



POINT OF VIEW | HYBRID INFRASTRUCTURE MANAGED SERVICES

Take Control With Hybrid Infrastructure Managed Services

Optimize performance and flexibility
to succeed in uncertain times

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Executive summary

No one saw 2020 coming. The COVID-19 crisis brought the majority of companies around the world an unanticipated wave of new technology challenges. The global shutdown threw IT resources out of balance as demand plummeted for in-person products and services while exploding for digital businesses. Simultaneously, companies struggled to equip and support a workforce that became nearly 100% remote, almost overnight. Through all the upheaval, organizations have had to invent new ways to provide uninterrupted service to customers (largely through digital channels), keep work-from-home employees engaged, and continue to keep information assets secure and their business relevant. Such volatility puts enormous pressure on IT infrastructure, and unfortunately, many organizations were unprepared to adjust.

In the past, infrastructure mostly consisted of data centers, network resources and enterprise applications wholly owned by an organization and stored onsite. But today, many IT departments take advantage of the cloud to make their infrastructure more flexible, scalable and resilient to enable a stronger digital business. This hybrid infrastructure approach — with a blend of legacy on-premises and private and public cloud-based resources — is becoming more commonplace. In fact, IDC research predicts that by 2022, 90% of enterprises worldwide will be relying on hybrid infrastructure.¹ But that's not to say it's solving all problems.

The rapid pace of innovation and explosion of digital business models, now only heightened by COVID-19, are pushing organizations in every industry to rethink nearly everything they do and how they do it — from optimizing back-office processes to providing a seamless customer experience. The unexpected impacts of the pandemic have underscored the need for companies to build and maintain a technology infrastructure that's not only powerful, but pliant — adaptable to whatever surprises the market and the economy might have in store. To meet the most pressing needs of today and position themselves strategically for the future, businesses should enlist the services of an expert partner to harness the true potential of hybrid infrastructure.

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A closer look at hybrid architecture

The days of the self-contained IT infrastructure are coming to an end. The world's accelerated push toward digital transformation demands that infrastructure resources be available anytime, anywhere, with optimal performance. That means shifting more resources away from rigid on-premises architecture to a more elastic configuration of public and private clouds, as well as to the edge of the network.

Nearly all companies have already adopted these strategies in some form or fashion. But for a business to make the most of this diverse toolbox, it helps to first understand the advantages of a hybrid infrastructure in general.

Optimized performance

The hybrid infrastructure approach gives companies an advantage when it comes to business performance, because moving certain workloads based on criticality, business and technical requirements to the cloud presents opportunities to upgrade to the most modern tools and capabilities available. By leaving behind outdated and often redundant applications in favor of new and/or upgraded cloud-based versions, companies can free themselves from siloed systems and technical debt that have been holding them back for years. Additionally, software-defined environments typical of cloud infrastructure allow the IT team to work faster, automating many management tasks entirely. That equates to fewer human errors and higher quality service.

Increasingly, hybrid infrastructure also includes distributed resources at the edge of the network, putting critical applications and data geographically closer to users to minimize latency and maximize performance. By enabling rapid access to data and tools that aren't tied to one location, hybrid infrastructure has become especially useful in meeting the needs of remote workers — an essential priority in a post-pandemic world.



Agility

Responding to rapid change driven by digital disruption, mergers and acquisitions, and the consumerization of everything was already a way of life for most companies before COVID-19. Today's tumultuous business environment demands that all organizations become even more nimble and flexible. Hybrid infrastructure can help unlock these capabilities.

When usage rates fluctuate wildly, scalability is key. As opposed to fully owned on-premises infrastructure, consumption-based cloud models allow resources to be ramped up or scaled back immediately according to an organization's needs. A distributed architecture approach enables IT to quickly develop and deploy new services and applications to seize business opportunities as they arise — without major investments in new equipment. The elastic nature of hybrid infrastructure also means organizations can automatically match demand to availability instead of over- or underutilizing capacity, which translates into cost optimization advantages too.



