

The modern data center's role in the evolving healthcare IT landscape

Colocation supports the diverse needs of medical providers and health IT companies without compromising security and compliance

Executive Summary

The healthcare industry and the businesses that support it are navigating complex environments, made even more challenging by COVID-19. While covered entities, such as doctors, hospitals and other healthcare providers, are trying to balance cost-cutting with improved patient care, health information technology companies are experiencing tremendous growth as they develop and introduce the innovative IT applications that help healthcare providers improve their diagnostic, treatment and overall operational capabilities.

To make matters even more challenging, both business groups must abide by a series of compliance obligations to ensure the privacy of patient information

and the integrity of the technology they utilize or develop. This common ground requires a compliant and highly available IT environment that can sustain operations and support core missions. A leading-edge third-party data center can address these unique and shared needs, offering the ability to quickly scale to accommodate growing demand, enhance organizational efficiencies and performance, meet compliance obligations and deliver cost savings.

Navigating the complex healthcare IT landscape

Despite healthcare's historically slow adoption of IT innovations, technology has increasingly injected itself as a transformative force in the industry. A quick glance at the rapid growth of health IT (HIT) businesses highlights technology's strengthening hold on the industry. With new HITs expected to [increase 78%](#) between 2019 and 2021, technology will continue to integrate itself within the industry to bolster a series of patient-facing and business-enabling operations and cost efficiencies. To accommodate this business surge and continue to effectively deliver the innovative products and services, HITs will require the ability to quickly expand their IT infrastructure.

As HITs position themselves for continued growth, covered entities (CEs) face shrinking profit margins, oversized IT environments and intense compliance demands. These organizations are increasingly relying on innovative technologies to help balance cost cutting with the continuous improvements in patient care. As hospitals around the country, especially in rural areas, continue to close, the need to minimize spend and enrich IT capabilities becomes more essential.

To support HIT's and CE's unique missions and the intense applications they develop and utilize, both groups require a robust IT infrastructure. A world-class data center provider can offer this dynamic infrastructure and support to meet these requirements while ensuring continued availability, compliance and a myriad of efficiencies to enrich operational viability, financial success and patient wellbeing.

New healthcare IT companies are expected to increase **78%** between 2019 and 2021.

The journey toward digital transformation

To best understand the infrastructure needs of HITs and CEs, it is important to understand how the health industry got where it is. CEs have a history of underinvesting in technology. With lives on the line, the sector implements innovations carefully, preferring to rely on “tried and true” technology with a long history of success. However, over time this lack of innovation and change can result in outdated infrastructure that is ill-equipped to handle modern challenges or the increasing speed of business.

Additionally, the bulk of CE’s resources have focused on diagnostic and care-related technologies rather than back-office solutions that support analytics, billing and medical records. However, the industry is recognizing that these IT applications introduce opportunities to improve efficiency and wellness, especially as CEs concentrate on cost reduction and IT consolidation.

TOO MUCH, TOO QUICKLY

CEs ramped up their IT efforts in 2010, when the Affordable Care Act (ACA) was passed to improve the quality and affordability of healthcare. ACA focused, in part, on technology, incentivizing technology purchases in an effort to improve care. To meet these newly introduced standards, CEs began rapidly adopting various technologies designed to streamline operations, drive collaboration, track and control spending, and improve overall patient care.

While these new technologies were implemented to improve efficiencies, the rush to use government funds to modernize operations did not always equate to IT

solutions that met long-term needs. As a result, many CEs oversubscribed to IT, and are now consolidating their IT environments to improve efficiencies and reduce costs.

A TSUNAMI OF SENSITIVE DATA AND INTENSIVE APPLICATIONS

The introduction of these technologies also unleashed a new issue. As paper files gave way to tablets and digitized patient records, the amount of data being created, consumed and stored, grew dramatically. The sheer quantity of this data, coupled with the resource-rich portfolio of IT applications, including EHR systems, online billing applications and a series of IT-enabled devices, strained bandwidth. To complicate matters further, this data also demanded—and continues to demand—low-latency connections.

The integration of these technologies into the healthcare landscape has continued to climb over the years as more tools are developed by HITs, deployed by CEs and utilized by the general public. Today, [86% of physicians’ offices](#) use EHR systems to electronically manage and share medical records across multiple health providers. Using patient portals, patients can access their own health records and medical results, remotely connect with their healthcare providers, pay bills, schedule appointments and more.

