

White Paper

Enabling Small and Midsize Businesses to Acquire and Retain Customers in an Evolving Digital World

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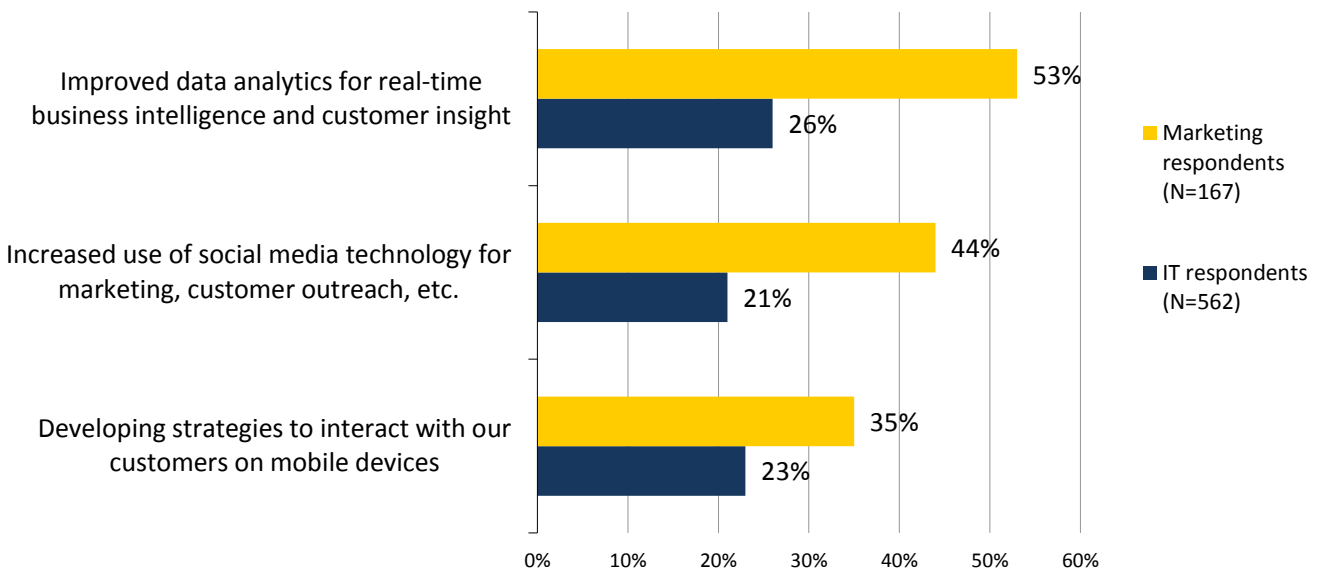
Introduction

With new technologies, new opportunities often emerge, especially in business. The advent of innovations, such as social media and mobile devices, is changing the ways businesses interact with customers and the ways in which customers desire to be engaged. Opportunities arising from the benefits of salesforce automation, business intelligence (BI), and customer relationship management (CRM) applications are providing new levels of insight, helping businesses acquire customers more efficiently and retain those customers longer. As a direct result, organizations that invest in better understanding potential customers are likely to see higher returns than those organizations that possess a more limited understanding of their customer base. Seeking the competitive advantage resulting from improved customer focus, IT organizations have increased investment in business intelligence and analytics and the underlying infrastructure to support those applications.

Enterprise Strategy Group (ESG) polled IT organizations in 2014 to investigate their technology spending trends. When asked what initiatives will drive the most technology spending over the next 12 months, the most-cited response was improved data analytics for business intelligence and customer insight (see Figure 1).¹

Figure 1. IT and Marketing Prioritize Business Intelligence and Data Analytics Initiatives

Which of the following business initiatives do you believe will drive the most technology spending in your organization over the next 12 months? (Percent of respondents, multiple responses accepted)



Source: Enterprise Strategy Group, 2015.

Advanced business analytic capabilities can provide organizations a much-desired competitive edge when acquiring and retaining potential new customers. However, the value that organizations received from these intelligent applications can be greatly impacted by the supporting IT infrastructure. With the right infrastructure, especially the right storage infrastructure, organizations can improve their potential to achieve higher returns from BI and CRM applications. While interest in BI and CRM applications is prevalent regardless of the size of the organization, smaller and midsize firms can experience challenges when designing and deploying optimal storage architectures.

