

2008 World Disk Storage for Digital Media Market
Product Differentiation Innovation Award

DataDirect Networks

The 2008 Product Differentiation Innovation Award for the World Disk Storage for Digital Media Market is being presented to DataDirect Networks for their dedicated storage solutions for rich media applications using Silicon Storage Architecture (S2A) technology.

Company Profile:

DataDirect Networks is a leading provider of storage solutions, storage management software and consulting services for digital media. It provides storage solutions for high performance computing, Internet services, broadcasters, post production and digital intermediate facilities, financial houses, government, oil and gas, and various other industries. Founded in 1988, DataDirect Networks offers storage solutions designed on the unique Silicon Storage Architecture (S2A), which provides large, scalable capacity and high bandwidth, throughput-intensive solutions to organizations.

These systems have been designed keeping in mind the range of applications for which the storage solutions would be used, such as back up, archiving, production facilities, HD/2K/4K/8K workflow, supercomputing and many others, thus making them reliable and easily accessible while reducing the operating expenses at the same time.

Product Line and Benefits:

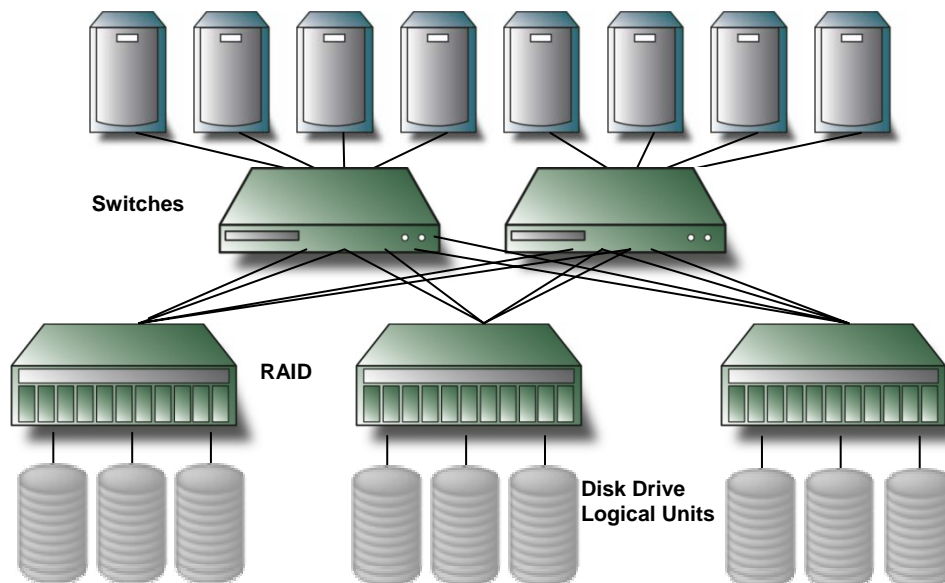
DataDirect Networks (DDN) has dedicated storage solutions for rich media applications within verticals like government, oil and gas, life sciences, archiving, Internet media, media and entertainment and others. With its product line including the S2A6620, S2A9550, S2A9700 and S2A9900, which are all based on Silicon Storage Architecture (S2A) technology, DDN has firmly focused on content-centric solutions. The increasing usage of rich media such as video, audio, graphics and other heavy bandwidth-intensive content has led to a demand for solutions that promise low time latency, high efficiency and security.

DDN's storage products are designed around a centralized storage pool. These systems have small servers with storage inside them and are networked together to provide a pool of storage. It has a controller architecture that can support very high throughput and high capacity on the disks which helps to store massive amounts of content, ranging from several hundred gigabytes to several petabytes. The system architecture is also able to sustain tens of gigabytes per second of bandwidth to hundreds of gigabytes per second.

