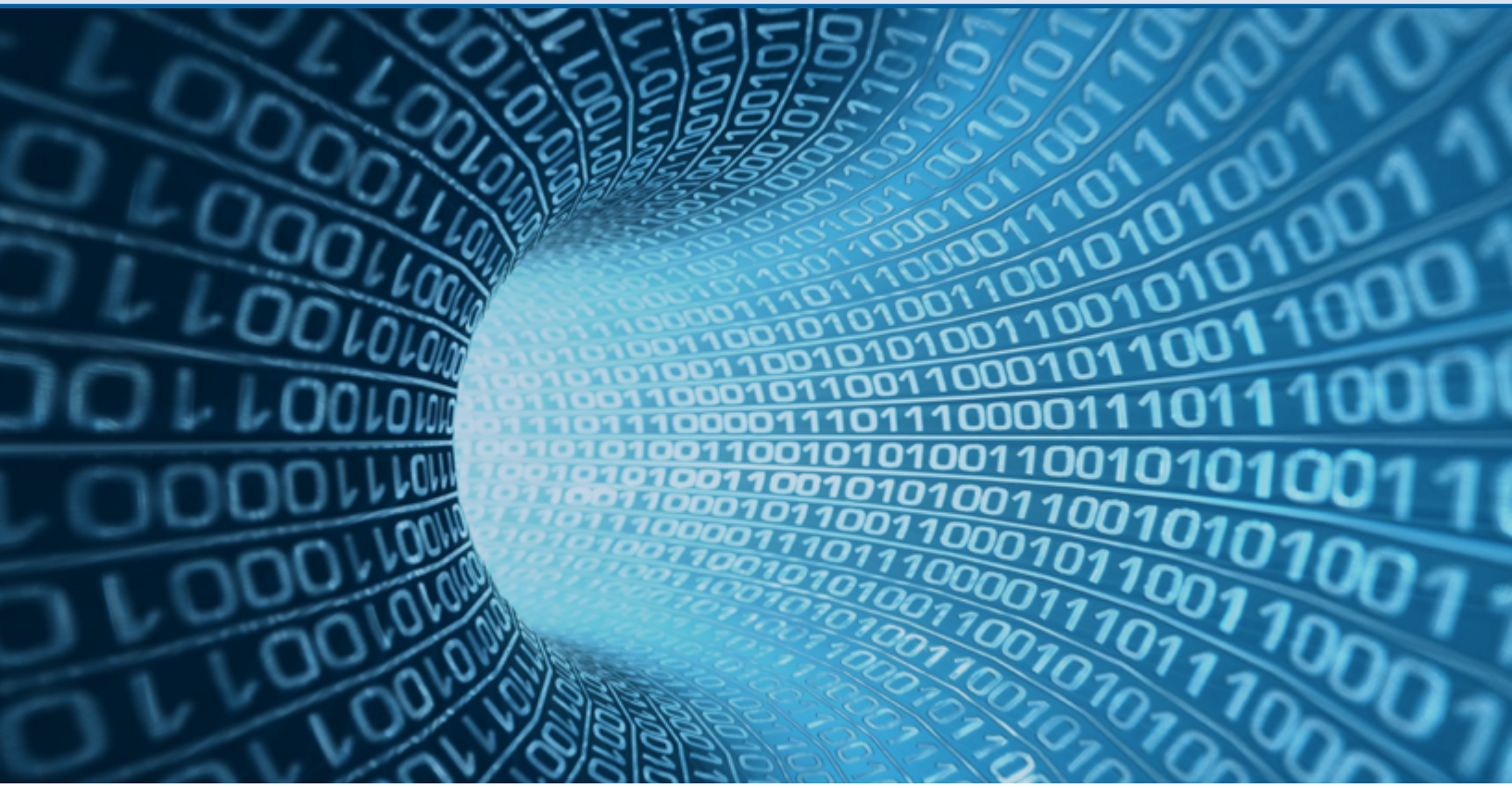

3 REASONS TO ADOPT NEW DATA CENTER MODELS

Technology leaders at data centers across the globe face a set of new and urgent challenges. These not only stem from but extend beyond the rapid acceleration of digital transformation, a trend that seems to become only more pronounced with time.

