

UDO – The New Optical Technology for Archival Storage

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ULTRA DENSITY OPTICAL

THIC
Boulder, Colorado
June 29, 2004

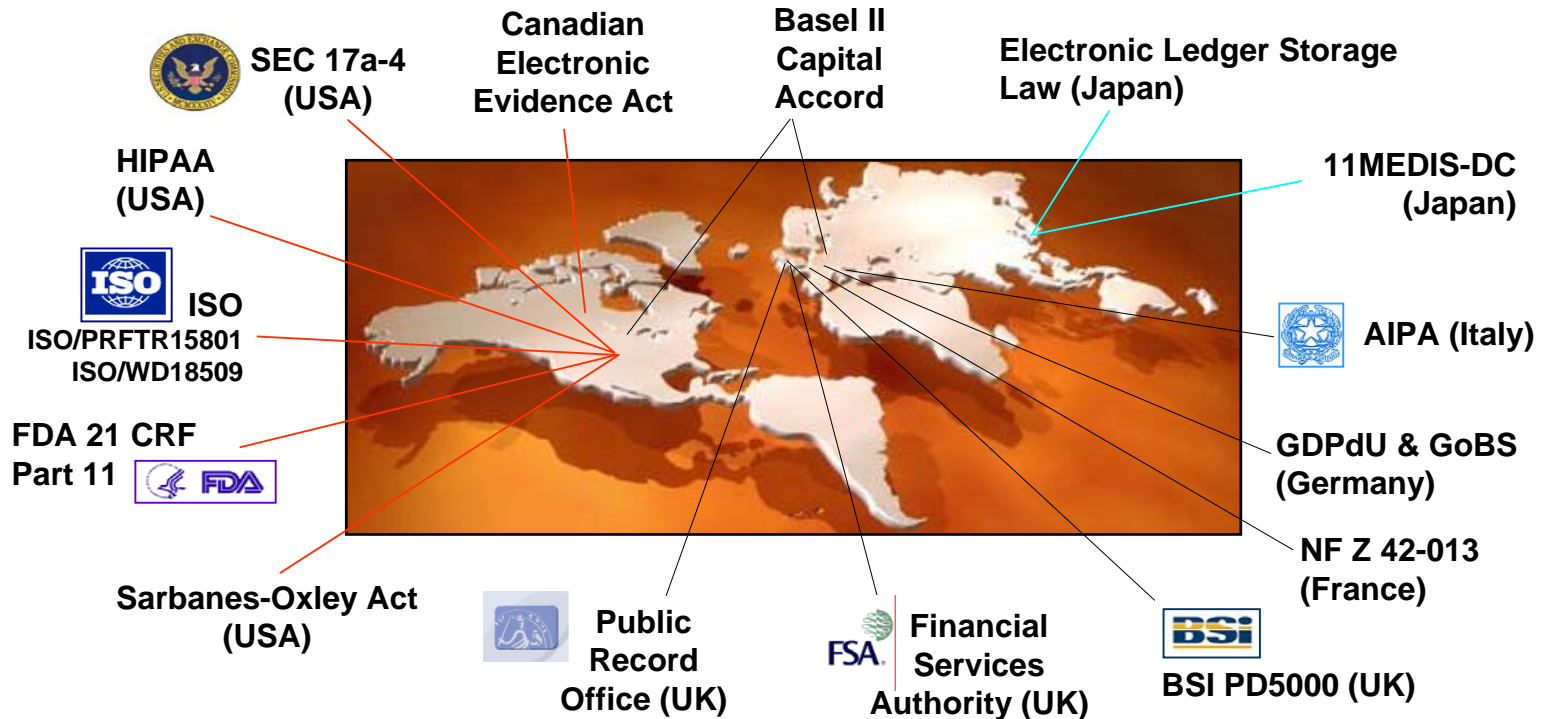
Dave DuPont
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- **Archival Storage - Why You Should Care**
- **The Storage Solution Choices**
- **Ultra Density Optical (UDO)**



The International Minefield of Digital Data Regulatory Compliance



- 10,000 regulations worldwide
- Scope: Compliance with international, national, state or provincial and local regulations
- Depth: Industry-specific, public corporations
- Impact: Cost to comply or remediate, penalties for non-compliance

Litigation



- **Litigation affects all organizations:**
 - Public and private; any size
 - Particularly the following industries – Securities, Insurance, Health Care, Financial Services, Consumer Products, Construction Materials, Food, Transportation, Pharmaceutical
- **The focus of litigation is increasingly dependent on the discovery and authenticity of electronic evidence**
- **Average securities litigation settlements continue to rise - \$25.1M in first seven months of 2003 (Pricewaterhouse Coopers)**
- **Average product liability settlement has jumped from \$1.7M in 1996 to \$6M in 2002 (Wall Street Journal)**

