Ending Data Center Infrastructure Design Debt

A Business White Paper on Transforming Enterprise Data Center Strategies covering:

• FINANCE   • OPERATIONS   • SUSTAINABILITY   • ALTERNATIVE FUTURES

serverfarm™

Executive Summary

Ending Data Center Infrastructure Design Debt (DCIDD)

Data Center Infrastructure Design Debt (DCIDD) has emerged because traditional enterprise data center designs and operations have innate inefficiencies

Many types of commercial buildings, whether offices designed and built to accommodate thousands of working people or data centers housing thousands of servers, face a radically different future from that envisioned when first planned and constructed.

In the data center sector, new approaches must be considered for enterprises to realize the maximum value from existing capital deployment.

That's where the term Data Center Infrastructure Design Debt (DCIDD) comes in. Ending DCIDD is about addressing shortcomings that already exist in physical data center environments.

As with monetary debt, where Infrastructure Design Debt is unaddressed, it can accumulate "interest." This debt makes it harder to implement changes in the future while saddling the organization with direct financial burden through rising maintenance costs, poor performance and greater risk.

Addressing DCIDD in enterprise data centers helps remove the risk of taking on new infrastructure debt as firms build or buy new data center capacity and adopt cloud. By maximizing utilization, improving efficiency, and adding capacity, it is possible to sustainably extend the life of facilities. This can mean deferring of even postponing the need to build new data centers.

An additional benefit is that by directly addressing design and operational inefficiencies, enterprises can inform their hybrid and multi-cloud strategies by not repeating past mistakes of buying and managing excess capacity.

The simple truth is underutilization combined with overcapacity in the data center is unsustainable.

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Introduction

The End of Infrastructure Design Debt

How the built environment will be used in the future is a major discussion topic for sustainability strategists.

In today's rapidly changing business landscape sticking to "as you were" old-fashioned use of infrastructure is no longer viable.

Data centers constructed in the 1990s and early 2000s are entering their third and even fourth decade of operation. As they age, data centers become less efficient. These inefficiencies can accumulate. They build up infrastructure debt.

While many data centers may have been well maintained within the constraints of their original designs, failing to address the infrastructure design debt accelerates entropy. Therefore, data center managers are assessing questions about capacity and use of digital infrastructure.

In data center environments enterprises may have unwittingly incurred digital infrastructure debt.

> ## "...not only more sustainable, but also makes greater financial sense."

It's not anyone's fault. It is simply a product of a standard approach to how data centers were designed and operated.

We believe that an approach of reusing infrastructure that's already built is not only more sustainable (reducing the need for new buildings avoids the production of more embodied carbon) but also makes greater financial sense.

By looking at what can be re-purposed, or simply run more efficiently, it also sets the standard for the sustainable future of technology operations in every location and on every type of cloud platform.

We call this ending Data Center Infrastructure Design Debt, and we believe it can and needs to be done.

Benefits of Ending DCIDD

1. **Financial** – New Value

2. **Operational** – Better Performance

3. **Environmental** – More Sustainable

DCIDD Issues

How did we get here?

How and why we built data centers the way we did

In the 1960s, 70s and for much of the 80s, IBM mainframe computers ruled the enterprise IT world.

Network connectivity was practically non-existent, meaning trucks would deliver information stored on giant rolls of 1" tape. Cooling was water based at the time, since air cooling wasn't introduced until 1990. Power consumption wasn't even listed as a consideration.

Then computers and related equipment got smaller and more plentiful. The mid 1980s was the era of the minicomputer and Unix servers.

From the mid 1990s, low-cost industry-standard pizza box servers heralded the arrival of vast numbers of rack-mounted systems housed in rows inside modern data centers.

The issue then became one of sprawl. Instead of paying hundreds of thousands or millions of dollars for centralized processing power in one machine that could be partitioned to do different tasks, enterprises simply bought cheap, off-the-shelf servers for a few

hundred dollars each and rolled them in as needed.

Corporations had the ability to expand IT systems quickly by installing servers by the dozen, hundreds and even thousands. And many businesses did so, without considering utilization of individual pieces of equipment or the overall efficiency of their infrastructure.

The CapEx budget for the unprecedented amounts of processing power and storage being used, generally managed by the IT department, was at historical lows.

> ## "Entropy dictates that aging facilities need more attention, more maintenance and are at greater risk of catastrophic events such as major outages and fires."

