

Observations From the 2009 U.S. Data Center Conference

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Issues and trends focused on at the 28th annual Gartner Data Center Conference included the impact of cloud computing on infrastructure and operations (I&O); the growing exploitation (and exposure) of virtualization technologies; business continuity (BC); the IT Infrastructure Library (ITIL); IT operation management's role in lowering total cost of ownership (TCO), while increasing quality of service (QoS), energy and data center design efficiency; new storage applications; volatility in the server market; and the role of I&O in data center planning and management.

Key Findings

- Spending levels, as measured by I&O budgets, are gradually improving.
- An aging facilities infrastructure is an impediment to optimizing data center agility, but budgetary pressures will limit how aggressively this can be addressed.
- Virtualization remains a key topic, although large organizations are moving beyond a mere x86 server consolidation play and looking at it as a business enabler. Focus is also being placed on virtualization on platforms such as the Unix server environment.
- Interest in the private cloud among end users has grown significantly since this event the previous year.

Recommendations

- If your budget does not allow you to address long-term requirements, then optimize cooling, airflow and equipment placement in the data center in the short term.
- Future data centers should be designed for flexibility and scalability — use zone and pod concepts as underlying tenets.
- Virtualization projects are often rushed through because of their rapid return on investment (ROI). Pause and perform a health check on your processes, management and security to ensure that virtual sprawl isn't happening.
- Start (or continue) to develop an overall cloud-computing strategy.

WHAT YOU NEED TO KNOW

Gartner held its 28th annual Data Center Conference in Las Vegas, on 1 through 4 December 2009. More than 1,500 data center professionals, Gartner analysts and industry experts attended, and there were six keynote sessions, 66 breakout sessions, four user experience sessions and four town hall meetings. (At the town hall meetings, panels of Gartner analysts answered audience questions about storage, the cloud, IT operations and virtualization.)

ANALYSIS

Gartner's annual Data Center Conference focused on issues of interest to data center professionals, including cost optimization, IT service delivery, new technologies and applications, and client and customer satisfaction. Other issues spotlighted included:

- Formulating a cloud strategy (both public and private) — separating the market hype from what can deliver value.
- Virtualization management — now that virtualization is becoming pervasive, attendees are grappling with issues related to the tools available to manage physical and virtual infrastructures in an increasingly virtualized world.
- Data center facilities — many users report having older facilities not suited to today's computing environment, but have been faced with budgetary pressures that have put many new build or refurbishment plans on hold.

Cloud computing became the hot industry buzzword in 2009. Attendees were most interested in trying to understand how the various cloud-computing approaches would complement what they were already doing and where they might offer more-economical models.

Virtualization remained a huge piece of the week's discussion because of the rapid and ongoing impact it has had on the data center. Most organizations are now using some level of virtualization technology for servers, storage and clients in their data centers. However, the increasing heterogeneity of technology and diversity of vendors in the data center introduced new challenges, as well as offering a critical component for many in the journey toward a real-time infrastructure (RTI) and cloud computing. There was a great deal of interest in the implications for operations, disaster recovery and security, as well as virtualization in the Unix environment.

A decade into the 21st century, data center managers are facing traditional data center facility issues, as well as new challenges. The growing interest in green IT initiatives, the obsolescence of data centers based on power and cooling issues, and the impact of virtualization are just a few of the new concerns. Just measuring the efficiency of their data centers is a daunting task. Attendees were continuing to grapple with cost, technology, people, location and environmental issues, while continuing to deliver a highly available, secure, flexible server infrastructure as the foundation for the business's mission-critical applications.