Archived Data - Beyond Protection

Timely access to more comprehensive knowledge assets can:

- Drive more informed and efficient decision making
- Re-purpose information assets
 - Drive incremental revenue and business opportunities
 - Accelerate projects
 - Reduce development costs

Examples Use



MRI scans Archived scans combined with current patient information provides for quicker, more accurate diagnoses and treatment

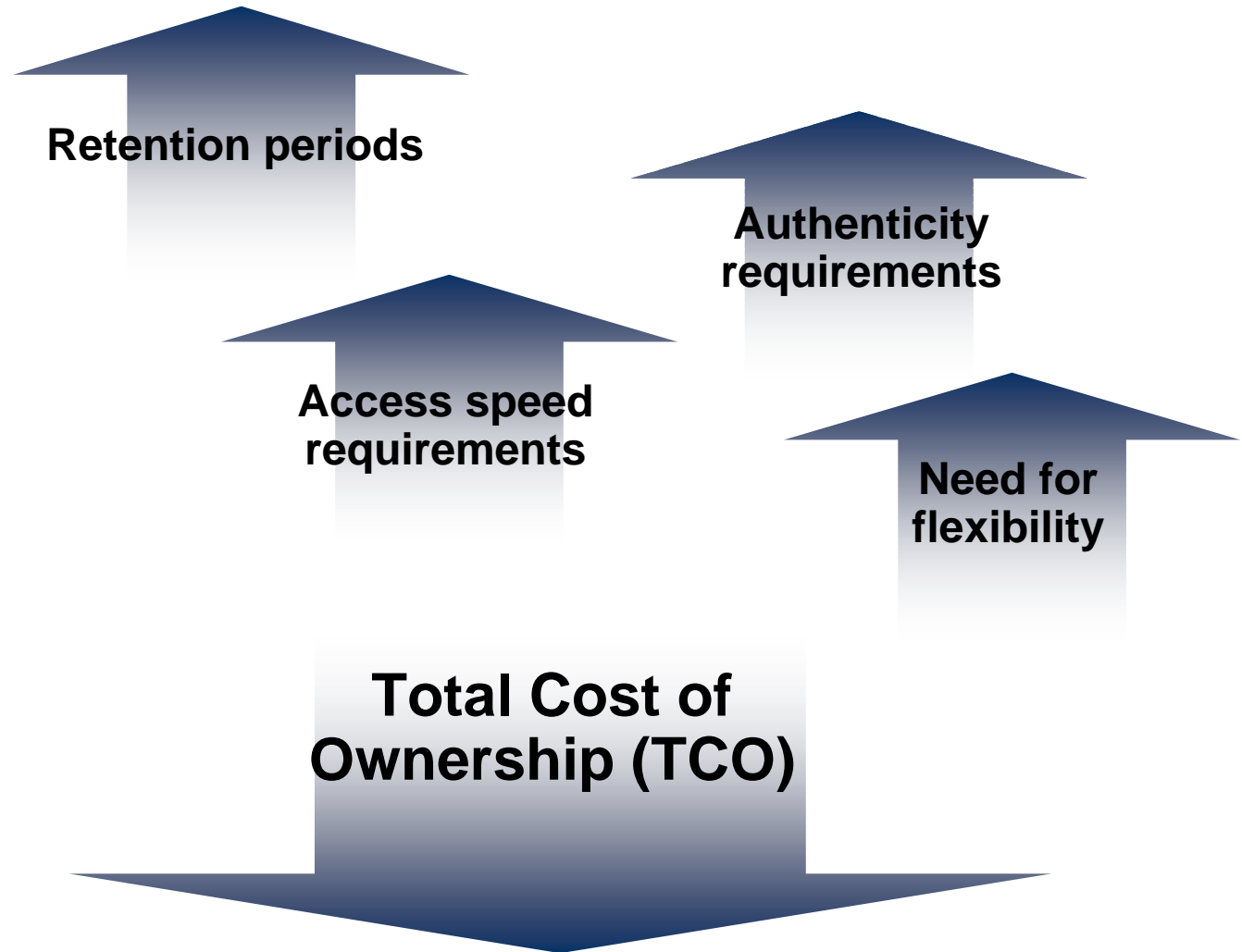


Mechanical designs Reusing design elements in a new product design dramatically speeds time-to-market as well as lowering costs