DCIDD Issues
Continued

Design Debt and Operation Challenges Overview

- Data centers were designed for peak demand
- Data center power and cooling infrastructure capacity were fixed
- Technology and infrastructure become less efficient over time
- As facilities and UPS, Switches, Chillers and Air Conditioning systems age, maintenance and service requirements grow
- Operations have become overtaken by new technology solutions
- Inflexible practices mean new processes and methodologies are difficult to adopt
- Change/Risk management constraints
- Poor project management execution
- Poor Reporting
- Poor Data Capture
- Poor Cost Control

\>\> The related power, space and cooling looked cheap and was budgeted through the facility management department.

The result? Millions of cheap commodity servers running at 5-10% of their capacity even at peak workload and often sitting idle.

A single server might only reach 10% utilization and draw 10% of its maximum design power, never exceeding 50% of its power and processing capacity.

This led to data centers growing in size and becoming a building asset class. In short, data center services became a commodity for society.

Underutilization and stranded capacity became the norm, and DCIDD was born.

How it Started

How it's Going

Ending DCIDD
What you need to ask to address data center design debt

Considerations for enterprise data center owner operators

As financial and sustainability agendas demand action, environmental, social, and corporate governance demands point to a major re-evaluation of all existing enterprise digital physical assets.

Companies need to understand how much unused value could be locked up in existing data center property portfolios. How much value could be realized by acknowledging and addressing infrastructure debt. How transformational it would be to optimize processes and to realize new value.

Environmental, Sustainability and Governance (ESG) is reaching the top of the corporate agenda and will put a focus on how companies are using their existing infrastructure assets. Along with many other factors from climate change to COVID, this is forcing enterprises to look at their data center assets.

One way is by syncing your MEP infrastructure refresh cycles with IT refresh cycles. This helps minimize downtime, avoid costly migrations, and take advantage of the latest and most efficient MEP infrastructure. For example, IT can be refreshed every 3-5 years, and MEP every 10-12 years to coincide the IT upgrade.

Infrastructure debt can no longer be allowed to accumulate. Serverfarm believes it is not just a possibility, but a priority.

The Questions Enterprises Need to Ask

- How are my data centers being used?
- What is the average occupancy level?
- What facilities are being used?

- How much is it costing?
- How much data center space is going to waste?
- How is capacity being managed?
- How much white space is occupied?

- Is space, power, cooling capacity and water use being fully optimized?
- Is there excess stranded power and cooling capacity?

- Is power efficiency being measured accurately? How is it calculated? How is it reported?
- What metrics are being used? PUE? IUE? WUE?

- Could the data center be doing more "useful work"?
- Could more be done with the existing space?

- Can the building be renovated, redesigned and upgraded to take more power?
- Could processes be optimized?

Case Study 1

How one global enterprise ditched its design debt and gained an award-winning data center.

Is it possible to wipe out your infrastructure design debt?

In March 2018, Serverfarm acquired a multi-story, 120,000-square-foot, 10.5MW data center located in Feltham, London, close to Heathrow airport.

A major global telco was the facility's sole occupant. Its objectives were to remove itself from substantial capital requirements needed to maintain the data center's effective performance, as well as to "right size" its IT capacity to fit its business requirements.

> "For the original owner operator, Serverfarm's acquisition of LON1 enabled it to dispose of an underutilized asset, thus removing the burden of infrastructure debt..."

Serverfarm set about upgrading and modernizing the mechanical and electrical infrastructure, resulting in the creation of a Tier 3+ environment in terms of uptime and efficiency.

Serverfarm identified how to expand the site's capacity by an additional 8 MW.

While continuing live operations for the in-situ client, Serverfarm deployed new switchgear and UPS equipment to create N+1 electrical infrastructure with A+B feeds combined with new super-efficient chillers and new CRAC units to create N+1 mechanical environment.
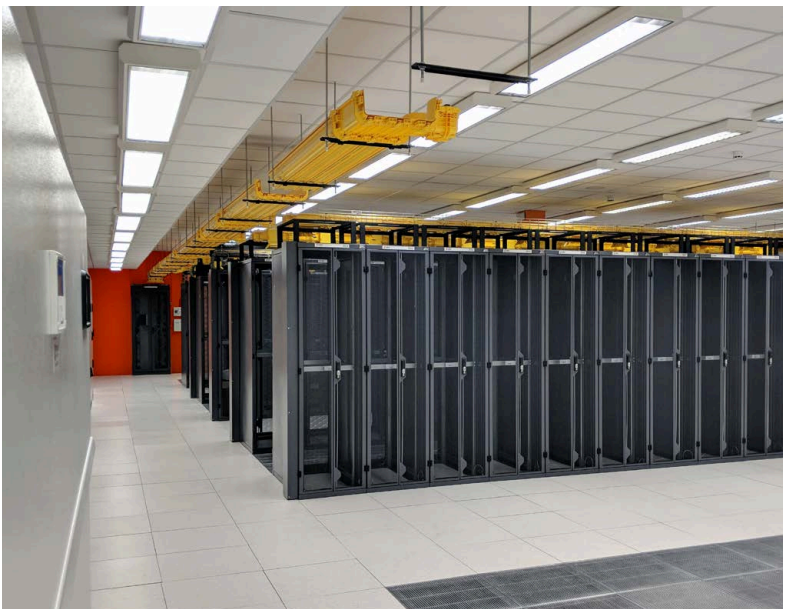
Serverfarm's LON1 is a flexible, multi-tenant data center ready for low-to-high density workloads ranging from 1-4kW per rack to 20kW+ per rack with a design PUE of below 1.2.