¹ Source: ESG Research Report, [Enterprise Data Analytics Trends](#), May 2014.

Challenges with Deploying Storage for BI and CRM Applications

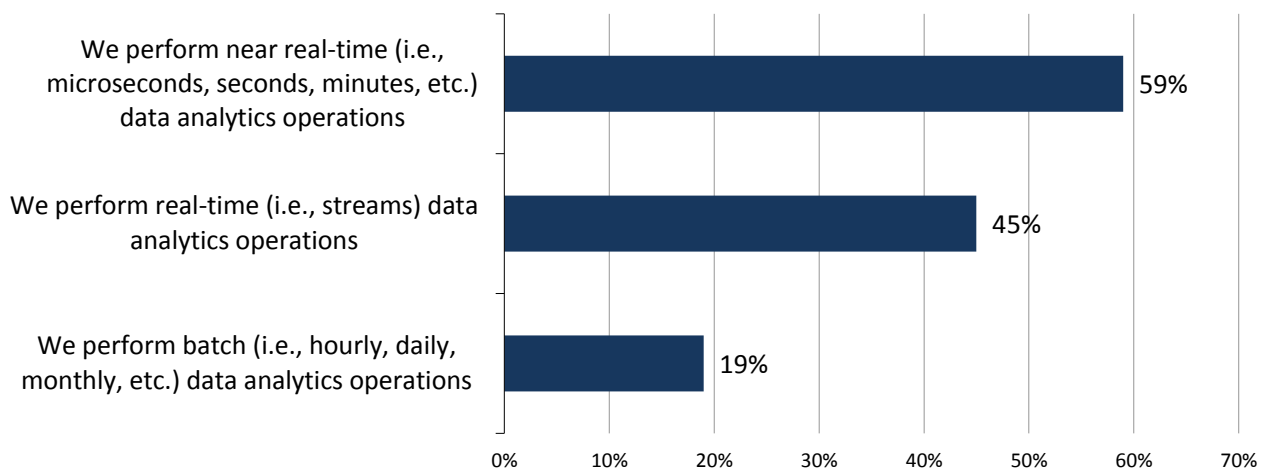
Small- and medium-sized businesses are challenged to do more with less in an ever-evolving IT landscape. Augmenting IT infrastructure to take advantage of the benefits of BI and CRM applications can present a number of challenges, which can be further exacerbated by the limited resources available to smaller firms (in terms of both budget and headcount). Despite these challenges, the demand to stay more competitive and improve customer engagement is ever present.

Searching for a competitive edge, organizations collect an increasing amount of customer data. As the volume of customer data increases, organizations have more data to store, protect, and analyze. With the number of potential customers increasing and changing over time, storage technology can become a bottleneck limiting end-users' ability to analyze data in a timely fashion.

- Storage bottlenecks impeding real-time or near real-time analysis:** In an investigation into the uses of data analytics, ESG found that the overwhelming majority of participants reported that they conduct real-time or near real-time analytics (see Figure 2).² This places a greater emphasis on the performance demanded by the IT infrastructure, especially the storage infrastructure.

Figure 2. Frequency of Data Analytics Operations

Which of the following can be used to describe the various data analytics operations that your organization performs? (Percent of respondents, N=370, multiple responses accepted)



Source: Enterprise Strategy Group, 2015.

As organizations grow and mature, the number of potential customers increases. Additionally, in many cases, the amount of data retained per customer increases as well. And finally, over time, organizations will hold on to more customer data as firms grow and change. The end result is a massive amount of ever-increasing customer data points to analyze, while the time window to complete queries or run reports will not increase.