Telemedicine has also recently seen a sharp usage spike due to COVID-19. Prior to the outbreak, only [10% of patients utilized the service](#). However, as doctors’ offices across all medical disciplines closed, providers turned to the virtual platform to protect themselves and their staff, and deliver non-emergency treatments during the pandemic.

Amwel, a Boston-based telemedicine company, reported a [158% increase in the use of its app](#) in the U.S. between January and March 2020, with [patient volume up 3,000%](#) in certain U.S. locations as compared to pre-pandemic use. These video conferences require tremendous bandwidth and high availability to ensure uninterrupted conversations. This reliability and low latency is especially critical when health and wellness are on the line.



As these data-driven technologies and analytics tools are increasingly being deployed to improve medical providers' abilities to improve care, bolster operations and make life-savings decisions, they continue to drive up the amount of data being consumed and stored. Artificial Intelligence (AI) in the healthcare sector alone is expected to near [\\$100 billion by 2027—up from almost \\$5 billion in 2019](#) for a 1957% increase.

This digital evolution will continue the dramatic uptick of data and bandwidth-intense applications, and require an intense level of support, availability, capacity and security that many health-related businesses may not be prepared to deliver.

The modern third-party data center meets the challenges of healthcare and health IT

HITs and CEs are juggling their core business needs and the new challenges that come in tow with the mounting focus on innovative IT. As HITs develop innovative IT solutions they need an IT environment that can support their need for speed, resilience and growth. CEs, on the other hand, are challenged to do more with less, and need a cost-sensitive IT infrastructure that can help streamline and improve operations without sacrificing patient care.

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To support these juxtaposed needs and ensure the survivability, reliability and compliance of their operations, HITs and CEs need to prioritize security and high availability. A third-party data center can provide the intense level of security and dependability while delivering a plethora of additional value-added capabilities.

ADDRESSING COMPLIANCE EXPECTATIONS TO PROTECT SENSITIVE DATA

The surge of electronic protected health information (ePHI) and other protected data, coupled with an increased reliance on digital technology, has made security and compliance more complex and crucial. Both HITs and CEs are bound by a series of compliance demands, including the Health Insurance Portability and Accountability Act (HIPAA), the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009, the Health Information Trust Alliance (HITRUST) and Payment Card Industry Data Security Standard (PCI DSS). These regulations and standards have different focuses, but each is designed to protect the security and privacy of personal information and IT operations.

Healthcare providers and health IT companies are bound by the same rigorous compliance expectations. A third-party data center can help both organizations meet these demands.

Maintaining compliance is an ongoing and arduous task that requires an intense level of expertise to address changing healthcare and security climates. A third-party data center can offer the expertise to keep pace with these evolving security and compliance requirements, and help both sectors meet their regulatory obligations.

A compliant facility can also ensure the availability and resilience of the environment to promote uptime, while providing the physical and logical controls needed to safeguard sensitive data and systems. This is critical as the healthcare sector experienced [540 data breaches—exposing 163,551,023 records](#)—in the first six months of 2020.

A data center that offers real-time transparency into the environment and on-demand access to compliance documents can streamline compliance processes and ease the auditing process for its customers. A truly sophisticated data center goes a step further in offering online access to physical security events/reports/access rosters.

DISASTER RECOVERY

A key piece of any compliance program is a comprehensive disaster recovery (DR) solution that helps organizations achieve key compliance obligations around resiliency. HITs and CEs can leverage the expertise of data center personnel to help devise and support a DR solution that meets recovery time objectives (RTO) and recovery point objectives (RPO) to minimize downtime and data loss.



Wellstar Health Systems, a healthcare provider, initially deployed a colocation solution in an Atlanta metro data center with a DR site in the same city. This architecture provides disaster recovery (DR) resiliency without sacrificing low-latency replication of transactions. A third-party data center with a portfolio of strategically located facilities delivers this flexibility and ensures a necessary level of geographic diversity.

The colocation provider can also help routinely test your solution to ensure its viability and appropriateness. This is paramount, as having a DR plan that does not work when needed is no better than not having one at all.