For the original owner operator, Serverfarm's acquisition of LON1 enabled it to dispose of an underutilized asset, thus removing the burden of infrastructure debt and the associated costs of maintaining the entire site. By moving from owner operator to client, the firm's IT now sits in a fully modernized facility with ample space, power, and cooling capacity headroom to sustainably meet its future growth plans.

> "Serverfarm's LON1 is a flexible, multi-tenant data center ready for low to high density workloads ranging from 1-4kW per rack to 20kW+ per rack with a design PUE of below 1.2"

By shifting from being a data center operator, the incumbent has the benefit of running its physical infrastructure as a cloud service with complete visibility on infrastructure costs.

The same benefits are available to all of Serverfarm's other tenants.

DCD > Awards
Data Center Modernization Project of the Year
Serverfarm LON1 London Data Center

SDC AWARDS
Digital Transformation Project of the Year
Serverfarm LON1 London Data Center

SDC AWARDS
Hosting / Colocation Innovation of the Year
Serverfarm LON1 London Data Center

The Future DC Market
Where digitalization and the data center market is headed

Research studies and reports point to an increasing use of existing infrastructure

For most organizations, the future of IT will be cloud enabled. And cloud means multiple hybrid platforms.

In the data center property mix, investments in enterprise owned, on-prem data center infrastructure is continuing – but not on new builds.

The latest surveys, reports and analysis from industry bodies, market watchers and vendors suggest that all corporate executives are thinking more carefully than ever about their investments while seeking ways to get more from existing digital assets and physical data centers.

Enterprises recognize the advantages but also the complexities and risks of moving to the cloud.

Making IT "cloud first" is being replaced with making assets "cloud enabled."

What should you do about your infrastructure?

1. Priority Number One: Get more from existing infrastructure

Eighty percent of data center operators said they're not building any new data centers, according to the 2021 AFCOM Data Center Survey.

Seventy-two percent claimed they won't be building any new facilities within the next year, and about 60% said they don't anticipate needing any new data centers within the next three years.

"While on-prem data center footprint isn't growing, there's a focus on getting more from organizations' existing computing facilities," Data Center Knowledge reports. "That conclusion is based on two findings from the survey: widespread adoption of DCIM software and rising rack densities."

2. Public Cloud End-User Spending in 2021

Global end-user spending on public cloud services is expected to grow 18.4% in 2021 to about $304.9 billion, according to Gartner. IT spending is expected to grow 4% in 2021 and the proportion of shifting to cloud will accelerate.

Cloud is projected to make up roughly 14% of the total worldwide enterprise IT spending market in 2024, Gartner estimates. IDC says IT budget percentage allocated to cloud infrastructure and applications is growing and will reach around 38% this year.

Although the figures look impressive, remember that annual global IT spending is estimated at between $1.5 and $1.7 trillion dollars.

What should you do about your infrastructure?

3. Owned data centers - the foundation of enterprise IT for the next decade

In its 2020 survey, The Uptime Institute says its findings "...confirm Uptime Institute's view that the enterprise-owned data center sector, while not necessarily the most innovative, will continue to be the foundation of enterprise IT for the next decade... Nearly two-thirds of IT workloads are expected to be running in privately owned environments (large data centers, server closets and micro data centers) by 2022, with the remainder contracted to external suppliers. Although the enterprise data center sector is falling as a percentage of the whole, the absolute amount of enterprise data center capacity is still growing."

4. Companies unready to migrate?

According to an IBM survey of 380 CIOs and CTOs in U.S. and UK SMEs (characterized by up to £999 million in revenue) and large firms (over £1 billion in revenue), most CIOs and CTOs (67%) say they require increased infrastructure flexibility to drive digital transformation.

Yet IT leaders under pressure to accelerate their organizations' transformation report that migrating to a multi-cloud environment can present substantial challenges if legacy applications are running large data pools.

