DATA CENTER STRATEGY IN THE "ALWAYS ON" ENVIRONMENT

GLOBAL TECHNOLOGY SOLUTIONS GROUP

WHAT DOES "DATA CENTER STRATEGY" MEAN ANYMORE, ANYWAY?

Steve Case and others have observed that the term "internet enabled" is going to become as unnecessary as "electricity-enabled." Always-available systems will become, for many if not most, simply "table stakes."

For many years, the term "data center" referred to a physical entity in a fixed location. Applications came and went, technology improved. Uptime requirements increased, and technology improved to support those requirements. For some firms, regulatory requirements changed and introduced additional recovery requirements. But the basic models were static.

Today things are very different, whether viewed from the demand side or from the supply side.

Demands on the data center are for nonstop availability and for ever-increasing processing, storage and points of connectivity. Steve Case and others have observed that the term "internet enabled" is going to become as unnecessary as "electricity-enabled." Always-available systems will become, for many if not most, simply "table stakes."

The **supply** of options has increased beyond the traditional on-premise, co-located and managed service offerings. Co-location options have expanded, and considerations have extended from cost to connectivity. Cloud options abound (Amazon introduced 722 new services in 2015 alone). Managed backup and disaster recovery as-a-service choices have proliferated.

"Two near, one far" just isn't the answer any more.

THE BUSINESS DEFINES THE DATA CENTER AND NOT THE OTHER WAY AROUND.

No one in our business can ignore the tremendous mindshare- and market share- earned by co-location and cloud infrastructure providers.

Let's review the threefold purpose of any data center construct:
- Support the operations of the business
- Operate cost-effectively, taking advantage of scale wherever practical
- Protect the business: mitigate risk

In 2015, Gartner introduced the term "Enterprise-Driven Data Center" to communicate their conviction that Infrastructure & Operations are to govern and provide, not necessarily produce. Their words: "Data center services will be an amalgam of premises-based, co-located, hosted and cloud-provided services."[1]

Whether you use the EDDC term or the more commonly searched "Hybrid IT", the outcome is the same.

No one in our business can ignore the tremendous mindshare- and market share- earned by co-location and cloud infrastructure providers. Recently, a major stock exchange made a public reference for a cloud provider stating that it chose their services for security and regulatory reasons.

This means that a variety of options must be considered — but it does NOT mean that the closure of your on — premise data center is necessarily imminent. Many factors play into such a decision. Let's look at a few.

MAKING THE CASE FOR CHANGE

Before we build the strategy, we need to understand what is driving change. The root causes of a need for change can be summarized in three major categories: business enablement; cost; regulatory. These mirror the three functions of the data center noted above: support the business; operate efficiently; mitigate risk. (Of course, more than one can be in play for any given client situation.)

CHANGE THEME	BUSINESS NEED	ISSUES
COST	Operate cost-effectively, taking advantage of scale wherever practical	• Facility or platform consolidation • Inability to support facility or platform • Greater scale available from a larger provider
ENABLEMENT	Inability to support facility or platform	• Agility • Modernization • Speed to market • Burst capacity
RESILIENCY	Greater scale available from a larger provider	• Protection vs. regional event • Protection vs. site event • Protection of appliction portfolio through distribution • Active-Active deployment • Facility issue, whether capacity or environmental

Once the business drivers are understood, Guiding Principles govern the development of the strategy. If a business doesn't understand its recovery time and recovery point objectives (RTO and RPO), we work to get those defined. We at least need to understand for strategy purposes what tiers of service are required (e.g., active-active, platinum is less than one hour RTO, gold less than four, etc.).

Guiding principles might state (these are based on actual client deliverables):

• "Prevent data loss for a period less than 24 hours for all production applications and those applications for which there is a Recovery Point Objective of zero data loss"

• "Support an 'Active-Active' multi-data center environment"

• "Prohibit single points of failure"

• "Centrally manage the resources associated with each function, even though those resources might be spread across numerous environments"

Again: only when we've clearly understood what is driving us, and how that translates to high-level requirements, can we begin to build the strategy. Having said that, we've never seen a set of guiding principles which wasn't subject to compromise based on cost, capability, and of course, even political considerations.

Any business case needs to include a migration plan crafted by experienced professionals who know how to anticipate costs. Otherwise, the cost to change can eat up any savings that the new strategy may be expected to provide. (We discuss best practices in our paper entitled "**Data Center Migration: Someone Else's Problem?**")

THE QUESTION OF CLOUD

From the marketing that surrounds us daily, there seems to be a broad race to the cloud. Gartner analyst Lydia Leong offers another perspective and several points:[2]

1. Frame what "cloud" means. The NIST definition of cloud is a platform where:
a. users can rapidly provision infrastructure themselves,
b. that is accessed over a network,
c. that can scale up and down with demand, and
d. whose usage can be measured and metered.

So, as Leong points out, neither mainframes nor "perfectly fine virtualization infrastructures" meet this definition of cloud. She goes on to say that "Not everything can or should be cloud."

