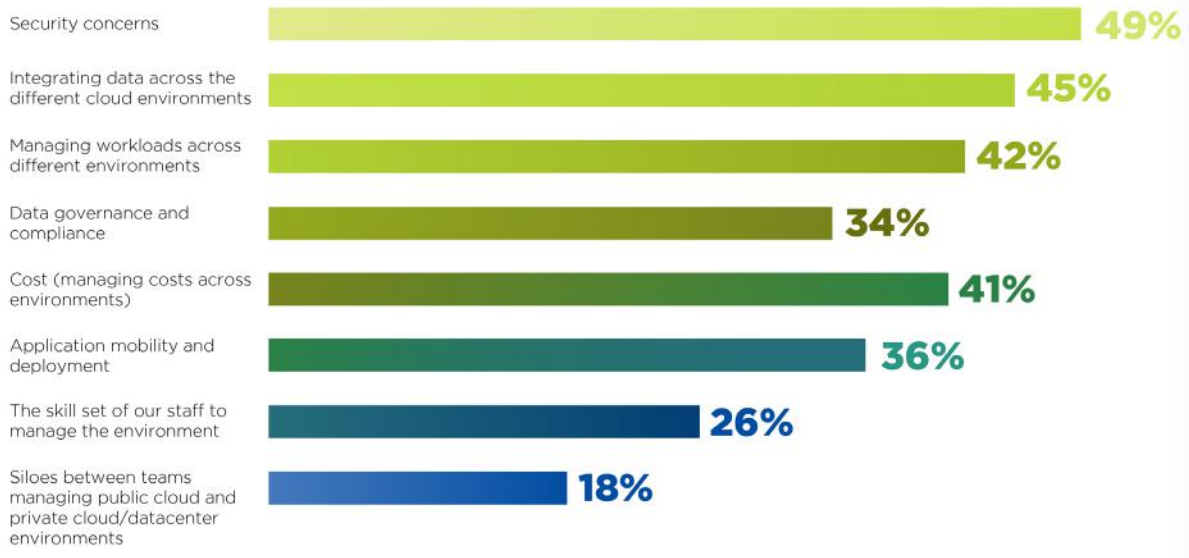
Adoption Impediments

Most healthcare and other **ECI** respondents indicate that they're in the process of transitioning to the hybrid cloud infrastructure described. Yet for most organizations, transitions don't happen overnight. As noted earlier, legacy applications may justify keeping older infrastructure for a time, for example, or require re-platforming skills that organizations may not have on hand.

Year over year, most **ECI** respondents also cite security and related governance and compliance concerns as among both their greatest decision factors and challenges with cloud computing. This year, healthcare and global respondents alike mentioned security concerns most often as challenges to maintaining a hybrid cloud environment, though healthcare respondents cited it slightly less often. Integrating data across different IT environments came up second most often by healthcare respondents **(45%)**, the same as the global average, followed by the related issue of managing workloads across dissimilar environments **(42%)**, which was mentioned by healthcare respondents slightly more often than the global average **(39%)**.

Figure 8 shows the comparative top-ranked challenges of operating a hybrid cloud.

