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Business Value Highlights

487%
five-year ROI

49%
reduced total cost of operations

7 months
to payback

62%
more efficient IT storage staff

36%
less staff time spent on keeping the lights on

59%
improved storage deployment agility

69%
reduced unplanned downtime

\$4.6 million
revenue saved due to improved performance

32%
more productive application development

HPE Nimble Storage Delivers Business Value to Enterprises Through Enhanced Performance, Availability, and Productivity

EXECUTIVE SUMMARY

As enterprises across all industries embark on digital transformation (DX), the evolution toward much more data-centric business models, a large percentage of enterprises will inevitably be refreshing their storage infrastructures. Recent IDC research in 2020 indicates that slightly more than a third of enterprises that have already embarked on their DX journey will be making this decision in the next two years. For most of those customers, this will mean deploying storage that can deliver consistent sub-millisecond performance at scale, exhibit “six-nines” (99.9999%) plus availability, and leverage artificial intelligence (AI) and machine learning (ML) to improve and optimize storage management. With these storage infrastructure enhancements, these customers are also looking for a simpler management experience and seamless cloud integration that support their hybrid cloud strategies.

The portfolio of HPE Nimble Storage arrays meets these requirements. IDC interviewed nine organizations running enterprise workloads supported by this HPE platform. The survey data obtained and applied to IDC’s Business Value model showed that study participants realized significant value with HPE Nimble Storage. In the wake of their storage technology refresh, IDC calculates that these companies will achieve average annual benefits of \$3.06 million per organization, which would result in a seven-month payback and a return on investment (ROI) of 487%, by:

- Enabling more efficient IT and storage infrastructure staff productivity while shifting staff focus away from routine tasks and projects and toward innovation and business support
- Enhancing performance and the agility associated with deploying and managing storage resources while lowering the cost of operations

- Using IT and storage team's operational benefits to foster improved application development and administrative productivity
- Minimizing unplanned downtime, thereby protecting revenue and lowering business risk

SITUATION OVERVIEW

Information technology (IT) organizations the world over are embarking on DX, the evolution toward much more data-centric business models that are needed to stay abreast of market developments. The pace of change is fast, and many enterprises are finding that their legacy IT infrastructures are challenged in providing the performance, availability, ease of use, and agility needed in the new digital era. Primary research by IDC in 2020 indicated that, over the next two years, over two thirds of the enterprises undergoing DX will be refreshing their storage infrastructures, and in doing so, they will be seeking to enhance their cybersecurity capabilities, leverage more cloud-based and solid state storage technologies, and improve the efficiency of IT operations.

As enterprises evolve their storage infrastructures, many are moving toward hybrid cloud strategies that ultimately provide three deployment options for workload placement: traditional on-premises IT infrastructure, private cloud infrastructure, and public cloud infrastructure. Modern storage systems need to be able to tier data to and access data from the cloud without necessarily requiring manual intervention and, as such, should include support for relevant APIs so they can be integrated into cloud-based automated workflows. They need efficient data movement technologies and, to this end, should offer a portfolio of replication options. And taking a cue from customers' familiarity with and penchant for public cloud-based services, some vendors are focusing on providing a more "cloudlike experience" for on-premises IT infrastructure, providing simple provisioning, nondisruptive scalability and multigenerational technology refresh, and subscription-based product licensing models.

Enterprises are capturing, storing, protecting, and analyzing more data than ever before. IT administrators are managing more storage capacity and adding new workflows. Ease of management is a critical concern as enterprises refresh their storage infrastructure, and enterprises are turning to artificial intelligence-driven management tools and increasing the level of automation they're using. Among the more established enterprise storage providers, several of them have introduced cloud-based predictive analytics platforms that go far beyond the monitoring aspects of legacy telemetry systems, leveraging AI/ML to much more comprehensively monitor and manage system health. The best of these systems go beyond just storage, monitoring logical objects such as virtual machines and applications as well as

other hardware products such as servers. The data that is collected is stored securely in the cloud and analyzed to proactively avoid failures, dynamically optimize systems for increased efficiency, aid in performance and capacity planning, more broadly disseminate best practices within a vendor's installed base, and pre-validate upgrades to lower risk, among many other things. These types of AI/ML-driven systems completely transform the support experience while significantly improving performance, availability, administrative productivity, and the reliability of operations.

Storage technology refresh can bring other efficiencies as well. The lower latencies delivered by solid state devices enable the inline use of various data reduction technologies (thin provisioning, compression, deduplication, etc.) that can significantly improve storage capacity utilization. Many vendors offer data reduction guarantees so customers can better plan purchases and ultimately enjoy more efficient use of storage resources.

More software-defined architectures deliver a configuration flexibility that better enables workloads with very different I/O profiles to be hosted on the same platform without putting performance and availability service-level agreements (SLAs) at risk. Software-defined flexibility also makes it easier to non-disruptively accommodate multigenerational technology upgrades. When combined with other multitenant management features (e.g., granular data services that can be applied at the application level, RBAC, quality of service, and other factors), this type of flexibility enables denser workload consolidation, potentially allowing customers to reduce the number of storage platforms and/or storage vendors with whom they interact. Administrators will also want to ensure that new storage systems they are considering support the APIs needed for automated workflow integration. Popular ones for VMware environments include Virtual Volumes (VVols) and VMware APIs for Data Protection (VADP), but IT managers should also look for support for containers (Container Storage Interface [CSI]) and cloud integration APIs (such as S3 and other REST APIs).

