

Satellite, Broadcast & Broadband Networks Powered with Storage Area Networks

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The Communications Company™

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Agenda

- LSI Logic Overview
- Entertainment & Media Market Business Challenges
- Enterprise Storage Demands
- Broadcast Services Architecture
- Satellite, Broadcast, Broadband Networks: Content over the Edge
- What is the SAN? Performance.....
- Enterprise Storage Architecture
- SAN Infrastructure: Platforms, Switches, HBA
- Business Impact: Storage Consolidation and Hot Scale Technology
- Customer Testimonials
- Conclusion

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LSI Logic Inc. Semiconductors to Fibre Channel Storage

Phones Over IP, Digital Cameras, Data Servers, Video Games, PDAs, Workstations

Internet

LANs, WANs, Routers, Hubs, Switches, Digital Copiers, Scanners, DVD, Storage Systems, PCs, Internet Browsers, Set-Top Decoders

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Entertainment & Media Market Business Challenges

INTERNET

- Managing Growth/Complexity**
Ability to adapt rapidly to changing business conditions within the broadcast environments
- Business Intelligence**
Information access, data availability at all times with no barriers to access
- Containing Costs**
Lower total cost of ownership and investment protection
- Increasing Productivity**
Speed of access must keep pace with ever accelerating and new technological demands on the enterprise
- Mission Critical Computing**
Service Level Agreements
24 X 7 X 365

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Enterprise Storage Demands within the Broadcast/Network Operations Center

High Speed Availability

Enterprise Storage

Centralised Mgmt Scalability

Open Storage Management Strategy

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CONTENT delivered to "THE EDGE" via SATELLITE, BROADCAST OR BROADBAND SERVICE PROVIDERS

Static Content Interactive Television

Dynamic Content

Multimedia HDTV

Entertainment MPEG 1, MPEG 2, MPEG 4

Radio/Audio Content Video Games

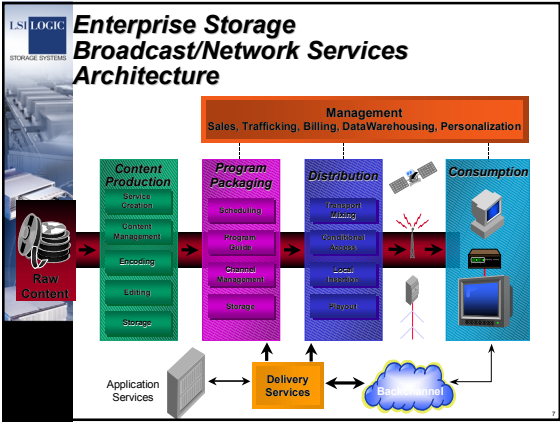
Streaming Media Broadband Access

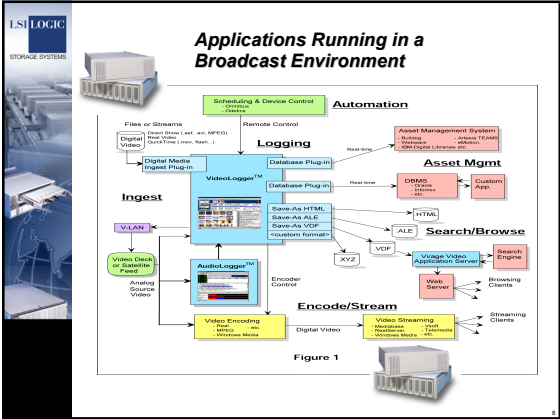
News Gathering

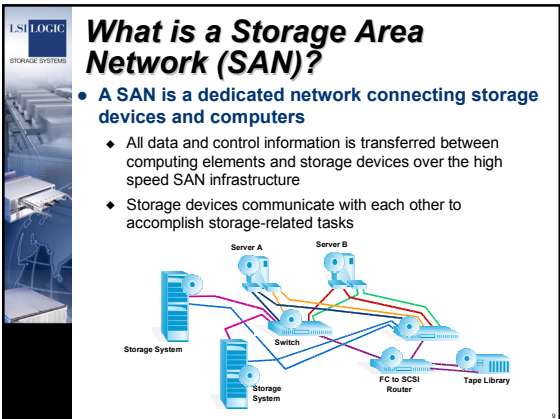
Delivery Network

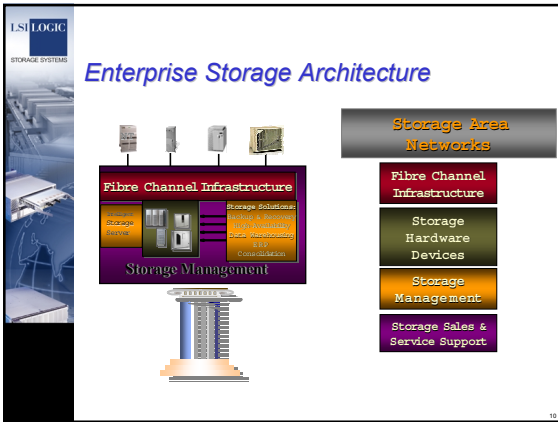
Content Aggregator

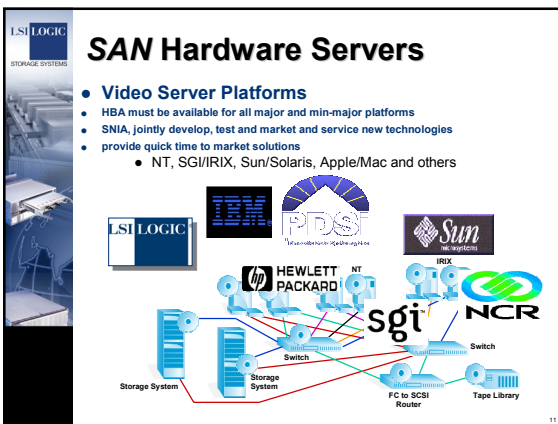
Broadcast Control
Enterprise
Post-Production House
Special Effects House
Animation House