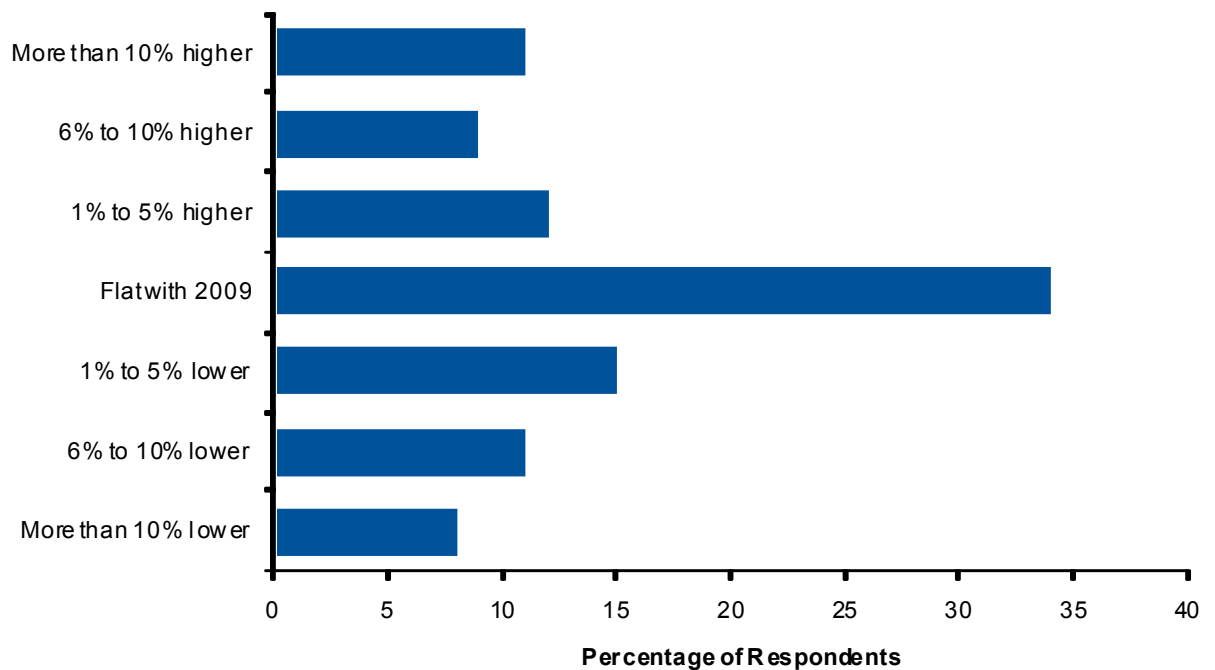
Given the state of the economy, participants were still sensitive to cost, but the mood was enthusiastic, and attendees appeared prepared to spend budget in places that would make a difference. That message was borne out in the electronic survey questions we conducted in the welcoming address. These polls provide insight into conference attendees' priorities and plans. The sample is skewed toward government entities and other large enterprises that have not had travel constraints. Attendance at the conference was up from last year, suggesting that travel constraints are relaxing. The data is neither weighted by budget, nor can we weight it to represent

the general population. However, it gives directional ideas in the segment of larger spenders in the market.

Welcome Address Provided Valuable Data

The welcome address posed three questions that set the tone for the conference. First, attendees were asked how their 2010 I&O budgets compared to 2009 (see Figure 1).

Figure 1. How does your 2010 I&O budget compare to 2009?