Sixty percent say their company's IT modernization program is not ready for the future, and a quarter claim their organization is just starting or has yet to start its IT modernization journey.

5. Concern about rising cloud costs

Businesses continue to struggle to get a handle on ballooning cloud spend. Flexera's 2021 State of the Cloud Report found that organizations waste about 30% of cloud spend. More than 60% of organizations plan to optimize their existing use of the cloud, making it the top initiative for the fifth year in a row.

In addition, companies' cloud spend is growing rapidly, with executives struggling to forecast their fast-growing cloud costs accurately. Public cloud spend was over budget by roughly 24 percent on average, the report states.

6. A battle between technology stacks

"Rapid transformations and the sudden influx of new technologies have ignited an era of business — one where architecture matters more than ever, and industry competition is a battle between technology stacks," as Accenture explains. "Enterprises also have more technology choices to make than ever before. From the distribution of cloud deployments, types of AI models and wide range of edge devices, to the design (and even basic physics) of hardware and computation — each layer of the stack is expanding into new dimensions."

7. Decisions have long term consequences

We now see more clearly that good, early decisions prevent problems later on.
We need to get more from less
We now recognize more urgently the need to get more from the buildings, infrastructure and natural resources that we already have.

Source: A collaboration of leading figures in the built environment
– Our vision for the built environment (2020)
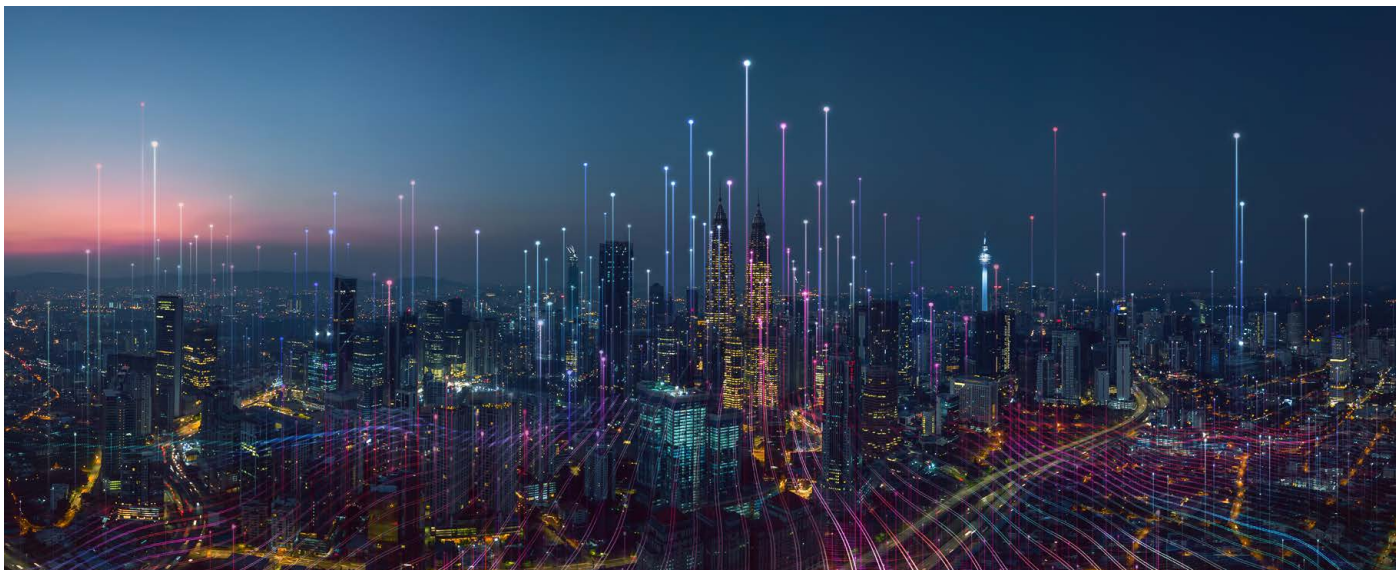
Optimizing for a hybrid infrastructure strategy should start with what you already have.

By cloudifying existing infrastructure, thus squeezing every ounce of available value from it with no loss of opportunity, the enterprise data center operation could be the template for cloud infrastructure management.

Making better use of existing assets could mean postponing or completely avoiding the complexities and major financial costs associated with cloud migration. Moving to the cloud is no simple task, nor is it a panacea.

Addressing DC Infrastructure Design Debt delivers:

- Informed strategic decisions
- Avoidance of lock-in
- Avoidance of new layers of infrastructure debt
- Infrastructure transformation

Case Study 2

How a global car maker improved accuracy & asset utilization across 55 data center sites.