When upgrading storage infrastructure on technology refresh, customers will note that newer arrays deliver much higher performance, are more highly available, and are much easier to manage than legacy storage systems. Their burst capability allows customers to locate latency-sensitive transactional databases, enterprise applications, IT infrastructure workloads (file, print, network, and security), and spiky workloads such as VDI all on the same system without having to overprovision storage or put SLAs at risk. They are architected for more efficient resource utilization, consume less energy and floorspace on a terabyte-per-Unit (TB/U) basis, and are well instrumented for use with automation and orchestration tools.

HPE NIMBLE STORAGE OVERVIEW

HPE Nimble Storage is HPE's block-based midmarket storage offering (although an optional file services gateway is available as well). Available in several all-flash models (as well as hybrid models), the portfolio spans from 6TB to up to 4PB of effective storage capacity. An enterprise-class array, each system comes with the flash-optimized Nimble Storage OS (featuring the vendor's unique Cache Accelerated Sequential Layout [CASL] technology) and a full complement of advanced data services, including thin provisioning, inline data reduction, Triple+ Parity RAID, snapshots, RBAC, encryption, quality of service, and sync and async replication, and carries a six-nines availability guarantee.

HPE Nimble Storage is NVMe ready and today supports both NAND flash-based and Intel Optane-based SSDs (storage-class memory that is used as an enhanced cache). It also features cloud integration capabilities that support the data movement needed in today's hybrid cloud environments. HPE Cloud Volumes, a component of HPE's cloud integration portfolios that ships with every array, delivers secure data mobility, reliable data durability, cost-effective cloud economics, and a simple way to leverage cloud-based data protection. Host connection options include both Fibre Channel and iSCSI. The platform's unique scale-to-fit architecture allows customers to scale performance and capacity up independently and scale out to four arrays (in a 16U form factor) managed as one. The system complies with a variety of regulatory requirements, including NEBS and FIPS 140-2, and features the industry's most comprehensive VVols implementation as well as support for the Container Storage Interface.

HPE Nimble Storage arrays include the HPE InfoSight cloud-based predictive analytics platform. InfoSight is the platform that started the whole movement toward AI/ML-based monitoring and management operations when Nimble Storage introduced it in 2010. (HPE acquired Nimble Storage in 2017.) InfoSight is the most mature platform of its type in the industry. It brings many compelling advantages in driving more efficient day-to-day operations as well as forward-looking planning, and a key metric of its value is that, over the course of the platform's history, it has been able to automatically resolve 86% of all identified customer issues. The predictive support automation in InfoSight gives customers direct access to Level 3 technical support personnel for the fastest problem resolution. While typical tiered support escalation models pass customers from one support engineer to another, gathering the same information multiple times, InfoSight's context-aware artificial intelligence completely eliminates the need for Level 1 and 2 support personnel. If InfoSight cannot resolve an issue itself, customers are immediately passed directly through to a Level 3 support resource.

HPE Nimble Storage was designed with IT generalists, not sophisticated storage administrators, in mind. Installation, deployment, provisioning, and upgrading are all simple operations that leverage wizards and other automated workflows. Data services are always on, and default assumptions (e.g., all data is automatically protected with Triple+ Parity RAID) enable virtual, Windows, and Linux administrators who are often managing storage in today's environments to deploy a new system in literally minutes. Application-aware intelligence dynamically adapts the system to meet performance, availability, and other business objectives as defined without requiring intricate tinkering with "nerd knobs." Out-of-the-box integration with VMware vSphere, Chef, Puppet, Ansible, and Kubernetes platforms enables automated operations that maximize administrative productivity and the reliability of operations for DevOps as well as storage infrastructure operations. These capabilities mean that HPE Nimble Storage customers spend less time, effort, and money to manage storage to meet their business objectives, an outcome substantiated by IDC's research (summarized in The Business Value of HPE Nimble Storage section).

HPE Nimble Storage extends to the cloud with HPE Cloud Volumes. HPE Cloud Volumes provides block storage as a service with seamless data mobility between the cloud and on-premises storage. Organizations have full access to true enterprise-class storage management capabilities with the agility, ease of use, subscription pricing, and offloaded infrastructure management of a true cloud-based service. Usage spans a variety of use cases, including backup, disaster recovery, test/dev, running enterprise applications in the cloud, and using public cloud-based services (e.g., compute) for analytics and other purposes. In contrast to competitive cloud storage offerings, there are no egress fees when restoring data on premises and the service is much simpler to set up and manage and less expensive to use than those vendors running a storage operating system in the public cloud. HPE Cloud Volumes is available on HPE Nimble Storage arrays, offering valuable differentiation against competitive offerings that claim to also deliver public cloud-based enterprise-class storage services.

Each HPE Nimble Storage array is also covered by HPE's Timeless Storage program — a 24 x 7 ownership plan that includes a money-back customer satisfaction guarantee, all-inclusive software bundling, fixed maintenance pricing, a 4:1 data reduction ratio, six-nines availability, nondisruptive upgrades, and a controller refresh (included once during the term of the maintenance contract). And through HPE GreenLake, customers can optionally choose IASB 2019-compliant subscription pricing models for any HPE Nimble Storage array (or any other IT infrastructure product) that tie payment more closely to consumption and move assets off balance sheet. HPE GreenLake provides customers with on-demand storage capacity elasticity and even offers a managed services option for on-premises IT infrastructure.

