cloudticity

What Healthcare Payer CIOs Need to Know About Moving to the Cloud

Six ways you can make the most of your cloud migration

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Who Should Read This

This white paper is intended for CIOs and other decision makers within the healthcare payer organization who are considering migrating parts of their on-premises infrastructure to public clouds.

The information presented here reflects lessons learned in dozens of Cloudticity engagements with healthcare organizations. While there is no single cookie-cutter way to take advantage of the cloud, these guidelines will help you understand some basic facts about the cloud, set realistic expectations for yourself and your organization, reduce risk, and maximize the likelihood of a successful migration to the cloud.

Brave (and Scary) New World For Payers

If you thought 2020 was a year of massive change, fasten your seatbelts. Four key shifts in the healthcare industry will make 2021 and beyond even more dynamic and unpredictable for payers.

These trends will create both challenges and opportunities for those who are bold enough to act.

Consumerism

Until recently, payers and employers managed most health benefit decisions—the patient was only along for the ride. As a result, patients rarely had to factor in cost in making their healthcare choices. That mindset has changed, due in large part to a steady rise in deductibles and premium copays. On average, covered workers contribute 18% of the premium for single coverage and 30% of the premium for family coverage.

The rise of consumerism presents payers with unique challenges and opportunities to engage their members. In general, member expectations for customer service are high based on the rich interactions that they experience at online retail sites. Now they bring those expectations to healthcare interactions. Legacy infrastructures often cannot support these requirements, which creates an opportunity for those payers that can break down their internal silos and retool their front ends to offer a more integrated and responsive customer experience

Beyond infrastructure changes, payers can educate patients on preventive care and healthy lifestyles, which helps lower out-of-pocket payments and builds brand value with consumers. Given the high cost of a customer service representative (CSR) call—according to one survey, as much as $6 per contact—payers can lower costs by allowing members to understand, manage, and pay the healthcare bills via web portals and interact with their insurers in all aspects of their healthcare. However, this approach also increases the attack surface—web applications are a prime target for cyberattacks.

One percent of people account for 22% of total healthcare spending, while five percent incur more than half.

Source: Agency for Healthcare Research and Quality (AHRQ)

Value-Based Care

It's no secret that healthcare costs in the U.S. are skyrocketing. The lion's share of those costs flow through public and private (non-governmental) insurance organizations. In 2018, private health insurance spending grew 5.8% to $1.24 trillion, which represents 34 percent of total national health expenditures.

One way to address the upward spiraling costs and other healthcare issues is value-based care (VBC), a form of reimbursement that ties payments for care delivery to the quality of care and rewards providers for both efficiency and effectiveness. VBC has the potential to improve overall care for individuals, improve health management strategies, and reduce healthcare costs. As one example, the Total Care Network, Blue Cross Blue Shield Association's network of accountable care organizations (ACOs) and patient-centered medical homes (PCMHs), reduced care costs by 32 percent during the first half of 2018.

Technology is a key enabler in the move to VBC. For example, wearable technologies and their associated apps are growing in adoption. This approach is already supporting patients with chronic conditions such as type 2 diabetes, asthma, arrhythmias, clinical depression, and other disorders—and the list continues to grow. Another promising innovation is the use of physical therapy exercise apps for home rehab post-operatively, which eliminates the need for office visits and yet provides accountability for compliance with the prescribed therapy.

Chronic diseases such as Alzheimer's, diabetes, heart disease, obesity and cancer incur about $3.8 trillion in direct and indirect costs—nearly one-fifth of GDP.

Source: Fitch Solution

Data-Driven Decision Making

Another important way that technology is transforming the healthcare industry is the realm of data-driven decision making. Payers have oceans of historical data that can be mined for insights using data analytics tools. Analytics are unlocking new models in which clinicians can deliver more informed care, patients can be more directly involved in healthcare, and insurers can better assess the value generated in order to determine fair reimbursement.

On the business side, payers can monetize data analytics in several ways. Analytics can help payers identify who their prospective members are and how to target them with relevant, timely messages that increase conversion rates. Payers can create buyer personas that guide targeted marketing campaigns to optimize member acquisition. In addition, insights from data analytics can help the customer experience group to design initiatives that foster loyalty and improve retention rates.

Among payers, Medicare is experiencing the fastest spending growth (7.6 percent per year over 2019-28), largely as a result of having the highest projected enrollment growth.

