Moving Technology Infrastructure into the Future: Value and Performance through Consolidation

An AMI-Partners Business Benchmarking White Paper

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Autumn Watters
Ryan Brock
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Introduction

With a global economic environment that remains challenging and uncertain, mid-market businesses (those with 100-999 employees) continue to strive to reduce costs and increase productivity. Unfortunately, neither of these two very important pursuits is easy to accomplish. On the cost side, firms are faced with obstacles such as inefficient processes and bloated infrastructures that no longer adequately support operations. On the productivity side, most mid-market businesses struggle with empowering employees with secure, anytime, anywhere access to critical company data and information.

Given these difficulties, many businesses are realizing the benefits of consolidating their IT infrastructure. While many firms are looking to the cloud to reduce capital expenditures (CAPEX), recent research suggests that mid-market firms are also continuing to invest in their on-premise infrastructure with the goal of optimizing the performance, manageability, scalability and productivity of their data centers.

IT consolidation is the act of reducing the number of physical IT assets in operation by using more efficient technologies, such as virtualization, to support better capacity utilization, process automation, and reduced operating costs. This paper explores why and how mid-market firms are consolidating their IT infrastructures. It provides results from a recent global study to help mid-market firms benchmark their consolidation efforts against their peers. It also provides guidance on how mid-market firms can effectively address their consolidation needs and goals.

72% of mid-market firms say that consolidation through server virtualization is a top IT priority.
Key Highlights: The Case for Consolidation

- **Top Overall IT Priority** – The vast majority (72%-74%) of mid-market firms seek better access and data transfer/retrieval speeds as well enhanced data backup and infrastructure security. Consolidation promotes agility within the infrastructure, greater flow of information between devices, and better monitoring capabilities for detecting security threats.

- **Consolidation Solution Needs** – When evaluating consolidation solutions, mid-market firms (84%-87%) are focused on reducing cost, complexity, and time associated with virtualization implementations and improving network/application availability. Since consolidated/virtualized bundles can be purchased in an already optimized state, acquiring them is much more straightforward, cost effective, and timely. Better workload management via load balancing and pushing workloads to virtual machines increases up-time at both the network and application levels.

- **Consolidation Benefits Sought** – Consolidated solutions should be systems-based (configured for the entire data center), easy to deploy, and built with the business in mind. They should produce tangible results for the business, such as streamlined processes, greater reliability, reduced IT management overhead, enhanced productivity and improved ROI.

- **Consolidation Journey** – The majority (50-55%) of mid-market firms are in the building momentum stage of their consolidation journey. This stage is characterized by considerable experience with virtualization and an integrated networking infrastructure and a focus on achieving peak performance and efficiency.

Did you know?

50% of mid-market firms in the U.S. that are building momentum with virtualization plan to consolidate the data center by replacing existing servers in the next 12-24 months.

Consolidation as a Top Mid-market IT Priority

A review of the top overall IT priorities of mid-market firms underscores the important role of infrastructure consolidation initiatives.
## Mid-Market IT Priorities

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<td>1</td>
<td>Improving Bandwidth</td>
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<td>2</td>
<td>Better Back-up &amp; Security</td>
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<td>3</td>
<td>Securing Mobile Devices</td>
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<td>4</td>
<td>Using Server Virtualization</td>
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Most mid-market firms (74%) view *improving bandwidth* as a key IT priority. Greater bandwidth reduces the time involved with migration of data between the physical, virtualized and cloud environments. Consolidation helps to address this by improving agility of the physical infrastructure and streamlining and automating the process of moving data across resources.

Another leading IT priority for mid-market firms (74%) is to *improve the back-up and security of their data*. A virtualized and consolidated IT infrastructure enables IT departments to seamlessly move data between physical and virtual machines and back-up or archive data to a storage device in a matter of seconds. Instances of data on virtual machines can be copied to any back-up solution and recalled effortlessly in the event of a disaster. Additionally, IT managers can more easily isolate and remedy security threats via better monitoring across the consolidated landscape. A consolidated set of physical assets also decreases access points (as security vulnerabilities) to cloud resources making for a more secure environment.

As mobile device proliferation continues, another priority among mid-market IT departments is *managing and securing mobile devices*. 73% of mid-market firms cite mobile device management and security as a top priority.

A consolidated environment better enables mid-market firms to extend company-wide access to mobile devices and provides better insight into monitoring and managing these devices.
The Consolidation Journey

The consolidation journey of yesterday was centered on virtualizing distinct areas of a firm’s IT infrastructure: servers, desktops, or storage. These disparate solutions have until recently been marketed and sold as such, in a “silo-ed” manner. By procuring separate stand-alone solutions, the typical firm’s IT department is not fully optimizing its data center or reaping the maximum potential benefits from virtualization.

The virtualization journey of today is different. Solutions are now moving toward an integrated approach to improving IT infrastructure while addressing the entire portfolio of resources, resulting in incremental efficiencies. It also makes for an easier, more manageable process to eventually virtualize the entire data center in a unified way.