2. Not everything needs to be cloud.
Leong and her Gartner colleagues state that organizations shouldn't start by deciding on the computing infrastructure they will use, but by first settling on what type of IT will best meet the needs of different parts of the business (the Enterprise-Driven notion introduced above). Leong suggests that either cloud or non-cloud can be architected to provide agility, although cloud may be better suited to provide it.

3. There's not necessarily an ROI to the cloud.
Many reading this will have an infrastructure that is perfectly serviceable. Many will also have applications that don't require the agility of the cloud. Substantial investment is likely required to move production workload of any scale. This investment can wait for a compelling event, such as technology refresh, facilities requirement, or an organizational change.

4. Private cloud can be problematic for many.
Many, if not most, enterprises which will be unable to compete with the scale of public cloud. Leong's position:

> ...the delta between public and private is only getting greater because of the convergence of the infrastructure-as-a-service space and platform-as-a-service space... all of the interesting stuff has started to become these solutions... that accelerate your time to market, that ease management, that drive automation, all these capabilities you're going to miss out on if you do private cloud. Private cloud innovation just hasn't kept up. [3]

GTSG find the need for our services will depend on your strategy and the profile of your workload:

• If you've got workload that won't be going to the cloud, we help with a plan to modernize that workload.

• If you have a x86-based workload that fits the profile, we help you decompose those apps so they can be safely moved, put wrappers around them and migrate to the cloud.

• If you've got new workload that you would design to be cloud-native, we help you to architect that workload in a framework that works with the rest of your business.

TECHNOLOGIES CHANGE. PRINCIPLES DO NOT.

GTSG operates from a data center strategy framework that has been developed over a quarter-century of strategy and migration work.

Fortunately, proven methods are available to sort through the options. To be sure, regulatory requirements on some industries are vastly more stringent than a dozen years ago. Developers can get services to market much more quickly, and options for service delivery models are much greater. But the core methodology doesn't change:

- understand the drivers for change
- develop guiding principles
- understand the range of technical options to satisfy these principles
- analyze and present alternatives
- determine the future state
- develop a roadmap to get there.

GTSG operates from a data center strategy framework that has been developed over a quarter-century of strategy and migration work.

Our framework has been utilized — in its entirety and in segments — at organizations ranging from the smaller mid-market (less than $500M in revenue) to the Fortune 20.

Some firms are going to insist on having the lion's share of their compute power and data on-premise in a facility that they manage. Others are going to be willing to utilize the capability provided by co-location providers and public cloud providers. Most firms are going to use some combination of the above. Some will look to the public cloud, and many will include a public cloud in their resiliency plans. They will also consider Disaster Recovery as a Service. Smaller firms will consider hyper-converged systems for this purpose as well.

There's also a cost to complexity. For many firms, not everything can run in what 451 Research's Brett Azuma calls its "best execution venue." The costs of integration and of communication become prohibitive.

Finally, wherever you land, **it's going to change.** Apple and Dropbox have been well publicized examples of moving workload away from AWS, as an example, but this practice is not limited to hyperscale providers.[4]

So, you need both a framework in which to operate, as well as the capability to effectively move workload on what will become a semi-regular basis.

THE GTSG DIFFERENCE: EXPERIENCE CRAFTED INTO A REPEATABLE METHODOLOGY

GTSG does NOT hire "trainees" to work data center strategy (or anything else). We bring experienced professionals. There will be no fees for "on the job training" from us.

GTSG has the skill most lacking in today's marketplace: the ability not only to do an assessment (most people can determine where workload should run in a perfect world), but the ability to foresee the "cascade effects" or downstream impacts. That ability only comes from experience.

What you need are people who can assess the business and resilience impacts of a move- whether to the cloud, to co-lo, consolidation to a single on- premise facility, or any of the permutations your firm may decide upon.

GTSG does NOT hire "trainees" to work data center strategy (or anything else). We bring experienced professionals. There will be no fees for "on the job training" from us.

With us, you get
- the experience you need to anticipate the downstream consequences of a decision, codified into proven methodology

- independence- we will not earn one dollar of commissions for "recommending" someone else's product or service to you

- an exceptionally reasonable cost structure based on the seniority of our team and leanness of our organization

- commitment and day-to-day engagement from the leadership of an organization fully devoted to the data center.

Contact us at **itservices@gtsg.com**. Thank you.

REFERENCES

1 | 2016 Strategic Roadmap for Data Center Infrastructure, Gartner, June 3, 2016, Bob Gill, Dave Cappuccio, et al

2 | Excerpted from http://www.zdnet.com/article/hybrid-cloud-why-hybrid-it-may-be-the-better-choice/, downloaded 06.27.16

3 | Ibid

4 | http://www.infoworld.com/article/3047830/cloud-computing/apple-and-dropbox-dump-aws-should-you.html, downloaded 08.09.16

**GLOBAL TECHNOLOGY
SOLUTIONS GROUP**

**T 877 467 9885
F 877 225 4084
W gtsg.com
E mainframe@gtsg.com**