Source: CMS.gov

New Market Entrants

As though the healthcare marketplace were not crowded enough, incumbent payers face growing competition from outside the industry. Agile startup insurers are developing novel business models and customer propositions to take market share from established insurers. Technology companies are beginning to disrupt the health insurance market, seeing it as ripe for innovation. These new entrants bring deep expertise in technology, consumer experience design, and retail, allowing them to develop more customer-friendly features and transparent processes. The imperative for established insurers is to stay one step ahead of the startups through innovation—quite a challenge in light of legacy infrastructures.

The Changing Role Of The Healthcare Payer

As a result of these trends, the basic business model for the payer is undergoing a radical transformation. The old model was transactional, involving a series of essentially one-on-one interactions across the value chain. This way of doing business has arisen over decades and works well in many ways. However, it can present a disjointed and impersonal picture of the insured employee, who often feels like a number instead of a person (see figure 1).

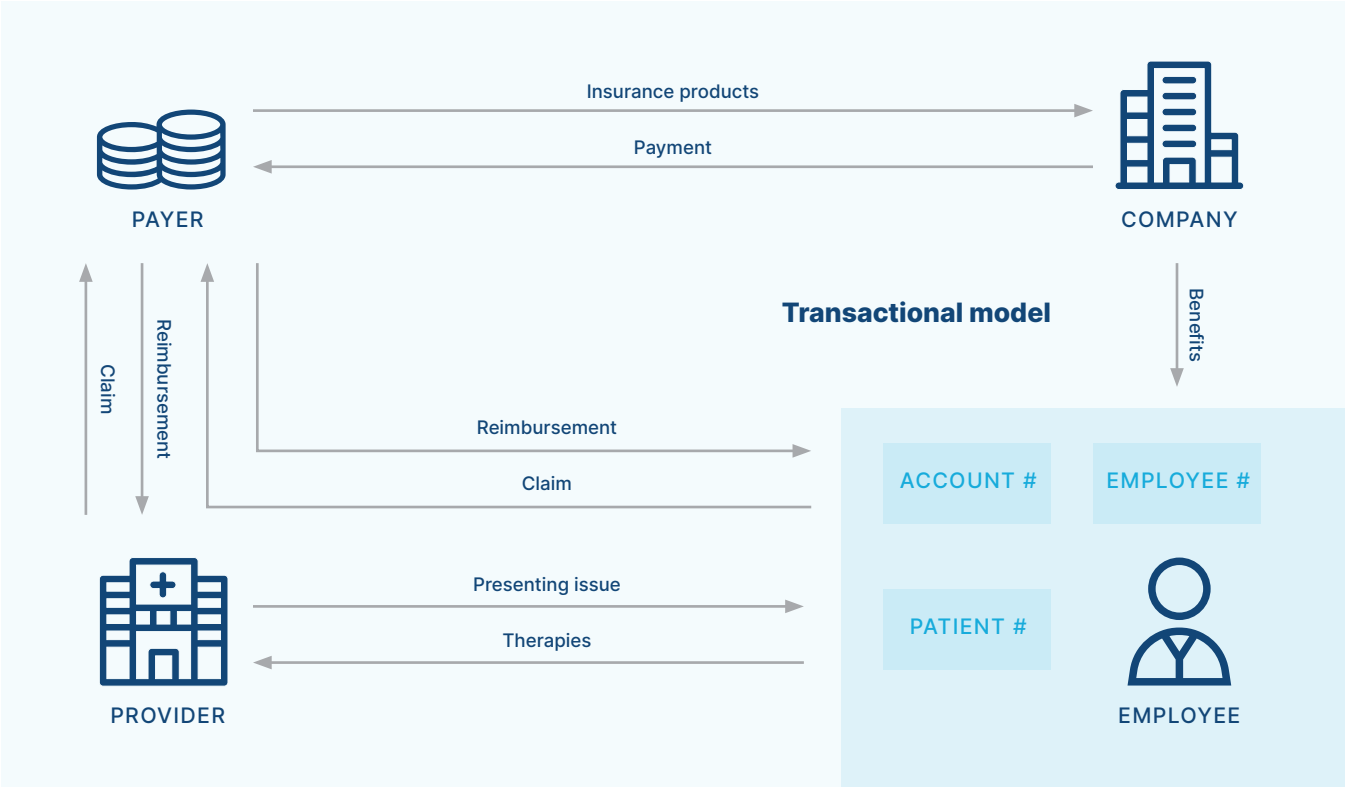

Figure 1. Transactional model—the employee is a set of numbers

As the industry moves to value-based care and consumerism, a new approach is required. The transactional model must give way to a holistic approach that creates a synergistic environment among payers, providers, and patients to improve care, reduce costs, and boost consumer satisfaction. The payer's part in the process now goes beyond a series of transactions: payers increasingly occupy a central role in which they proactively engage the other participants in the value chain, influence provider and member behaviors, and encourage members to invest in wellness programs (see figure 2).

