

Silicon Graphics, Inc.



Storing, Accessing and Managing Multi-Petabyte Data Sets

Presented by:

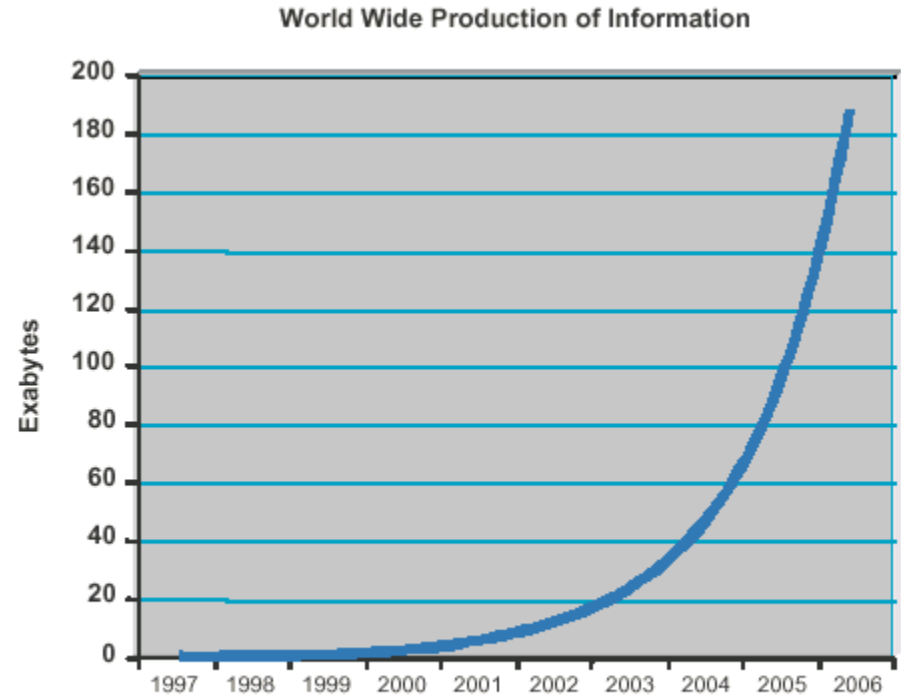
Geoffrey Wehrman

Storage Software Technical Lead



Challenges

- Scaling Capacity
- Increasing Bandwidth
- Data Sharing
- Ensuring Data Protection
- Developing Efficient Management Strategies



Source: Gartner

Evaluating Technologies

- **Performance**

- Limiting Factors, Scaling Efficiency, Cost to Scale

- **Connectivity**

- Number of Hosts, Heterogeneous Hosts, Data Coherency, Cost to Scale, Wide Area Connections