Optimizing the data center operations of a global auto manufacturer

The physical data center fleet and IT estate of a global car maker had grown over decades into a distributed environment with different data center types.

It included 55 sites with 124 data halls running more than 10,000 devices. The company recognized it lacked data and possessed few meaningful insights on its data center operations.

Day-to-day incidents took too long to resolve. Planned maintenance was difficult. Emergency responses to unplanned outages were manual and slow. Asset utilization was poor.

The auto manufacturer first needed to know more about its data centers and what was inside them. For the initial engagement, the customer was unable to offer a baseline on its IT assets. Of the 55 sites and 124 halls in its IT footprint, the car maker was operating at around 20% accuracy on what was running where.

> "It can maximize the use of its assets while maintaining efficient operations."

Just under one year of using InCommand has raised the client's accuracy of location and status information across 124 rooms to above 90%.

To make data center planning more accurate, the client wants to know how many physical assets are in a rack and, by extension, how many in a row are occupied. What kind of draw is this making on the power system? What average temperature are they operating at?

InCommand provides tracking of every rack and how it is used. The platform achieves complete insight by tying into the mechanical electrical systems to get real-time metrics. It provides visibility into every rack, tracking how it is being used by monitoring power, cooling and space management. What rack has adequate power, cooling and space to maintain the design efficiency of the data center?

At every rack unit (RU) level, InCommand reveals details and metrics on:
- How many are in use?
- How many are available?
- Which rack has adequate power, cooling and space?

> "The platform achieves complete insight by tying into the mechanical electrical systems to get real-time metrics. It provides visibility into every rack…"

The client now has a completely different approach to day-to-day data center operations. It can confidently make and execute strategic decisions. It can maximize the use of its assets while maintaining efficient operations. It knows where capacity is available and where it is constrained. Its security posture has completely changed for planned and unplanned downtime.

Using InCommand, the 55 data center sites are being managed from a cloud service. Serverfarm's data center management service makes physical data center and IT assets available to support the business with the same or better flexibility, agility, performance and availability as the best-run cloud services.

Sustainability and Flexibility with InCommand

End DCIDD – Achieve Sustainability and Gain Direct Control and Operational Flexibility using InCommand

How data centers work today. Is there too much power? Too much waste? Too much stranded capacity? Are they under occupied?

From the outside, enterprise data centers will look unchanged.

It is what happens inside in power chain management and with the cooling infrastructure that will determine a facility's future as a sustainable IT environment.

Spanning FM, M+E, and IT, a sustainability strategy for data center operations can never be the product of a single controlling hand. Rather, it is the result of a considered strategy based on the careful calibration of many different actions. These must be performed at the right moment for a known outcome.

Traditional approaches to data center operations management are slow and inaccurate, often consisting of "walking around with clipboards writing stuff down." There is little to no automation. Maintenance is slow, intrusive (requiring an off switch) and risky.

Sustainability

The necessary actions will be performed by machines and by people.

They will cross many multiple disciplines such as physical IT, mechanical engineering and electrical engineering. The actions will be agile and responsive to constantly changing environments.

Day-to-day data center environments change as load demand rises, peaks and falls. Sustainability means being able to quickly change an environment as the weather changes.

Operations will change as maintenance and planned downtime are factored in. They will certainly change when unplanned outages require emergency break fix interventions.

External factors which affect and change data center operations are changes to the energy generation mix, new grid infrastructure and emerging energy storage options available.

For those with enterprise data centers to manage, it is obvious that what previously seemed like a complex mix of disciplines and tasks in the old data center world has already become even more complicated.

What is InCommand?

Serverfarm's InCommand is a cloud-based Data Center Management as a Service (DMaaS) platform for the modern management and operation of physical data centers, however distributed at whatever scale.

Its CMMS provides MEP asset lists, MEP maintenance schedules, MEP servicing vendors and MEP maintenance ticketing.

For FM DCIM, InCommand provides MEP monitoring, environmental sensor monitoring and power/space/cooling monitoring.

For IT DCIM, InCommand DMaaS manages room/rack layouts, IT device lists, IT data cable tracking from switch port to device interface and rack elevation. In shared environments, it can measure power utilization by customer across the UPS, PDU, panel, circuit and rack.

It provides IT power/space/cooling planning algorithms. It handles IT moves/adds/changes ticket tracking and approvals at all levels.

To provide resilience planning, InCommand issues power outage impact reports and switch outage impact reports. It can even be used to track IT storage and IT equipment lifecycle.

The InCommand platform features list is unrivaled in the DMaaS market. And it works thanks to the accuracy, timeliness and veracity of the data.