As a result, data volume records are being broken every single day. This calls for more processing-intensive and storage-hungry application deployments to meet escalating software requirements. And that creates ever-increasing demand for more capacity, capabilities and services.

With competitive and internal pressures higher than ever, IT leaders don't have the luxury of picking and choosing which challenges to tackle—or even in what order they address them.

A classic infrastructure-focused approach—that is, modernizing and scaling up while also trying to derive performance and efficiency benefits—seems like the obvious response to these evolving market needs. Historically, however, the technology that most companies need hasn't been readily available on demand. Nor are Capex and

Opex budgets keeping pace with these changes. In fact, most IT spend globally is flat or declining.[1] So, unless your organization is one of the lucky few with massive resources and talent pools, the current models for acquiring, managing and scaling infrastructure aren't going to get the job done.

Overcoming these daunting complexities means rethinking the status quo. And that's not nearly as radical as it might sound. Abandoning legacy approaches and adopting new data center models can be a natural migration that yields huge advantages for your business—and, crucially, without the financial or environmental tradeoffs we've come to expect.

Let's now take a look at three of the biggest challenges faced by data center operators today and how new data center models will solve them.

For too long, data center deployments have required long planning cycles and careful negotiation of delicate supply chains.

CHALLENGE NO. 1
PACE & SCALABILITY: MINIMIZING TIME TO VALUE

The legacy approach

For too long, data center deployments have required long planning cycles and careful negotiation of delicate supply chains. This protracted process includes time for teams of expert engineers and designers to determine technical requirements down to the component level and armies of technicians to oversee complex integration, setup and support.

Furthermore, organizations have to hope their three- to six-month forecasts are accurate and that customers are willing to wait for new capacity and capabilities to be added on prescribed schedules. Despite having become established practice, this approach remains fraught with risk and delay.

The new model

Taking a page from the software industry, the data center hardware industry is now enabling near continuous on-demand deployment of compute and storage systems.

These innovative building-block models leverage Open Compute principles in order to be more responsive and flexible. They allow teams to accelerate development and add server capacity as needed—whether at the node or rack level. This gives data center operators the control they need to update entire systems or make incremental changes on the fly. In other words, they gain the freedom to scale their operations at the speed of their business.

1 "The 2021 State of IT," Spiceworks Ziff Davis, 2020

This new generation of hardware starts with engineered systems designed and optimized for critical workloads that may include Kubernetes orchestrations, artificial intelligence and machine learning (AI/ML) applications, hyper-converged infrastructure (HCI) or even a mix thereof. Such systems come in a variety of production-ready configurations that can be rapidly tuned to specific customer requirements. It's also easy to add more capacity in the future.

That translates to shorter time to value in every way. Bringing this kind of agility to the data center enables faster growth, shorter upgrade cycles and seamless responses to changing business demands and priorities.

CHALLENGE NO. 2
SPENDING & BUDGETS: LOWERING TCO WHILE BOOSTING ROI

The legacy approach

The world's largest cloud service providers are in the unique position of being able to design their own hardware. This gives them unique strengths when it comes to architecture, cost and supply chains.

To compete with these outsized advantages, other data center owners, service providers and enterprises have to pay a premium to acquire the latest hardware from OEMs. They wind up with high-end systems overbuilt for their actual needs—a waste of finite budget resources that could be better directed toward system upgrades, more capacity or expansion.

What's more, paying more for overbuilt systems doesn't necessarily lead to savings in longevity. The technology used in this hardware is typically proprietary, which locks customers into those same conventional OEMs for expensive maintenance, support and upgrades down the road. And when future pivots in business compel changes in infrastructure, or budgets inevitably constrict during down cycles, technology leaders find themselves between a rock and a hard place: Their hands are tied financially while their ability to explore alternative options is limited.

Tailored hardware at cost-effective prices is a hallmark of the new data center model.

The new model

Tailored hardware at cost-effective prices is a hallmark of the new data center model. Spurning the one-size-fits-all approaches that have defined mainstream hardware acquisition and infrastructure investment, this more efficient and customizable model delivers high-performance, high-demand

equipment that offers more choice and makes your dollars work harder. Every aspect of these modern systems brings the kind of total cost of ownership (TCO) advantages that used to be exclusive to hyperscalers.