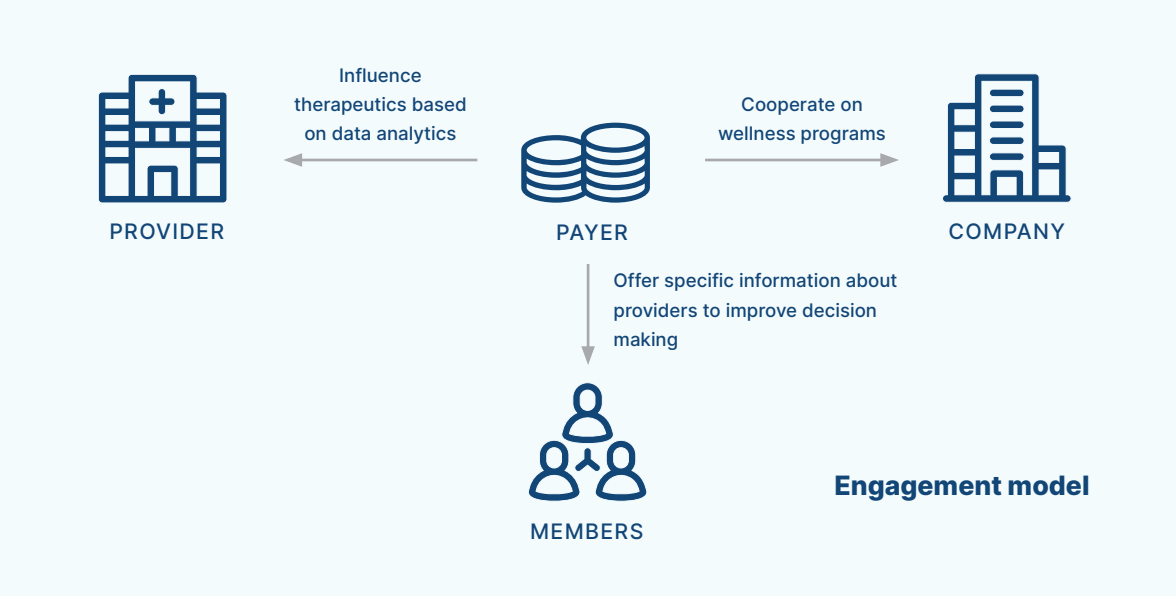

Figure 2. Engagement model—the member is a complete person

Starting in 2022, most payers will be required to publish cost information, according to a final rule published by the departments of Treasury, Labor, and Health and Human Services. These monthly reports will include negotiated rates, historical payments, and prescription drug cost information.

Source: PwC Healthcare Research Institute

Why Payers Are Moving To The Cloud

The trends discussed earlier put additional stress on the payer's infrastructure. In many cases, legacy architectures and monolithic proprietary applications are just not up to the task. Although the healthcare industry in general and payers in particular have been slow to move to the cloud, the arguments to do so become more and more compelling. This section summarizes some of the challenges and describes why many chief information officers (CIOs) are adopting a cloud-first mentality (see figure 3).

- **SCALABILITY: Cloud resources grow and shrink quick**
- **SECURITY: PHI is safer in the cloud**
- **INNOVATION: Cloud is ideal for experimentation**
- **ANALYTICS: Cloud provides perfect platform for data unification and analysis**

Figure 3. Four reasons why payers are moving to the cloud

Scalability: The Sky's the Limit

If the COVID-19 pandemic has taught us anything, it's that you can never be sure you have enough capacity. For example, the CDC reports that telemedicine visits during March 2020 went up by 154% compared to March 2019. Many telemedicine providers simply could not respond fast enough to keep up, resulting in decreased reliability, degraded performance, and lost customers.