- **Capacity**

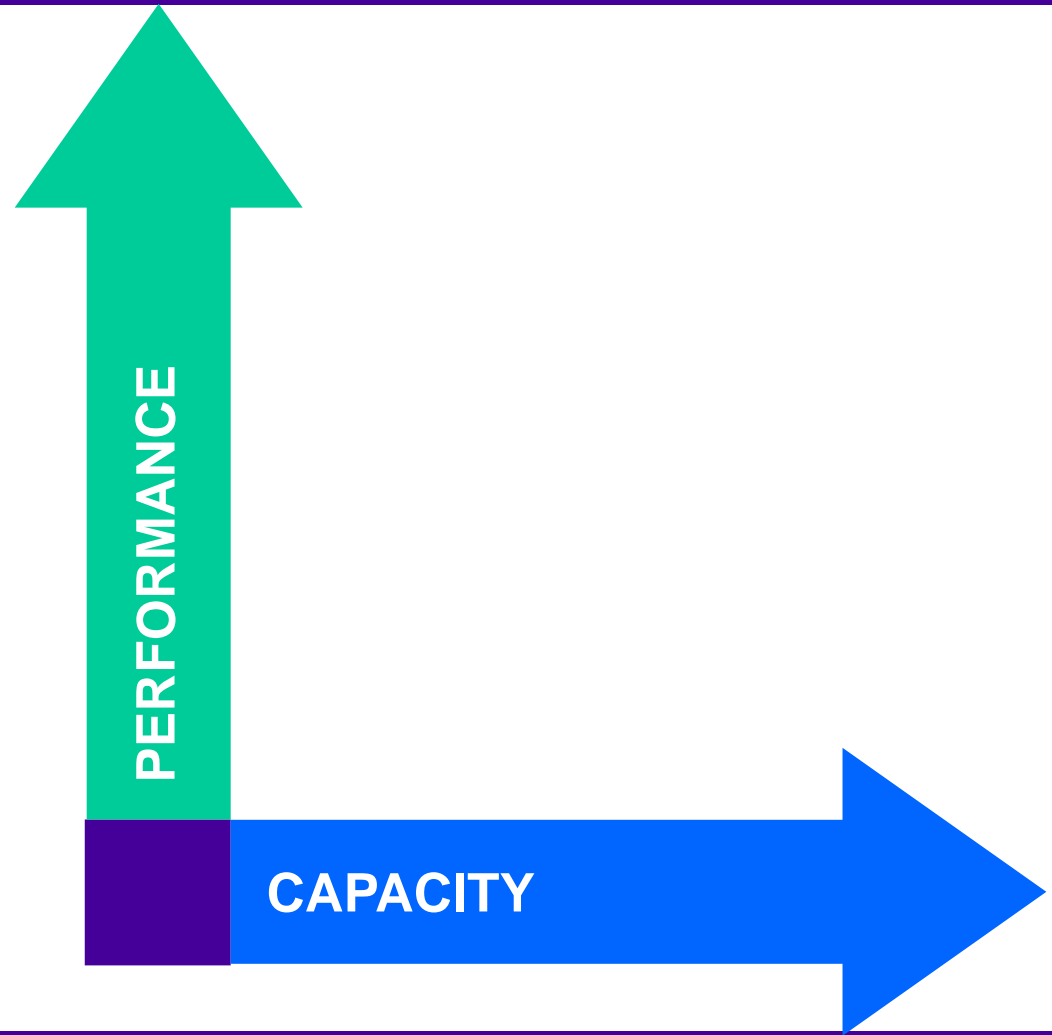
- Hard Limits, Effect on Performance, Effect on Reliability, Integration with DLM, Cost to Scale

- **Management**

- Data Consolidation, Centralized Backups

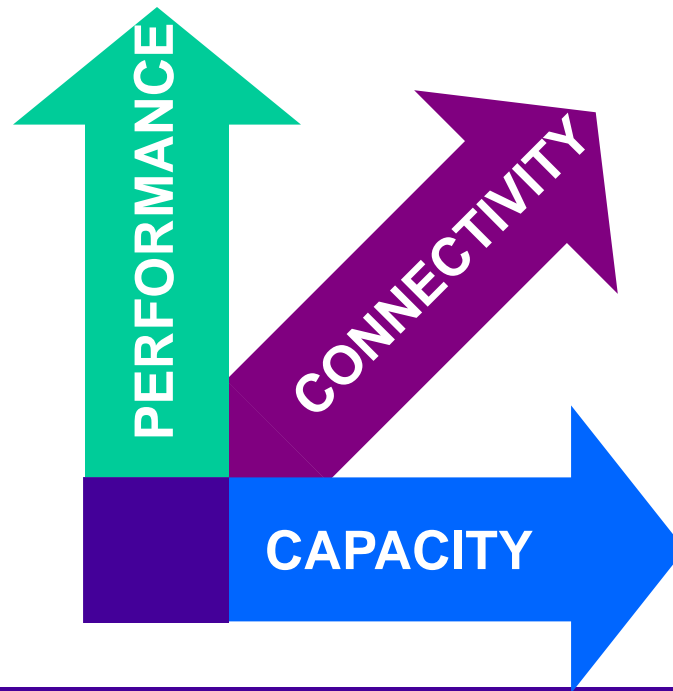
Traditional Filesystems

- Performance
 - High yield
 - Low cost
- Connectivity
 - Single host
- Capacity
 - Low cost
 - Scalable
 - Reduces reliability
- Management
 - Per host
- SGI® Solution: XFS®