How exactly does that happen? It comes down to several interrelated factors. First, this next-gen hardware comes in higher-density configurations, packing up to 50% more compute, storage and networking capacity into a standard footprint. Besides taking up less physical space, centralized rack-level power and cooling makes these systems more compact and far more energy efficient than their conventional counterparts. On top of that, their modular design and open architecture simplify maintenance and eliminate OEM vendor lock-in.

Organizations of all sizes also gain the ability to fully preconfigure and integrate the equipment, including any related software. This means that systems can go from crate to connected in minutes, thereby reducing or even eliminating the specialized engineering resources that typically go into rack-and-stack processes.

Although these benefits can be quantified in terms of lower TCO and higher ROI, they have palpable qualitative effects too. They allow businesses across the data center industry to be more responsive and intentional as they act in line with evolving strategies and growth trajectories.

CHALLENGE NO. 3
ACCESS & PERFORMANCE: LEVELING THE PLAYING FIELD

The legacy approach

As already discussed, a worrying and sometimes unbridgeable divide separates traditional data center management practices from those of the hyperscalers that form the backbone of today's major cloud services. Hyperscalers quite simply have the resources to access and afford hardware that's often beyond the reach of the broader market. Aside from enjoying a corner on all the performance advantages of cutting-edge tech, they also reap the economic and goodwill benefits of leading on sustainability.

These advantages are partly rooted in the general business practices of the ODMs that supply hardware to hyperscalers. Their entrenched attitudes, in combination with established high-volume/low-margin models, make it competitively beneficial to focus inward and limit the customers and markets they serve.

At the same time, this insular, business-as-usual thinking has also led to deep inequalities that make it harder for disruptors or businesses outside major markets to gain a foothold in the first place, let alone stand on equal footing with the global hyperscalers. It leaves many feeling like sustainability and competitiveness is an either-or proposition.

The new model

Open computing and circular economic models are challenging many of the long-held assumptions of proprietary, siloed thinking. Rather than forcing the vast majority of organizations to accept general-purpose solutions that leave them hamstrung by compromise, these emerging trends instead seek to empower them and widen their paths to access.

Put another way, the broader market of data center operators, service providers and enterprises are no longer expected to settle for second-rate solutions.

With open computing, particularly as it relates to the Open Compute Project (OCP), new mainstream hardware systems are currently being built on the collective know-how of an entire industry—including many of its giants. This enables all businesses to benefit from more than a decade of cross-industry collaboration and thousands of cumulative years of engineering skill in developing and testing advanced technology. Compared with using the single walled-garden vendor model, it's just smarter business to leverage technology that has been co-developed by the entire ecosystem and then proven through extensive use in hyperscale data centers.

Additionally, the introduction of new circular economic models for the data center industry is making it possible to create new sustainable supply chains that make hyperscale tech both accessible and affordable to the broader market. The circular data center model creates a closed loop of reusing, repurposing and remanufacturing advanced data center gear, in turn transforming it into a self-replenishing resource. This model is sustainable by its very nature.

When organizations choose to adopt such circularity, they can reduce complexity, accelerate growth and realize significantly better compute and storage economics. Beyond gaining a competitive edge through the latest technology that the household names have always had at their disposal, organizations that tap into circularity keep more e-waste out of landfills and defer manufacturing that is responsible for as much as 75% of IT Scope 3 emissions (i.e., CO2). Combining the strengths of OCP with the compound benefits of circularity puts everyone on a more level and sustainable playing field.

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MODERNIZE YOUR DATA CENTER MODEL WITH ITRENEW

Sesame by ITRenew was expressly engineered to realize all the promise of the new data center model. By mastering the speed, cost and inequity of digital transformation with a single solution, Sesame frees IT leaders from the uncomfortable dilemma of having to choose which challenges to ignore.

Proven, premium tech with a new purpose

For maximum value and performance, Sesame starts with the best of the best; ITRenew sustainably sources proven hardware exclusively from hyperscalers.

Using this advanced tech, built on flexible Open Compute principles, **Sesame systems leverage the industry's best ideas for superior performance, durability and reliability**. Data center operators enjoy rack-level power, cooling and space efficiency while avoiding the lock-in of proprietary models that are the stock and trade of bespoke or walled-garden vendors.