THE BUSINESS VALUE OF HPE NIMBLE STORAGE

Study Demographics

IDC conducted research that explored the value and benefits for organizations of using HPE Nimble Storage. The project included nine interviews with organizations using this solution and that had experience with or knowledge about its benefits and costs. During the interviews, companies were asked a variety of quantitative and qualitative questions about the impact of the solution on IT and storage operations, businesses, and costs.

Table 1 presents study demographics and profiles. Organizations interviewed had an average employee base of 12,644 (indicating the involvement of several large companies). This workforce was supported by an average IT staff of 120 engaged in managing 165 business applications on behalf of 10,644 end users and a large number of external customers (over 217,000). In terms of geographical distribution, six companies were based in the United States, two in Australia, and one in Hong Kong. From a vertical industry standpoint, organizations were from the education, financial services, healthcare, defense, legal, and manufacturing sectors. (Note: All numbers cited represent averages.)

TABLE 1 Firmographics of Interviewed Organizations

	Average	Median	Range
Number of employees	12,644	2,000	500 to 68,500
Number of IT staff	120	43	13 to 400
Number of IT users	10,644	2,000	500 to 68,500
Number of external customers	217,500	2,600	0 to 1.2 million
Number of business applications	165	100	15 to 400
Revenue per year	\$6.44 billion	\$922.4 million	\$20.0 million to \$42.0 billion
Countries	United States (6), Australia (2), and Hong Kong		
Industries	Education (2), financial services (2), healthcare (2), defense, legal, and manufacturing		

Source: IDC, 2020

Source: IDC, 2020

Choice and Use of HPE Nimble Storage

The companies that IDC surveyed described the usage of HPE Nimble Storage and provided a snapshot of their IT and business environments. In addition, they discussed the rationale behind the choice of the HPE Nimble Storage platform. Interviewed customers cited several decision factors for choosing the solution such as being able to reduce the financial effects of unplanned downtime and the speed and agility of storage resource allocation. Also, customers cited benefits such as reduction in the overall costs of storage operations and better VDI and backup performance. Study participants elaborated on these and other benefits:

- **Improved management of storage growth and security:** *“Storage capacity increases about 10% per year. So we were looking to more efficiently manage our storage growth. Security is also always a major consideration. Breaches are a big concern for a law firm. It’s not just our data, but our clients’ data. We have not had any breaches so far, but given our rapid data growth, we have more exposure.”*
- **Better VDI performance and usable storage:** *“We are a heavy user of virtual desktops. We attempted to run our VDI on a different storage vendor’s hybrid SAN, but the performance was not good enough. Additionally, the redundancy in our old platform was more of a mirror between SAN units with RAID on each individual unit. This resulted in significant data protection overhead and a high cost. HPE Nimble Storage’s All Flash Array gave us faster storage with much better capacity utilization, both because of more efficient data protection and data reduction technologies like compression and deduplication.”*
- **Needed better storage scalability:** *“It wasn’t so much that we had specific challenges as we needed to evolve. We needed to stay more current with our network storage. We also needed to expand our storage capabilities, and we determined scale to be our main challenge.”*
- **Better performance and costs:** *“As our data continued to grow, we were concerned about both performance and cost. We did a thorough market analysis of current and future needs. We determined we needed a simpler solution, and the Nimble Storage infrastructure provided that. We are able to quickly access and move data from the storage system despite continued storage growth.”*

Table 2 describes organizational usage associated with the HPE Nimble Storage platform.

There was a substantial storage footprint indicated by an average total capacity of 280TB.

The companies that IDC surveyed were on average running 190 databases on behalf of 8,335 internal users. Customers were clearly depending on HPE Nimble Storage as a mission-critical platform, with an average of 118 business applications supported by HPE Nimble Storage, representing 71% of all applications in use and 88% of company revenue.

TABLE 2 Organizational Usage of HPE Nimble Storage

	Average	Median
Number of terabytes in storage	280	40
Number of arrays	5	4
Number of databases	190	20
Number of applications running	118	45
Number of internal users supported	8,335	1,000
Revenue supported	88%	100%

Source: IDC, 2020

Business Value and Quantified Benefits

IDC’s Business Value model explores the benefits for organizations that have chosen HPE Nimble Storage to support their ongoing IT and storage operations. While considering the use of alternative or previous solutions, the survey data obtained from HPE customers was applied to this model to arrive at quantified post-deployment benefits. Using this methodology, IDC found that these customers realized significant value for their storage infrastructure and business operations.

The use of the HPE Nimble Storage platform has supported more efficient IT and storage operations and increased the overall productivity of teams that manage those operations. Study participants reported that the platform enhanced the agility needed to deploy storage resources and lowered the cost of operations. These benefits also led to reduced cycle times for application development as well as better business productivity and revenue protection. The use of the platform also helped these companies minimize unplanned downtime, thereby contributing to greater productivity and lowering risk. Study participants described these benefits:

- Faster, more usable storage and improved management:** *“Getting faster storage with better capacity utilization is the biggest benefit. It has also provided more staff efficiencies for our IT teams. The system demands far less of our time to manage, freeing administrative resources up for more strategic responsibilities. Support has improved because it’s faster and easier to isolate problems. InfoSight lets us drill right down to a root cause, minimizing trouble shooting time.”*

“Getting faster storage with better capacity utilization is the biggest benefit. Nimble Storage has also provided more staff efficiencies for our IT teams.”

