

POSITIONING WHITEPAPER:

# What Does "Green" Really Mean?

**Introducing Pillar Storage EQ**

"Green" storage will be the most hyped trend in data storage for 2007. Nearly every vendor will claim lower power and cooling expenses through more efficient uses of technology.

Consider, in 2005, \$6 billion was spent powering data centers in the U.S. alone. For every dollar spent on hardware, a quarter of that amount was spent on power and cooling that same hardware. Gartner Group estimates that today large corporations spend between 4 and 8 percent of their IT budget on energy. They predict that this expenditure will increase by up to four times in the next five years. Spending 32 percent of an IT budget spent on energy alone by 2011 is something that should cause IT managers to implement "green" policies on future data storage purchases.

While every major manufacturer of storage systems claims some form of "green" storage practices or technology, they are overlooking a key underlying issue. Taking a one-dimensional, power-consumption only view ignores a critical component of what corporate data centers require most: efficiency. Storage system efficiency encompasses much more than lower power and cooling costs. Physical space limitation in data centers around the world has inexorably, and in most cases unexpectedly, emerged as one of the most perplexing challenges facing IT professionals today.

There is little debate that corporate data growth has surpassed all forecasts. Along with additional compliance and regulatory issues, compounded by generally flat or declining IT budgets, growth rates have left many IT organizations struggling to keep pace and maintain required service levels. That problem traditionally, and temporarily, has been solved by simply adding storage capacity. Eventually, data centers themselves will reach their physical capacity thresholds.

Enter the next phase of data center evolution:

- Where environmental resource constraints for the first time are placing limitations on corporations' ability to cope with growing demands
- Where IT professionals are forced to glean every bit of value possible from data center environments
- Where capacity, performance and reliability demands are balanced carefully with space and energy limitations

That is the data center environment of today: where true storage efficiency is a primary consideration.

## **Impact of ILM**

The last major horizon in the evolution of the corporate data center – Information Lifecycle Management (ILM) – hoped to address the inefficient use of data storage systems by introducing multiple, specialized pools of storage technology. ILM promised significant cost savings, more appropriate utilization of storage resources, and a dynamic infrastructure that accommodated varying service-level agreement (SLA) requirements.

The reality of ILM bore out much differently.

Instead of lowering overall costs associated with storage, the very nature of ILM – adding purpose-built tiers of storage and appliances to data centers – compounded the growing pressures of managing power, cooling, and space concerns. Multiple tiers of storage require multiple footprints and multiple sources of power and cooling. In some regards, ILM can be credited with starting us down the path to greater storage efficiency, but it can equally take credit for generating unprecedented power, cooling, and space constraints.

$$\text{Pillar Storage Efficiency Quotient} = \frac{\text{Capacity} \times \text{Performance}}{\text{Power} \times \text{Space}}$$

Performance. Capacity. Energy. Space. Balance each of those effectively and the result is the Pillar Storage EQ™ (Efficiency Quotient). Traditionally, IT organizations were forced into a trade-off scenario where high performance corresponds to energy consumption. Likewise, if massive capacity was required, space and performance suffered. IT professionals played a precarious balancing game of meeting minimum requirement thresholds for performance and capacity while taking into account resource limitations. The Pillar Storage EQ continues the trend toward more efficient usage of data storage resources.

Today energy and space limitations are becoming a dire concern for companies of all sizes and geographic locations. That pressure further impacts the already precarious balance of performance, capacity, energy, and space in a data center.

For example, in a storage environment where performance is the primary concern, a mission-critical application uses Tier-1 disk arrays as the de facto storage technology. Those high-performance storage systems deliver maximum transactional processing and a range of advanced data services to ensure the highest levels of reliability and data protection. These systems are also expensive, both to acquire and to manage, power, and cool. They are not necessarily designed for space efficiency. While they meet performance demands, they lack resource efficiency.

Another example is a company requiring massive storage capacity for data archiving. The most likely choice here would be to deploy an automated tape library, which stores huge amounts of data within a single, very large footprint. Tape libraries provide the highest capacities and lowest energy consumption, but the low performance and large space trade-offs easily nullify those gains.

Both examples illustrate the shortfalls of the storage industry today. Traditional storage technologies typically offer specialized, purpose-built solutions that address narrow requirements. Where they excel in some areas, they generally ignore other considerations. This is why most corporate data centers are filled with multiple islands of varying storage systems that each consumes its own footprint, power, and cooling requirements. They also require additional resources to configure, manage, and maintain those systems.

Recently, a new generation of storage companies has emerged: companies that address the limitations of those specialized, single-purpose legacy architectures. Pillar Data Systems™ leads this trend. For the first time, a storage company is addressing the multi-dimensional resource constraints of space, power, and cooling. Pillar is the only company that both reduces energy consumption associated with powering and cooling storage systems, and reduces the overall physical space consumption of those same storage systems. Resource efficiency is what Pillar Data Systems is all about: no other company helps customers decrease their space, power and personnel resources to nearly the same degree. No other company can match the Pillar Storage EQ.

The company has pioneered the unified storage market, which combines NAS and SAN environments into one consolidated system. The Pillar AxiomONE™ software suite consolidates multiple tiers of storage, multiple storage technologies (Fibre Channel, SATA, and fixed content), multiple protocols (FC SAN, iSCSI SAN, NFS, and CIFS), and multiple applications into one simple system.

The Pillar approach delivers the promised benefits of ILM – transparent, automated placement of all the data types to the appropriate storage tier – but also addresses the resource constraints of today's data center. Pillar Storage EQ eliminates the trade-offs and balancing act associated with legacy storage systems by delivering leading performance and capacity while consuming the lowest amounts of space and energy. The result is the most efficient storage system on the market today.

Pillar Data Systems takes a sensible, customer-centric approach to networked storage. We started with a simple, yet powerful idea: Build a successful storage company by creating value that others had promised, but never produced. At Pillar, we're delivering the most cost-effective, highly available networked storage solutions on the market. We build reliable, flexible solutions that, for the first time, seamlessly unite SAN with NAS and enable multiple tiers of storage on a single platform. In the end, we created an entirely new class of storage. [www.pillardata.com](http://www.pillardata.com)