Interesting Fact:

MID-MARKET FIRMS IN THE U.S.

ARE TURNING 1 PHYSICAL SERVER INTO 4 VIRTUAL MACHINES DRASTICALLY INCREASING CAPACITY THAT EACH SERVER CAN SUPPORT

Cloud also plays an important role in today’s consolidation journey. It is expected that mid-market firms globally will spend around 40% more on cloud services in 2018 than they did in 2013. Virtualization is a key enabling technology for cloud as it prepares the environment by generalizing the infrastructure to move and pull cloud resources on-demand in an automated fashion.

Each mid-market firm has its own unique approach to consolidation; however, we have found that there are typically three stages in the journey. By looking at the profiles of businesses in these three groups, firms can benchmark and evaluate where they are in the process and what may be next.

The three stages in the consolidation journey are:

- **Starting Out:** This is the firm with an interest in or that is just starting out with virtualization.
- **Building Momentum:** This is the firm that already has experience with virtualization and that is eager to derive the greatest benefits.
- **Business Expansion:** This is the firm that is in a rampant stage of IT growth and needs to determine the best way to manage consolidation across networking, servers and storage.
Where are you in your Consolidation Journey?

10-15% of Firms
Profile: A firm at this stage has either not yet deployed virtualization or has made its initial foray. It likely has constrained IT resources and is seeking entry-level converged solutions to build the foundation to use and benefit from virtualization.
Top Infrastructure Solution Needs:
- Essential Server
- Embedded disk storage
- Basic virtualization deployment

50-55% of Firms
Profile: A firm at this stage likely currently deploys virtualization, but is looking for ways to extend the benefits. It has a robust network in place and is poised to pursue extended virtualized solutions to further improve the network. It may struggle with limited IT resources to further grow the business.
Top Infrastructure Solution Needs:
- Virtualized high availability server(s) and related racks/mounts
- SAS disk storage
- Networking switches and Network management tools
- Advanced backup/replication/disaster recovery

40-45% of Firms
Profile: A firm at this stage is well versed with virtualization, has a process oriented mindset, typically has multiple sites and is likely considering advanced storage and virtualized storage solutions. Its primary focus is likely scalability and growth.
Top Infrastructure Solution Needs:
- Advanced virtualized high availability server(s)
- Virtual SAN
- Scale-out unified storage platform
- Storage for data-intensive environment

Most firms in the starting out phase are focused on building out their infrastructures. Businesses in this stage have not yet virtualized their server infrastructure or may have just begun to do so. These companies are prime candidates for entry-level virtualized servers and related networking and storage equipment that help them get acquainted with virtualization as an optimizing force. Constrained IT resources make easy-to-manage solutions highly desirable.

Additional Server Investment Plans
By U.S. Mid-Market Firms

<table>
<thead>
<tr>
<th>Phase</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Business Expansion</td>
<td>76%</td>
</tr>
<tr>
<td>Building Momentum</td>
<td>43%</td>
</tr>
<tr>
<td>Starting Out</td>
<td>30%</td>
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Firms in the building momentum stage understand the efficiencies that can be derived from consolidation, but may need support in fully realizing them. Most in this group have networking and storage hardware on-site and are using virtualization, but many have yet to achieve target efficiencies and peak performance. Consolidation via a mid-tier virtualized server is a good alternative for these companies. Refreshed server attached storage (SAS) devices and various
networking hardware and network optimization tools should also be key considerations to boost IT infrastructure functioning and promote growth.

Firms in the **business expansion** stage are the most advanced in terms of consolidating their infrastructures and are seeking opportunities to optimize, scale, and grow. While server virtualization usage is nearly ubiquitous, storage virtualization usage is lagging behind. Only 35% of businesses in this stage have fully deployed storage virtualization. This group has a strong inclination toward implementing data warehousing and other ‘big data’ type solutions. Mid-market firms in this stage are 2.5x more likely than firms just starting out to be using data warehousing or business analytics, driving an increased need for advanced storage and backup solutions. Given this, these businesses are targets for not only advanced storage technologies, but also more robust storage networking, like a virtual storage area network (SAN).

**Data Intensive Solution Usage by U.S. Mid-Market Firms**

*Data Intensive Solutions Include: Data Warehousing & Business Analytics*

**Consolidation Benefits & Decision Making**

Consolidation ultimately eliminates the "sprawl" of physical assets and allows IT to focus on innovation and growth, not maintenance. The key goals for mid-market firms include reducing the number of IT assets in operation and consolidating to only critical, high availability and reliability devices. By doing this, mid-market firms will realize higher returns on infrastructure investments, lower costs, and greater overall IT efficiency. The consolidated environment also serves as an effective platform to exploit and consume cloud services, which further results in business improvement. Additionally, a shared resource environment encourages more effective collaboration, significantly boosting overall productivity of the organization.