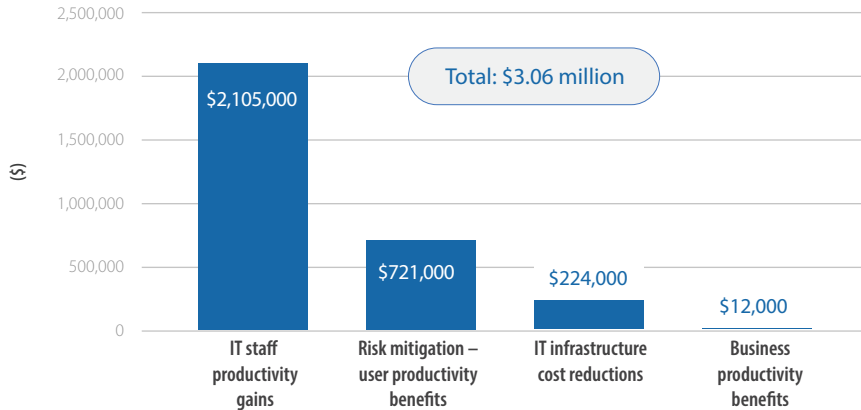
- **Lower costs and better performance for business:** *“The biggest benefit is the cost reduction for storage, which I estimate to be 40% less than what we were paying before. Our backups are faster, and our virtual desktops deliver great performance. Reduced storage latencies, which drive up our CPU utilization rates, are another example. This is an overall positive for the business.”*
- **Better access to information:** *“HPE Nimble Storage has helped make information more accessible to different people in different groups. We now have access to data in a more timely manner while increasing the speed of storage deployment.”*
- **Reduced downtime that protects revenue and company reputation:** *“Downtime impacts both IT and the business. We have calculated that our total billable time runs about \$1 million per hour, so downtime is very expensive. For us, that is the bottom line. Plus, downtime affects our reputation.”*

IDC calculated that the total value that HPE Nimble Storage customers realize will be worth an annual average of \$3.06 million per organization over five years, consisting of the following areas of improvement:

- **IT staff productivity gains:** The use of HPE Nimble Storage requires less IT and storage infrastructure staff time to deploy and manage storage resources compared with alternative approaches. IDC projects that interviewed organizations will realize value through staff time savings and higher productivity worth an annual average of \$2,105,000 per organization (\$7,500 per terabyte).
- **Risk mitigation — user productivity benefits:** The HPE Nimble platform sustains fewer unplanned outages that affect the performance of end-user applications. IDC calculates the value of higher end-user productivity at an annual average of \$721,000 per organization (\$2,600 per terabyte).
- **IT infrastructure cost reduction:** The deployment of HPE Nimble Storage lowers the cost of operations in terms of both capex and opex. IDC calculates that the solution reduces these costs by an annual average of \$224,000 per organization (\$800 per terabyte).
- **Business productivity benefits:** Greater agility and performance lead to higher business productivity and better revenue protection. IDC calculates the value of these productivity benefits at an annual average of \$12,000 per organization (\$40 per terabyte).

These benefits are summarized in Figure 1, which presents the data on a per-organization basis.

FIGURE 1 Annual Average Benefits per Organization



Source: IDC, 2020

Improvements in Storage Operations and Management

In today’s enterprise IT environments, storage presents a number of challenges for the teams that manage it. As in other areas of IT, there is a need to reduce the amount of time these teams spend on routine tasks that involve deploying, provisioning, managing, and upgrading systems while addressing various events that can affect end-user application performance. Storage solutions also need to ensure high availability and reliability so that business-critical applications such as ERP systems, critical databases, business intelligence tools, VDI, and backups are not impacted or slowed down. Further, COVID-19 has posed a new set of challenges to business operations globally now that a much higher percentage of employees are working from home. This has put greater demands on IT infrastructure to support surging workloads in web conferencing, remote desktops, and other areas, with a corresponding increase in data storage requirements.

HPE Nimble Storage arrays help address these challenges by providing better storage performance that can handle additional workloads and I/O spikes when they occur without causing “noisy neighbor” problems and making more efficient use of existing storage capacity (through data reduction features such as compression and deduplication). Overall, interviewed companies reported that the HPE Nimble Storage platform made it easier for teams to manage their IT and storage infrastructure. They cited key benefits such as data compression, excellent levels of technical support, and having a more cost-effective infrastructure. Study participants also appreciated having more time to focus on strategic projects (because they were spending less time managing storage). They commented on these and other benefits:

- **IT infrastructure is more cost effective:** *“Managing costs is how we measure our performance in IT. We are a service-related business. We have contracts for banking-related services involving loans and savings plans. What we can do now with HPE Nimble Storage is grow the portfolio of the business without having to buy more equipment.”*
- **Storage agility is more responsive to COVID-19 business needs:** *“Our ability to respond to the heightened storage demands of COVID-19 is a good example of the improved agility we get with HPE Nimble Storage. With so many more people working at home, we had to add more virtual desktops. We can quickly and easily add more desktops into the pool. It makes a huge difference.”*
- **HPE provides proactive support:** *“Support on HPE Nimble Storage is phenomenal. They tell me when I have a problem. This saves staff time and virtually eliminated downtime. We don’t have to worry.”*
- **InfoSight gives better insight into issues:** *“When we got InfoSight, we used it a lot. The dashboards showed us metrics we weren’t used to seeing, like storage latencies at the virtual machine level and where that latency is coming from. When a problem arises, it makes it very easy for us to quickly troubleshoot and resolve any problems that InfoSight itself didn’t already address. We have really come to trust InfoSight to manage our systems for us in many ways.”*

IDC evaluated the ways that HPE Nimble Storage made it easier for IT teams to manage infrastructure. Table 3 quantifies various improvements in IT team efficiency. The staff required for projects, measured in FTEs, decreased from 6.1 to 2.3, representing a substantial productivity improvement of 62% and translating into an annual salary savings of \$376,000.

