Data Center Build vs Buy Part 1: Preliminary Considerations

There are innumerable writings addressing data center build vs. buy. Unfortunately, service providers with an agenda are producing most of them. Here is some straight talk based upon strategy work with hundreds of data center owners. In this multi-part series, I will first address perspective on the subject and initial actions that should be taken.

Time is a commodity that is increasingly less available. If you have been assigned the task of analyzing the merits of build vs. buy, most likely you have not been given a reprieve of your current responsibilities. Working efficiently will save you dozens to hundreds of hours depending on the size of your project.

Perspective: Davies' Dictums

First, let's consider certainties as pertains to this endeavor. I refer to them as Davies Dictums.

Everything is situational.

Every organization has different priorities and they change over time as a function of various aspects including board/executive concerns, business focus, and competitive conditions. Organizations have different opinions and financial thresholds involving Capex and Opex. So it is logical that no one solution is best.

Things change on the supplier side as well. Space availability changes as contracts are signed and lapse. Think of purchasing colo space somewhat like airline seats. The rate that you expected or were quoted months ago may not be valid and this is certainly understandable. Many providers are offering a wider variety of services graying the lines between colo, managed services, and cloud. On top of this, providers are buying others or re-aligning their portfolios.

Building vs. buying is ultimately a matter of understanding your business priorities and assessing the market's current offerings. After the facts are defined, you can make a decision about which course is best for your organization. To illustrate, here is a point –counterpoint view of building versus buying:

*"**Building my own data center is the best option**"*

Pros	**Cons**
Install custom solution options I want	You likely can't afford all the a 3rd party can. Most 3rd party have more robust infrastructure
Size infrastructure according to my needs	You will have to significantly "over-buy" facility infrastructure Can't go back to the board in 3 - 5 years asking for another infusion
We have capex to invest	Are there better uses? Plant, equipment, IT infrastructure?

I can manage my own facility	Operational procedures in most 3rd party DCs are excellent. business model depends on it
My costs will be less than theirs	Sometimes not all costs are included in your analysis. e.g. r estate, maintenance, licensing, communications, taxes, etc.
I have operations and technical staff	3rd party may have more proficiency and technical expertise you can "rent" to augment your staff or provide staff redunda Let's say your SharePoint person leaves.

"Colo/managed services is the best option"

Pros	**Cons**
Colo has better infrastructure	Current owned data center infrastructure has a proven track record and has plenty of "life"
It will increase availability	No history of outages at current site
Provide capacity increases as needed	Technology has shrunk IT infrastructure so there is plenty o capacity at the current site
Avoid major capex event	Capex is not a concern but opex is (e.g. universities). Cost low now
Enable organization to focus on strategic vs. tactical IT	IT is the core function of the business. Tactical experience required
Leverage provider's technical expertise	Expertise resides in house and is available now. Besides its custom
Leverage operational processes – battled hardened and field tested	Proven processes and track record already in place

What matters is what matters to your organization.

While this statement seems obvious, I have found many organizations get caught up in the arms race of features/services amongst providers. If the feature set does not impact your organization today, or possibly in the future, then it should neither favor nor detract from your ranking of that service provider. Forget it and move on.

Providers also fall into this trap by blasting out features before discovering what matters to the organization.

Bad news early is good news

If something will affect the outcome of your decision making, finding out about it earlier in the process will save you time, frustration, and money. Here are some examples:

Executive/board preferences eliminate the option you have been pursuing. Float trial balloons early and get a coach who has access to the C-suite.

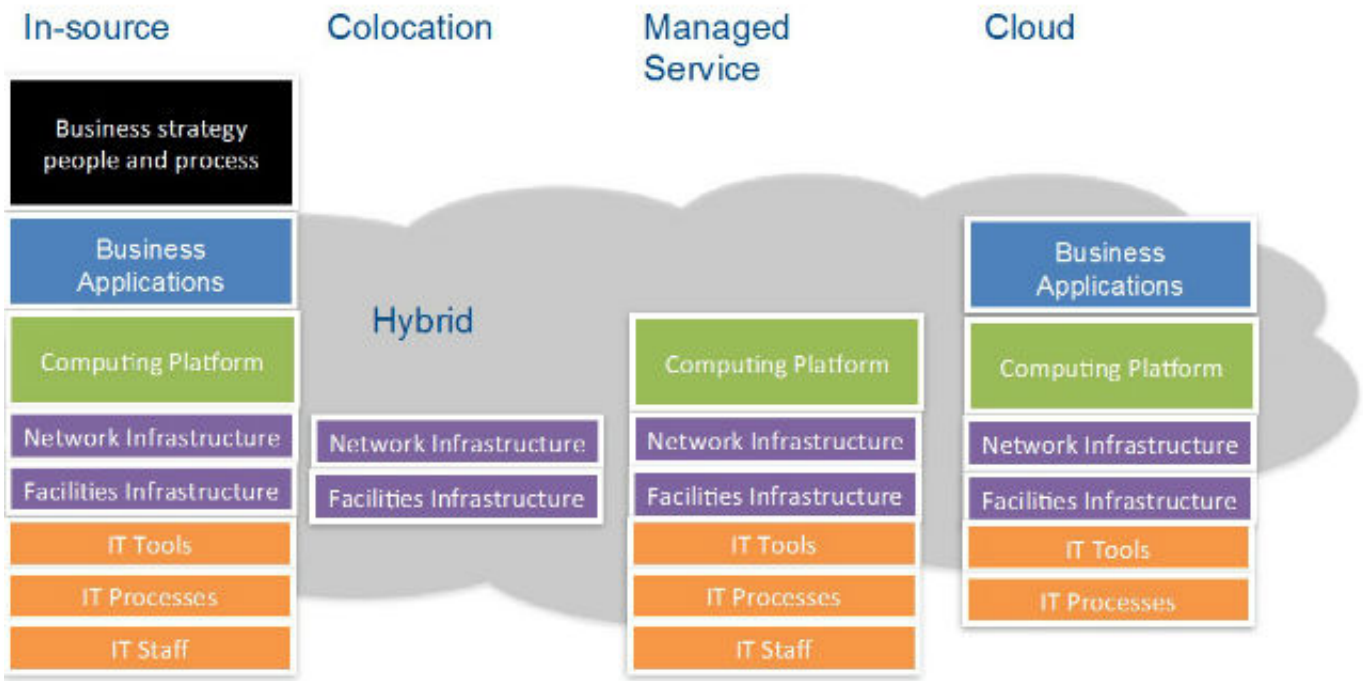
Technical limitations (such as application latency). Have the appropriate SMEs involved in creating the solution.