DELIVERING A HIGHLY AVAILABLE, RELIABLE ENVIRONMENT

The availability of your environment is equally critical from both business operations and compliance perspectives. HITs require this availability to optimize productivity and ensure stakeholder's expectations are met. This is also important—and even mission critical—to CEs as they continue to adopt IT-driven solutions to address a myriad of business and health concerns, regulate life-saving devices and make life-impacting decisions. In these scenarios, even a minor outage or interruption can have devastating outcomes, impacting the safety of patients and exposing organizations to data loss.

Downtime, for any reason, has serious cost implications. One study reported that downtime resulted in [545 hours of lost employee productivity](#). With the average cost of downtime registering at [\\$260,000 per hour](#), this seriously impacts the revenue.

A third-party data center can provide the high level of availability that HITs and CEs require to support patient wellbeing, bolster productivity and strengthen the bottom line. With built-in redundancies around power, cooling and networking, these facilities ensure operations remain online and the environment continues to operate effectively.

DIVERSE CONNECTIVITY OPTIONS KEEP YOU CONNECTED

Multiple connectivity paths, a rich network of connectivity partners and automatic rerouting of traffic can ensure operations remain connected in even the most intense, unforeseen circumstances. These diverse connectivity options can mitigate downtime to promote a high-availability, low-latency environment that supports innovation and speeds the delivery of life-impacting and business-enabling data and communications. This is especially important as CEs continue to rely on sensors,



telemedicine and other connected medical devices and digital applications to share results, deliver AI-powered medical interventions and improve patient care. This ongoing connectivity also fosters improved productivity to boost HITs profitability.

RIGHT-SIZING THE ENVIRONMENT

While HITs are generally looking to ramp up their footprints to meet escalating needs, and CEs are consolidating their environments, both benefit from the ability to scale their environments in either direction. In the burgeoning health IT market, mergers and acquisitions may require the consolidation of multiple IT infrastructures to improve efficiencies. Amidst COVID-19, many healthcare organizations needed flexibility around space, connectivity and IT services to quickly react to new challenges and demands that altered capacity, capabilities and IT requirements.

Pairing this level of scalability with cost efficiency is difficult to achieve when managing an onsite data center. Accurately predicting future space, power and connectivity requirements is not an easy—or even realistic—task, even with dynamic capacity planning tools and sophisticated analytics.

Many healthcare organizations that opted to build their own data centers to address security and privacy concerns are now in a position where these facilities no longer fit their needs from a space, connectivity or cost perspective—leaving the majority of these organizations with either too much or too little space. Those that overbuilt are now paying for unused square footage, racking up power and cooling costs on this space and decreasing productivity as the IT staff's attention is diverted from business-enabling initiatives to data center maintenance tasks. Alternatively, CEs that underbuilt their data centers have outgrown their spaces, leaving them in the unenviable situation of having to migrate their environments to another data center—a time-consuming and costly endeavor.

Colocation eliminates these challenges, offering the agility to scale in either direction with minimal friction for improved productivity, efficiency and cost savings.

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ACHIEVING IMPROVED COST EFFICIENCY

Controlling costs is, of course, a critical aspect of business success. Even growing profitable businesses like HITs remain cost-conscious to continue to enhance their profit margins and satisfy stakeholders. However, for CEs, minimizing costs is a matter of survival in an industry challenged by tightly negotiated fees and shrinking profit margins.

Colocation can deliver cost savings to optimize revenue streams by paying only for the space, power, cooling and connectivity you need, while allowing you to scale these elements as needed. It can also provide a better understanding of month-to-month and year-to-year costs to assist the budgeting process.

ONSITE EXPERTISE OFFLOADS THE INTERNAL IT TEAM

Colocation eliminates the time-consuming responsibility of monitoring, maintaining and refreshing critical equipment and systems—allowing internal IT teams to focus on their core competencies while the data center staff optimizes the environment.

On-staff IT teams are juggling a variety of responsibilities, including implementing and supporting the technology and IT strategies that promote the corporate mission and meet critical objectives. Managing and maintaining a data center is a labor-intensive endeavor that pulls IT personnel away from these initiatives.

The data center skill set is also highly specialized and not easily duplicated internally. Healthcare leaders are sensitive to the importance of a highly skilled IT workforce with [70% of CISOs](#) concerned by the lack of competent in-house staffing. Additionally, [72% of are concerned over talent hiring in healthcare IT innovation in the next 12 months](#).