TABLE 3 IT Infrastructure Management Impact

	Before HPE Nimble Storage	With HPE Nimble Storage	Difference	Reduction (%)
Equivalent FTEs required to manage storage infrastructure	6.1	2.3	3.8	62
Salary cost per year per organization	\$609,000	\$234,000	\$376,000	62

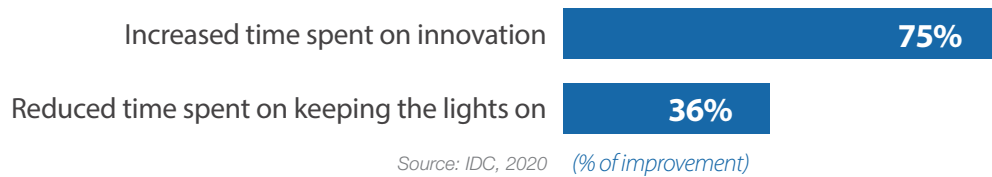
Source: IDC, 2020

Study participant data showed that HPE Nimble Storage helped storage infrastructure teams to shift focus from routine tasks associated with “keeping the lights on” to spending greater amounts of time on innovation and supporting the business. Several factors contributed to this. The high performance of HPE Nimble Storage arrays means that very few storage performance

problems arise any more in the first place, provisioning new storage could be done quickly and easily on demand, troubleshooting any problems that do arise is much faster with InfoSight, and expanding storage capacity is simple and nondisruptive. As one study participant commented: *“With the time freed up, our IT staff can focus on more strategic architectural issues. This, in turn, will produce a better road map for the whole IT organization.”*

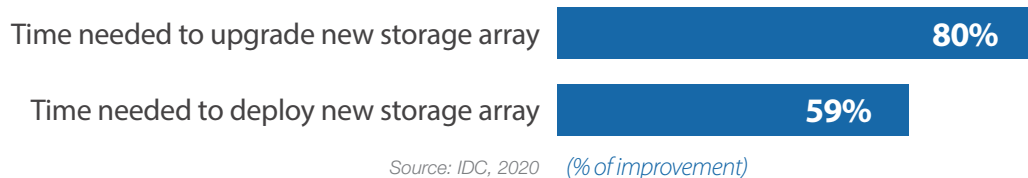
Figure 2 quantifies the impact of the platform on storage team efficiency. Storage management organizations were able to spend 75% more time on innovation-related projects. This was in part made possible because the platform enabled these teams to spend 36% less time on the routine tasks associated with keeping storage systems up and running properly.

FIGURE 2 Impact on IT Storage Team Activities



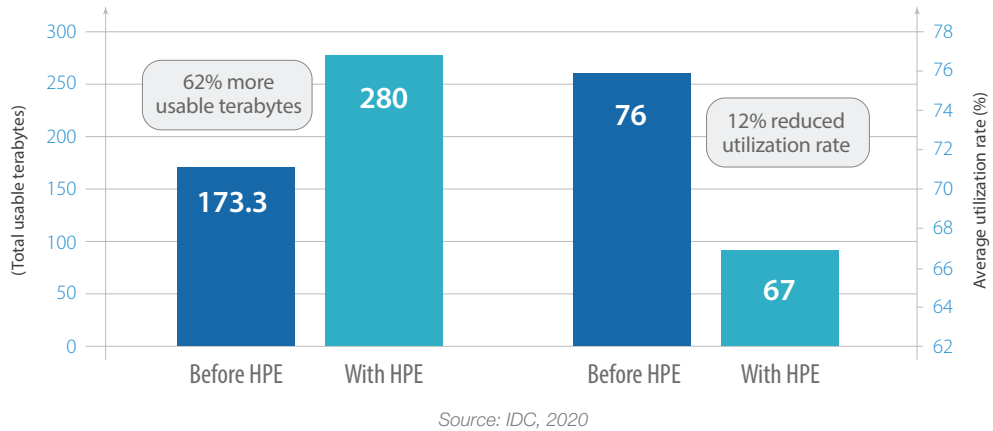
An average of five storage arrays were deployed across all interviewed companies (refer back to Table 2). IDC looked further at how these arrays were being managed. Study participants reported that the HPE Nimble Storage platform improved the agility needed for deploying these storage arrays and resources. Figure 3 quantifies these benefits. Interviewed companies were able to deploy a new storage array 59% faster. In addition, the time required to upgrade these arrays was significantly reduced (80%).

FIGURE 3 IT Agility Impact



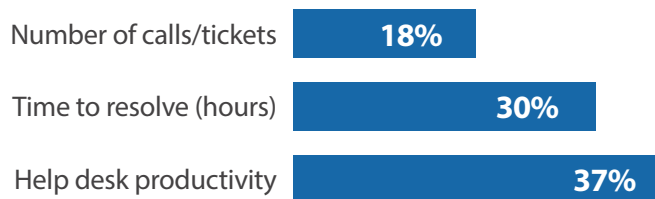
Study participants reported that HPE Nimble Storage also increased the availability of usable storage. Critical data services such as thin provisioning, compression, and deduplication, which could be used without noticeable application impacts, significantly increased capacity utilization rates (see Figure 4). Commenting on this benefit, one study participant observed: *“HPE Nimble Storage’s data compression feature is a major contributor to the improved capacity utilization and a reduction in the need to buy additional storage.”* With HPE Nimble Storage, companies benefited from 62% more usable terabytes, and utilization rates were reduced by 12%.

