Few computer technologies have evolved as rapidly or as dramatically as data storage, particularly at the enterprise level. Storage-hungry applications like online transaction processing, financial modeling and seismic data analysis have always sucked up huge amounts of data, and new enterprise workloads and use cases like analytics, compliance, e-discovery and e-commerce are chewing up hundreds of terabytes and even petabytes at a dizzying pace. In fact, research from SearchStorage.com indicates that the average large enterprise will purchase an additional 89 terabytes of data storage in the coming year just to keep up.¹

But as important as added capacity and even higher performance are, IT organizations need even more from their storage vendors. Storage is becoming more difficult to manage, even as storage management software improves its functionality. As data center infrastructure becomes increasingly heterogeneous, virtualized and cloud-based, IT professionals and storage administrators need more than higher capacity and improved performance measured in reduced latency and increased IOPS.

Organizations are also placing higher value on issues such as reliability, data protection and data recovery because of how heavily they rely on data and build their businesses around it. The bottom line is that IT organizations need a comprehensive, enterprise-wide approach to storage architecture that reduces complexity, eases deployment and addresses storage on a long-term basis with investment protection.

One leading company that has an overarching vision for enterprise data center infrastructure—from storage and servers to networking and software and services—is Dell. In a relatively short time, Dell has used a combination of savvy acquisitions and

¹ 2014 Storage Purchasing Intentions study, SearchStorage.com, April 2014
strategic product development programs to catapult into leadership positions in numerous infrastructure categories. In fact, respondents to SearchStorage.com’s survey who had either already purchased a storage solution in 2014 or who said they intend to do so cited Dell more often than any other company as their preferred choice of storage solution.2

Dell Storage: The Vision
Storage has been among the most important pieces of Dell’s corporate strategy to help make enterprise data centers more efficient and enable long-term value from infrastructure investments. Today, Dell has transformed its storage portfolio from a successful business to a visionary industry force with a cohesive strategy. Dell’s storage product line spans affordable storage appliances to high-performance storage arrays built on a combination of hard disk drives and solid-state drives.

As part of the foundation for Dell’s enterprise portfolio, Dell Storage reflects the maturity and integration of the company’s storage solutions, as well as its strategic vision. For example, Dell has built its storage portfolio through both significant internal research and development investments and a series of strategic and carefully planned acquisitions in different segments. These have included established companies with cutting-edge intellectual property such as Compellent and EqualLogic and early-stage, emerging players such as Ocarina Networks, Exanet and RNA Networks. Collectively, the technical storage know-how unleashed through acquisitions and internal development programs, combined with Dell’s servers, networking, software and services capabilities, have helped propel the company into a leading IT solutions provider.

Dell’s overall strategy for storage not only preserves customers’ long-standing investments, but it also presents new storage models and technical advances. The result is increased customer choice while, at the same time, continuing to improve value of Dell’s popular brands of storage solutions.

In addition to a long-term acquisition strategy to build bridges from legacy technologies to new solutions across the enterprise in a consistent architecture, Dell has entered into strategic partnerships with specialized vendors with advanced functionality for data centers of the future. These include VMware, Nexenta, Red Hat, Nutanix and Microsoft. Dell’s willingness and ability to partner with other suppliers in order to present the widest and most innovative set of infrastructure solutions is an important element in the company’s “acquire, integrate, accelerate” model for end-to-end data center solutions.

Of prime importance to making this vision a reality is acknowledging the need—and the challenges—associated in tying together all aspects of data center infrastructure. This tight integration is essential when it comes to things like taking data from a storage-area network and pushing it up into a server-level cache or a multi-server cache resource. Doing that seamlessly and automatically as part of an underlying, unifying storage architecture helps erase boundaries between infrastructure components, drives efficiency and reduces costs.

2 SearchStorage.com, Ibid
Why a Unified Storage Architecture Is Essential
Having a long-term, enterprise-wide vision for where a unified storage platform fits into the data center of the future is more important than ever. During the past several years, data centers have become increasingly heterogeneous in terms of both architecture and vendor brands, often resulting in a patchwork design that is difficult to manage, cumbersome to scale, susceptible to downtime and increasingly expensive to maintain. Convergence among servers, storage and networking is also a requirement for customers looking for a consistent roadmap, and Dell’s vision for enterprise solutions is designed specifically for that goal.

The increased use of virtualization, cloud computing, software-defined infrastructure and other new models is a fact of life in today’s data centers, and more than likely will accelerate in the coming years. Add to this the reality of pressure on IT leaders to do more with less—both budgets and manpower resources—and it becomes obvious that new infrastructure approaches are needed. Storage, in particular, has an acute need for a more coordinated approach in order to help organizations reduce complexity and improve cost efficiency, while continuing to meet the escalating needs of business stakeholders.

Clearly a different approach is needed for an open, common architecture that facilitates data mobility and management and ties together storage, servers, networking and software into a cohesive solution.

Benefits to Enterprise Storage Buyers
A single, unifying storage architecture confers many benefits to organizations, ranging from common management, data mobility and improved service levels to cost savings on both operating and capital expenses. Additionally, the approach gives organizations the ability to introduce new technologies more rapidly and seamlessly, including flash storage, software-defined infrastructure, cloud-based solutions and many others.

Equally as important, however, is the ability to stage this transformation according to a timeline that works best for each individual organization, based on issues such as budgets, risk tolerance, workload trends and data center capacity. To reap the full range of benefits of a unified platform, organizations must be able to transition their data center infrastructure as aggressively or as cautiously as they need, helping them prioritize workloads, applications and infrastructure investments.

Another important customer requirement is investment protection; no IT manager wants to be stuck with dead-end technology with no expectation of continued advancements and, just as important, easy integration with upcoming solutions that provide even more functionality.

As a result, organizations reap an escalating degree of benefits based on their adoption time frames, including common management schemas, consistent application integration and data mobility across a broad spectrum of storage solutions. Customers even enjoy the benefit of significant reductions in power and cooling in the data center.
What to Expect From Dell
In the case of Dell’s own storage portfolio, having a single Dell Storage architecture protects customers’ investments in existing storage product families. Dell continues to offer and invest in new capabilities for those lines, while simultaneously working toward the vision of having a single, common architecture for the data center.

Dell is staging the delivery of new features and functionality for maximum customer flexibility, while driving toward even greater interoperability across Dell Storage brands and technologies. For instance, Dell is already working on such functionality as cross-platform replication to improve data mobility and automated storage-to-server data tiering to enhance data center performance. Dell also is developing a common management framework that oversees storage components, as well as bringing out common techniques for automated storage provisioning and management.

Conclusion
As data center infrastructure has become increasingly complex and unwieldy over recent years, IT leaders have sought new ways to make their architecture more efficient and agile. Transforming storage infrastructure is at the heart of many IT organizations’ goal, especially with storage that seamlessly integrates with other data center components, while future-proofing legacy infrastructure investments.

Dell Storage has developed, and is articulating, a coordinated vision for the data center of the future—one that not only provides a roadmap for improved data center efficiency, manageability and scalability, but also does so in a manner consistent with each organization’s goals and limitations. In fact, Dell Storage is a continuation—and an expansion—of the vision Dell has brought to the data center across infrastructure classes, such as servers and networking.

Dell Storage is at the heart of the growing trend toward a modernized data center infrastructure that supports innovative, emerging technologies in a deployment model that is highly flexible, cost efficient and provides for long-term growth commensurate with rapidly growing data volume and velocity for critical enterprise workloads.