Corporate Datacenter Trends

Consolidation Remains a Primary Focus – Software-Defined Datacenters Are Poised to Disrupt

About This Report

A February survey of 1,264 members of the 451 Global Digital Infrastructure Alliance looked at key enterprise datacenter trends – including budgets, IT infrastructure spending, facility consolidation vs. new construction, and the outlook for software-defined datacenters.

Datacenter Facilities Spending: A total of 29% of organizations surveyed expect their datacenter facilities spending to increase over the next 90 days – two points higher than our previous survey in October. Just 11% expect a decrease – one point better than previously.

Consolidation vs. New Construction: 7.7% of respondents report their organization is planning to open a new datacenter/IT site in the next 90 days – but at the same time, 8.3% are planning a closure. These results point to a slight overall reduction in the total number of sites.

Top Datacenter Priorities: *Improving existing IT asset utilization* (38%) and *datacenter consolidation* (18%) remain the top priorities for datacenter operators. Datacenter consolidation projects were particularly popular among manufacturing (27%) and utilities (24%) organizations.

Software-Defined Datacenters – Poised to Disrupt: We asked respondents which technologies will have the greatest impact on their datacenter operations over the next two years, and better than two-in-five (42%) cited *software-defined datacenter* (SDDC) as having the greatest impact. *High-density racks* (39%) was a close second, followed by *Datacenter Infrastructure Management Software* (DCIM; 20%).

Datacenter Facilities Trends

Nearly all organizations make some level of IT investment, but not all require their own datacenter. Given the large amount of capital it takes to run a datacenter, many organizations opt to use third-party providers instead.

Of the 1,264 total respondents for this survey, two-thirds (66%) said their organization owns their own premium, regional or local datacenter facility.

Healthcare (77%) and government organizations (74%) are most likely to own their own datacenter. We note that regulatory compliance and other issues often make it difficult for them to offload their IT to service providers. Services firms (49%) are least likely to own their own datacenter.

Projected Datacenter Facilities Spending: Next 90 Days

Regarding datacenter facility spending plans, 29% of respondents say their organization's facilities spending will increase over the next 90 days (10% *Significant Increase*; 19% *Slight*) – up two percentage points compared with the previous survey in October 2014.

*How would you characterize your organization's **datacenter facility** spending plans over the next 90 days compared with the previous 90 days? Please include spending on the building or "shell," power and cooling equipment, but not including colocation expenses.*

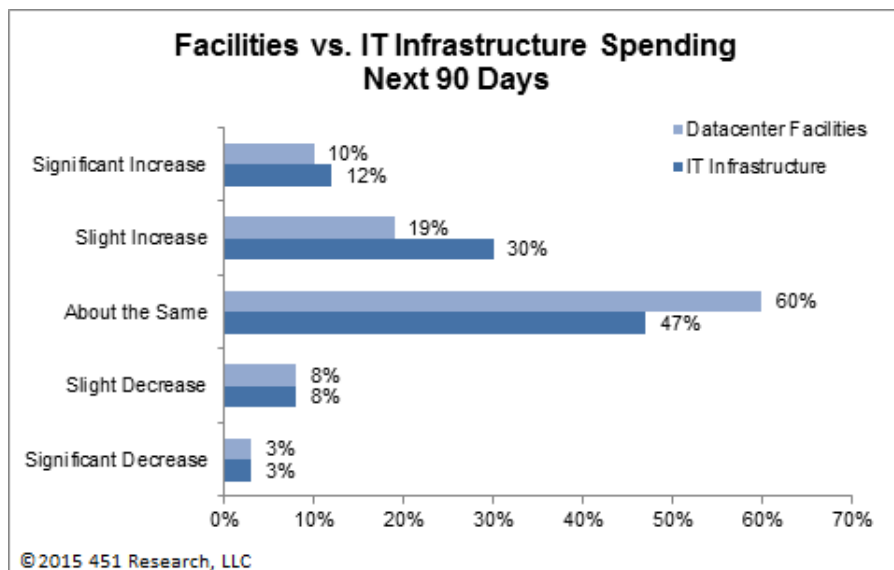|	Previous Survey (Jul '14)	Previous Survey (Oct '14)	Current Survey (Feb '15)
Significant Increase Over Next 90 Days	7%	7%	**10%**
Slight Increase Over Next 90 Days	15%	20%	**19%**
About the Same	68%	61%	60%
Slight Decrease Over Next 90 Days	8%	9%	8%
Significant Decrease Over Next 90 Days	2%	3%	3%

Only 11% say their facilities spending will decrease (3% *Significant Decrease*; 8% *Slight*), one percentage point better than previously.