FIGURE 4 Storage Usage Impact



IDC evaluated how HPE Nimble Storage provided ancillary benefits for help desk operations. As one study participant noted: *“Our help desk is 50–60% more productive due to fewer unidentifiable issues. The storage just works better.”* As shown in Figure 5, users are saving more than two hours on their help desk calls and tickets as a result of better storage reliability and performance. In addition, there were reductions in both the number of tickets and calls logged weekly (18%) and the time to resolve those tickets (30%).

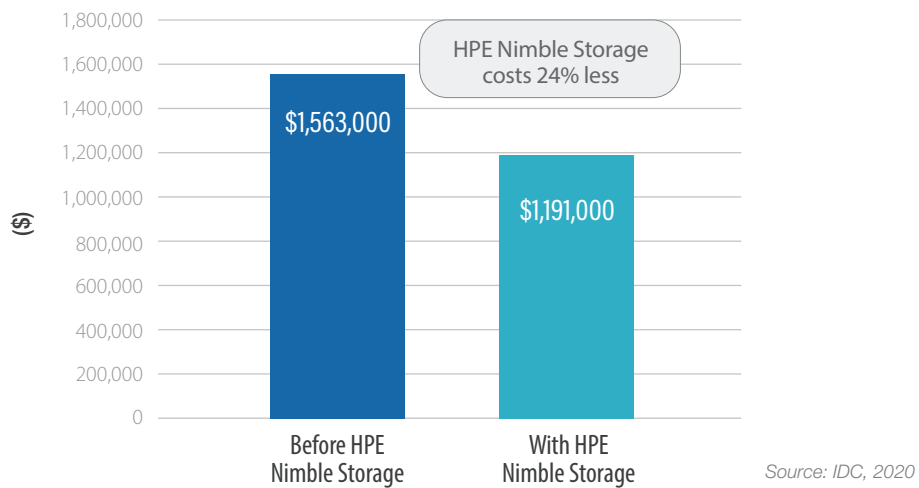
FIGURE 5 Help Desk Impact



Source: IDC, 2020 (% of improvement)

In addition to these operational benefits, HPE Nimble Storage served as a cost-effective storage platform. In part, this was because of the system’s integrated storage efficiency features, such as thin provisioning, compression, and deduplication, all of which improve capacity utilization, that could be used with all applications without impacting performance. Figure 6 illustrates storage infrastructure savings that IDC projects will be available to interviewed companies over a five-year period. Infrastructure cost for HPE Nimble was 24% lower than the cost of alternative or legacy solutions.

FIGURE 6 Five-Year Storage Infrastructure Savings



Improvements in Business Operations and Results

The use and deployment of HPE Nimble Storage fostered better business results and revenue protection for interviewed companies. Overall, these organizations were able to improve storage key performance indicators (KPIs) and performance leading to better application development, less unplanned downtime, better adherence to internal SLAs, and improved ability to meet business KPIs. Study participants cited specific benefits such as improved security, time savings in the application development process, and better performance and reliability. They commented on these and related benefits:

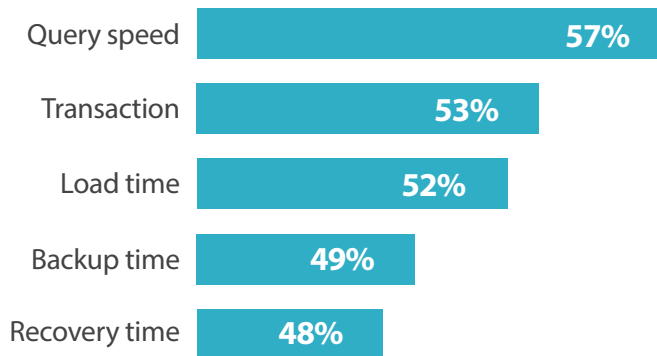
- Better decision making with better access to critical information:** *“HPE Nimble Storage helps us make more timely decisions because of better storage access and the ability to analyze the information we have. Because of regulations, we keep every single document we’ve produced for 10 years. We have offices in about 20 countries, and it helps us keep better track*

of and have more immediate access to development and regulatory data. This is no longer a major concern for the business.”

- **Performance makes things easier:** “Performance and stability are the biggest benefits we see. You ask for information and you get it quickly. Storage provisioning is faster and easier. Downtime has been reduced. There are no backup issues. We’re not waking up at 3:00 a.m. to deal with a problem. And during regular hours, our engineers are dealing with fewer issues that crop up. That frees them up to work on other projects — so we’re also enjoying better administrative resource allocation. Burnout is also reduced, because when they’re not constantly working on daily disruptions, people are more efficient.”
- **Application developers save time:** “Our app developers really appreciate the snapshot capabilities. When they need copies of current data for development or testing purposes, they can get highly performant snapshots quickly from the storage administrators. This cuts cycle times during the application development process and saves hours of time on testing. Storage administrators like it as well since snapshots are fast and easy to take, and don’t consume additional storage capacity while delivering great performance.”
- **Improved security leads to more business opportunities:** “We can encrypt data without performance impacts on Nimble, so we know our data is safe. For us that’s extremely important. We have confidence that our customer information is secure, and this helps us pursue more business and aids our reputation.”