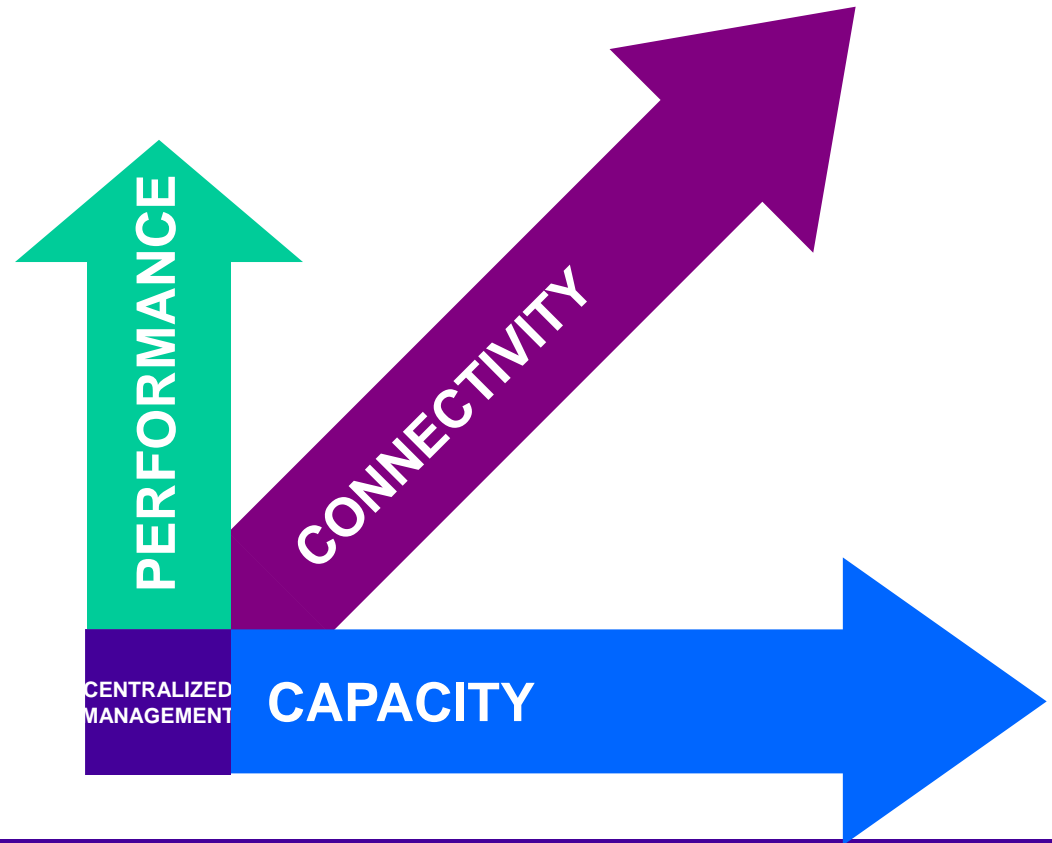
Copy-based File Sharing

- Performance
 - Limited by network bandwidth
- Connectivity
 - Heterogeneous
 - Supports wide area
 - Lacks data coherency
- Capacity
 - Inefficient
- Management
 - Per host