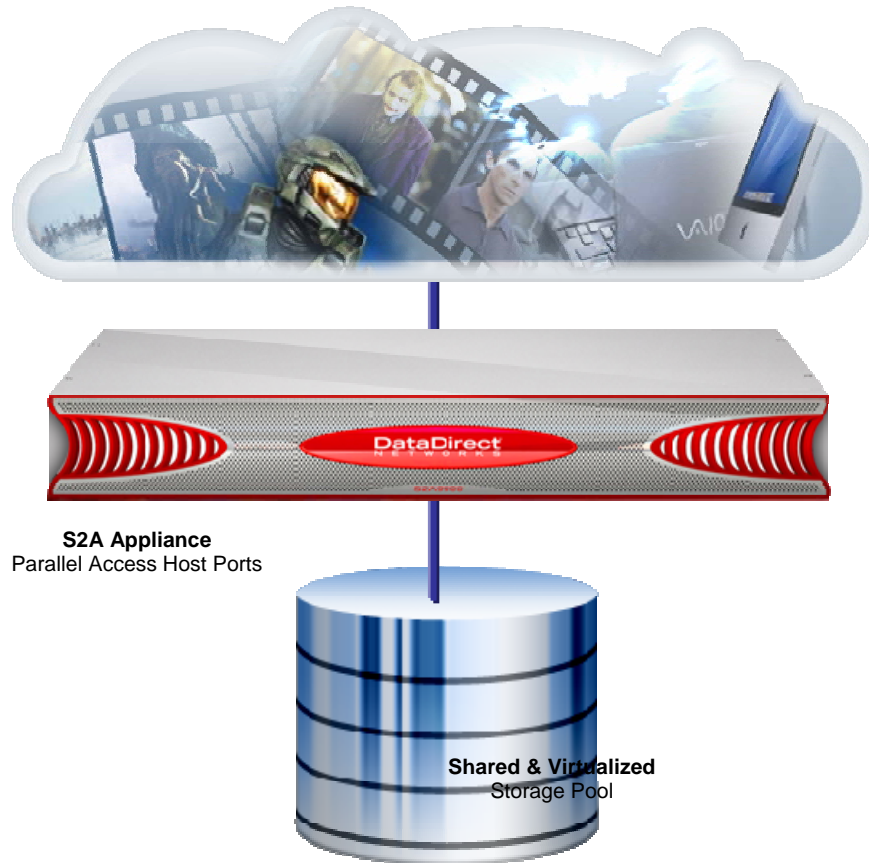
The S2A design features the following unique intellectual property: 1) Highly parallel access to and from disk drives; 2) Specialized silicon which performs on-the-fly error correction to ensure data integrity supported by a deep pipeline. These capabilities are truly vital in rich media applications as re-reads must be avoided for performance reasons.

DDN products offer a software and core hardware platform that enables it to run multiple applications simultaneously in parallel, saving time, money and management personnel. These products can write data as fast as they read it, providing consistently predictable performance for large content files, which are business-critical for content-rich environments. Moreover, DDN products offer a variable disk power down solution known as Dynamic MAID (D-MAID) which enables customers to dynamically spin down segments of disk drives on their own parameters, saving on electricity and cooling costs.

The S2A architecture allows one to keep adding storage without adding more controller elements such as processors, switch ports and other surrounding elements that go with it. DataDirect's flagship product, the S2A9900, can scale to 1.2 petabytes of capacity in only two floor tiles—utilizing a dual controller architecture. In contrast, most other market solutions would require dozens of controllers or nodes to attain that level of capacity and would require significantly more floor space. These S2A systems are designed to be completely real-time and can stream media from the disks at very high rates. Moreover, the same files can be accessed by multiple hosts at the same time, without affecting the speed and accessibility.