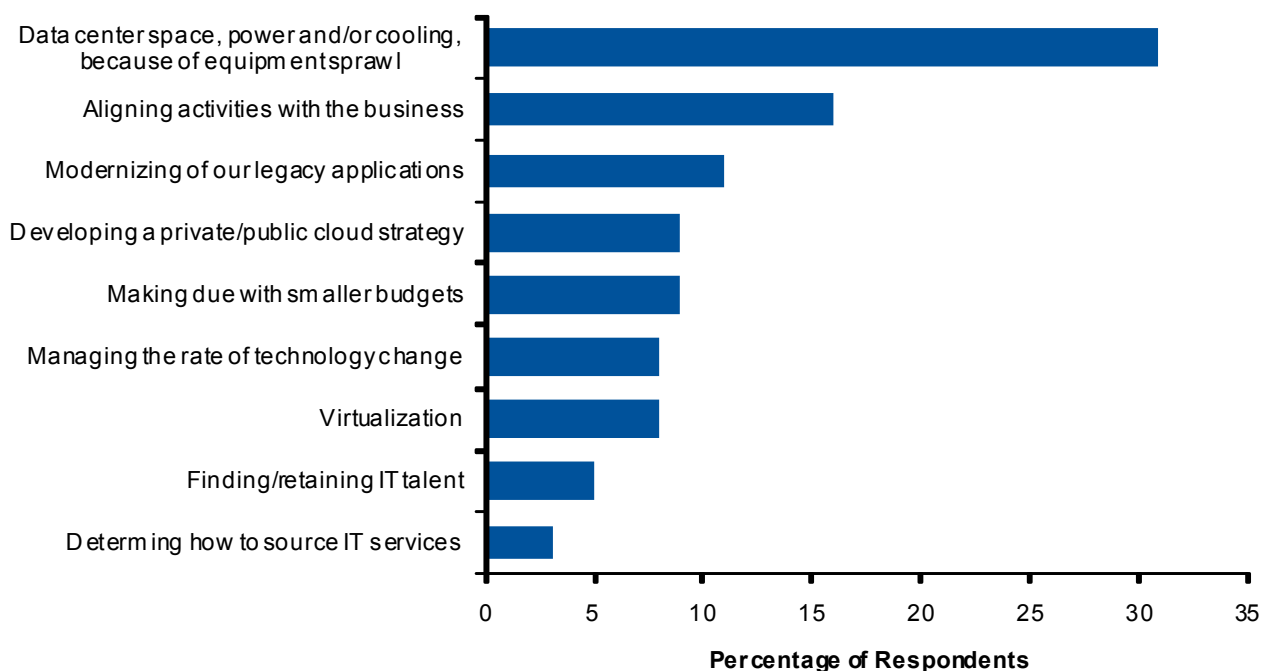
Respondents: 607

Source: Gartner (January 2009)

The results came back in roughly a bell curve. The distribution was approximately equal between budgetary growth (32%) and reduced budgets (34%), while 34% were flat, with no change from 2009. This reflects a gradual improvement from the somber mood most end-user organizations were feeling in 2008.

In the second question, we asked attendees to identify the most significant data center challenge they face (see Figure 2).

Figure 2. What is the largest data center challenge you currently face?



Respondents: 654

Source: Gartner (January 2009)

Issues related to the data center facility (power, space and cooling) remain the top challenges. (In last year's poll, there were slightly different choices for respondents [see "U.S. Data Center Conference Focuses on How to Do More With Less"]). The economic downturn has caused many facilities to refurbish or expand an existing data center or, for those building a new one, to put those projects on hold. Polling done in one of the track sessions showed that, when asked the age of their current data center, 49% of the respondents' data centers are more than 15 years old. A separate kiosk survey conducted at the conference indicated that, for 70% of the audience, their organization's oldest data center was more than seven years old.

In addition, the price of power is growing, new workloads and systems are increasing electricity needs, and the availability of increased power is shrinking, driving the demand for new approaches. Energy consumption will be the most dominant trend in data centers during the next five years — both from an efficiency standpoint (how do you reduce consumption) and a monitoring/management standpoint (how do you ensure the most efficient use of the resources at hand).

Aligning with the business was the second most popular response. Every CIO survey points to the desire for IT to align with the business strategy. Yet, this has proved elusive, which is why it's always top of mind. IT organizations don't want a strategic seat at the table — they want to meet business priorities, and provide the right services at the right cost, quality and agility. So, why is it still so hard to achieve this? Does aligning with the business mean catering to every whim? Is that what service management is all about? Is there a middle ground? We continue to advocate that IT focus on regularly evaluating the business services they provide, establishing that they are delivering the right services at the right level of quality at the right price.

Modernizing legacy applications was the third most popular response. Organizations that have used IT for decades to support their businesses now find that this same hardware and software

environment can impede growth. Whether their legacy environments are perceived as too expensive or not agile enough, companies want to move to a modern architecture. By their reckoning, "modern" means "cheaper, better and faster." Modernizing these applications often requires dramatic shifts in architectures, introducing new platforms and operating systems into the data center, retooling the operations staff, different processes, tools, support software and additional costs to operate the environment. The conflicting pressures between the application development (AD) and the operations organizations can easily result in stumbling blocks to modernization. Setting clear, consistent goals across the AD and operations organizations will help avoid and/or resolve this conflict.