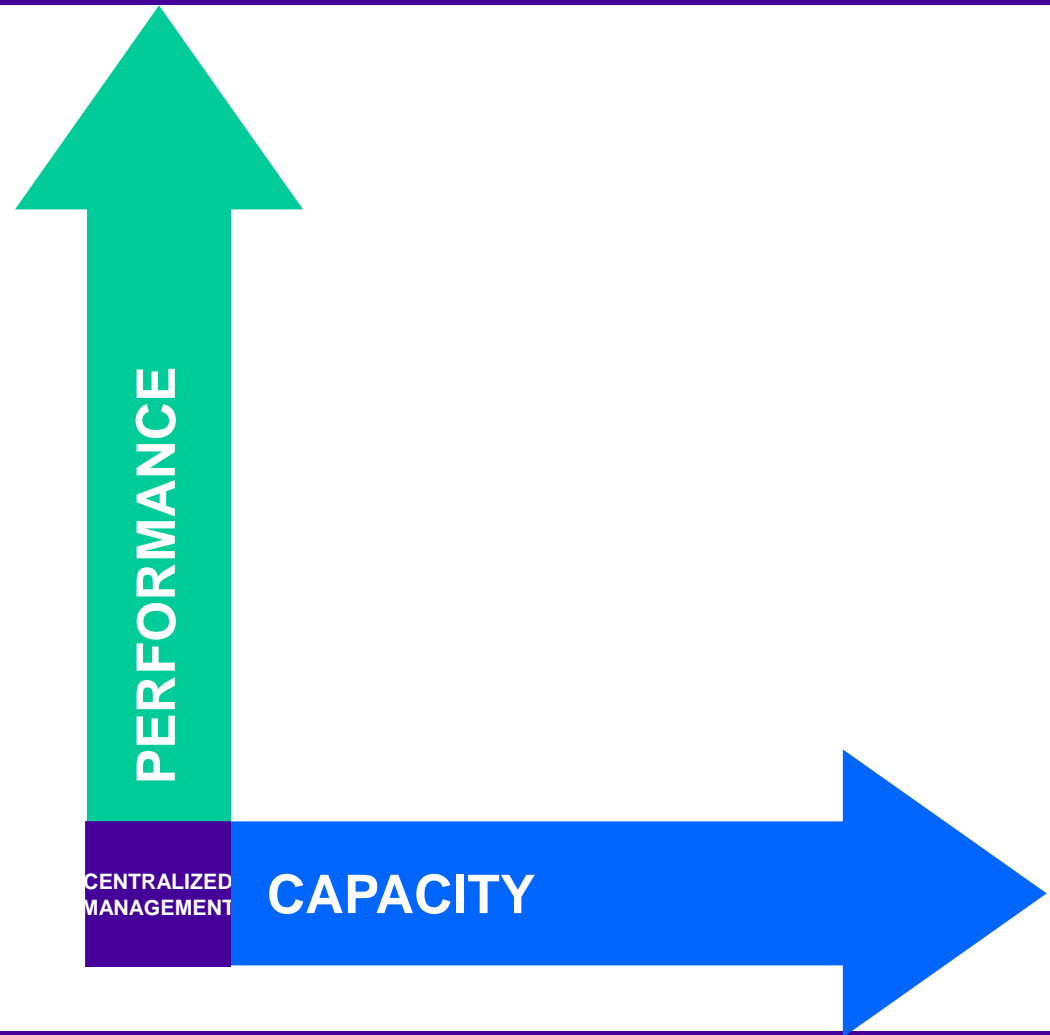
Network File Sharing

- Performance
 - Low cost
 - Limited by network, file server
- Connectivity
 - Thousands of hosts
 - Heterogeneous
 - Lacks data coherency
- Capacity
 - Scalable
 - May affect performance
 - Decreases reliability
- Management
 - Data consolidation
 - Centralized backups
- SGI® Solution: SGI File Server