This level of expertise comes at a cost as this proficiency is paid a premium. A third-party data center can provide the skill level to manage and optimize the data center environment and allow internal teams to remain focused on business-critical IT initiatives that directly impact next-generation IT innovations and patient health. However, this expertise is not enough. Organizations should look for colocation providers that pair this knowledge with a strong focus on customer service and responsiveness. An NPS score is one way to gauge this level of customer commitment.

While a modern third-party data center can address both CEs' and HITs' needs while delivering a host of additional benefits, it is important to remember that the level of service and value is not the same across all providers. HITs and CEs need to perform their due diligence to ensure their third-party data center provider can meet their most critical needs—now and as they evolve.

QTS DELIVERS A DYNAMIC DATA CENTER ECOSYSTEM FOR THE HEALTHCARE MARKET

QTS, a leading provider of hybrid colocation and mega-scale data center solutions, understands the unique requirements and challenges facing the healthcare space. Its family of compliant, high-availability data centers is poised to help HITs and CEs meet their most critical and intensive needs. With 26 data centers in 14 major U.S. markets—and an additional two in the Netherlands—QTS provides the geographic diversity to optimize resiliency and latency while offering cost savings and an intense level of operational flexibility and security that evolves with changing needs.

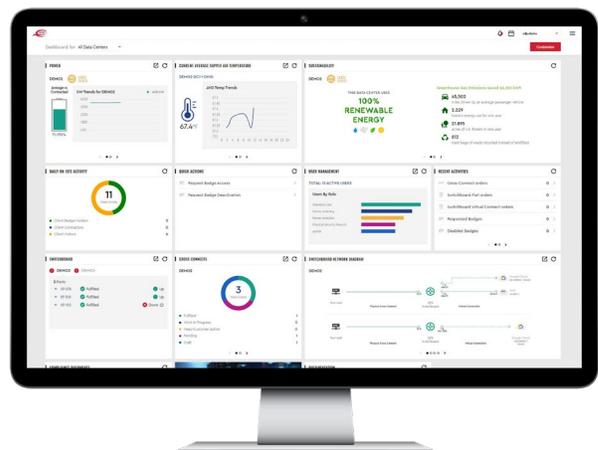
QTS' robust connectivity ecosystem and national data center footprint ensure proximity to partners, carriers and mobile providers, and position the healthcare industry to address the diverse challenges before them. To deliver this highly reliable environment, all QTS data centers are built with an intense level of redundancy to minimize single points of failure and deliver the security necessary to protect your assets.

DIVERSE CONNECTIVITY OPTIONS BOLSTER RESILIENCE

To promote availability and resilience, QTS offers a suite of connectivity options to flexibly address demands, now and in the future. Designed for automation and integration, QTS adaptive networking solutions utilize its expanding network of interconnections including software-defined data centers, public clouds, carriers and internet exchanges to promote low-latency, high-reliability connections that strengthen performance and deliver cost savings.

Its open and neutral policies on internet traffic promote the seamless flow of information between networks, allowing customer traffic to enter and exit QTS facilities at nondiscriminatory rates and connect with their carriers of choice, including Zayo, AT&T, CenturyLink and Packet Fabric.

QTS also offers a [series of services to ease connectivity management](#) including a self-service, interconnection platform is designed to simplify the management of connectivity.



SDP: DIGITIZING THE DATA CENTER TO OPTIMIZE OPERATIONAL INSIGHT

QTS is committed to full data center transparency. By digitizing the data center, the organization allows customers to remotely view, manage and control their data center environments in real-time, from any connected device. This includes viewing power consumption, ordering cross-connects, assigning



badges and controlling physical access to their environments, managing assets, logging tickets and more. Users can also utilize a 3D model of the data center environment for an easy-to-understand representation of their footprint.

By integrating machine learning models into the API-driven platform, QTS enables critical insights and valuable real-time details to improve capacity planning, cost efficiencies and more. The digitized platform enables health organizations to easily manage and monitor the environmental conditions of their data center environments to meet compliance requirements around business continuity.

SDP also offers a self-service library of QTS compliance documentation as well as a detailed log of data center access to help HITs and CEs support auditing requests and address the rigorous security and compliance standards of the healthcare market.