Government and education organizations are most likely to be increasing spending, followed by services and healthcare. According to 451 Research datacenter analyst Dan Harrington, "Government organizations continue their push to upgrade aging infrastructure and keep pace with new technology, while many healthcare companies are still racing to digitize medical records."

Datacenter Facilities vs. IT Infrastructure Spending: Next 90 Days

How does datacenter facilities spending compare with IT infrastructure spending (i.e., spending on servers, networking equipment, other IT hardware, etc.)?
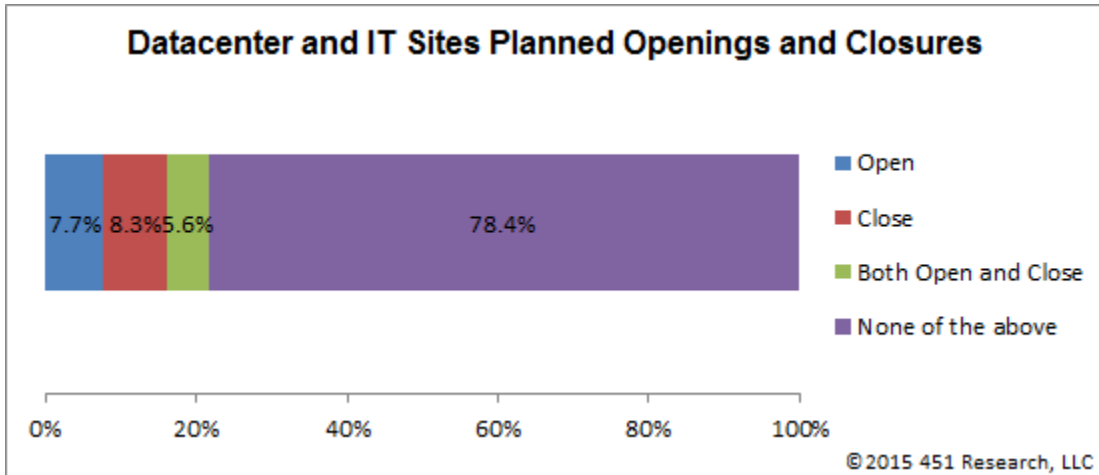
IT infrastructure spending is even stronger than datacenter facilities spending – with 42% of respondents expecting their organization to increase IT infrastructure spending in the next 90 days. This compares with 29% who expect their facilities spending to increase.

Facilities vs. IT Infrastructure Spending Next 90 Days

- Significant Increase: Datacenter Facilities 10%, IT Infrastructure 12%
- Slight Increase: Datacenter Facilities 19%, IT Infrastructure 30%
- About the Same: Datacenter Facilities 60%, IT Infrastructure 47%
- Slight Decrease: Datacenter Facilities 8%, IT Infrastructure 8%
- Significant Decrease: Datacenter Facilities 3%, IT Infrastructure 3%

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Datacenter Consolidation vs. New Construction