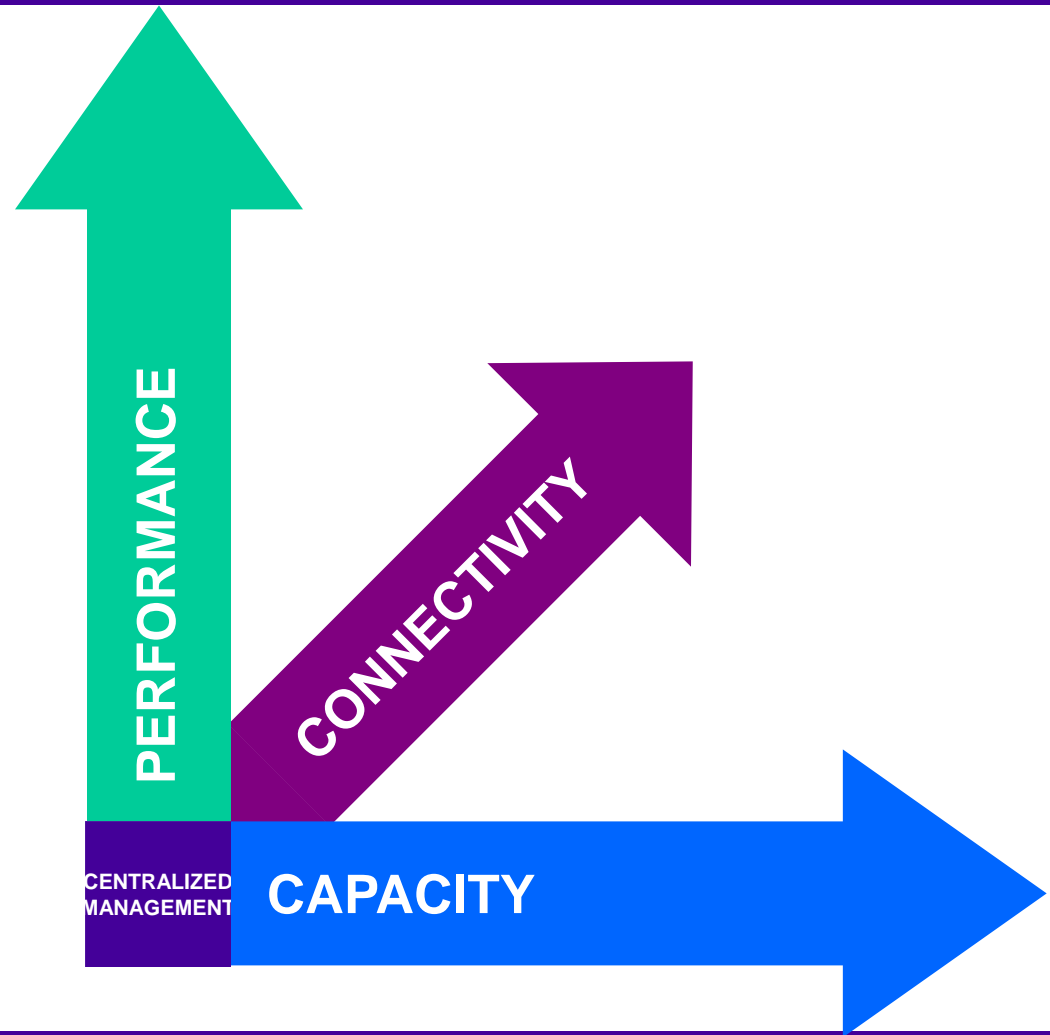
Data Lifecycle Management

- Performance
 - Only limited by bandwidth to secondary storage, software design
- Connectivity
 - Compatible with other data sharing technologies
- Capacity
 - Most economical
- Management
 - Data consolidation
 - Centralized backups
- SGI® Solution: DMF