We all hope that COVID-19 is an anomaly, but it's not a good idea to bet your business on that assumption. Even before the pandemic, organizations were looking to transition from massive capital investments in infrastructure to a variable cost model. A recent survey showed that nearly 75% of finance leaders were planning for a more agile business environment going forward—exactly what cloud provides. In the same study, 83% of CFOs cited plans to scale back capital expenses. In short, they prefer OPEX over CAPEX—just what you get when you migrate from on-premises infrastructure to the cloud.

CIOs are on board as well. Rather than populate the data center with enough hardware and software to handle peak loading—and then watch it sit idle most of the time—they can instead spin up more computational power in the cloud on demand to accommodate these changes in volume. By moving key applications to the cloud, organizations only pay for the additional computational power and resources when they're actually needed, reducing the total cost of ownership (TCO). And there's never any doubt that resources will be there when needed, because the resources of a public cloud provider are essentially infinite compared to the needs of any one organization.

Security: Providers Have Your Back

Personal health information (PHI) is a high-priority target for cyberattackers, and it's no wonder: a single medical record can sell for as much as $1,000 on the black market, up to 50 times more than a credit or social security number. And PHI theft is not the only risk. Ransomware can render millions of records unusable and force organizations to pay substantial sums to the cybercriminal or recover information from disaster recovery sites, also a costly process. Given the importance of data security, payer CIOs have been reluctant to migrate PHI and other intellectual property from their data centers to the cloud.

However, the notion that data is safer on-premises is a myth. Public cloud providers have far better security because they invest far more in security than any individual payer can possibly match. Why? Because data security IS their business. If a cloud provider suffers a breach, it can lose millions of customers representing billions of dollars of revenue, to say nothing of brand damage and compliance penalties. Public cloud providers such as AWS, Microsoft Azure, and Google Cloud have large, global teams of experienced IT professionals focused solely on cloud security—a stark contrast to the average payer organization that often struggles to find and train even one full-time security staffer.

Innovation: There's No Place Like Cloud

More than one commentator has made the observation that the "I" in CIO increasingly stands for Innovation. As enterprises make the transition from brick and mortar to online—and virtually every business is now online in some way—IT infrastructure becomes the enabling platform for digital transformation. Where CIOs were once responsible for keeping the IT infrastructure work—the so-called "keep the lights on" imperative—now they must develop new products and services to drive revenues and increase operational efficiency.

However, legacy infrastructures based on asset ownership are inherently rigid and difficult to change. The cloud is significantly more agile, easing the process of architecture change and experimentation. Public cloud providers offer a wide range of services which developers can leverage to build more powerful applications and do so faster than ever. For example, a developer can spin up an Artificial Intelligence (AI) environment in just minutes on AWS or Microsoft Azure, compared to the lengthy and costly process required to build that same capability from scratch in the local data center.

Analytics: There's Gold in Those Mountains of Data

Over the years, healthcare payers have accumulated massive amounts of historical information about their members and providers—information that they can potentially turn into revenue using data analytics. The usual approach is to start with a small subset of data and a basic analytics package and see what insights can be extracted. Once executives realize the inherent value hidden in your data, there's usually a consensus that data analytics is a good thing and should be expanded to include much larger data sets and more sophisticated analytics applications.

But there's a problem. Analyzing massive amounts of data requires significant storage and computing resources, something that you almost certainly didn't plan for when you architected your current platform. The initial enthusiasm for analytics can lessen when the executive staff sees requisitions for additional servers and storage units. In addition, it's hard to predict the level of resources that will be needed as the data analytics program expands.

And there's another problem. In the typical payer organization, data of various kinds — clinical, financial, and operational — remains in silos because of legacy systems and interoperability issues. Mergers and acquisitions further complicate the picture by introducing multiple systems for electronic health records, enterprise resource planning, and imaging.

Migrating to the cloud doesn't solve all these problems automatically but it does bring into play the necessary capabilities. Business analysts can easily scale computing and storage resources as needed for large analytics runs, then decommission those resources at project completion to avoid paying for unused capacity. Furthermore, the cloud is a perfect platform for data unification initiatives, simplifying connectivity and boosting collaboration in today's geographically dispersed organizational structures. You can use the cloud to reduce the risk for large initiatives such as data analytics and data unification by avoiding capital outlays and taking advantage of analytics services offered by the provider.

How To Make Your Cloud Migration Pay Off

When—not if—you do decide to move to the cloud, there are ways to make it as beneficial as possible for your organization. This section highlights six essential tactics that Cloudticity recommends for our customers (see figure 4).