We asked respondents if their organization plans to open or close a datacenter in the next 90 days. While nearly four-in-five had no plans, 7.7% report their organization is planning to open a new datacenter/IT site in the next 90 days. In comparison, 8.3% are planning a closure. These results point to a slight overall reduction in the total number of sites.
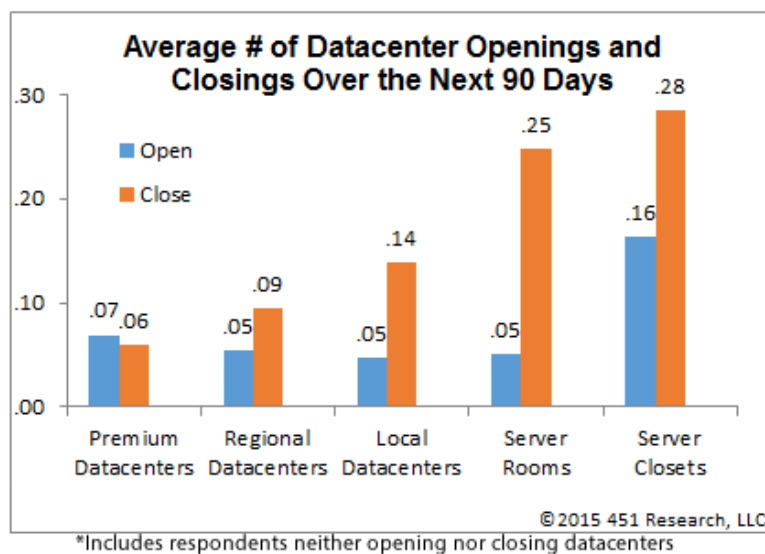
In the next 90 days, does your organization plan to open or close any datacenters and IT sites?

Datacenter and IT Sites Planned Openings and Closures

Open	Close	Both Open and Close	None of the above
7.7%	8.3%	5.6%	78.4%

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To better understand this trend, respondents were asked how many and what kind of datacenters/IT sites they plan on opening or closing.

The following chart shows the average number of datacenters either opening or closing over the next 90 days. Premium datacenters were the only type where the average number of planned openings (0.07) is higher than the number of closings (0.06).

How many of the following datacenters or IT sites do you plan to open/close in the next 90 days?

Average # of Datacenter Openings and Closings Over the Next 90 Days

	Open	Close
Premium Datacenters	.07	.06
Regional Datacenters	.05	.09
Local Datacenters	.05	.14
Server Rooms	.05	.25
Server Closets	.16	.28

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*Includes respondents neither opening nor closing datacenters

As Dan Harrington explains, "These results show that over time the total number of smaller remote sites – such as server closets and rooms – is continuing to decline at a greater rate, along with local and regional datacenters."

We note that server closets (0.28) and rooms (0.25) are the most likely target for closures, followed by local (0.14) and regional (0.09) datacenters.

However, "The fact that there will be slight reduction in the number of sites does not necessarily signify a wholesale movement to cloud or colocation tomorrow," says Harrington. "Rather, it represents a gradual mind-set shift away from owning many distributed sites to owning large centralized ones, or owning none at all. Most likely, it means some combination of the two."

Of course, this is how disruption often plays out over the long term. Organizations slowly shift away from their existing deployment patterns while periodically introducing new technologies until they eventually represent the majority of deployments.

As this trend unfolds, we could reach a 'point of no return' for many organizations. Migrating existing assets to third parties – whether it be colocation, managed hosting or cloud – is certainly no small feat. But once these assets are outsourced, the pain involved in building a new datacenter to bring them back on-premises is that much greater.

This is especially true not just from a technology perspective, but from the financial point of view as well.
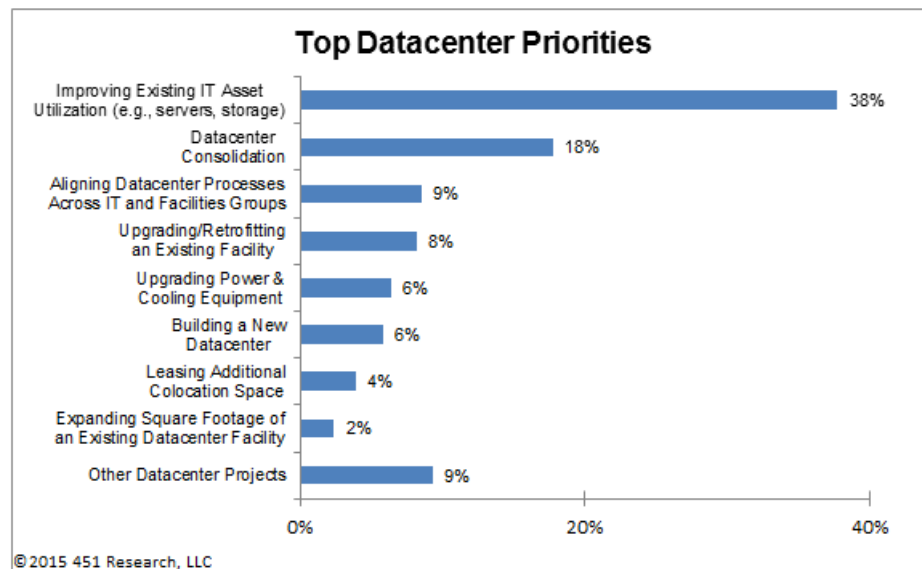
Regardless of roadblocks, the trend is clear: enterprises are divesting their distributed sites on the road to a more centralized model, supplemented with third-party resources.

