



RK WHITE PAPER

Top 10 Data Center Predictions for 2016
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Now that 2015 is behind us, strategies are being developed by enterprises, colocation providers and web giants alike for the next great developments in IT.

Will 2016 be the year that cloud kills the data center? Will the race to the edge continue? Who is happy that the term “fog computing” never caught on? Before revealing my fearless predictions for the 2016 data center industry, let’s take a look back at my [predictions for 2015](#) and see how the market performed.

Year in Review: 2015 Predictions

Cloud Won’t Doom Data Centers

Grade: A

The market found that colocation data centers and cloud are very complementary, and that FUD (fear, uncertainty, doubt) alone will prevent radical shifts in IT. Enterprises are adopting a hybrid model of in-house and colocation data centers along with strategic cloud implementations.

Warmer Data Centers

Grade: B

The prediction was that [temperatures would inch higher](#), but not substantially overall. For the most part, this proved out. However, colocation providers are adapting to offer different products for those that are willing to operate at higher temperatures.

TCO Doesn’t Drive Design

Grade: A+

A frustratingly and irritatingly accurate prediction that Total Cost of Ownership would continue to be ignored by most of the industry. The use of CapEx as THE decision making metric continues to baffle when factors such as accelerated depreciation, energy efficiency and incentives paint such a compelling financial picture for change.

Data Center Services Commoditization

Grade: A

Consider the data center services sector commoditized. Many providers would argue the contrary, but in the eyes of the customer, there is very little differentiation between providers. The arrival of [Aligned Data Centers](#) that offers a [pay-for-use model](#) similar to cloud is strong proof.

“Every other layer in the IT stack has adopted a use-based pricing model - except the data center. Aligned is bringing the first pay-for-use, consumption-based pricing model to the data center.”

- Jason Ferrara, Chief Marketing Officer, Aligned Energy

Flat Data Center Density

Grade: B

The prediction that power densities would remain flat and far below the capabilities of today’s IT was correct. That said, positive trends toward the end of the year give hope that this will change. One example was a

production environment for a higher education institution averaging nearly 5 kW per cabinet, which isn't earth-shattering, but certainly higher than the industry average in years past.

Greenpeace Influences Data Center Decisions

Grade: C

Although Greenpeace continues their name and shame campaign by updating their [naughty and nice list](#) annually, I think it is roundly ignored as a result of green fatigue. Although [Google](#) and [Microsoft](#) continued their investments in renewable energy and were joined by [Amazon](#) and a few colocation providers, these were business decisions based on economics, risk mitigation and brand value.

Server Huggers Drive Demand

Grade: A

Never underestimate the strength of the server hugger psychological phenomenon. Some end-users are branching out and locating data centers where it makes the most economical sense. Yet the vast majority continue to keep their servers on a short leash, close to home. This may be further enabled by the availability of edge data centers.

Renewable Energy: More Talk than Action

Grade: D

Although the web giants did continue their investment in renewables, the adoption by colocation providers such as [Switch](#), [Equinix](#), and others was surprising. As is typical, Switch took it to the next level by building their own solar farm instead of simply buying Renewable Energy Certificates. As highlighted earlier, it was for sound reasons, but I missed the boat on the rate of adoption in the market as a whole.

"Data runs the planet, which is why Switch SUPERNAP wants to ensure data doesn't ruin the planet. Switch has always been focused on efficiency and sustainability inside of the data center, and for nearly 18 months we worked with our local utility and regulators to design a renewable energy tariff in southern Nevada that would allow us to construct one of the largest private solar projects in the world so we could achieve our goal of being 100% renewably powered."

- Adam Kramer, Executive Vice President of Strategy, Switch

Transactive Energy Management Gains Traction

Grade: F

A big miss for 2015. The market for on-site power production, dispatchable power and other forms of transactive energy management appeared positive late in 2014. But the discussion died a quiet death during 2015. Perhaps it is the availability of cheap natural gas? Or the failure of fuel cells to reach an economical price point? But, there was little movement by data centers toward this tactic.

Green Fatigue Grows

Grade: A

Green fatigue reached an all-time high in 2015. There were few if any "greening the data center" panels at conferences this year. The market has turned to simply making good business decisions and implementing the tactics that make sense.

On the whole, the predictions for 2015 fared well, with a couple of notable failures. Next, let's turn our attention to the future and discuss what is in store for the data center market in 2016.

Top 10 Data Center Predictions for 2016

2016: The Year of Modular

There has been a great deal of talk about modular data centers, yet relatively low adoption. That will change in 2016 with a substantially higher rate of adoption due to new concepts on the market.

Most people relate modular data centers to shipping containers. Modular no longer has to have the negative connotations associated with constraining containers thanks to concepts like [CENTERCORE](#). With open white space and ceiling heights similar to that of traditional construction, while maintaining the advantages of speed to market, scalability, and accelerated depreciation of modular, the market paradigm is poised to shift. Leading colocation providers such as [FORTRUST](#) are adopting modular at scale.