Financial implications that are not defined early. Submit preliminary budgeting to ensure that your request is financially viable. And remember the situational dictum – what was once acceptable may no longer be.

This dictum applies to providers as well. While hard to stomach, if you know that a provider(s) is not a fit, best to let them know early. It is unproductive for you and the provider to continue the conversation. I have found retail colos trying to be included in a wholesale colo RFP. Like taking off a Band-Aid, doing it right will hurt at first.

What are You Buying?

Your team will have to be aligned regarding what services you will consider procuring. Are you considering colocation only? Managed services? Cloud? Maybe a combination (hybrid)? Finalizing on a requirement will simplify your criteria.



As you consider how best to meet your needs, you will may come to the conclusion that one size does not fit all. You may need to consider various services that require more than one provider. This activity will consequently inform from whom you will eventually solicit RFPs.

What are You Currently Spending?

If you do not know what your organization is spending to support having a data center in-house, how can you make fact-based decisions on the financial merits of a third party service? Conduct a Total Cost of Ownership analysis and segment your analysis by the services you may consider procuring. Colocation is the most straight forward and should include cost components such as:

- Utility - electricity, water, etc.
- Building/grounds maintenance
- Consumables (annual)
- Facilities staff
- Communications
- Equipment maintenance
- Non-recurring consumables (UPS batteries/fans capacitors)
- Depreciation
- Space - rent
- Equipment break/fix
- Parts

An analysis comparing a managed services provider to your cost of business becomes more complex. You must determine what specific services you will procure. In addition to the above costs, you might include IT infrastructure and the staff that supports the following functions:

- IT infrastructure
- OS patching and support
- Security/Firewall
- Monitoring
- Middleware support
- ERP (SAP, Oracle, Infor)
- Capacity Management
- Support apps (Exchange SharePoint, etc.)
- Disaster recovery

Request someone from Finance participate in this analysis. That person knows how to assemble a business case specific to your organization, from where to get the data, and how it should be presented to executives.

The term of your analysis will be a function of your business needs but should typically be 10 years for a colo and two or three 3-year terms for a managed service provider. You will have to take into

account replacement of assets at your data center if any are approaching end of life.

What are Your Capacity Requirements?

You will need to build a multi-year model reflecting how much infrastructure will be required to support your requirements. Typically you will need to provide quantity of racks (or rack equivalent units- REUs) and power consumption per rack. The provider will want to know the maximum power requirement for a rack. Consider providing some level of detail such as a kW value and quantity for server, storage, and communications racks. Assign a growth factor and include a density factor as that will likely increase over time.

	Forecast Capacity Model										
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Notes:
Total Racks	27	32	38	44	51	57	65	73	82	92	All racks sized at 30"w x 48"d
Servers	20	24	28	32	36	40	44	48	52	56	4.0 Rack/year growth
Storage	7	8	10	12	15	17	21	25	30	36	20% compounded growth
Avg Kw/Rack	4.6	4.9	5.2	5.5	5.8	6.2	6.6	7.0	7.4	7.8	6% power density growth
Power (kW)	125	159	198	243	295	356	426	509	606	721	
Sq. Ft./Rack	30	30	30	30	30	30	30	30	30	30	Includes room for CRACs & PDUs
Sq. Ft. Reqd.	810	972	1,142	1,323	1,515	1,723	1,947	2,192	2,463	2,764	

Get your SMEs involved in this exercise. They should be held accountable making the model reflect reality. While it is impossible to predict the future, state all of your assumptions to provide an audit trail in the future.

The key thing to remember is that this is a model to enable comparative decision-making. The model will also apply to the option of building a new data center or expanding an existing one.

What's Next?

In Part II, we will discuss the merits of a two-step solicitation process, namely starting with a RFI and subsequently issuing an RFP.

About the Author

Tad Davies is a 28-year veteran of the data center industry. He advises clients nationally on Business Centric strategy issues such as consolidation, provider selection, and build vs. buy and Facility Centric strategy issues such as risk assessment, owner's representation, and energy improvement. Currently, Tad leads Bick's Consulting Services business unit based in St. Louis, MO. tdavies@bickgroup.com