Top Datacenter Priorities

The top priorities for today's datacenter operators are *Improving existing IT asset utilization* (38%) and *datacenter consolidation* (18%) – both consistent with previous survey results.

Aligning datacenter processes across IT and facilities groups (9%) is also a priority.

Which of the following do you consider the number one priority datacenter project for your organization over the next 90 days?

Top Datacenter Priorities

Improving Existing IT Asset Utilization (e.g., servers, storage)	38%
Datacenter Consolidation	18%
Aligning Datacenter Processes Across IT and Facilities Groups	9%
Upgrading/Retrofitting an Existing Facility	8%
Upgrading Power & Cooling Equipment	6%
Building a New Datacenter	6%
Leasing Additional Colocation Space	4%
Expanding Square Footage of an Existing Datacenter Facility	2%
Other Datacenter Projects	9%

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"Better alignment of processes is increasingly important for datacenter operators and IT groups in today's environment," says Harrington. "It's driven by the need to support more complex IT infrastructure, which requires advanced power and cooling to deploy and maintain."

Consolidation projects were a popular priority for manufacturing (27%) and utilities (24%) organizations. Typically IT laggards, these industries are likely playing catch-up in terms of consolidation – a trend that has been driving IT and datacenter investment for more than a decade.

More on Improving IT Asset Utilization

It's no surprise, given the trend toward consolidation, that the number one priority for datacenter managers is improving their existing IT asset utilization. However, the way they go about this varies.

We asked organizations how they are improving their existing IT asset utilization, and nearly four-in-five (78%) said through *increased use of virtualization*, while 64% said *increasing virtual machine densities*.