Figure 8. Biggest Challenges in Maintaining a Hybrid Environment*

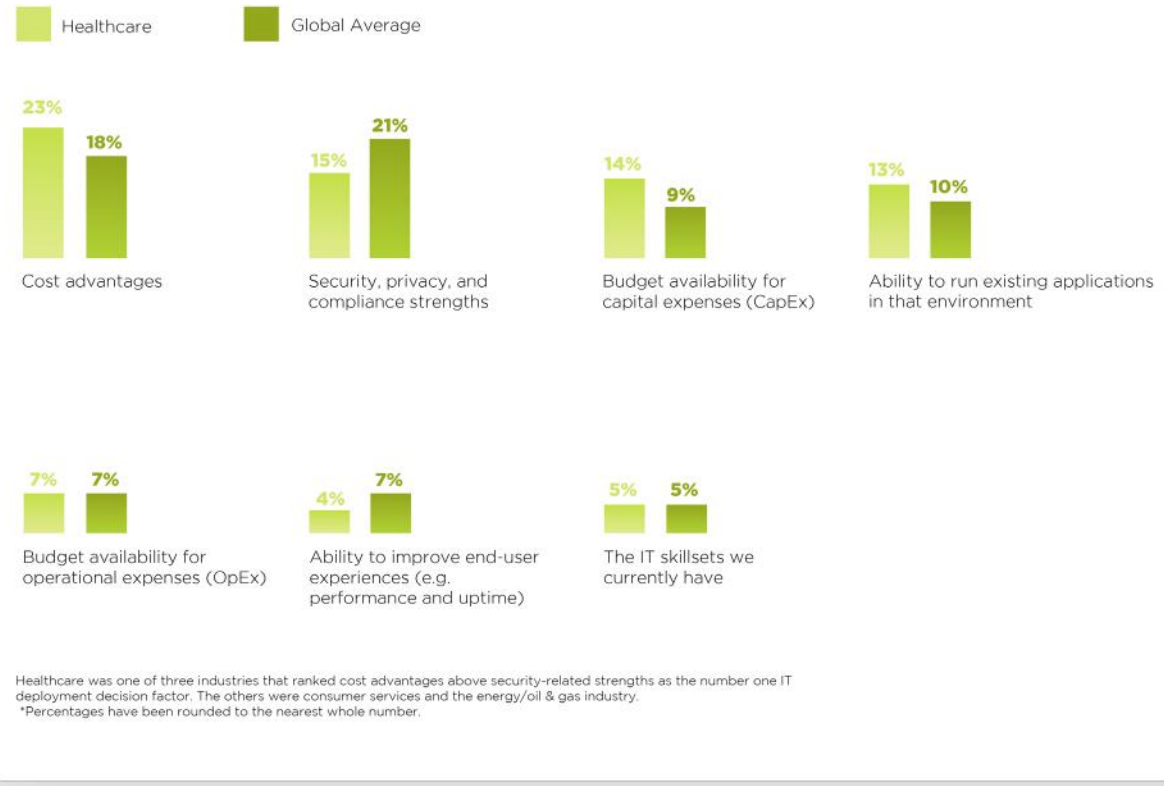


* Percentages have been rounded up or down to the nearest whole number.

When it comes to deciding what infrastructure(s) to deploy, most respondents mentioned the security, privacy, and compliance triumvirate most often as the number one decision factor. Healthcare respondents, however, chose cost advantages most often by an **8-point** margin **(Figure 9)** over security. And while healthcare respondents chose security strengths second most often, the percentage of those who did trail the average by **6 percentage points.**

Healthcare, consumer services, and the energy industry respondents were the only ones out of the 13 sectors polled that chose cost advantages over security-related strengths. Consumer services chose cost more often than any other industry **(25%)**, while the U.S. Federal government chose it least often **(6%)**.

Figure 9. Most Important IT Deployment Decision Factors



Healthcare was one of three industries that ranked cost advantages above security-related strengths as the number one IT deployment decision factor. The others were consumer services and the energy/oil & gas industry.
*Percentages have been rounded to the nearest whole number.

APPLICATION TRENDS

Short-term cloud deployment plans hit a speed bump between 2018 and 2019, when nearly three-fourths of **ECI 2019** respondents **(73%)** reported moving applications out of the public cloud and onto private infrastructure. Correspondingly, the use of traditional data centers increased from 2018 to 2019, which was unexpected. That's why, in 2020, we followed up with questions targeted at discovering the appeal of bringing apps back on-prem and at better understanding decision-making about where applications run today and will run in the future.

While it usually becomes cost-effective to move applications from a public cloud to existing premises infrastructure once their resource requirements become predictable, this didn't appear to be the driving reason behind healthcare actions. Most cited worries about security, privacy, and compliance with public cloud **(Figure 10)**, followed by a desire to gain better control of the application as a rationale for pulling applications back on-prem.

Figure 10. The Comparative Appeal of Running Apps On-Prem*

Security, privacy, or compliance concerns about public cloud deployment

To gain better control of the application

To improve speed of access to data

* Percentages have been rounded up or down to the nearest whole number.

Healthcare respondents chose "improving speed of access to data" third most often, a nod to the faster application response times generally achievable when accessing resources across high-speed local-area networks, compared with having to traverse a wide-area network to reach public cloud resources.