Figure 4. Six ways payers can take full advantage of the cloud

1. Start Small To Go Big

When organizations finally buy into the potential of the cloud, there's a temptation to migrate the most important applications as soon as possible to begin to achieve the benefits as soon as possible. However, starting with a smaller project—a non-critical web portal, for example—is a better way to get your feet wet in the cloud. Once your team is up to speed on basic cloud operation, it will be easier to tackle the larger, more complex applications. If you choose to work with a managed service provider (MSP) or other third-party, a small project helps you assess the fit with your organization and provides a graceful exit if needed.

2. Modernize Your Applications

A common misunderstanding about cloud adoption is the notion that cloud is merely an extension of the on-premises data center where applications are hosted on virtual machines just as they are now—the so-called "lift and shift" approach. While that tactic is indeed possible, it will fall well short of delivering the full range of cloud advantages. One reason is that traditional applications have cloud antipatterns, consume excess resources, and cannot fail and recover gracefully.

The concept of application modernization can strike fear into the hearts of CIOs. After all, these massive legacy monolithic programs are absolutely crucial to the business—for example, claims processing applications—and perform their current functions quite well. Tinkering with a business-critical application that consists of millions of lines written in FORTRAN or COBOL sounds incredibly risky.

At the same time, the reasons for modernizing are compelling. Innovative cloud services such as serverless computing require an event-driven architecture that is difficult to graft onto a monolithic application, putting advanced capabilities out of reach. To take another example, machine-learning services rely on an API-centric architecture to pass data between services—almost certainly not the way your legacy application was designed. To reap the full benefit from the cloud, legacy applications must be modernized using cloud-native development methodologies.

Fortunately, there are ways to do so without breaking the application (or the bank) or interrupting business operations. Knowledgeable MSPs and other third-parties can help you preserve as much of your investment in legacy code as possible and move to a containerized, orchestrated, microservices-based environment that can take full advantage of public cloud services.

3. Mind The Skills Gap

The cloud is a different animal than on-premises and requires a different set of skills. Advanced cloud and security skills are in higher demand than ever before; however, there is a significant lack of qualified, skilled professionals to support cloud initiatives. It's not getting better: Recent research shows that 63% of U.S. organizations anticipate the IT skills gap to widen, and 59% expect this talent shortage to continue in the next two years.

These numbers spell trouble for healthcare payers looking to grow their business via the cloud. Training existing staff in cloud operations and management is essential; however, it's unlikely that training alone will empower your staff to perform a cloud migration without the services of an MSP or other outside resources. An added bonus of third-party help is knowledge transfer, that is, your staff working side by side with MSP staff and learning on the job.

4. Pay Now, Save Later

Many customers assume that they will automatically and immediately reduce their infrastructure expenses when they migrate legacy applications to the cloud. Then they encounter sticker shock when they see the first month's bill from their public cloud provider. In some cases, it can be nearly as much as they were paying for colocation.

As you establish a baseline of resource requirements and utilization timelines, your team or your MSP can drive the cost down substantially through cost optimization measures such as right-sizing and reserved capacity. In one case, Cloudticity reduced the first month's bill by 75% over three months. However, cost optimization requires a thorough knowledge of the provider's cost structure as well as the requirements of your own applications. In other words, don't try this at home unless you know what you're doing.

5. Free Your Developers

To the IT staff, cloud is like a shiny new toolbox full of gadgets they can use to solve practical problems. To developers, it's like the keys to a Formula One race car—now they can do things that they could only dream of in the past. One important benefit to your development team is the ability to quickly prototype ideas. A developer can provision a fully functional instance with storage, networking, and database in minutes. Ideas that once were unfeasible to explore suddenly become easily within reach.

The extensive library of services in the public cloud is another spur to innovation. AWS comprises more than 175 products and services including computing, storage, networking, database, analytics, application services, deployment, management, mobile, developer tools, and tools for the Internet of Things. Microsoft Azure has an equally well-stocked catalog of services.

6. Meet the Neighbors

An underappreciated bonus of moving to the cloud is that you gain access to an enormous ecosystem of independent software vendors (ISVs) and other value-add entities that are certified for compatibility by the cloud provider. AWS and Microsoft Azure each have relationships with thousands of ISVs whose products and services dovetailed seamlessly with their cloud offerings. Leveraging the provider's ecosystem can spur innovation, shorten time to market, and increase competitive advantage.