Consolidating storage (50%) and *servers* (46%) are also high on the list, followed by *software automation* (38%), and *adoption of converged infrastructure solutions* (33%).
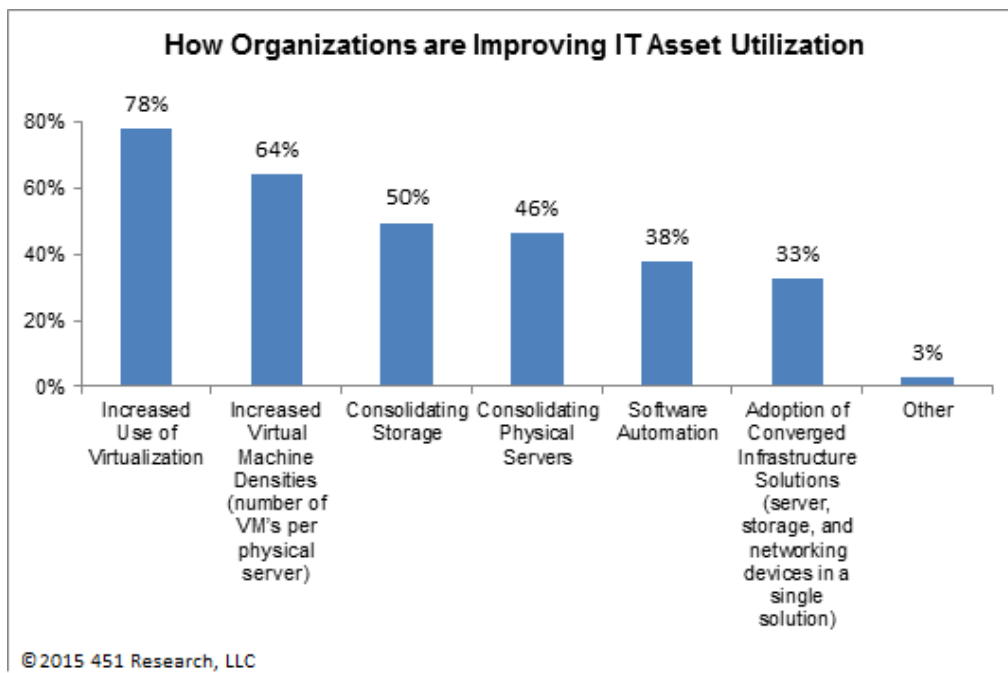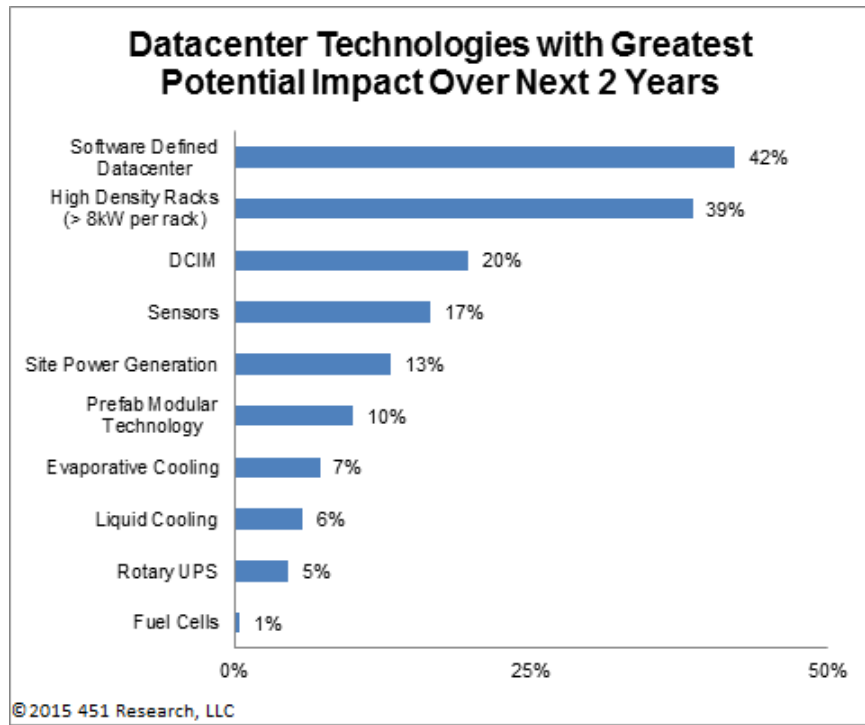

"It's significant that one-in-three datacenter operators cited adoption of converged infrastructure solutions," says Harrington. "Solutions like VCE Vblock, Oracle Exadata and Cisco UCS have grown in maturity and are quickly gaining in popularity as organizations look to pre-integrated turnkey solutions rather than relying on internal expertise to build complex private clouds."

Software-Defined Datacenters – Poised to Disrupt

The consolidation movement, combined with the shift to a more automated software-driven infrastructure, is bringing considerable change to the datacenter.

We asked respondents which technologies will have the greatest impact on their datacenter operations over the next two years, and better than two-in-five (42%) cited *software-defined datacenter* (SDDC) as having the greatest impact. *High-density racks* (39%) was a close second, followed by *Datacenter Infrastructure Management Software* (DCIM; 20%).

What are the datacenter technologies that will have the greatest impact on your datacenter operations over the next 2 years?

Datacenter Technologies with Greatest Potential Impact Over Next 2 Years

Technology	Percentage
Software Defined Datacenter	42%
High Density Racks (> 8kW per rack)	39%
DCIM	20%
Sensors	17%
Site Power Generation	13%
Prefab Modular Technology	10%
Evaporative Cooling	7%
Liquid Cooling	6%
Rotary UPS	5%
Fuel Cells	1%

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SDDC is often used as a catch-all term to describe the increased levels of software-driven automation in today's datacenters. Regardless of the definition used, the above findings provide strong evidence that software-driven automation is a disruptive industry force.

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