Figure 11 shows healthcare respondents' assessments of how much they've increased their use of various IT infrastructures between 2019 and 2020 and how those changes compare to the global response pool. As the **figure** shows, all but **16%** have increased their use of public cloud, private cloud, and on-premises infrastructure for running applications during the past year.

The figure also indicates that healthcare organizations are more bullish than others about running applications on-prem, even as they increase their usage of public and private clouds: a quarter of them **(25%)** said they're now running more applications on-premises than they were last year, compared to just **15%** of all respondents.

Figure 11. Changes in Where Apps Are Running, 2019 to 2020*

*Percentages have been rounded to the nearest whole number.

And when asked about their application plans for next year, nearly twice the percentage of healthcare respondents than the global response pool said they were likely to run more applications on-premises **(Figure 12)**.

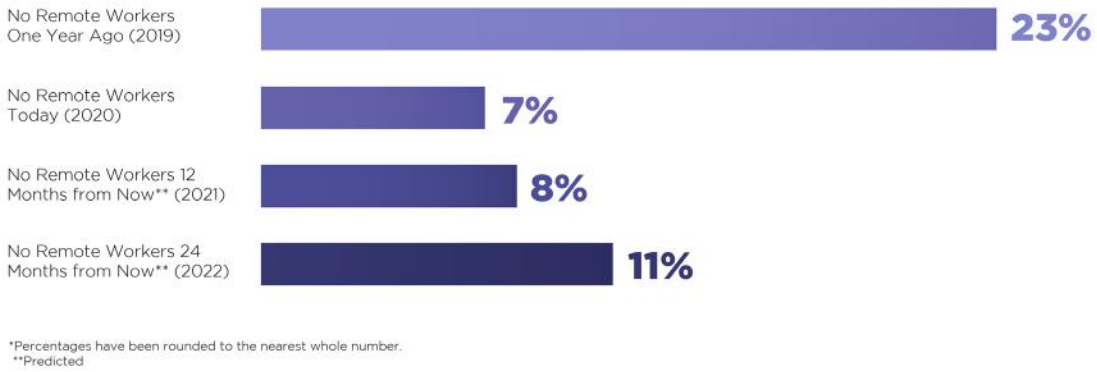
Figure 12. Where Will Apps Run Next Year?*

*Percentages have been rounded to the nearest whole number.

COVID'S IMPACT ON HEALTHCARE IT

The majority of **ECI** respondents said that the COVID-19 pandemic has caused IT to be viewed more strategically within their organizations, and more than two-thirds **(70%)** of healthcare respondents agreed. As indicated earlier, the pandemic has in many cases forced IT shops to turn to the cloud for readily available infrastructure that can accommodate larger numbers of work-from-home employees. While nearly a quarter **(23%)** of healthcare respondents said their organizations had **no employees working remotely** one year ago, that percentage has plummeted to just **7%** this year, the same as the global average, since the onset of the pandemic **(Figure 13)**.