Typical Storage Network, Source: DataDirect Networks

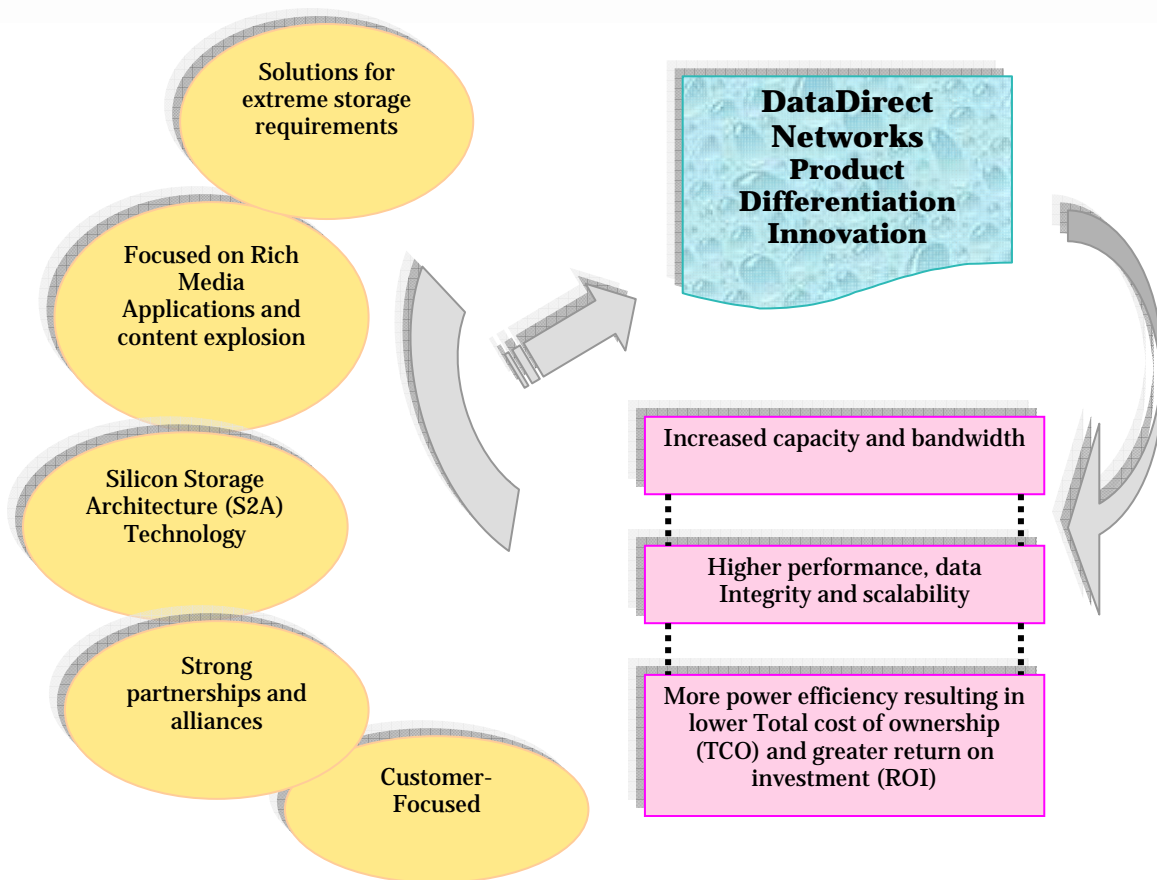


S2A Storage Network. Source: DataDirect Networks

DDN consistently innovates its products based on the S2A optimizing its benefits to the fullest and providing solutions for dynamic content storage.

Strong Customer Base:

DDN's S2A-based solutions are being used by more than 400 broadcasters and post-production facilities worldwide. DDN offers multi-dimensional storage solutions including SAN, NAS, high-performance computing and Virtual Tape libraries that address a broad spectrum of requirements from a single system. Users can work from a single centralized storage platform to perform real-time operations.



DDN's customers include XBOX LIVE, Warner Bros., AOL, Slide, Inc, Shutterfly, Imagica, Pacific Title & Art Studio, RIOT, Ferrari and China Central Television (CCTV), among many others.

Among its many customers, Pacific Title & Art Studio, a leading post production house in Hollywood, successfully utilized S2A storage platforms to produce dynamic theatrical trailers and visual effects for Warner Bros. Pictures' "The Dark Knight." Pacific Title has been using DDN products for several years, particularly as the company transitioned from post-production to an end-to-end digital shop for visual effects, digital compositing and optical, 3D animations, digital intermediate and digital trailers. DataDirect's storage product gives Pacific Title continuous storage playback with no interruptions in performance in real-time, opening many more opportunities for their products as an end-to-end digital shop. Pacific title, today, has about 100 terabytes of storage capacity on its DataDirect S2A storage platform. The company also utilizes about 500 terabytes of LSI NAS storage for rendering and computing.

Another customer who has largely benefited from the Silicon Storage Architecture (S2A) Technology is Time Warner Cable's 24-hour NY1 News. NY1's main aim was to integrate its production facility, which included integrating various aspects of news

editing, playback and archiving. Moreover, NY1 was looking forward to increasing workflow in a cost-effective and efficient manner. DataDirect's S2A solutions enabled NY1 to accelerate their applications, thereby increasing their performance and lowering operational costs.