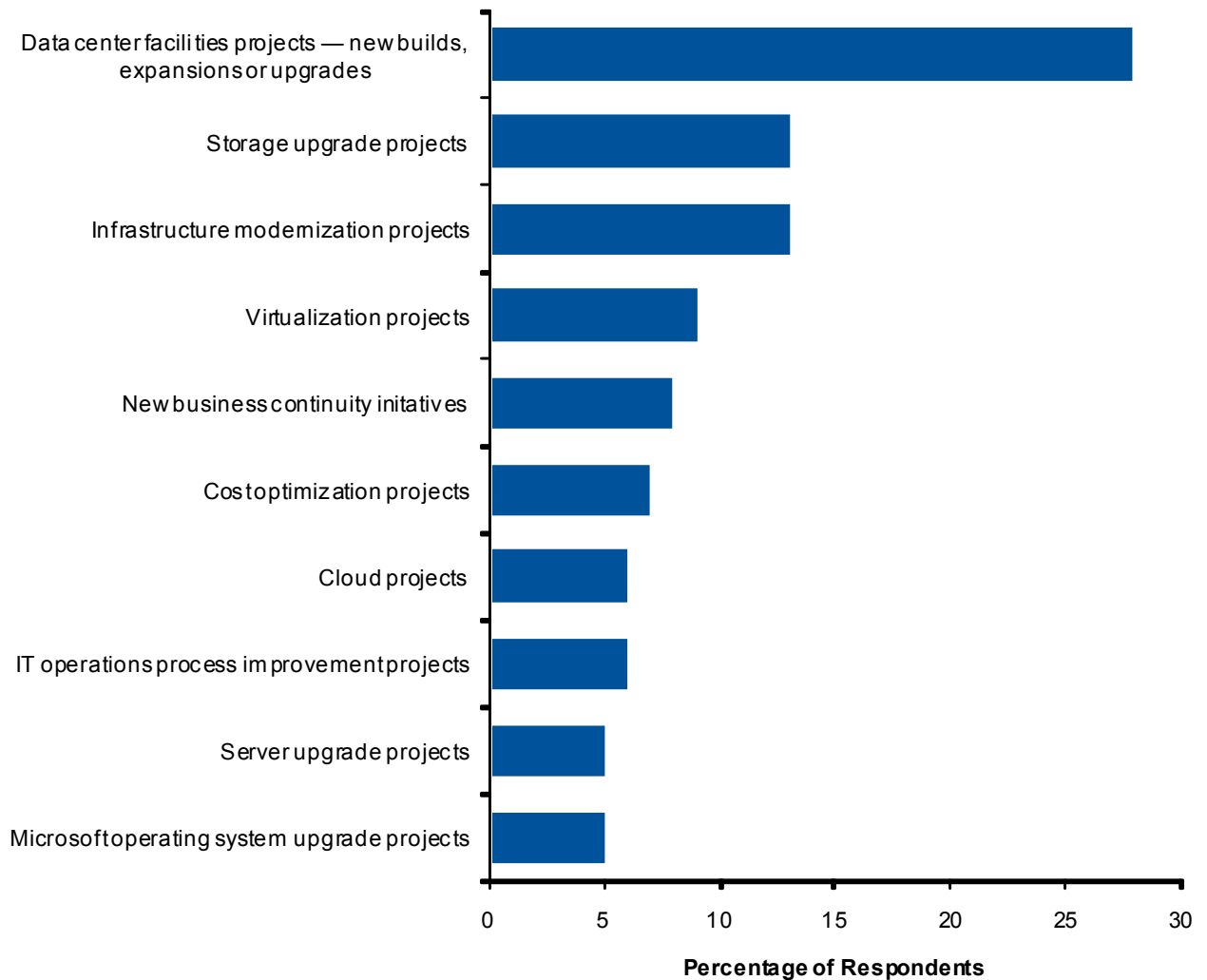
Developing a public/private cloud strategy was the fourth most popular response. Given the volume of interest we have seen from clients in 2009, as well as attendance in the subsequent sessions at the conference that had cloud content and one-on-one sessions with attendees, this was surprisingly low. We believe organizations will spend more on private cloud-computing services through 2012 than on public cloud services — but the decision whether to "buy" or "build" needs to start with a deep analysis of service offerings, a strategic plan for each service and an evaluation of when external services will be available to meet enterprise needs.

Making due with smaller budgets did decline as the largest challenge, from more than 20% in December 2008 to 8% in 2009. This reflects the gradual improvement noted in Figure 1.

Although many organizations are concerned about the aging baby boomers' pending retirements, finding and retaining talent scored relatively low. Retaining talent may not be as much of a challenge at a time when the overall unemployment rates are high and many professionals are thankful for a job. Hence, this could be a window of opportunity for organizations that have the capacity to hire. The global financial downturn has resulted in a large population of displaced IT workers, especially from the financial services industry. IT I&O leaders that are able to hire new staff report a wealth of talented applicants from which to choose.