The Power of Two

Managing the cloud requires both a holistic understanding of the technology and deep skills in the various platforms being used. According to one analyst, that's the top reason why enterprises choose third-party managed services. Doing so helps the business stay current with the continual release of new functions and features by the providers and reduces training requirements. Using an MSP frees in-house staff from the burden of day-to-day cloud management and enables them to build up enterprise capabilities in areas that really differentiate the business.

The right MSP can also serve as your hub for migration. Many organizations rely on their MSP for ongoing management of security and compliance, monitoring, troubleshooting, and other key activities (see figure 5).

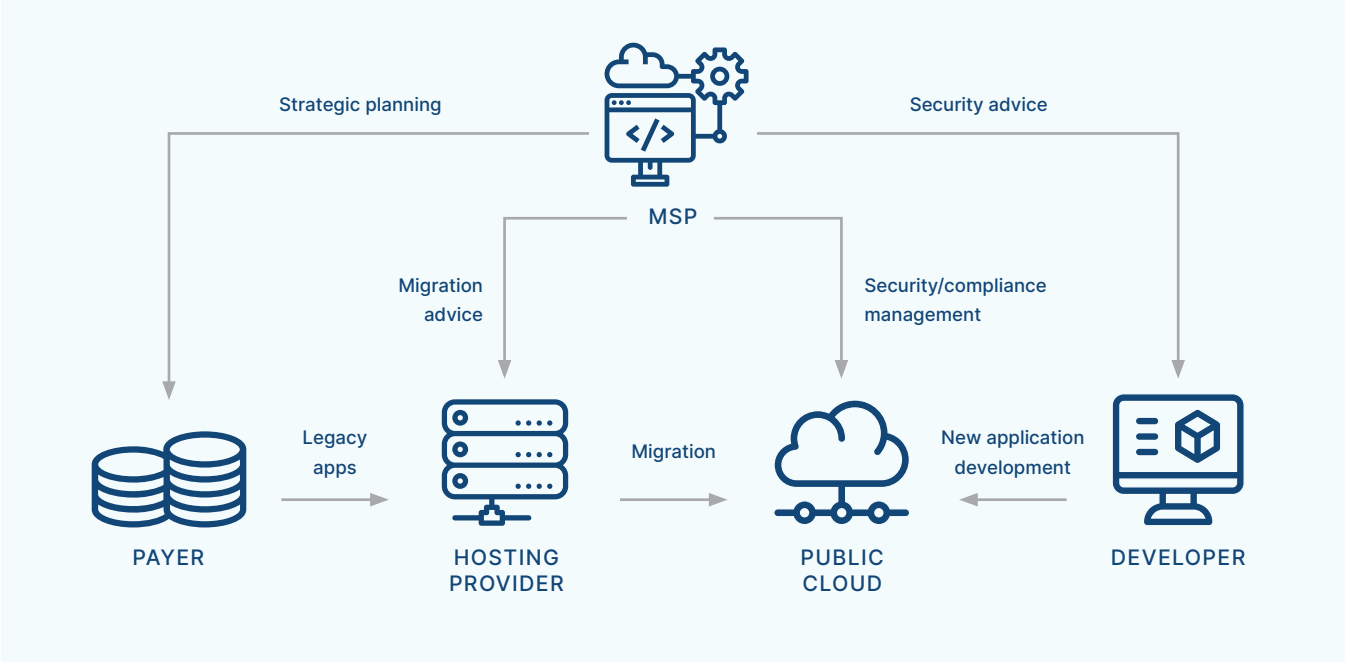

Figure 5. The central role of the MSP in cloud migration and management

About Cloudticity

As you weigh your options for cloud migration, consider Cloudticity for your MSP partner. Cloudticity is a digital enablement partner for the healthcare industry generating measurable business and clinical outcomes by unlocking the full potential of the cloud. Through groundbreaking automation and deep cloud expertise, Cloudticity solutions empower healthcare organizations to create and scale the next generation of healthcare solutions.

Cloudticity has built some of the earliest and largest health systems on the cloud, including the first patient portal, the first health information exchange (HIE), the first and only Federal Information Security Management Act (FISMA) high deployment on AWS GovCloud, and the first Meaningful Use 2 (MU2) compliance attestation for a large hospital system. Cloudticity enables healthcare to thrive in the digital era. Let us help you innovate faster, improve care, maintain compliance, and drive long-term growth with Cloudticity HITRUST-certified solutions.


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