“The modular approach to data center design, construction and delivery to the end-user is long past due. The old paradigms of traditional raised floor data center design and/or the “build it all out and then fill it” models are simply inefficient and wasteful capital management.”

- Robert McClary, Sr. Vice President & General Manager, FORTRUST Data Centers

Retail and Wholesale Colocation Merge

The line between retail and wholesale colocation has been increasingly blurry over the past few years. The line used to be drawn at about 1 MW of capacity, but the wholesale players are now coming down as far as 250 kW and are offering more managed services than ever. Meanwhile, traditional retail players such as [ViaWest](#) are signing customers to increasingly larger deals into the multi-megawatt range while still offering the same array of managed services.

The Race to the Edge Will Continue

The rise of edge data centers is well [documented](#) with early pioneers [EdgeConneX](#) and [vXchnge](#) establishing an early advantage over the rest. With our never-ending appetite for content and decreasing attention spans, the race to the edge will continue with more players joining in. The focus to-date has been on cable and telecom connectivity, but the next frontier will be mobile where more and more people are accessing their content.

DCIM Adoption Will Continue Slow and Steady

The DCIM market has been riding the [hype cycle](#) for quite some time. But hype alone cannot sustain the over 70 companies listed on the Rhonda Ascierio's [DCIM Metro Map](#). With all of the attention, yet relatively low adoption, one must assume DCIM is past the “Peak of Inflated Expectations” and the “Trough of Disillusionment” and is now trending toward maturity and productivity.

The knock on DCIM is that there is too much noise in the market (i.e., too many players) to determine who is real and who isn't. Adoption will continue slow and steady until the market shakes out and there are more visible success stories.

Renewable Energy Adoption Will Accelerate

The adoption of renewable energy in 2015, especially by the colocation market, was surprising. It shows that renewable energy has matured to the point where it is no longer a marketing gimmick, but is now a competitive advantage.

The colocation market is cutthroat competitive. So, if renewables didn't make business sense, colocation players would be putting themselves at a disadvantage by sourcing their energy in such a way. I believe adoption of renewable energy will accelerate in 2016, if for no other reason than risk mitigation. After all, who wouldn't want to lock in your power rate for 20 years?

TCO Loses Ground

In 2016, Total Cost of Ownership will actually lose ground in data center design consideration. It defies logic, but I have witnessed a movement back toward pure CapEx-driven decisions over considerations of energy efficiency, accelerated depreciation and other financial factors. This seems to be more prevalent with enterprises, but I have seen examples across market sectors. Kudos to those enlightened souls that understand the benefits to be gained for years to come.

Water Usage Rises in Importance

The drought in California brought the issue of water use and conservation to the forefront of our consciousness in 2015. Given that water is the most subsidized and underpriced utility in the U.S., it will become a larger factor in TCO (for those that actually use this metric), but that will not be the reason it rises in importance in data center design.

Although geographically driven, risk mitigation will be the reason water usage climbs the ladder of design considerations. Simple availability has to be a consideration in this era of droughts and other extreme weather. As with renewable energy, it simply [makes business sense](#).

Ghetto Colo Becomes a Product Offering

Lower [levels of redundancy](#) have become a product offering. Although I cannot take credit for the catchy name, heard after hours at a 7x24 Exchange Conference a couple of years ago from [Jason Scandrol](#), quoting the words of a wise IT sage he once worked with.

Whether it be bitcoin miners or a research cluster, there are many instances that do not require anything more than street power. Why pay for the redundancy if you don't need it? Look for more service providers to follow suit.

Rise of the Data Center Density

Power densities were relatively flat in 2015, with some trending upward toward the end of the year in the projects we evaluated. This trend will continue in 2016 with a steady rise in density across all market sectors. Legacy equipment is finding its way out of enterprise data centers, giving way to new equipment capable of more computing in a smaller footprint.

Production data centers in higher education are averaging 5 kW per cabinet, while a research facility we designed came in at an average of 40 kW per cabinet.

Hybrid IT Rules the Day

Many have predicted that public cloud would dominate the IT landscape. Although usage is rising sharply, it is nowhere near the IT market share that some have predicted. There are many reasons this growth hasn't come to be, such as security concerns, migration complexity and simple FUD.

Given the massive growth of IT and data in general, there is room for everyone. Enterprises will spend more time evaluating what they can offload into the cloud, colocation—and what they want to keep in their own data center.

There you have it; my fearless predictions for the New Year. I have no doubt there are misses in this list and hopefully a few direct hits. I am interested in hearing your thoughts on the list, so please share your comments and let the debate begin.

Contact me at [Ron Vokoun](#).