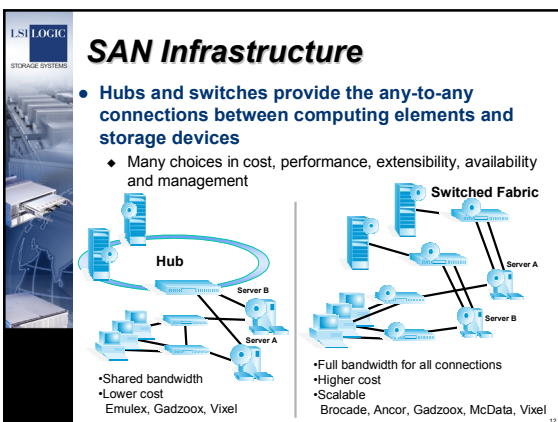












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SAN Hardware Devices

- **Fibre Channel Host Bus Adapters**
 - Not all adapters available for all platforms
 - Widely available for many popular platforms
 - NT, SGI/IRIX, Sun/Solaris, Apple/Mac and others
 - LSI Logic, Qlogic, Emulex, Prisa, Jni, Agilent

Storage System, Storage System, Switch, FC to SCSI Router, Tape Library

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Fibre Channel Infrastructure

- **Fibre Channel Data Transfer Rates**
 - 1 Gigabit/sec. transfer rate
 - 2 Gigabit/sec. Prototype Technology
 - Up to 100KM point-to-point distances possible over IP
 - Optical media characteristics
 - Single-mode LWL to 10KM
 - Multi-mode SWL to 500M
 - DWDM Fibre Transport -Metropolitan Area Networks

Storage System, Storage System, Server A, Server B, Switch, FC to SCSI Router, Tape Library

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Storage Area Networks Studio to Post-Production

Information Core
High Speed Connectivity
Studio, Metro, & Post-Production
Remote Mirroring & Roll-over
Seamless Backup & Investment Protection

Digital Domain, New Wave Entertainment, UNIVERSAL

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E4400's HotScale Keeps Data Available

- HotScale technology maintains Fibre loop integrity when components are added or removed
- HotScale host-side components with no system downtime
 - Servers can be connected or re-deployed
 - SANs can be reconfigured
 - Existing host-side components (servers, switches, hubs) unaffected
- HotScale drive modules with no interruption to data access
 - Scale capacity as demands grow
 - Re-deploy capacity as requirements change

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Storage Consolidation

Decentralized

100GB per manager
Management costs = 55% of storage budget

Co-located—Server Dependent

200GB per manager
Management costs = 35% of storage budget

Consolidated Storage

750GB per manager
Management costs = 15% of storage budget
40% REDUCTION

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Streaming Audio & Video Content Digital Island

- Business challenge**
 - Access to audio and video assets of Digital Island onto the web in multiple B to B and B to C Businesses
 - Maintain control, quality, and visibility over their assets and integrate leading edge technology
- Solution**
 - Dell Power Edge 1300 Servers WIN 2000
 - Storage capacity: LSI Logic Storage E4400 2.0TB
- Enterprise Storage Impact:**
 - Faster accessibility to their assets increased productivity
 - Better performance time, better customer satisfaction allowing them to maintain market share

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**Storage Consolidation:
MTV Networks**

- **Business Challenge**
 - ◆ Storage Consolidation with Animated Television Shows
 - ◆ Business Continurance with increased performance with a fair total cost of ownership
 - ◆ Manage their own network environment
- **Solution**
 - ◆ 1 E2400 Enterprise Storage Systems
 - ◆ Advanced Intelligence Tape (AIT) Library
- **Business Impact**
 - ◆ Cost savings across the enterprise
 - ◆ 18 Editing Workstations (AVID) consolidated to one storage subsystems
 - ◆ Increased productivity with less resources

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**Business Continuance:
Digital Domain**

- **Business Challenge**
 - C/S system availability and performance intensive
 - C/S system 24/7
 - I/O intensive
 - Slow rich media file rendering
- **Solution**
 - Sun Servers, SGI Servers, LSI E4400
 - Storage capacity 4.0 TB
- **Business Impact**
 - 35% - 70% improved performance
 - Improved productivity and accessibility for 400 special effects artists

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Bottom Line

- **Business Efficiency**
 - ◆ Reliable, First in Class partnerships
 - ◆ Adaptive Architecture: Open SAN vs. Proprietary SAN
 - ◆ No Vendor Lock limits choice and pricing, assures best of breed components and pricing
 - ◆ Business & Storage
- **Increase Revenue Stream**
 - ◆ Uptime/Availability
 - ◆ Business Continuance
- **Cost Reduction**
 - ◆ Operational Support-end to end interoperability certified?
 - Applications and infrastructure
 - ◆ Cost Of Ownership

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*LSI Logic Storage Systems
Delivering Solutions*



**Drive To Success
with LSI Storage!**
