

When Disaster Strikes: 13 Risks of an On Premises Data Center

Should You Still Be in the Data Center Business?

Given the meteoric rise of cloud computing, online gaming and content streaming, discussions of where infrastructure should reside are now commonplace. Enterprises aren't just mulling over total cost of ownership and application readiness – they're considering the impact of a man-made or natural disaster and debating whether or not to keep their infrastructure only on their premises, move to colocation, or purchase additional disaster recovery (DR) space. Your decision may be fueled by the desire for control, the need to leverage existing investments, or simply: "if it ain't broke, don't fix it." If you're thinking of keeping your infrastructure in a single on premises deployment, here are some high-impact business risks to consider:

1. Connectivity Options, Latency and Bandwidth

Consumers have an insatiable need for connectivity with low latency and this demand is driving enterprises to rethink their connectivity strategy. Most on premises data centers have a limited choice of carriers and typically only one connectivity feed into their building. This single point of failure can be taken down by a simple fiber cut or DDoS attack which can cause lengthy outages. Relative to data centers, most in-house infrastructures do not provide redundancy, multiple paths or specialized connectivity. This flexible connectivity is a must in today's hybrid world, being able to directly connect to your disaster recovery site or to the cloud is vital. Do you have the right level of redundancy, bandwidth and connectivity options to keep your customers satisfied?

2. Power and Cooling Reliability

How reliable is your power and cooling, and how much is that costing you? How are you monitoring for changes in temperature? Can you easily identify when you are oversubscribing? Data centers are specifically designed for 100% uptime with multiple power feeds and regularly serviced, properly maintained failover equipment.

Sudden spikes in temperature are a leading cause of IT equipment failure. Current ASHRAE standards state the ideal temperature of a data center should be 64.4 F – 80.6 F and 20% – 80% for relative humidity with a target of 55%. Excessive heat, moisture or static discharge can all shorten the life of infrastructure and potentially cause equipment failure. Standards exist to ensure IT equipment is getting the proper cooling. Understanding and operating within the parameters of these regulations is imperative as IT equipment has evolved.

3. Ability to Scale

As your business grows organically or through merger or acquisition, does your on premises data center have the capacity to expand? How much could you expand if needed? What will you do when space runs out? What if your company needs to expand your data center foot print quickly? If you don't currently have space available, it will take time and money to build out. Working with a data center partner who has available space will shorten that time significantly.

The ability to scale is more than just a space consideration, you must consider power density. With the growth of high order analytics and AI, power density requirements are increasing. Can your current environment support power upgrades or will an expensive redesign be necessary? Data centers with an onsite substation enables them to increase power supply over time or as needed to support customer demand in a specific facility.

4. Cost Control

Outsourcing where your infrastructure is housed allows you to focus on your core competency, control capital costs, increase efficiency, and reduce labor costs. Business continuity has never been more important or more complex as assets sprawl over cloud, colocation and on premises. Choosing to stay on premises can mean higher insurance premiums and increased risk.

Data centers offer the benefit of circuit based and "all-in" power costs which provide a steady operational CAPEX vs. OPEX model which can protect you from fluctuations in utility rates.

In addition to staff to run your data center, depending on the size of your building, you'll also need mechanical and electrical expertise. Are you relying on the scheduling and availability of third-party providers for your building maintenance? Data centers have this expertise on site 24/7.

5. Tax Abatement

Many data centers help you qualify for tax abatements including sales tax on high-technology data center equipment drop shipped from the manufacturer including peripheral computer devices, routers, batteries, wiring, cabling and conduits.

6. Redundant Power

Maintaining power isn't always solved by owning an uninterrupted power source (UPS). Power failures can be caused by outside forces such as weather, vehicles knocking out parts of the power grid and electrical failures. Each of these scenarios can last longer than the average UPS device can withstand and losses can be substantial. A data center provider offers redundant power feeds, backup generators and may have substations that give greater control over the power into the building.

A sub-station is essential to step down high voltage electricity from the transmission system to lower voltage electricity so it can easily be supplied to through the distribution system. With a sub-station onsite, you get better reliability, efficiency and greater operational transparency.

Voltage on a 208V circuit can vary anywhere from 191 to 220, and that can make IT equipment operate less efficiently. Data centers can carefully control and meter the power delivered to ensure maximum efficiency.

7. Climate

When you chose the location of your on premises infrastructure, did weather play a factor in your decision or did you simply build out your headquarters or keep data center locations in a merger or acquisition? Morgan Stanley reports climate-related disasters have cost the world [\\$650B](#) over the last three years, and North America is shouldering most of the burden. Data center providers pay close attention to weather data, trends, and predictions when choosing their location.

8. Flooding

Flooding is the most common and costliest natural disaster in the US. Over the past twenty years, flood damage and insurance claims have increased steadily. According to FEMA, [98%](#) of all U.S. counties have been impacted by a flooding event. Don't limit your risk assessment to hurricanes or heavy rains, you must also consider other flooding triggers including failed dams and levees, blocked storm drains and melting snow. Even a small amount of water has the power to wreak havoc on a server room.