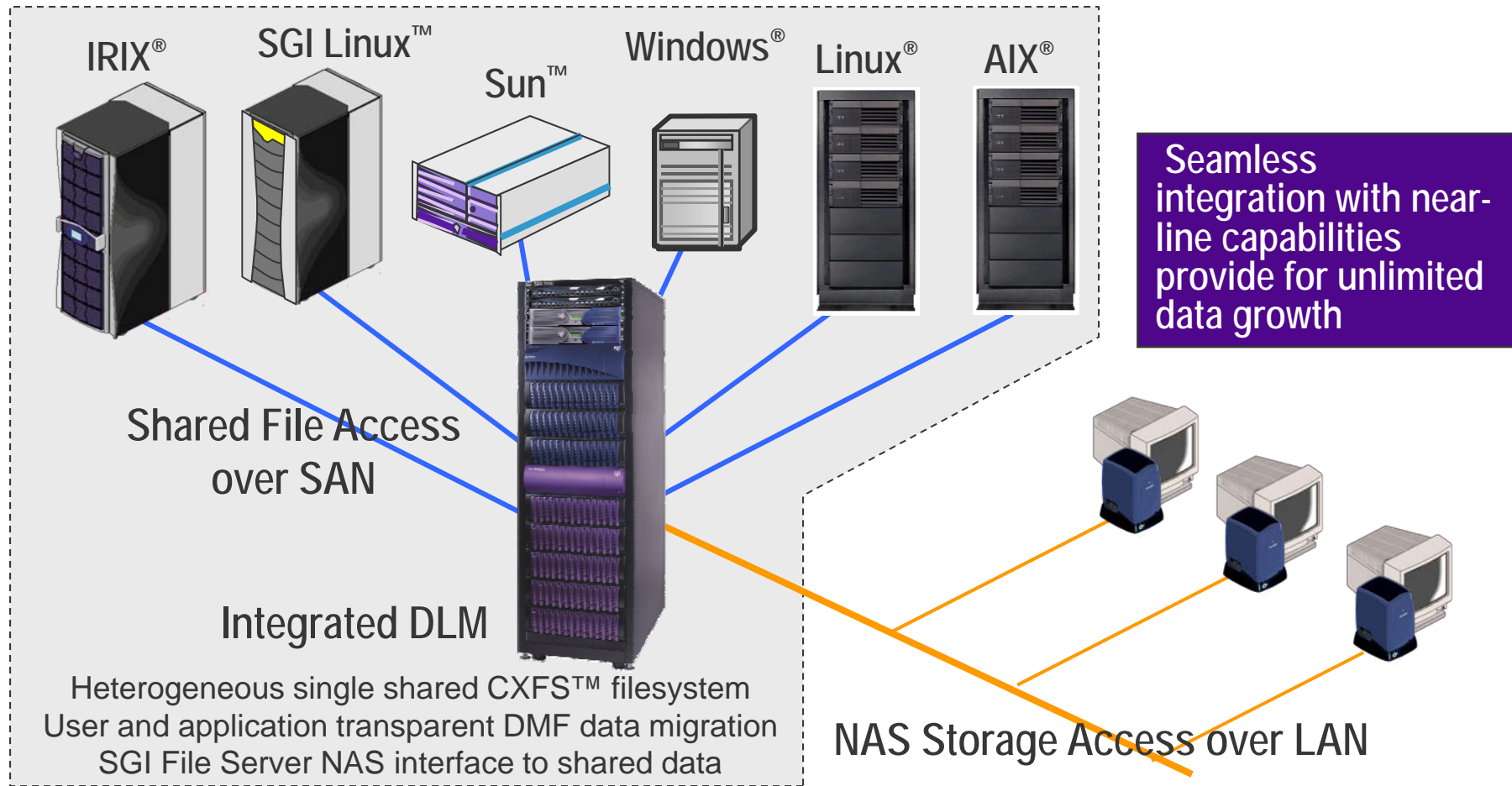


Shared Filesystems

- Performance
 - Only limited by SAN bandwidth, software
 - Expensive
- Connectivity
 - Tens of hosts
 - Heterogeneous
 - Wide area connections possible
- Capacity
 - Scalable
 - Reduces reliability
- Management
 - Data consolidation
 - Centralized backups
- SGI® Solution: CXFS™



SGI® InfiniteStorage Solutions



Example Customer Deployments

- Weta Digital
- NASA Ames Research Center
- Meteo-France
- Pittsburgh Supercomputing Center
- BBC Broadcast

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