Finally, survey participants rated areas that would receive the most investment in 2010 (see Figure 3).

Figure 3. Which of these areas will get the most funding in 2010?



Respondents: 670

Source: Gartner (January 2009)

Data center facility projects, including new builds, took a significant percentage of the investment budget as planners seek to design space to optimize power and cooling. This should be no surprise as this was shown as the No. 1 challenge. Gartner advises planners to use a pod approach (adding increments of space when needed), as well as a multitier approach (building to different levels of power and cooling specifications, rather than all at the highest level). These strategies make more sense than erecting a large facility with empty space to power and cool. It also enables data center managers to take advantage of new technologies as they become available, while achieving greater energy efficiency.

Storage upgrade projects were tied for the second most popular response. Applications, users and business partners increasingly expect more, if not all, data to always be available and to be available quickly. This is leading to a dramatic increase in the amount of data that is being kept online. As demand for storage continues to explode, organizations must wrestle with data security, availability, archiving, retrieval, sharing and cost management. Attendees were urged to

consider adopting multiple tiers (online, near-line, and offline) for storage based on usage that will lower costs and improve energy efficiency.

Infrastructure modernization projects were tied for the second most popular response. Any modernization effort must begin with the overall facility, but this hasn't been a priority among IT practitioners. The days when facilities management and IT operations were completely separate disciplines (and organizations) are coming to an end. In many organizations, this has been highlighted by the four-pronged impact of consolidation, followed by heavy virtualization, followed by installation of high-performance servers or high-density racks, and, finally, by the attention that green IT has focused on IT power consumption. These four actions have forced a complete reassessment of the power and cooling requirements needed in data centers. Facilities modernization can start with something as simple as an assessment of what's available, how much actual growth is possible and how the existing environment can become more efficient.

Many steps can be taken to improve the overall efficiency of facilities without incurring a large expense. In the longer term, organizations are evaluating potential options, such as collocation for growth, outsourcing or building another site designed specifically for long-term growth and the highest levels of agility. Each has benefits and down sides, but each must take a long-term view of an organization's needs and be based on clear assessments of what's needed now.

Virtualization projects were the fourth most popular response. We believe its relatively low placement is because many of the attending organizations have already done the first phase of virtualization — addressing the specific x86 server utilization issues that have been so "high profile" and delivering the rapid ROI that was necessary in the economic climate of the past year. Much of that "low-hanging fruit" has now been done — at least by our attendees, who tend to come from large organizations. (We still believe there is tremendous opportunity in the small and midsize business space.) We anecdotally found our conference attendees now focused on virtualization projects that focus on increased agility and flexibility, improved availability and security, and faster deployment of resources, among other attributes.

New BC initiatives were the fifth most popular response. In tough economic times, BC/disaster recovery (DR) budgets are often under pressure, and the opportunities to test are being limited. We saw this result as one more indication of the gradual improvement and recovery our attendees seem to believe is on the horizon, as well as the earlier observation that data availability requirements are increasing. Virtualization can also play a key role in reducing the cost of BC/DR.

The Bottom Line

Given the state of the economy, participants were still sensitive to cost, and cautious about where and how to invest. However, the message that came across loud and clear was positive. Data center and I&O managers are ready to spend in areas that promise rapid ROI, offer opportunities for competitive advantage and deliver higher QoS to their businesses. In short, attendees were prepared to focus budget dollars on the places that make a difference.

RECOMMENDED READING

"U.S. Data Center Conference Focuses on How to Do More With Less"

"Survey Results for 2009 Infrastructure and Operations Spending Outlook"

Note 1

2010 Conferences

For a deeper look into topics that focus on tactics, tools and strategies, attend one of these 2010 Gartner conferences:

- Infrastructure, Operations and Data Centre Summit — 24 to 25 March (Sydney, Australia)
- IT Infrastructure, Operations and Management Summit — 14 to 16 June (Orlando, Florida)
- Data Center Summit — 22 to 23 November (London, U.K.)
- 29th Annual Data Center Conference — 6 to 9 December (Las Vegas, Nevada)

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