Resilience

Although high performance and agility are essential, security and reliability can't be overlooked. Hybrid infrastructure gives organizations more options to protect critical operations and ensure business continuity. Hybrid Infrastructure powered with modern technologies benefit from advanced security tools utilizing artificial intelligence and machine learning that can help pinpoint vulnerabilities, predict malfunctions and prevent security incidents. But sometimes it makes sense to leave certain mission-critical data or applications in an airtight on-premises database. As a whole, hybrid infrastructure offers a powerful toolkit to avoid costly service outages and security breaches that dampen a company's competitive edge.

Cut through IT complexity with a managed services approach

For all its advantages, hybrid infrastructure isn't a silver bullet solution to every technical challenge companies face, especially if it's not carefully planned and well-managed.

Complexity, siloed resources and a shortage of relevant skills are common stumbling blocks that keep many companies from realizing the full potential of a hybrid infrastructure. This is because, while most organizations utilize hybrid infrastructure today, few had the luxury of starting with a greenfield project on which to build a grand design. Rather, the reality for most mature companies is that their infrastructure has been cobbled together over many years through tactical projects, misaligned priorities, and mergers and acquisitions. The result is a Frankenstein's monster of IT assets and occasionally incomplete projects put in place by various leaders who may have long since left the company. It's likely that every element of the sprawling infrastructure – compute, storage, private cloud, public cloud and so on – is contracted through a different vendor, each with its own agenda and service-level agreement. This lack of cohesive design and management leads to redundancy, incompatibility, inefficiency and excess cost, and it robs companies of hybrid infrastructure's most potent advantages.



It's a problem so typical that it has given rise to a new entry in the technology services market: the hybrid infrastructure managed services (HIMS) provider. The concept is to call on a single provider to help bring a company's disjointed infrastructure into alignment. Like a money manager creates a portfolio of complementary investments to build and protect wealth, a managed services provider can orchestrate IT infrastructure to achieve the right balance and meet interdependent goals under a unified plan.

The simplicity of working with one provider gives an organization a firmer grasp of IT governance, with a clear view of how multiple environments can work in concert. A consistent approach to operations and processes brings to life the benefits that hybrid infrastructure can and should deliver: optimized performance, agility and resilience. And when questions or problems arise, the client organization knows exactly who to call.

Four priorities for the pandemic and beyond

The acronym VUCA – which means volatility, uncertainty, complexity and ambiguity – might border on trite, but it's a perfect way to describe the economic, political and cultural environment of 2020. Nearly every organization around the world has been affected in some way by the COVID-19 crisis, as it put a bold exclamation point on the need for most businesses to accelerate digital transformation. In terms of IT infrastructure, it has become clear that merely existing in a hybrid environment isn't enough to make it effective. To keep the company moving forward through the shifting sands of today's marketplace, hybrid infrastructure must be well designed, closely monitored and expertly managed.

With no clear end to the pandemic in sight and some experts predicting such global upheaval may become the norm rather than the exception, adaptability is imperative. Here's a look at four specific areas where businesses would do well to focus their energy in the coming year, and how HIMS can help.

1. Get more flexible

It could be argued that the massive disruption to the business world in 2020 wasn't caused by COVID-19 directly; rather, it was the organized attempt to stop the virus from spreading. As shelter-in-place orders kept hundreds of millions of people at home, two major shifts occurred that were incredibly consequential for IT infrastructure.

First was the shift in marketplace dynamics. As people avoided going out in public for all but essential purchases, sales at brick-and-mortar establishments fell through the floor. Unsurprisingly, layoffs followed, with industries, such as retail, oil and gas, food service, entertainment, and travel and hospitality, hit especially hard.² From an IT perspective, many of these struggling companies suddenly found themselves grossly overprovisioned with unused infrastructure and saddled with wasted technology costs.

On the flip side, the threat of COVID-19 and mass quarantine buoyed sales for a variety of other industries: online retailers and digital services, healthcare providers and makers of household products, to name a few. Many of these companies found themselves scrambling to ramp up infrastructure fast enough to support the skyrocketing demand.

The second major shift created by the pandemic was the mass exodus of workers from office environments, as any employees with the ability to work from home were asked to do so indefinitely. Similarly, educational institutions switched to online learning for millions of students. Again, for unprepared organizations, the immediate surge in demand for network resources stretched IT infrastructure to its breaking point.