S2A forms the data backbone for such production environments and allows companies such as NY1 to increase productivity and efficiency to manage up to 100 terabytes through a single system administrator. Data retrieval using S2A technology has been considered by customers to be three times faster when compared to a traditional Storage Area Networking (SAN) solution and ten times faster than a traditional Network Attached Storage (NAS).

Besides traditional media and entertainment, DDN also offers customized vertical solutions for rich content storage within small, medium and large enterprises. Its customers include Trinity College, Sandia National Laboratories, Saudi Aramco - the world's largest oil producer, Lawrence Livermore National Lab, NASA, Red Bull, China Film Group, Maple Leaf Entertainment (parent company of the Toronto Raptors NBA team), Synopsis and several others.

DataDirect's S2A architecture is considered to offer more density and capacity when compared to most competing solutions, proving to be more cost efficient. Moreover, it is also known to enable organizations to save on power consumption and reduce cooling costs considerably.

	LSI XBB-2	NetApp FAS6000	EMC CX3-80	S2A9900
Capacity	480 TB	1176 TB	480 TB	1200 TB
Rack Quantity	3.75	6.5	2.5	2
Footprint	30.64 ft ²	52 ft ²	20 ft ²	16.33 ft²
Density	15.67 TB/ft ²	22.62 TB/ft ²	30 TB/ft ²	73.49 TB/ft²

Source: DataDirect Networks

Strong Alliances and Partners:

DDN has strong alliances and partnerships with some of the leading technology companies of the world. Its technology partners include IBM, Seagate, Cisco, QLogic, Quantum, DVS, Dalet and others. It also has a set of OEM and system integrators which include IBM, Dell, Sony, SGI, Seachange, Cray, Raytheon and others, providing added value to customers.

Revenue Growth:

DDN has quadrupled its sales since 2003, earning over \$100 million in revenue in 2007 and has been consistently profitable since 2003 as well. The company has over 160 petabytes installed worldwide and over 1,000 customers, with over 400 in the broadcast and post production space. The company has displayed more than 60 percent growth in its capacity shipments per year. It is expanding globally with offices established in Europe, India, Australia, Asia Pacific and Japan.

With its unique architecture, DataDirect's storage products help in addressing a broad spectrum of requirements from a single system, thereby eliminating data integrity and performance issues. S2A technology has helped the company to project high growth revenues and market penetration using its storage products worldwide. The company aims at expanding its position across broader market segments using its innovative product range.

Frost & Sullivan is proud to award DataDirect Networks with the product differentiation innovation company of the year award in the world disk storage for digital media market category.

Award Description

The Frost & Sullivan Award for Product Differentiation Innovation is presented each year to the company that has best demonstrated the ability to develop and/or advance products with more innovative capabilities than competing vendors and products. This Award recognizes the company's successful adoption of new or existing technology that has become a part of its well-designed product family. Such innovation is expected to significantly contribute to the industry in terms of product performance and degree/rate of technical change.

Research Methodology

Before considering the recipient of this Award, the analyst team tracks competing market participants' product differentiation strategies through ongoing research. This research consists of market participant interviews, end-user surveys, and extensive secondary research. The data compiled through this research is analyzed based upon specific measurement criteria for this Award. Participants are then ranked with respect to the measurement criteria. Frost & Sullivan then presents the Award to the company that received the number one rank.

Measurement Criteria

In addition to the methodology described above, there are specific criteria used to determine the final ranking of industry competitors. The recipient of this Award has excelled based on one or more of the following criteria:

- Degree of differentiation innovation compared to other market participants
- Positive impact on sales directly related to product differentiation
- Time to market improvement based upon product differentiation strategy
- Benefit to end-users due to product differentiation
- Effect of product differentiation on ease of adaptability for new end-user applications

- Effect of product differentiation on market maturation

About Best Practices

Frost & Sullivan Best Practices Awards recognize companies in a variety of regional and global markets for demonstrating outstanding achievement and superior performance in areas such as leadership, technological innovation, customer service, and strategic product development. Industry analysts compare market participants and measure performance through in-depth interviews, analysis, and extensive secondary research in order to identify best practices in the industry.

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