**Interesting Fact:**

**MID-MARKET FIRMS IN THE U.S.**

*CITE VIRTUALIZATION USAGE AS A MEANS TO REDUCE COSTS*
As mid-market firms evaluate consolidation opportunities and solutions, there are a few key criteria that tend to drive their decision making.

**Consolidation Benefits Sought**

- Reduced Cost, Time, Complexity of Virtualization
- Improved Network Reliability
- Better Application Availability
- Decreased Costs & Better Storage Utilization

87% of mid-market companies indicate they are looking for *solutions that reduce the cost, implementation time, and complexity of virtualization*. Exercising virtualization capabilities in a consolidated data center through a bundled infrastructure-based solution ensures consistency and seamless integration, reducing implementation time and total cost, and creating ease in the process.

*Consolidation solutions that improve network reliability and availability* is also a top focus for mid-market firms (86%). Given little tolerance for down-time (as a business continuity concern) which could result in major revenue loss, mid-market firms demand consistent reliability. With fewer areas in the network to trouble-shoot and monitor, consolidation leads to overall better management.

**Fewer workloads occupying physical servers**

and **improved load balancing lowers the likelihood systems will become “over-loaded” resulting in systemic failure**
The number three mid-market priority for consolidation solutions is to help improve application availability (84%). Running applications in a consolidated environment on virtual machines improves the chance applications won’t go down as workloads can be balanced between servers and virtual machines to achieve optimal performance.

Additionally, mid-market firms want to get more from their storage through consolidation. Better storage utilization and lower costs through consolidation peaks the interest of 83% of firms. As the amount of data a firm accumulates and processes grows, the greater the need to eliminate or re-purpose low value-add storage hardware and improve capacity utilization of high value-add storage hardware. This might mean holding on to existing high value-add resources or upgrading to those with better capabilities. Reducing storage assets and improving capacity utilization through consolidation directly results in better resource efficiency and lower costs.

Conclusion: Consolidation Solutions that are Just Right

Mid-market businesses that are consolidating their infrastructures should be seeking solutions that help them address both their technology and overall business goals. As such, mid-market firms should prioritize solutions that have the following characteristics:

- **Pre-defined and configurable virtualization**: The solution should have the ability to support a virtualized environment and/or have virtualized components.

- **High availability hardware**: The solution must support infrastructure-wide change and include server, storage, and (optional) networking components that when implemented to replace existing hardware drive higher ROI, increase capacity utilization, and lower overall TCO.

- **Support and monitoring tools**: The solution should have the capability to manage and trouble-shoot at the system-level and at each point within the system.

Regardless of where the firm is in its consolidation journey, whether starting out, building momentum, or expanding the business, HP offers a solution that fits the bill and meets these mid-market requirements.

HP offers a simple, yet robust set of virtualized bundles specifically designed for the mid-market within the HP Just Right IT Solutions Portfolio. HP Flex-Bundles for Microsoft Hyper-V and HP Flex-Bundles for VMware vSphere with Operations Management (vSOM) can be selected based on the stage of the mid-market customer’s consolidation journey. Both are fully optimized for rapid realization of cost savings and increased revenue.

Bundle components include an HP ProLiant Server, HP Storage hardware (internal, SAS MSA or Virtual SAN appliance (VSA), depending on product bundle), HP Insight Control management software, virtualization software (Hyper-V or VSOM), and optional HP Networking (switches).
For those companies just starting out with virtualization, HP partners with Microsoft and VMware to deliver the essentials - distinct and unique bundles specifically designed for smaller mid-market environments that wish to support up to 50 virtual machines.

For the mid- to upper-end of the mid-market, HP offers bundles for building momentum with virtualization. This includes a high availability virtualized server, integrated networking equipment, and direct attached storage. All components are optimized to help businesses achieve the goal of extending virtualization across the entire infrastructure.

For the most advanced, high growth mid-market firms, HP offers a more advanced system that includes top-notch virtual server and storage capabilities specifically for firms in the phase of business expansion with virtualization. HP ConvergedSystem 300 for Virtualization is designed for mid-market organizations and remote branch office applications. These workload-optimized pre-engineered systems are easy to procure, manage, scale, and support. They are built on standard and reliable modular infrastructure blocks, including rack-based servers and a virtualized storage controller that reduces acquisition costs. For companies wanting to deploy between 50 and 300 virtual machines, HP can quote and configure the system in 20 minutes and move it into production in 20 days, providing 2x the performance at a 25% lower entry price point.

Managing data growth and preventing data loss and security breaches are top of mind for most mid-market firms. Data-intensive firms in all stages of the consolidation journey should consider storage for virtualization. HP Simply StoreIT, a branch of the JRIT program, showcases a wide range of storage products that can be purchased as add-ons to core HP Flex-Bundles. Product sets are segmented based on need and include those developed exclusively for Virtualization, Microsoft SQL Server, Microsoft Exchange, Files Shares, and Data Protection.

About This White Paper

This White Paper was developed by AMI-Partners, a leading, global SMB and mid-market research and consulting firm. It is based on the results of a global mid-market IT priorities study conducted in Q4 2013.