Figure 13. Pandemic Drives Remote Work*



*Percentages have been rounded to the nearest whole number.
**Predicted

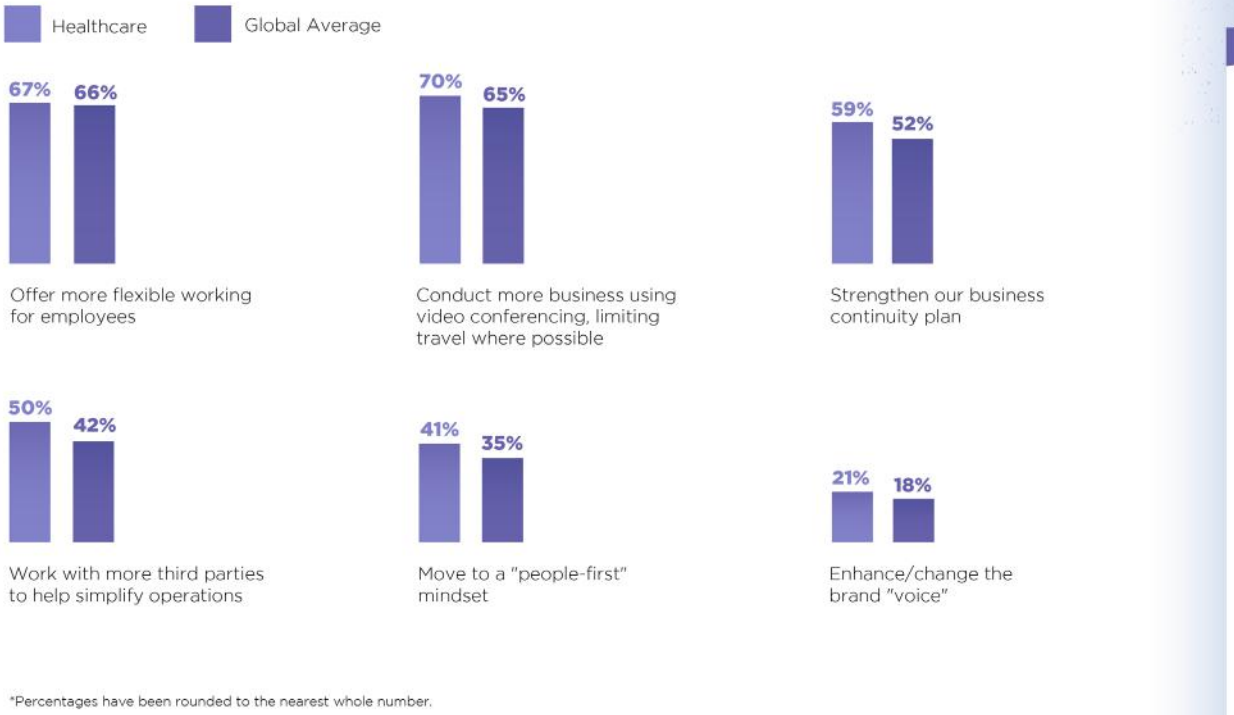
All **ECI** respondents said that they have increased their cloud investments as a direct result of COVID-19. Healthcare respondents' activities outpaced the averages in this regard. **More than half** have increased their public cloud and hybrid cloud use and **nearly half** have invested more in private cloud environments because of the pandemic **(Figure 14).** These moves likely reflect an effort to quickly provide new work-from-home employees with access to IT resources.

Figure 14. New Cloud Investments as a Direct Result of COVID-19*

*Percentages have been rounded to the nearest whole number.

In terms of the types of plans for IT change that the pandemic has fueled, more healthcare respondents than average indicated that COVID-19 is spurring changes in all the options presented. Most notable was an **8-point lead** in plans to **work with third parties** to simplify IT operations and **a 7-point lead** in plans to strengthen **business continuity** plans, as **Figure 15** shows.

Figure 15. Plans for Change Because of COVID-19*



*Percentages have been rounded to the nearest whole number.

CONCLUSIONS

Healthcare organizations overwhelmingly **favor a hybrid cloud architecture**, more than any other sector surveyed. They've embarked on a journey to achieve it with an uptake in private clouds, enabled by HCI adoption, increased public cloud usage, and planned decommissioning of legacy datacenter architecture.

Of the 13 industries polled for this report, healthcare had **the highest percentage still exclusively running traditional datacenters** that had not been cloud-enabled **(27%)**, so their work in migrating those architectures will be significant. They report plans to reduce their exclusive installations of non-cloud-enabled datacenter architecture by **21 percentage points** in the next few years.

Still, it's clear that healthcare organizations **highly value keeping certain applications on-prem**. By a significant margin, compared to the global average, healthcare respondents are running more applications on-premises this year than last, and plan to run more next year at increased levels that also outpace the global average.

Like other respondent groups, healthcare IT pros surveyed indicated that their goals with infrastructure change were more about **influencing business outcomes** for the better than about cost savings. Cost fell toward the bottom of the pile of reasons that organizations are transitioning their IT infrastructures toward the cloud in general and hybrid cloud in particular. On the other hand, when deciding what infrastructure(s) to deploy, healthcare organizations expressed the most concern about cost advantages and was one of just three industries polled that **prioritized cost over security or any other factor as a decision factor.**

All sectors are in various stages of similar journeys. Most have a fairly consistent view of their primary decision factors and challenges. All greatly consider security, privacy, and compliance factors, as most must comply with industry and internal governance mandates that dictate where they're allowed to store data. These are among the reasons that healthcare organizations plan to retain a substantial number of applications on-prem; they're heavily regulated in this regard.