In each of these cases, flexibility made the difference between success and failure. Organizations with IT infrastructure based partially in the cloud were better prepared to expand or contract as the situation evolved. This is true because a key benefit of cloud infrastructure is the ability to scale up or down almost immediately as needs fluctuate — without buying additional equipment or getting stuck with millions of dollars of idle gear. At the same time, however, even some cloud providers faced capacity issues as demand spiked, a reminder that on-premises and edge infrastructure still have an important role to play.





A managed services approach to hybrid infrastructure can also give enterprises greater visibility into their usage needs, helping them predict peaks and valleys and make timely adjustments.

These benefits were readily apparent when NTT DATA used our own solutions to quickly transition our global workforce of 40,000 employees to work from home while giving equal priority to our clients' pandemic challenges.³ For example, we helped a leading food packaging manufacturer enable remote work for employees in 80 locations, double its network throughput to support the surge in demand and prepare 250 virtual desktops overnight. Another client, the New York City Department of Education (the largest public school system in the U.S.), was able to equip nearly 300,000 students and 3,500 teachers with Apple iPads and other devices while fielding nearly 30,000 support calls to enable distance learning — all in less than a month. Hybrid infrastructure managed by NTT DATA was at the foundation of each success story.

Even as lockdown orders ease in some regions, the future remains unpredictable. How soon will customers resume their old shopping, dining and travel habits — if ever? Will most workers continue to stay at home or return to the corporate office? Will schools stay open or close again? The answers will define the infrastructure needs of the coming years, and HIMS will help organizations be ready for any eventuality.

2. Digitize the customer and employee experience

Ten years ago, receiving fast, high-quality customer service through digital channels was something of a novelty. Today, it's expected of any sizable organization. Customers are sold on the convenience of personalized online shopping, app-based account management tools, on-demand chatbots and self-service web portals. Those same customers are also members of the workforce, and they expect employers to provide them with similarly empowering digital experiences on the job.

When COVID-19 emerged in early 2020, the pressure to go digital only intensified. Businesses of all kinds doubled down on their efforts to serve customers in a contact-free fashion with online/app-based ordering and collaboration tools. At the same time, employers had to find new ways to keep employees productive and engaged as they worked in homebound solitude.

Though it occurred under tragic circumstances, the pandemic has managed to jump-start digital transformation. And by all indications, there will be no turning back. As the current crisis subsides, companies are likely to find themselves in a never-ending race to deliver new and innovative digital solutions that win customers and retain employees. To succeed in this hyper-competitive landscape, they'll need technology infrastructure that supports ever-greater speed and agility.



By virtue of its distributed nature, a well-managed hybrid infrastructure can help organizations accelerate operations and become more customer centric. With access to modernized tools and capabilities through the cloud, the IT team is empowered to rapidly develop, test and bring new digital products and services to market in less time. Meanwhile, maintaining some resources in on-premises or edge architecture can guarantee high bandwidth when a lightning-fast customer experience is paramount, such as processing financial transactions in real time.

These capabilities were especially critical for the industry on the frontlines of the COVID-19 crisis — healthcare. In one typical scenario for 2020, NTT DATA worked with a major hospital to rapidly scale its use of telehealth to screen, triage and treat COVID-19 patients at home. Relying on a well-managed hybrid infrastructure, our client was able to handle a 140-times spike in call volume for telehealth support, while migrating 10,000 non-clinical employees to remote work within a week.

When it comes to supporting employees, hybrid infrastructure gives organizations more options to safely provide on-demand access to the tools they need most. Remote employees can get to essential applications and services in the cloud, while the most sensitive data remains fully protected onsite. And by complementing cloud architecture with edge computing through localized micro data centers, companies can offer peak performance for key applications or process critical data from internet of things sensors.

Again, a haphazard approach to the variety of architectural options can lead to redundancy and confusion. But a HIMS provider can help companies see the whole picture and achieve an optimal configuration — the right resources, in the right environments, at the right time.