IDC looked at these business benefits in terms of KPIs. As shown in Figure 7, the greatest performance improvements were seen in query speed (57%), transaction rate (53%), and load time (52%). This also meant that any operational workflows that were dependent on storage performance completed more quickly.

FIGURE 7 Storage Performance KPI Impact



Source: IDC, 2020 (% of improvement)

Interviewed companies benefited from less operations-related downtime because of HPE Nimble Storage’s high-availability features, which included Triple+ Parity RAID, host multipathing, transparent controller failover, space-efficient snapshots (for fast file-level recovery), replication options, and redundant, hot plug components, as well as more proactive support services that were directly related to InfoSight. Table 4 provides metrics on these impacts. The annual frequency of downtime events declined from 6.0 to 2.1, representing a significant improvement of 65%. Further, the number of hours required to resolve downtime events declined from 4.0 hours to 1.4 hours, a 65% improvement. Both of these benefits resulted in a 69% improvement in staff productivity measured in FTEs.

TABLE 4 Unplanned Downtime Impact

	Before HPE Nimble Storage	With HPE Nimble Storage	Difference	Change (%)
Frequency per year	6.0	2.1	3.9	65
Time to resolve (hours)	4.0	1.4	2.6	65
FTE impact (lost productivity due to unplanned outages)	1.8	0.6	1.2	69
Value of lost productivity per year	\$125,800	\$38,800	\$87,000	69

Source: IDC, 2020

IDC drilled down a bit more on the benefits of unplanned downtime by looking at the financial impact and how it affected revenue-generating applications and workloads (see Table 5). As a result of fewer disruptive events, interviewed companies recognized substantial additional annual revenue of \$4,605,000.

TABLE 5 Financial Impact: Unplanned Downtime

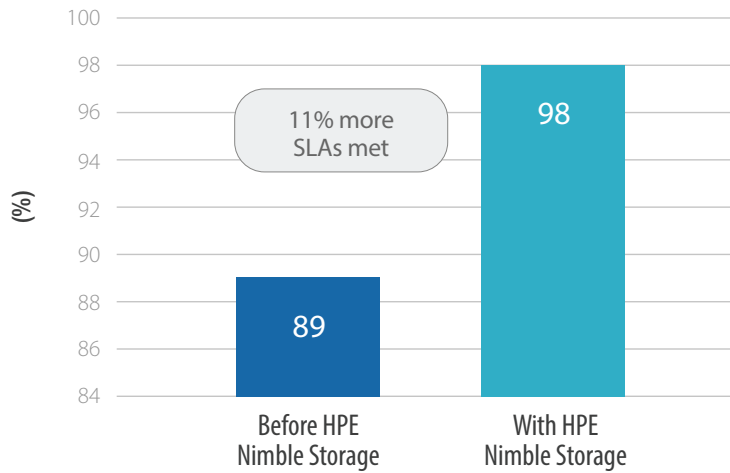
Risk Mitigation — Unplanned Downtime Revenue Impact	Per Organization
Total additional revenue per year	\$4,605,000
Assumed operating margin	15%
Total recognized revenue per year*	\$691,000

*The IDC model assumes a 15% operating margin for all additional revenue.

Source: IDC, 2020

Business SLAs represent an important measure of performance. HPE Nimble Storage has enabled interviewed companies to meet a higher percentage of internal SLAs as a result of the improved functionality and performance described previously. Figure 8 quantifies these benefits, showing that 11% more SLAs were targeted and met.

FIGURE 8 Internal SLA Impact



Source: IDC, 2020

Because enterprise IT departments are facing the challenge of developing digital solutions in progressively faster delivery cycles, technologies that accelerate developer productivity are seeing increased importance. HPE Nimble Storage has provided application developers with the storage capacity and performance required to deploy more applications and do so in a more timely manner. Table 6 presents these productivity impacts. Interviewed companies experienced a 32% increase in developer productivity, resulting in an annual salary savings of \$926,700 per organization.

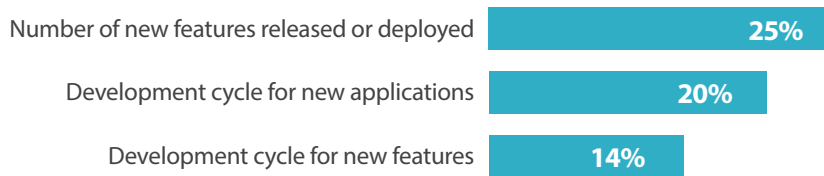
TABLE 6 Application Development Staff Impact

	Before HPE Nimble Storage	With HPE Nimble Storage	Difference	Benefit (%)
FTEs per year per organization	29	38.2	9.3	32
Equivalent value of staff time per year per organization (based on FTEs)	\$2.90 million	\$3.82 million	\$926,700	32

Source: IDC, 2020

Study participants reported that they were able to provide application developers with more storage capacity and performance. As a result, they were able to deploy new applications and features in a more timely and responsive manner. Figure 9 quantifies these benefits in terms of typical KPIs that are part of the application development life cycle. With HPE Nimble Storage, the number of new features released or deployed increased 25%. In addition, development cycles for new applications were shortened by 20%.

FIGURE 9 Application Developer KPIs



Source: IDC, 2020 (% of improvement)

IDC also looked at how the deployment of HPE Nimble Storage affected business performance by measuring another series of KPIs. As shown in Figure 10, business outcomes showed various levels of improvement. Those KPIs showing the greatest improvement included time to market for products and services (21%), improved IT ability to cost effectively support new IT/business initiatives (12%), and reduction in business process errors (10%).