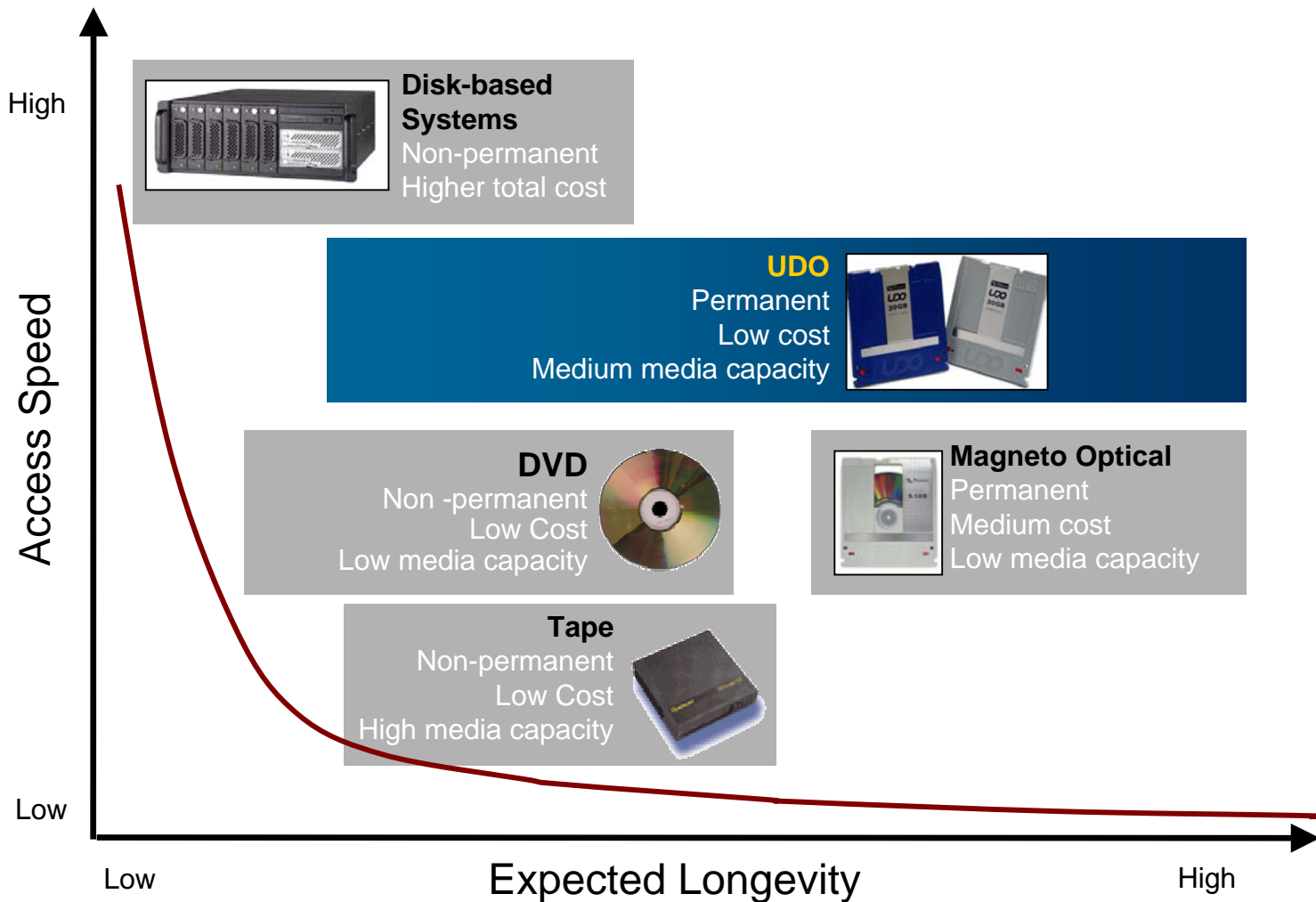


Financial trade info Using archived financial data facilitates more insightful trend analysis