Many different requirements for flexibility are emerging within what were once called 'typical' enterprise data center configurations. Having a base data hall power design with the ability to tune it up or down depending on individual customer need or to reconfigure an entire data center on the fly to meet a changing need is within reach.

This is in part driven by hyperscaler approaches who build out electrical infrastructure on dedicated hardware to suit specific requirements in areas such as resilience.

Enterprises do not want to be left behind.

Block redundant infrastructure which can flex and can be proportioned dynamically on an as-needed basis, either room by room in the data hall, suite by suite or row by row is possible to deliver real time reallocation of resilience on the power string.

By using this approach, it can also dynamically configure electrical switching either through static transfer switches or through a clever arrangement of transfer switches further up the power chain As IT workloads become less static and less predictable, the requirement for dynamic infrastructure operations increases.

Enterprises find that more and more their data center infrastructure may need to be N+1 on some occasions of critical demand while at other times needing only N because a particular data center environment is running non-critical workloads, or resilience is provided further up the software stack.

As workloads move across clouds and physical environments change the resilience of equipment across a number of data centers by dynamically reprovisioning power and cooling in response to workload demands may soon be possible.

How it Started

How it's Going

From the cloud, as a cloud, for the cloud

As a 24/7 cloud service, InCommand data is always up to date. It allows operators to see exactly what is happening across every data center at a granular level. For operators, this means taking the guess work out of planning.

The impact of any change can be assessed in advance.

But more than that, it means having the ability to constantly optimize for power efficiency and maximize utilization without risking availability and reliability.

Today's data center workloads are constantly in flux. InCommand allows the operator to be responsive to changing requirements but also to be analytical about how facilities are behaving across multiple facilities right down to individual components.

And because it provides alerts and prioritizes alarms through a 24/7/365 NOC staffed with onsite expertise and event history fed ML algorithms, it enables rapid response to any outages which can stop escalation and allow for predictive maintenance and pre-break fix interventions.

InCommand DMaaS gives data center operators the confidence of a full solution wraparound across IT and FM. And it scales to monitor data centers across the globe and across all cloud types.

InCommand should not just be considered a management solution for physical sites. It is a true DMaaS cloud service which doesn't simply monitor equipment in your data center but manages the FM and IT, whether its on-prem, in a Serverfarm data center, in any other third party data center or across any cloud platform.
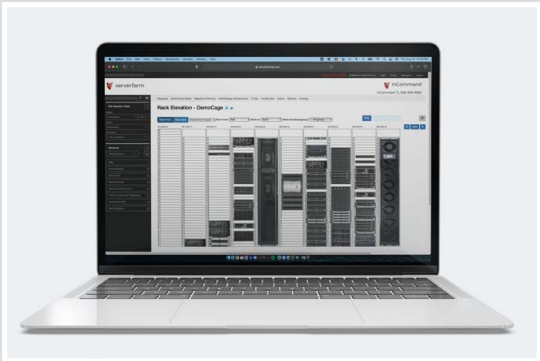
Running the data center from the cloud as a cloud with InCommand makes everything a bit easier. This extends to optimizing staffing requirements based on the types of work that needs to be done.

For example, operators can determine where smart hands skills need to be available on-site 24/7. With InCommand real time information, better planning activity such as changing a server on a chassis could be executed by nearby response teams.

InCommand can be used to overlay the requirement for a smart hands job, define what the requirement is and define the skill set required for a particular task. It can assign the ticket to a verified, certified resource that's best placed to do complete the job.

Where an OnDemand resource is spread across several data centers this can remove fixed costs and optimize OpEx for the organization with no loss or degradation of service. Site familiarity or end-user clearances and vetting can be added as a criteria to be applied to filtering of suitable resources.

With InCommand, the required skills and support capabilities can be defined in advance and verified responsibilities set. Resources could be allocated through an on-demand resource in a metro area working directly for you either dedicated or shared among other users.

Maintenance and Service Planning

With InCommand it is possible to group non-critical or non-time sensitive tasks to be executed effectively at a defined time in a single or set of locations. InCommand can aggregate all those against an asset or service and apportion these on an as needed basis. This cuts multiple calls outs, again saving time, resources, and cost.

Efficiency at this granular level applies the most appropriate and cost-effective resource to get a piece of work done as quickly as cheaply as possible.