Architecting a storage solution to support the increasing demands for BI and CRM applications can present several challenges. Storage solutions need to provide not just the necessary performance for BI and CRM applications: The storage architecture must also be able to provide enough overhead or scalability to grow with the application needs, specifically the ability to provide and sustain low latency operations. While higher-bandwidth storage interconnects, such as 8Gb or 16Gb, can often be confused with general higher-performance improvement, in many cases, increases to bandwidth have little impact to performance in BI and CRM workloads. These applications are typified by lots of small I/O transactions. Even at small (i.e.,

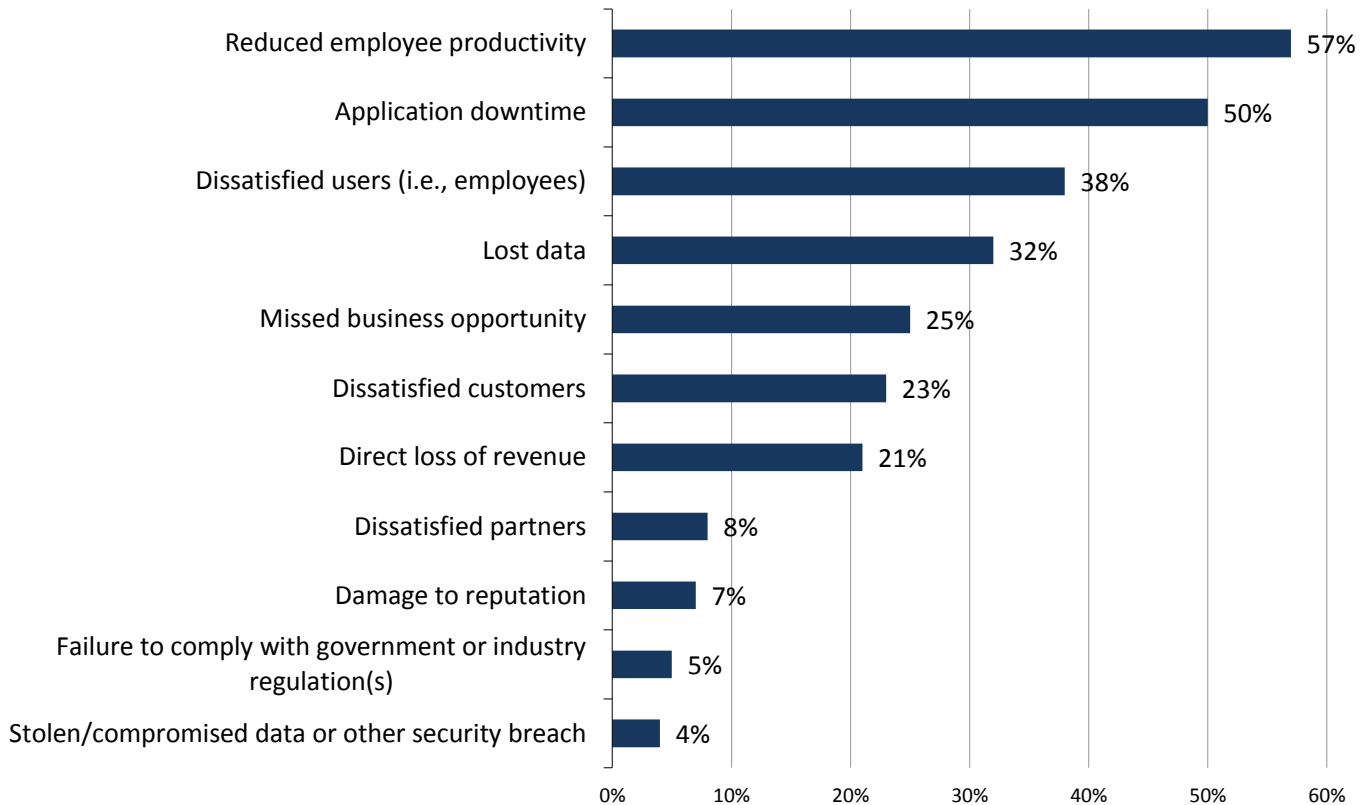
² Source: Ibid.

300-person) companies, the CRM-BI system may have to handle well over 3,200 query executions in a typical day. They therefore demand infrastructures that can quickly respond to each data request in the fastest manner possible. With the amount of transactions likely to increase as the number of prospects/customers increase, the performance of the storage infrastructure can quickly become saturated.