3. Strengthen security and regulatory compliance

Today's cars contain a multitude of interconnected parts and systems to make them move and stop with maximum efficiency while also providing convenience, comfort and safety to the operator and passengers. We've come to expect a similarly intricate matrix of hardware and software for IT infrastructure to work flawlessly, but with so much going on under the hood, there's also a lot that can go wrong. That's why predicting, preventing, diagnosing and repairing problems — from costly outages to security breaches and compliance with government regulations — has become more challenging (and more expensive) than ever before.

These issues have been exacerbated by the pandemic. From a security perspective, attack surfaces have increased as millions more employees work remotely using a vast array of personal devices and companies rush to make themselves more digitally accessible to customers. It's a monumental challenge for IT teams to find and fortify every potential weakness in the company's defenses while maintaining compliance with customer service-level agreements and security regulations such as HIPAA, the Sarbanes-Oxley Act or the Payment Card Industry Data Security Standard.



For all these reasons, a managed services provider can be a valuable ally in an organization's quest to secure its hybrid infrastructure. An experienced advisor with visibility across all platforms can bring simplicity to an otherwise complex landscape, enabling the placement of workloads in the right environments to satisfy security and compliance needs. The HIMS approach also lends itself to greater levels of automation, artificial intelligence and machine learning to enhance security monitoring and controls across the infrastructure. And when problems do arise, efficient architecture makes it faster and easier to resolve them.

In the case of a major health plan provider, NTT DATA helped transform its IT environment to achieve a number of goals, with security and compliance key among them. The IT team was able to improve its gross first-call resolution by 20%, reach 100% patch compliance and reduce the time to engage teams in critical incidents by 67%.

With fewer security and compliance concerns to occupy their time, IT teams have more freedom to focus on adding strategic value to the organization. And the company itself can confidently provide uninterrupted service to customers and employees.

4. Optimize IT operations and reduce costs

To say 2020 has been a difficult year for business would be an understatement. As pandemic-induced anxiety led customers to cut back on non-essential purchases, the effects rippled through supply chains and plunged the economy into recession. After surviving the initial shockwaves, companies are still finding their bearings and adjusting their plans for the coming year. For most, those plans include cutting costs and running lean. In fact, one PwC survey showed that 86% of chief financial officers are intent on implementing cost containment measures to combat the impact of COVID-19, including actions such as layoffs, hiring freezes, corporate travel bans and tighter discretionary spending.⁴

While optimizing the IT infrastructure may not be an obvious source of cost savings for non-technical executives, it should certainly be high on the to-do list for chief information officers and infrastructure and operations leaders. As the downturn continues, a HIMS approach can help control costs by maximizing the performance of IT in general. For example, a well-structured hybrid environment empowers IT teams with the modern tools they need to deliver essential services with more speed and precision. And the ability to manage multiple environments through a unified, single-pane-of-glass portal provides the visibility companies need to drive out excess cost.



Take back clarity and control

In a time when the next year's economic forecast is anyone's guess, a clear sense of direction is hard to come by for most organizations. But as the current crisis persists and uncertainty lingers, companies must continue to focus on the things they can control. That includes driving out excess cost, providing the best possible service to customers and employees, protecting critical information assets and maximizing flexibility to move with the winds of change.

Optimizing hybrid IT infrastructure with the help of an experienced managed services partner contributes to each of these goals. It provides the tools and transparency organizations need to unify technology operations under a single master plan tailored to business objectives. In the time of a global pandemic, HIMS is a powerful prescription for both coping with the present and positioning for the future.

Additionally, an increasing array of time-consuming processes — whether on-premises, in the cloud or at the edge — can be automated to achieve further savings. NTT DATA uses smart IT analytics in the Nucleus Intelligent Enterprise Platform to bring about incident avoidance, increase service-to-labor ratios, reduce surface risks in the ecosystem and increase operational efficiency.

As an example of how significant the savings can be, we helped one client dramatically reduce its costs for application management, development and security by transitioning to a new, state-of-the-art infrastructure platform. The client, a leading provider of information, analytics and business services, moved 75% of its servers to a virtual environment to accommodate long-term growth and seasonal workloads. In doing so, the company also cut expenses by a total of \$175 million over five years.

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