"Unlike competitors, Serverfarm's organizational structure allows for flexibility in how sale/leaseback deals can be formed. "
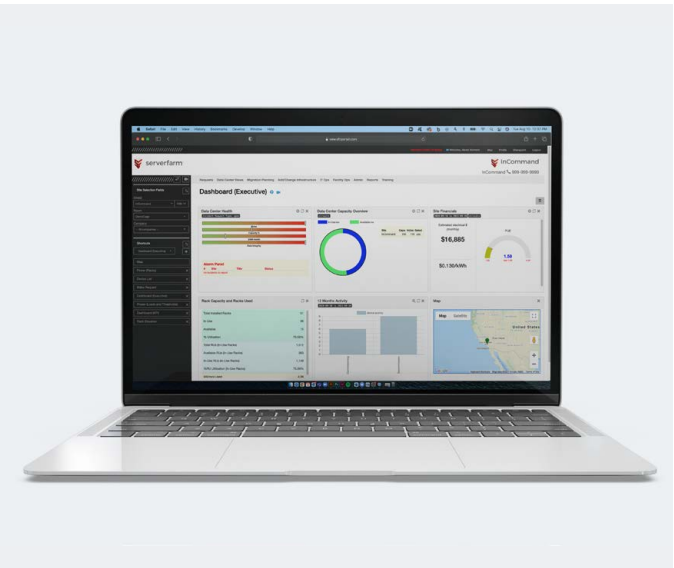
Ending Design Debt: Financials
The financial case for ending DCIDD with Serverfarm
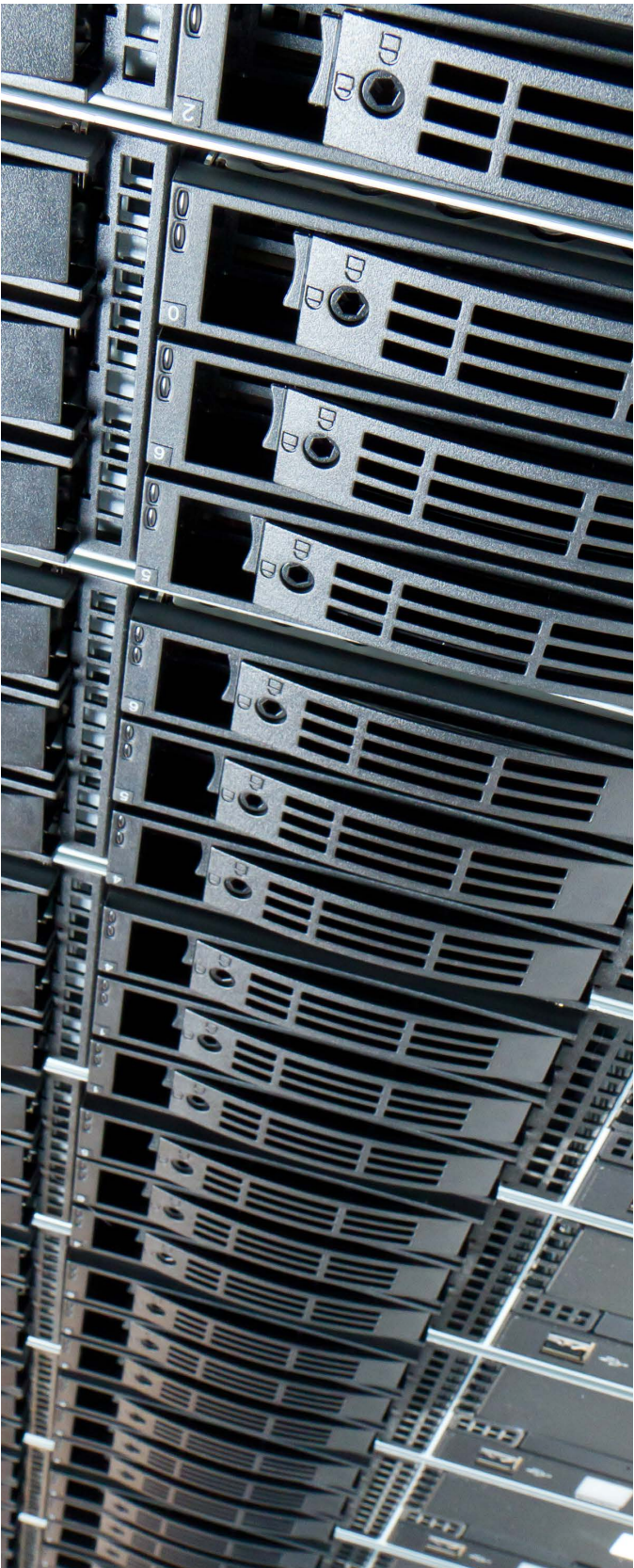
Serverfarm offers enterprises different ways to address Data Center Infrastructure Design Debt.