- Storage silos or insufficient storage scalability:** At any SMB that is growing and acquiring customers at a healthy rate, the combined effect of increases in the number of prospects/customers and the amount of information retained per customer can also increase the amount of data that needs to be stored, protected, and made available. Storage silos or in-server direct-attached storage (DAS) can become pressed to their capacity limits. Even if the necessary capacity exists, the increased demand for data could saturate the infrastructure’s performance capabilities. Either of these events has the potential to lead to costly upgrades and time-consuming data migrations.
- Data unavailability or downtime:** The ability to run real-time BI analysis or leverage CRM capabilities depends greatly on the data being available. For many SMBs, BI and CRM applications are classified as mission-critical, where any downtime results in immediate end-user requests for resolution. According to ESG research, downtime can impede productivity and result in lost data, irritated end-users, dissatisfied customers, and even loss of revenue (see Figure 3).³

Figure 3. *Business Impact of Outages or Events Resulting in Downtime and/or Data Loss*

What has been the business impact on your organization of the outages or events that resulted in downtime and/or data loss? (Percent of respondents, N=342, multiple responses accepted)



Source: Enterprise Strategy Group, 2015.

Ill-timed outages in CRM capabilities when the firm is near the end of quarter can hinder customer engagement and potentially impact financial results. Also, small and medium firms often don’t have surplus

³ Source: ESG Research Brief, [Data Backup Trends at SMB Organizations](#), May 2013.

IT resources to allocate to troubleshooting, isolating, and resolving issues without significantly negatively impacting other portions of the business.

- **High storage infrastructure costs:** Higher performance, scale, and availability typically are associated with more expensive (traditionally enterprise) storage solutions. While the benefits of the enhanced customer focus that arise from BI and CRM applications provide the value to justify the expense, smaller organizations often find themselves more budget constrained than their larger competitors, limiting the ability to deploy the more expensive enterprise-class storage solutions.

Regardless of which symptoms arise, it is best to resolve or mitigate storage infrastructure challenges in order to provide an optimal environment for a BI or CRM application deployment. A few key capabilities can assist organizations in resolving these challenges and can enable organizations to better achieve the competitive advantage that comes with enhanced customer focus.

Storage Considerations for BI and CRM Applications

Storage solutions exist with the features and functionality to help address the top challenges of BI and CRM solutions and provide an infrastructure that can scale in both performance and capacity to address potential future demands. Consolidated, dedicated storage, such as Storage Area Network storage, have a history of providing the performance and the resiliency necessary for data-intensive application environments.

HP Offers Storage Solutions to Help Organizations Focus on Customers

While a number of vendors in the industry provide SAN storage solutions to support BI and CRM application deployments, one vendor in particular, HP, offers a couple of unique storage offerings, the HP MSA and StoreVirtual storage families, targeted at solving the challenges of these types of applications for small and mid-sized businesses.

HP MSA Storage offers affordable SAN storage for small and mid-sized businesses with intuitive management designed with ProLiant and BladeSystems administrators in mind. MSA provides a solid suite of availability and data protection capabilities, with dual controllers, replication, snapshots, and volume copy services.

The second solution, HP StoreVirtual is delivered as either an appliance or as virtual storage appliance (VSA) and provides the simplicity of common management, all-inclusive licensing, and hypervisor integration. StoreVirtual VSA enables HP to be one of the few major storage players and one of the only end-to-end IT providers with innovation and intellectual property in the software-defined storage space. Software-Defined Storage offerings, such as the StoreVirtual VSA, provide hardware flexibility by allowing organizations to deploy centralized storage capability as software on the hardware of their choosing. The result is the capabilities of SAN storage combined with the ability to take advantage of lower cost hardware, such as DAS, alternatives. The resulting ecosystem allows for more flexibility in hardware selection, the ability to more quickly integrate new hardware technologies into the environment, and ultimately the ability to help reduce costs. The StoreVirtual VSA also provides data availability and data protection capabilities including high availability, snapshots, and replication. Each of these offerings provides capabilities designed to address the challenges of storage deployments for BI and CRM applications.