ROBUST SECURITY TO MEET THE MOST RIGOROUS COMPLIANCE DEMANDS

QTS is committed to delivering physical security that protects the healthcare industry's stringent needs. Its comprehensive security features and controls ensure only authorized personnel have access to customer information technology. QTS' data centers feature perimeter fencing; around-the-clock patrolling security guards; visitor screening and ID checks to access the facilities; active video monitoring of entry points and the property; and card readers and biometric access controls. QTS also maintains a risk-based cybersecurity program that continuously identifies and assesses risks to QTS assets, including its essential IT systems used to implement and manage the physical security and environmental controls in the colocation facilities.

Additionally, SDP has significantly changed how organizations can manage physical access to colocation space. Organizations that are subject to the Healthcare compliance programs have demanding requirements to manage physical access to the data center, and the SDP User Management capabilities improve organizations ability to meet these requirements through self-service, on demand

reporting and provisioning. This has a big impact on the compliance program implementation, improving efficiencies and simplifying how the physical access control is managed by customers.

QTS' on-staff compliance experts understand the complexities of compliance in the healthcare space, and its comprehensive compliance program helps organizations manage risk to lighten the load on internal IT teams. QTS' compliance program includes HIPAA, SOC 1, SOC 2, PCI DSS, ISO 27001 and HITRUST. Additionally, seven of its data centers have gone through the FISMA High Compliance program. Its federal focus and experience with government entities provides a heightened level of understanding around the unique needs and challenges of the government agencies that impact healthcare, such as Medicare and Medicaid.

To ensure its own compliance, QTS also annually validates its compliance programs through an independent third party.

"Our auditors are always impressed with the redundancies, physical security and client services at QTS," said Vin Budhai, director of infrastructure for IQVIA. "QTS understands the GxP and data privacy requirements of our business, and has implemented it beyond our auditors' expectations. QTS goes above and beyond the call of duty for the audits. I can honestly say that every single audit at QTS has been successful."

THE QTS ECOSYSTEM OF OPPORTUNITY

The QTS ecosystem offers additional value. With more than 100 healthcare businesses in its data centers—including many Fortune 1000 companies—QTS provides customers with a strong network of related businesses. This ecosystem allows healthcare providers, health IT companies, government entities, insurance companies, insurance payors, hospitals and health clearinghouses to easily connect and share data across the QTS data center portfolio. This creates efficiencies in terms of cost, latency and connectivity, and offers a level of flexibility not available at other data centers.



A COMMITMENT TO THE CUSTOMER EXPERIENCE

QTS ensures the high-performing, available and compliant environment healthcare organizations require. Its specialized team of engineers, technicians, and compliance and security professionals monitors the data center environment, addresses alerts and issues, and provides the peace of mind that allows HITS and CEs to dedicate their internal personnel to core business needs.

QTS supplements its multitude of differentiators with a commitment to customer service. The data center provider boasts an industry-best NPS score of 88, nearly twice that of the closest data center company. NPS is an ongoing, independent customer survey that rates companies based on customer service. QTS ranks high in customer service, physical facilities, processes, responsiveness and its 24-hour Operations Service Center. Its score betters leading customer service brands like Starbucks (77) and Apple (65).

Keeping pace with the rapidly evolving healthcare industry can challenge even the most profitable and respected health organizations. With a continued focus on technology and IT-enabled applications, healthcare businesses need to be able to quickly pivot to meet a flurry of evolving expectations and support increasingly intense applications. Entrusting your IT environment to a world-class, third-party data center can support your organization's growth while delivering an economy of scale that supports its bottom line. Colocation can enrich your business direction, strengthen your IT security posture and seamlessly flexing to achieve a level of scalability and expertise that is difficult to achieve internally.

When you are ready to discuss how colocation can support your organization, we are here to help.

Visit our [Healthcare Solutions page](#) for more information.

ABOUT QTS

QTS Realty Trust, Inc. (NYSE: QTS) is a leading provider of data center solutions across a diverse footprint spanning more than 7 million square feet of owned mega scale data center space within North America and Europe. Through its software-defined technology platform, QTS is able to deliver secure, compliant infrastructure solutions, robust connectivity and premium customer service to leading hyperscale technology companies, enterprises, and government entities. Visit QTS at www.qtsdatacenters.com, call toll-free 877.QTS.DATA or follow on Twitter @DataCenters_QTS.