9. Fire

According to the US Fire Administration, in 2017 there were 111,000 nonresidential building fires accounting for a total loss of [\\$2,719,400,000](#). Overall trends for nonresidential building fires and losses for the 10-year period of 2008 to 2017 show a 20% increase in the number of fires. Electrical malfunction and heating systems account for more than 20% of fires. Over 50% of fires in non-residential buildings are either cooking related, simple carelessness or intentional.

If a fire were to occur and an investigation proved you were not in compliance with National Electrical Manufacturers Association (NEMA) fire codes related to power usage, your insurance claim could be denied.

10. Building Maintenance

Depending on the age and size of the building housing your infrastructure, you must consider the cost of maintaining large boilers, site sewer lines or lift stations. You'll need to factor plumbing and electrical maintenance and determine whether you or your landlord are financially responsible. Complications with these mechanical devices are inevitable. FEMA issued [\\$8,736,385](#) in maintenance related loss claims in 2017. Janitorial services are also required to keep the data center clean and dust free.

How long could your business sustain a power outage? According to US Energy Information Administration, the average length of a commercial business outage is about 4 hours.

11. Security

Data breaches aren't limited to malware or ransomware attacks. Employee theft or losing track of company issued assets such as laptops, flash drives, and mobile devices can have big security implications. How do you safeguard your infrastructure on premises? Do you have fences, bollards, 24x7 guards, biometric scanning and cameras to protect entry into your data center? Can you see who is coming and going in your on premises data center?

12. Distributed Denial of Service (DDoS) Attacks

If you've got a direct internet connection, you're at risk of being the victim of a DDoS attack. DDoS attacks can overwhelm infrastructure devices including routers and firewalls, or consume server resources, which impacts the overall experience for end-users. In addition, they consume IT security staff time for troubleshooting and can serve as a vector in more sophisticated cyber-crime activities. And with Gartner predicting over [20.4B](#) connected devices by 2020, IoT devices are prime targets to be compromised. Most data center operators take steps to ensure bandwidth is available for all customers and will black hole traffic clogging the network.

13. All Data Centers Aren't Created Equal

The number of colocation data centers in the US continues to climb. All data centers providers do not have the same building standards, vision, scalable campus plans, service delivery platforms, industry leading customer service and proven history like QTS.

Innovative Building Development

QTS has experience in both greenfield and brownfield developments. QTS grew a former Sears-Roebuck warehouse into a state-of-the-art, 1M sq ft Metro Atlanta mega data center featuring a dedicated, on-site Georgia Power substation and direct fiber access to a wide variety of carrier alternatives. The QTS Ashburn-Broderick features an innovative evaporative cooling system that offers greater energy efficiency that can be translated to customer savings and a modular, scalable and flexible design, optimal for large enterprise deployments. QTS uses innovative design, maximum efficiency and builds to scale.

Sustainability

When QTS decided to take on the challenge of sustainability, we did it with an open mind and a willingness to do the right thing for our employees, our customers, communities and shareholders. QTS has made a commitment to corporate responsibility through our key Environmental, Social and Governance (ESG) initiatives. In 2019, we published our first annual ESG report and have set measurable, relevant and timely targets that will reduce carbon footprint while helping to align our industry around common principles to benefit present and future

What is the Cost of Downtime?

The impact of downtime to your organization can be measured in several ways: lost revenue, missed SLAs, negative customer experience, brand reputation, and employee productivity.

generations. We have committed to procuring 100% of our power from renewable sources by 2025, pursuing LEED certifications in 90% of our facilities by 2025, recycling at least 600 million pounds of material by 2025, and conserving at least 10 million gallons of water annually. We even took the next step of becoming the 188th company in the world to join RE100 and publicly proclaim that we are going to do our part.

Service Delivery Platform

QTS offers the industry's first API-driven digitized [platform](#) to deliver real-time visibility and access to critical colocation, cloud infrastructure and operational systems data across all your QTS deployments. SDP is accessible from the QTS Customer Portal and gives you real-time analytics and trending, on-demand ordering and provisioning, hybrid cloud management and more. QTS is committed to the digitization of its end-to-end systems. Our [open source API](#) delivers maximum transparency to all aspects of data center operations including security, power, cooling, sensors, provisioning and other key metrics.

Solution Portability

Flexibility is a key component of your IT strategy. With QTS, you can shift your spend over the term of your agreement as your needs change, with no penalty. QTS [solution portability](#) allows you allocate your contracted spend as needed between various QTS services including: data center locations, connectivity, trading space for services and more.

Proven Customer Service

QTS uses Net Promoter Score, an independently administered and calculated survey to gauge overall customer satisfaction and brand perception. QTS is proud to report we achieved an industry-best NPS score of 78, nearly twice that of the closest data center company. QTS ranked high in customer service, physical facilities, processes, responsiveness and the 24-hour Operations Service Center.

About QTS

QTS Realty Trust, Inc. (NYSE: QTS) is a leading provider of data center solutions across a diverse footprint spanning more than 6 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.

