

# Cometh the hypersqueeze

## How MTDCs can be ready for the hyperscale AI revolution

August 07, 2024 By: Chris Merriman

AI has changed the data center landscape faster than anyone could have imagined. With its thirst for resources, it has presented a range of challenges for operators, from increased power demands to the need to accommodate liquid cooling in facilities that simply weren't designed for it. But the bottom line for any data center remains trifold: capacity, latency, and speed.

In the wake of these challenges, a new phenomenon has emerged – the hypersqueeze – offering a new opportunity for MTDCs (Multi-Tenancy Data Centers) who invest in their networks, and a potential challenge for MTDC/Colo users in a time when demand for services continues to explode.



Jason McCoy, Corning

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Jason McCoy is the director of MTDC business development in the optical communications specialist department at Corning Optical Communications. DCD caught up with him to learn more about hypersqueezing and what it means for everyone from MTDCs to end users. But before that, he begins by telling us what it isn't:

"First, it's important to focus on what hasn't changed. The value proposition of MTDCs for any enterprise has always been there for hypers to utilize MTDCs in situations where it just doesn't make sense for their builds, such as an Edge site, smaller compute and storage needs, or a ready-made space that's large enough for their needs."

But in this new world of AI, the demands of the hyperscalers simply cannot keep pace with the construction of new purpose-built facilities, negotiation for often scarce power resources in key locations, and superfast connections, as McCoy explains:

“What has changed recently is a need for deployment scale and speed driven by AI infrastructure that is unique in its breakneck pace. It’s too much of a challenge for them to do it all by themselves. There are plenty of attractive situations where MTDCs have acquired land and power, significantly shortening that deployment timeframe. There are always going to be hypers building their own data centers, but augmenting them using MTDCs just makes a ton of sense”

## Enter the Hypersqueeze

However, as logical as this is for the hyperscalers, it presents a trickle-down effect to the rest of the data center market and its users. Enter, the hypersqueeze:

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“Any enterprise that wants to use MTDCs to provide compute and storage space can become vulnerable to what we call ‘hypersqueeze’. The big players are taking up supply in a unique way, and that is squeezing the available market out there. And that’s just the finished MTDC space – they’re also taking up a lot of the planned space along with the available land and power in key data center markets squeezing that supply.”

That’s great for the hyperscaler, but as the name suggests, regular data center customers have the potential to be squeezed out of the regions where demand is highest and latency is lowest. McCoy tells us more:

“Anytime there’s a supply shortage, enterprises are going to lose something when looking for space. Perhaps it’s a preferred location, because certain key data center markets may make sense for the latency of an application – where your end users live, where your offices are, and so on.

“You may lose a preferred MTDC operator that you love, for a myriad of reasons. Maybe it’s their managed service offerings or the customer experience they provide. And of course, anytime you’re talking about a squeeze, you could lose out on an attractive or preferential price. I don’t see a lack of space available for a traditional or standard enterprise build, but I would strongly suggest that you start the space acquisition process sooner rather than later, so you don’t get squeezed out of what you want.”

## Pushed to the latency margins

As the hypersqueeze continues at pace, traditional Colo users may find themselves increasingly pushed toward lower-demand locations and regions. Hyperscalers will look for facilities that are closest to their user base, or that plug a gap in their existing locations, putting further demand on key areas such as Virginia and FLAP-D. McCoy points to power provision as a major driver of this:

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“When you start squeezing the power and land in a certain market, you’re going to start moving to tertiary markets – tier two and tier three, even tier four type markets. The reality is the market is just going to spread where power is.

“There used to be a saying ‘Bring power to the data center’. What I hear more and more is bringing data centers to where the power is. So whether it’s North America or EMEA there will always be those big markets. They make a lot of sense from a business standpoint, but the reality is that wherever power is available, you will start seeing that spread.”

The other big winners of the hypersqueeze phenomenon are the MTDCs – the Colos themselves. A well-resourced, well-networked data center can be an attractive proposition to a hyperscaler, and an opportunity to refit for success. McCoy tells us what a hyperscaler looks for in an MTDC to contract with:

“The land and the power have to meet their needs – the right location, not just the available space. “You can have plenty of land in a place that isn’t developed, but if you don’t have a scalable-rich network coming in from the long haul, providers are not going to be as relevant for you.”