New data center costs have a CapEx range of $9-$13 million per MW, depending on a long list of variables from location to available power to taxes and tariffs. With existing infrastructure and buildings, much of this is already "priced in."

Because of Serverfarm's decades of experience in commercial property, combined with its years of owning and operating its own global data center fleet,

"Serverfarm's unique approach to ending design debt can provide financial and technical value for enterprises stuck with underperforming data center assets."

it can provide enterprises with options on what to do with data center assets that go far beyond the usual sale and leaseback offerings.

Serverfarm's unique approach to ending design debt can provide financial and technical value for enterprises stuck with under performing data center assets.

Tackling DCIDD is not simply about getting a one-time balance sheet benefit by disposing of the asset in favor of uncertain long-term cloud OpEx costs.

Serverfarm Unrivaled Financial Expertise

The benefit of Serverfarm's experience allows the company to provide bespoke financial expertise to fit many requirements and at many levels.

For example, Serverfarm's financial market experience, position and reputation enables the company to provide competitive access to capital and credit.

> "By looking holistically at the financial, property, infrastructure and technical requirements solutions can be bundled."

Serverfarm's ability includes structuring sale/leaseback deals where access to the capital markets is required. Serverfarm's cost of money matches and often betters many of its larger rivals.

Unlike competitors, Serverfarm's organizational structure allows for flexibility in how sale/leaseback deals can be formed.

In terms of acquisitions Serverfarm's approach means accommodating future growth, without artificial ceilings. We are focused on creating long term strategies which are more cost effective without the risk of incurring unknown future costs.

Clients also benefit from using Serverfarm's purchasing power and relationships with third party suppliers across the world.

Financial Flexibility

For forecasting requirements, knowing what the space, power and cooling requirement will be over five or ten years can be difficult (if not impossible).

Companies may need to start small and then need to grow quickly across different regions. Whereas many suppliers are inflexible, the answer is to hand out a rate card, Serverfarm offers the ability for clients to move into space in multiple locations across the world on flexible terms and pricing at multi-site locations. And to scale at those sites as clients respond to market demands.

Serverfarm data centers in LA, Chicago, Atlanta, Oakbrook, Toronto, Amsterdam, London are online and other major metros are planned.

At every site Serverfarm can provide bundles that cover transit carrier deals, cloud on ramps and other services. By working with Serverfarm, clients have greater purchasing power than by acting alone and can realize multi-year financial benefits on equipment and services.

For multiyear deals or longer-term tenures Serverfarm has access to cost effective finance from which customers can benefit. This expands beyond the data center to providing infrastructure at competitive cost points and can even extend to equipment refreshes.

Serverfarm helps clients by enabling them to leverage credit and avoid having to pay very high rates on for multiyear purchases. Serverfarm's access to cheap ten-year credit can provide cost effective and long-term solutions.

Such capabilities can be effective where an enterprise operates older facilities but has immediate infrastructure upgrade needs. By looking holistically at the financial, property, infrastructure and technical requirements solutions can be bundled to span sale leaseback agreements, equipment and service offerings and multi-year colocation.

"Serverfarm's approach to managed infrastructure is unique.
They provide customers with staff, training, workflows, and a data center portal that offers unparalleled insight into the combined facility and IT infrastructure."

Ending DCIDD: Business & Technical Outcomes
The goal of ending DCIDD with Serverfarm

Create value for investors and improve end user experience

InCommand is the DMaaS analytical platform that delivers real-time technical insights in order to:

- Develop better working practices
- Improve process and control
- Offer real-time data analysis
- Capture Internet of Things (IoT) data
  Monitor continuously
- Provide data on how workloads draw on power capacity at the rack level
- Create value-based space
- Enable demand-based usage
- Reduce redundancies
- Enable data-based operational decisions

Using InCommand to end DCIDD creates business value by allowing enterprises to use existing data centers to:

- Develop data center space as innovation centers
- Facilitate technology-based execution
- Facilitate decision making
- Treat users like customers
- Create engagement, deliver infrastructure performance to meet user preferences
- Provide end users with transparent data-backed decision-making
- Develop bespoke, customized end user experiences
- Ensure availability at all times
- Improve reliability
- Meet sustainability objectives
- Eradicate design debt through optimization of underperforming assets

serverfarm™

About Serverfarm

Serverfarm is a unique IT and data center developer and operator with a pioneering approach to accelerating digital transformation for service providers and enterprises.
With InCommand Services, our integrated platform of real estate, data center and IT management solutions, we maximize our customers' infrastructure efficiencies, providing them with end-to-end visibility and control over their IT and data center environments. As a result, our customers and their teams gain agility, reliability and efficiencies, allowing them to focus on innovation.

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