FIGURE 10 Business KPI Impact



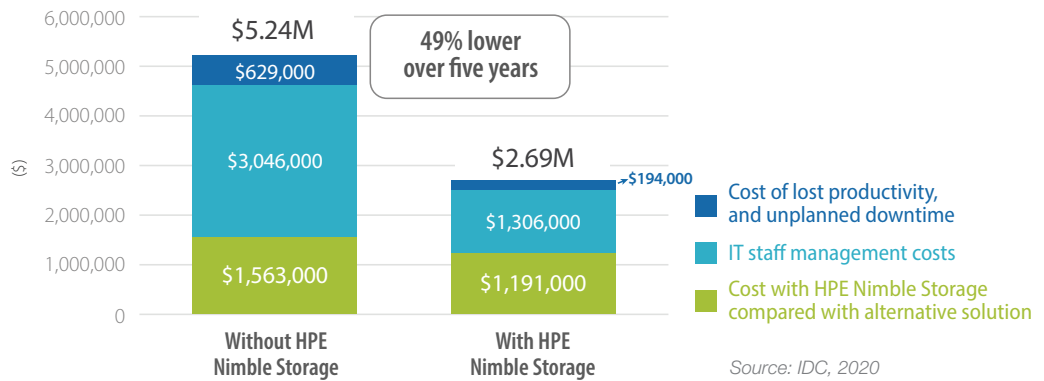
Source: IDC, 2020 (% of improvement)

A final but important area evaluated by IDC was the overall cost of operations. IDC analysis shows that deploying the HPE Nimble Storage platform helped interviewed companies cut their costs significantly. This analysis looked at three factors:

- The cost of lost productivity and unplanned downtime
- IT staff management costs
- The platform capex and opex costs compared against those of alternatives/incumbent solutions

Figure 11 presents these results showing that over a five-year period, overall costs for these organizations were 49% lower

FIGURE 11 Five-Year Cost of Operations



ROI Summary

Table 7 provides IDC’s analysis of the financial and investment benefits for study participants’ use of HPE Nimble Storage. IDC calculates that over five years, interviewed organizations will achieve discounted benefit of \$10.4 million per organization (\$37,000 per terabyte) based on IT/storage staff efficiencies, improved performance/reliability, better business results, and lower costs, as described previously. These benefits compare with projected discounted investment costs of \$1.77 million per organization (\$6,300 per terabyte) over five years. Based on these benefits and investment costs, IDC calculates that these organizations will achieve a five-year ROI of 487% and breakeven on their investment in seven months.

TABLE 7 Five-Year ROI Analysis

	Per Organization	Per Terabyte
Benefits (discounted)	\$10.4 million	\$37,000
Investment (discounted)	\$1.77 million	\$6,300
Net present value	\$8.6 million	\$30,700
ROI (NPV/investment)	487%	487%
Payback	7 months	7 months
Discount factor	12%	12%

Source: IDC, 2020

CHALLENGES/OPPORTUNITIES

As enterprises refresh storage infrastructure, purchase decision metrics are definitely changing. The requirements of the next-generation applications that need to be put in place as part of DX are raising the bar on both performance and availability. In the digital era, business must operate at a much faster pace, and IT agility has become a critical determinant of business success. Static IT budgets in the face of continued high data growth increase the administrative span of control, and keeping up with data protection, security, and compliance requirements make managing storage today even more of a challenge. When it's time to replace legacy storage, IT organizations are not just looking for incremental improvements in performance and capacity, but they need solutions that can consistently deliver sub-millisecond response times at scale, exhibit six-nines plus availability, and are much easier and more intuitive to manage.

Vendors are introducing the use of new technologies and design concepts to meet these requirements. Solid state storage, inline data reduction, AI/ML, and software-defined flexibility must be combined with automation and cloud integration to make storage easier to manage at scale and support the flexibility to place workloads in the optimal locations. Vendors that meet these requirements and can directly connect them to meaningful customer benefits will have an opportunity to grow revenue in this new era, while those that just provide incremental improvements to legacy designs will not.

CONCLUSION

Customers that refresh existing storage infrastructure with newer designs should have high expectations. Based around new technologies such as solid state storage, software-defined design, AI/ML, and cloud, it is not unreasonable to expect to cut the total cost of storage operations in half. Based on our quantitative analysis of the business value generated by a move to HPE Nimble Storage, companies did just that while removing storage performance as an issue, reducing unplanned downtime by 69% and improving storage deployment agility by 59%. Through better storage infrastructure from HPE, these companies made application development 32% more productive, enabling them to respond faster to changing business conditions and market need while freeing up IT management to spend more time on innovation (because they were spending 36% less staff time on keeping the lights on). With a seven-month payback period and a 487% five-year ROI, these HPE Nimble Storage customers were extremely happy with their storage infrastructure modernization decision.

APPENDIX

Methodology

IDC's standard ROI methodology was utilized for this white paper. This methodology is based on gathering data from current users of the HPE Nimble Storage solution as the foundation for the model. Based on interviews with organizations using the solution, IDC performed a three-step process to calculate the ROI and payback period:

- 1. Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of HPE Nimble Storage.** In this study, the benefits included staff time savings and productivity benefits as well as operational cost reductions.
- 2. Created a complete investment (five-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using HPE Nimble Storage and can include additional costs related to migrations, planning, consulting, and staff or user training.
- 3. Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of HPE Nimble Storage over a five-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on a number of assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded salary of \$100,000 per year for IT staff members and an average fully loaded salary of \$70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the five-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.



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