And of course, it goes without saying that power is not a ‘maybe’:

“You need a commitment to that power. You can’t be in a situation where the power might be ready. Plus, add in any innovative power and cooling technologies such as direct-to-chip. There has to be power, ready-to-roll. After that, it’s that critical infrastructure – the right fiber backbone at the right capacity, with the ability to scale as needed, virtually immediately. A facility that has the fiber

backbone to handle the immense connectivity needs – and I can't stress the word immense enough of these types of builds – you have a winning strategy.”

## Prioritize your connections

McCoy is keen to emphasize that connectivity is sometimes too much of an afterthought in these situations when it should be front and center, and the hypersqueeze only makes that more important:

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“If you have a standard density data center, in terms of the ability to deliver power, cooling, and fiber, that isn't an attractive facility to an AI hyperscaler. The disadvantage is upfront work and cost, but designing your infrastructure to be ready, or at worst, be ready to quickly upgrade any critical component, is going to be a winning strategy.”

If you're reading this as an MTDC operator, McCoy has a simple message for you. This is a call to action:

“I would argue that it isn't financially viable for an operator not to be ready for the next generation of compute and storage needs that demand fiber. If your facility doesn't have enough fiber, the right power, and cooling capabilities, then you have to factor in things like lead times from manufacturers, labor and network challenges, and transporting all that equipment to the data center. It makes all the sense in the world to be ready on day one to support the changing infrastructure needs AI is bringing.”

## Seeing the light

Corning has a long history of fiber innovation that is vital to the modern data center, making McCoy perfectly placed to advise on exactly what goes into a data center that hyperscalers want:

“From a fiber standpoint, you could look at connectors. Colos typically want to standardize as much as they can on a single connector. We're seeing more operators move to multi-fiber connectors, our MTP-based assemblies, for example, to provide an infrastructure that can scale without disruption. You don't have to kill all the trunks on the inside, You can just start upgrading the edges.

“Then to take that a step further, the next generation of very small form factor connectors – MMCs, can support up to 24 fiber connections. When you start putting those in, you're getting more fiber capability ready to go that you can just plug into that smaller space.”



– Corning

“Corning is laser-focused on innovations to meet cabling demands everywhere, as density requirements increase. It is based on increasing cable density within the rack, within the support of infrastructure, and directly impacting the speed of deployment; 200-micron fibers allow for smaller cables – more cables in the same physical space.

And of course, Corning doesn’t just talk the talk. McCoy and his team can partner with you to find the perfect solution for your facility:

“One common challenge I hear from operators retrofitting older facilities is limited duct and conduit space. They were designed for a world that no longer exists, so smaller cables help them immensely. Our Contour 200-micron fiber has even more enhanced bend performance, a critical feature in packing more cables within the tighter space.”

So, we ask, why partner with Corning?

“I would pit Corning against anyone in the space. When it comes to innovation, the industry is changing – the demand for smaller cables, and smaller connectors, all the while delivering more fiber within that space. We see an increase in pre-terminated cables to address labor challenges, or maybe just simply to accommodate the sheer mass volume of fiber we’re splicing that can’t meet the required speed of deployment.

It’s a relationship that begins with blueprints, and blossoms even after delivery. It also gives access to a huge breadth of knowledge held by its global network:

“My team will help with critical partners. There are people all across the globe, MTDC-centric folks, but also enterprise-centric folks, hyper-centric folks, and we have all those resources to help – our team is at the nexus of the ecosystem, where we bring all these anchor points: operator, contractor, integrators, and end users together.”

## For today and tomorrow

McCoy points out that the value of the right partner like Corning will benefit your data center for its entire lifespan, regardless of what the future brings. After all, AI could be just the beginning:

“When it comes to AI, the sky is the limit. There is a plethora of possibilities not yet discovered-- but whatever it may be, one thing is for certain, a fiber-rich network foundation is the key to unlocking the next generation of AI. It’s about having a facility that is ready for the most demanding of workloads. That’s a better story than ‘I have space, but it’s limited in this critical area’.”



## AI enabled infrastructure

The fiber optic catalyst

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As we close, McCoy reminds us that whether you're a hyperscaler, an MTDC, or a tenant, Corning is here to guide you through the hypersqueeze:

"The infrastructure demands of AI are exponential, and they're enormous. That's why I'm excited every day that I get to do this job because I can solve challenges and help customers be ready for the future, and that's a fun place to be. The fact that we can impact the entire chain of the horizontal flow of operators is so exciting for me and my team."

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### Tags

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