Providing the Performance and Features Necessary for BI and CRM Applications

Looking at the application performance characteristics more closely, the more common BI and CRM applications tend to leverage large amounts of small block transactions. Often for these types of workloads, increasing the interconnect bandwidth will not help performance, but there is a storage technology that thrives for these types of data access patterns: solid-state. Unfettered by mechanical spinning components, solid-state can provide an exponential boost to performance and dramatically reduce transaction latencies. However, despite recent declines in pricing, heavy doses of solid-state can still be outside the budget of a small or mid-range organization. If an all-flash configuration is outside of an organization's budget, alternative options are hybrid storage solutions, which combine spinning media with solid-state to provide enhanced performance with a capacity pricing much closer to traditional hard disk. Hybrid options may leverage solid-state as a cache or as a tier of storage. As a tier, more active data is stored on solid-state, and less active data is moved to more affordable spinning media. As a cache, the data

that resides on solid-state is a copy of that which resides on spinning media, reducing the amount of storage processing required to move data between tiers, but also reducing the overall total capacity supported.

HP MSA Storage features support for solid-state and offers both caching and tiering capabilities, providing flexibility depending on specific application needs and budget requirements. The SSD read caching of the MSA improves the random read performance by allowing SSDs to act as an extension of the controller cache. BI and CRM applications often experience heavy sets of read operations and analytics read multiple customer data points for insight. The automated tiering of MSA leverages a real-time I/O engine to intelligently position data on the most appropriate “tier” of storage, offering more usable capacity than the caching option. The tiering solutions can provide advantages over caching solutions when data is likely to stay active or stay inactive, instead of fluctuating between the two states. For CRM applications where new customer data is accessed far more frequently than old customer data, tiering may provide an advantage. HP MSA Storage is unique in that it offers both caching and tiering as options for SSD, while many solutions only offer one. The HP StoreVirtual, however, can be deployed as software on a virtualized server and offers greater flexibility in which solid-state disk is leveraged for the storage, potentially enabling a lower entry cost point. StoreVirtual also offers tiering capability to move workloads to or from SSD tiers when deployed as a storage appliance.

Additional storage capabilities that can help provide improved performance for BI or CRM activities include offloading features such as cloning and snapshots. Cloning allows for the quick creation of a copy of production data on open storage space. This feature allows for business intelligence analysis to be completed on production data sets without impacting the performance of the production data. Snapshots use a combination of production and non-production capacity to present a snapshot of the data at a particular time. The use of some production data does mean that analysis on snapshots will impact production performance to some, likely small, extent, but this feature can still be very helpful when running analytics on production data. Both MSA and StoreVirtual storage solutions provide snapshot capabilities. MSA also offers cloning support through its VolumeCopy feature, simplifying the process of creating a copy of production data to be analyzed while protecting the performance of the production volume.

Scaling to Support an Ever-increasing Amount of Customer Data

Consolidated storage solutions, such as SAN, can provide the ability to scale storage capacities and performance on demand to meet the needs of BI and CRM applications. HP offers multiple scaling options when it comes to its storage portfolio, with both scale-up and scale-out options. HP MSA Storage can scale up, with the ability to add more storage capacity to existing controllers without impacting existing applications. While some scale-up solutions can experience performance bottlenecks as the amount of data increases behind a set number of controllers, HP’s MSA supports in-place controller upgrades, providing the ability to improve the processing and memory while keeping data in place. This is the fourth generation that MSA has provided in-place upgrades, building on a history of future proofing.

HP StoreVirtual Storage utilizes a scale-out architecture, providing the capability to scale both capacity and performance. Additionally, as a software-defined storage solution, StoreVirtual can integrate multiple hardware generations into the same pool, which can provide the storage solution with the ability to reuse existing storage hardware while also allowing access to faster processing and memory technologies as soon as they become available. The result is more affordable performance scaling with capacity scaling. The ability to scale capacity and performance can help ensure that your storage solutions will keep up with the ever-increasing customer data being stored by the existing BI and CRM applications.

