

# The Battle of Economy of Scale versus Control and Flexibility



Lori MacVittie, 2010-26-07

*When strategies are formed it quickly becomes obvious that [cloud computing](#) is more about balance than anything else.*

At a time when you'd think cloud computing would be the primary "go to" strategy for managing scale and rapid growth multiple well-known and demanding organizations are building their own data centers instead.

With all the hype around cloud being faster, cheaper, and more efficient these folks must be crazy, right?

Not at all. In fact, these moves illustrate the growing friction between the economy of scale offered by cloud computing and the control and flexibility that is part and parcel of owning one's own data center.

“ In April Twitter [announced plans](#) to build a data center of its own. On Wednesday it provided additional details on the [Twitter Engineering blog](#).

“Later this year, Twitter is moving our technical operations infrastructure into a new, custom-built data center in the Salt Lake City area,” wrote Twitter’s Jean-Paul Cozzatti, who said **having dedicated data centers will provide more capacity to accommodate growth** of 300,000 new users per day. “Keeping pace with these users and their Twitter activity presents some unique and complex engineering challenges. Importantly, having our own data center will give us **the flexibility to more quickly make adjustments as our infrastructure needs change.**”

-- [Data Center Knowledge](#), “[Twitter Picks Utah for New Data Center](#)”

Twitter isn't the only Web 2.0 savvy organization moving to their own data center. Facebook earlier this year announced it, too, was also investing in building out its own data center.

## **BUT CLOUD AUTO-SCALES and STUFF!**

It's not all about scalability. I know that sounds nearly heretical, but it's not. And it's not a new mantra, either. Scalability is certainly a factor in why one would choose cloud computing over a localized deployment, but also important are **control** and **flexibility**.

Another consideration is the ability to customize your data center infrastructure to provide **more granular control of operations**. “That **control gives us a ton of flexibility**, and we can build new things without having to wait for our partner,” said Heiliger [Jonathan Heiliger, Facebook’s VP of Technical Operations]

-- [Data Center Knowledge](#), “[Data Centers: For When The Cloud is Not Enough](#)”

If I've said it once I've said it a thousand times: [control is a huge factor in the decision making process](#) and something that isn't effectively offered by today's public cloud computing offerings. Remember the Information week analytics Cloud computing survey in 2009?

Even though security remains concern number one, control and configurability are on the top of the list, as well. The issue of control has almost always gone hand in hand with cloud adoption inhibitors, but it [always takes a back seat to the more glamorous and scary "security" issue](#). These are not minor stumbling blocks in many cases, and the inability to rapidly adapt an infrastructure to meet growth and scale and make architectural changes, if necessary, are paramount to success. If cloud computing cannot provide the agility necessary to meet these challenges then it is logical to assume that organizations will either (a) stay in the local data center or (b) move to a local data center from the cloud when it becomes obvious the environment is inhibiting forward momentum.

Current adoption patterns indicate that this is not an anomaly, but will instead likely become the norm for organizations. Applications that are initially deployed "in the cloud" will, upon becoming a critical business application or growing



beyond the meager means of control and flexibility offered by the cloud, will migrate to the data center, where control and agility are provided by the simple fact that the organization can change at will any piece of the infrastructure – from its physical implementation to its logical organization – at will. This is evident in the percentage of organizations using cloud for "dev and test" but not for production. Clearly the economy of scale and rapidity of deployment makes the cloud a perfect environment for development and testing but not necessarily production.

## **ECONOMY of SCALE MAY be INHIBITING SCALE**

The irony is that the economy of scale offered by cloud may well be biting cloud in the proverbial derrière as it becomes the inhibitor to effective scale by limiting or making extremely difficult the architectural changes necessary for an application to scale in a cloud environment.

At some point scalability can become not about the application but about its infrastructure and the way in which that infrastructure interacts. It can become about the network and its components and how applications end up interacting with and through that infrastructure. In a cloud computing environment it is rarely the case that a customer can impact that infrastructure and, when it can, it is then limited by other factors such as underlying virtualization technology and the *physical server infrastructure* on which the application is ultimately deployed. If the answer to a scalability obstacle is more bandwidth and higher throughput, you can't really add another NIC to a server in the cloud. That's not your call. But it is if you're in the data center, and it is *virtualization* – not cloud - that ultimately provides the agility to make such a change and rapidly propagate that change across the application deployment.

It isn't always about costs. Well, okay, it *is* about cost but in IT it's about cost as it relates to performance, or flexibility, or other operational functionality required to successfully meet data center and business goals. When spending less on infrastructure results in higher operational costs, the organization really hasn't saved money at all. Savvy CIO and CTOs understand that it's not a battle, but a balancing act. It's not about achieving the **highest** economy of scale, but the **best** economy of scale given the specific operational and business needs.

## Related Posts

- [Fear and Loathing of Cloud Computing](#)

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**Figure 14: Information week analytics Cloud computing survey, 2009. Respondants were asked: How concerned are you with following issues as they relate to cloud computing? (range from 1 to 5)**



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