ITRenew transforms that high-performance hardware into integrated, rack-scale compute and storage systems designed for any data center. This puts elite hyperscale tech in the hands of the broader market at a 50%-plus TCO advantage—with the further benefits of a dedicated warranty and support. In the same way that "certified preowned" puts luxury vehicles in the hands of a second generation of drivers, Sesame breathes new life into some of the most advanced and prestigious data center tech on the planet.

Sesame by ITRenew's Infinitely Customizable Design

Using a modular building block approach, ITRenew can create highly specialized configurations to suit any data center deployment. Guided by decades of experience, Sesame systems are built and tuned for what customers need their infrastructure to do. From cloud-native to AI/ML, IoT, microservices, edge computing and more, **Sesame can handle any combination of demanding workloads at any capacity.** Here are a few examples:

- **Kubernetes:** Sesame provides high scalability and clustering using the flexible software infrastructure needed for Kubernetes orchestration. Each system is production-ready and capable of being tuned for a variety of container or virtual machine solutions, with cross-rack switching interconnecting up to 20 racks and 750-plus nodes in a single cluster or network domain.
- **AI/ML:** Sesame delivers both power and flexibility, providing high bandwidth, low-latency performance, iterative processing to shorten time to solution plus the ability to respond to algorithms and adjust data at scale. A cost-effective option for accelerated computing and applications, code-trained for AI/ML, Sesame can put the power of large-scale infrastructure into the hands of even the smallest teams.
- **Hyper-converged infrastructure (HCI):** Sesame optimizes standardized nodes to provide an HCI layer that makes scaling compute, storage and networking in lockstep—and deploying apps—easier than ever. Configurable clusters that move and scale as needs change make updating code, applications and data structures straightforward for new or legacy applications.
- **Edge applications:** The flexibility of Sesame rack-scale systems makes them ideal for deployment in distributed environments. They can also come in compact, mobile mini-racks so developers can build a localized cluster, or test and validate software prior to deployment, on mobile production nodes with standard 110V/220V plugs.

Sustainable by design

ITRenew has built its reputation on bringing forward-thinking, environmentally sound practices to the data center industry. With Sesame, **ITRenew's circular economic approach designs e-waste and CO2 out of new IT hardware systems** by sourcing materials that are already in the economy versus pulling from the ground or firing up factories. This helps green-minded data center operators meet aggressive sustainability targets without having to sacrifice performance or agility.

Sustainability plays out in other areas too. Sesame's optimized design removes the heavy lifting of data center planning and deployment from an organization's internal staff. Enterprises can roll out hyperscale-class equipment quickly and with minimal effort. From loaded racks to those with room for scale, all Sesame systems arrive fully assembled and connected in as little as two weeks, ready to go from crate to operational in a matter of minutes.

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Facilitating digital transformation for everyone

All this means that **Sesame is the fastest, easiest, most cost-effective way to get started and scale with open technology** in an ecologically responsible manner. Even those lacking the clout and resources of the largest global cloud service providers now have access to hyperscale hardware that delivers more for every IT dollar right out of the box. Moreover, Sesame creates long-term opportunities for game-changing operational efficiency, higher-density footprints and reduced energy consumption.

While the challenges of digital transformation might seem insurmountable, **solutions like Sesame are providing a clear and attractive path forward to the new data center models**. ITRenew's alternative to the status quo is making it possible for organizations of all shapes and sizes to achieve scale, improved financial results and efficiency without settling for second best.

Find out more about Sesame and learn how to smooth your organization's digital transformation today. Visit **itrenew.com** for more information.

ABOUT ITRENEW

ITRenew, the Circular Cloud leader, refuses to settle for a world that pits economic success against social good. ITRenew creates second lives and reuse pathways for the most advanced technology on the planet, bringing circular economic benefits to the data center and IT hardware industry. This approach to unprecedented data, application workload and infrastructure demands opens up billions in new financial opportunity, slashes e-waste and CO2 impact, and makes hyperscale hardware accessible to and affordable for all. Our products and services power cloud and enterprise data centers, edge infrastructure, AI/ML, and embedded and industrial systems, which is why the world's leading data center owners, service providers and enterprises choose ITRenew to revolutionize how their infrastructure is managed and deployed. ITRenew is headquartered in California with locations worldwide. To learn more, visit www.itrenew.com and follow ITRenew on LinkedIn and Twitter @ITRenewinc.