Customer Focus Is Mission-critical for Businesses

Customer relationship and business intelligence capabilities require high levels of availability and protection. Both the MSA and StoreVirtual solutions support replication capabilities, ensuring that critical customer data is protected in multiple locations. Beyond that, storage ecosystems are better protected when they include a data protection and backup strategy in addition to deploying prequalified, supported solutions in order to ensure that the customer

data behind the CRM and BI applications is protected. HP offers multiple data protection solutions leveraging both disk- and tape-based backup.

HP StoreOnce disk-based backup solution offers flexibility by providing both physical and virtual deployment options. HP StoreOnce VSA provides the ability to leverage existing HP or third-party server hardware as a backup target, potentially saving on capital expenses up to 65% when compared with other dedicated disk-based backup solutions. StoreOnce integrates with a wide spectrum of backup software providers, giving small businesses flexibility between software partners, while providing the security of knowing that the solution has been qualified and validated before being deployed on the production floor. HP StoreOnce can also be deployed as a purpose-built, backup appliance, simplifying deployment for those organizations not looking to procure the software and hardware capability separately.

A Prequalified Solution for Greater Reliability and to Eliminate Deployment Headaches

Deploying an IT infrastructure can be a complex endeavor. Often, the process involves separately researching and evaluating a myriad of technologies from multiple vendors in order to understand the technical and performance differences. Once the various components are pieced together, the resulting configuration may be unique to that particular deployment. The end result is a solution that may be a bleeding edge configuration, when what was originally desired was something pre-validated and far less risky. HP provides a full suite of infrastructure components, including servers, networking, and storage, along with backup solutions. By procuring a full suite of solutions from the same partner, organizations can feel confident that the end-to-end solution has been validated and qualified before being deployed on their data center floors.

Services and Support if Issues Do Occur

Some storage vendors only provide support via e-mail and only guarantee a next-day response. While those service levels may be acceptable to some organizations, many small and medium organizations don't have the luxury of long service outages or an IT staff that can root cause and diagnose issues internally. Selecting a partner with a robust and experienced set of services and support personnel can provide peace of mind that, in the event an issue does arise, it will be resolved quickly. HP not only provides an extensive set of services and support offerings, but the company also provides worldwide coverage with experienced support personnel. Additionally, HP provides an extensive partner network of local solutions providers that are trained on HP technology, providing smaller firms a local person that they can turn to if an outage or performance issue occurs.

Affordability for the Non-Fortune 500 Budget

As mentioned earlier, multiple storage solutions provide the capabilities demanded by BI and CRM deployments. However, the number of offerings that can fit into the budgets of small or mid-sized businesses are few and far between. HP MSA Storage is optimized around cost per performance, providing three to four times the IOPS per dollar versus comparable storage solutions, with four times the performance of comparable entry SAN solutions, enabling the performance necessary for BI and CRM workloads while keeping the costs down. HP StoreVirtual Storage provides the flexibility to leverage off-the-shelf hardware from multiple vendors, keeping capital expenses down by protecting against lock-in and allowing the integration of new generations of hardware when available. Also, HP is offering 1TB of StoreVirtual for free with the ninth generation ProLiant, allowing organizations to evaluate StoreVirtual with no upfront costs. Similar to StoreVirtual, StoreOnce also provides the ability to leverage off-the-shelf hardware, keeping data protection costs low.

The Bigger Truth

Technology is changing the way firms interact with customers, increasing competition when acquiring and retaining customers. New business intelligence tools and customer relationship management applications are providing organizations with insight and improving customer focus. These applications can place demands on the underlying architecture, especially the storage hardware. These demands are considerably more onerous for small and midsized companies. HP is providing storage solutions to help solve the challenges of BI and CRM applications, with affordability and functionality targeted to smaller companies. HP's portfolio demonstrates innovation across both physical and virtual offerings, making software-defined storage a reality... and making it accessible to the SMB. Along with technology, HP offers a vast and robust network of services, support, and local partners to help small- and medium-sized businesses evolve their infrastructure to meet the ever-advancing demands of customers and the business. As your organization deploys solutions to help improve customer focus, it might be advisable to include HP and its storage portfolio in that investigation.



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