Requirements Driving Archival Storage

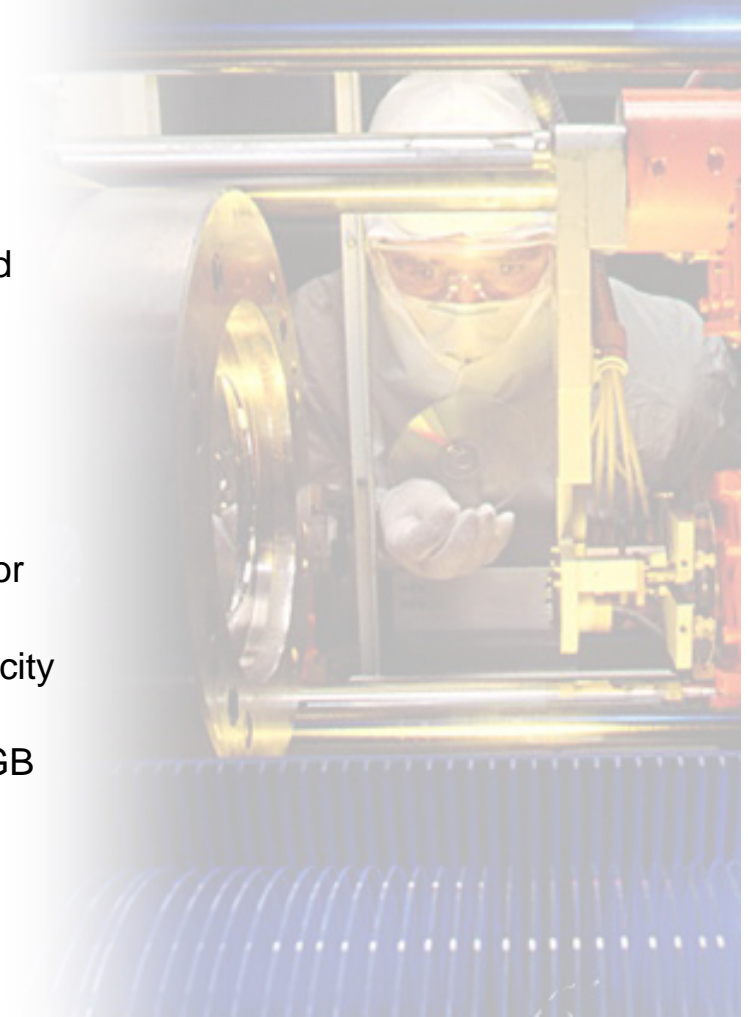


Storage Technology Positioning



UDO Technology Fundamentals

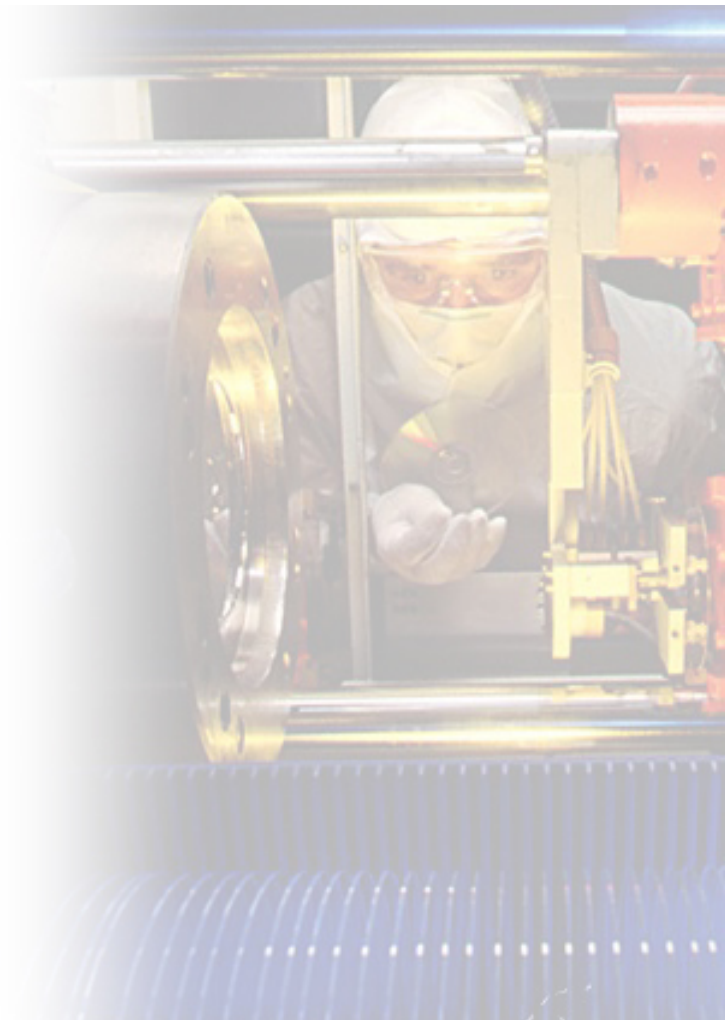
- **Phase Change technology**
 - The most secure archival storage recording technology
 - Permanent – Media life > 50 years
 - Enables true Write Once (WORM) and Rewritable (RW) media
 - Low-cost - \$2/GB vs. \$10/GB for MO media
- **New blue laser technology**
 - Provides smaller spot than red laser for greater areal density
 - 30GB initial capacity > 3x media capacity increase over DVD and MO
 - 1st generation 30GB - roadmap to 60GB and then 120GB



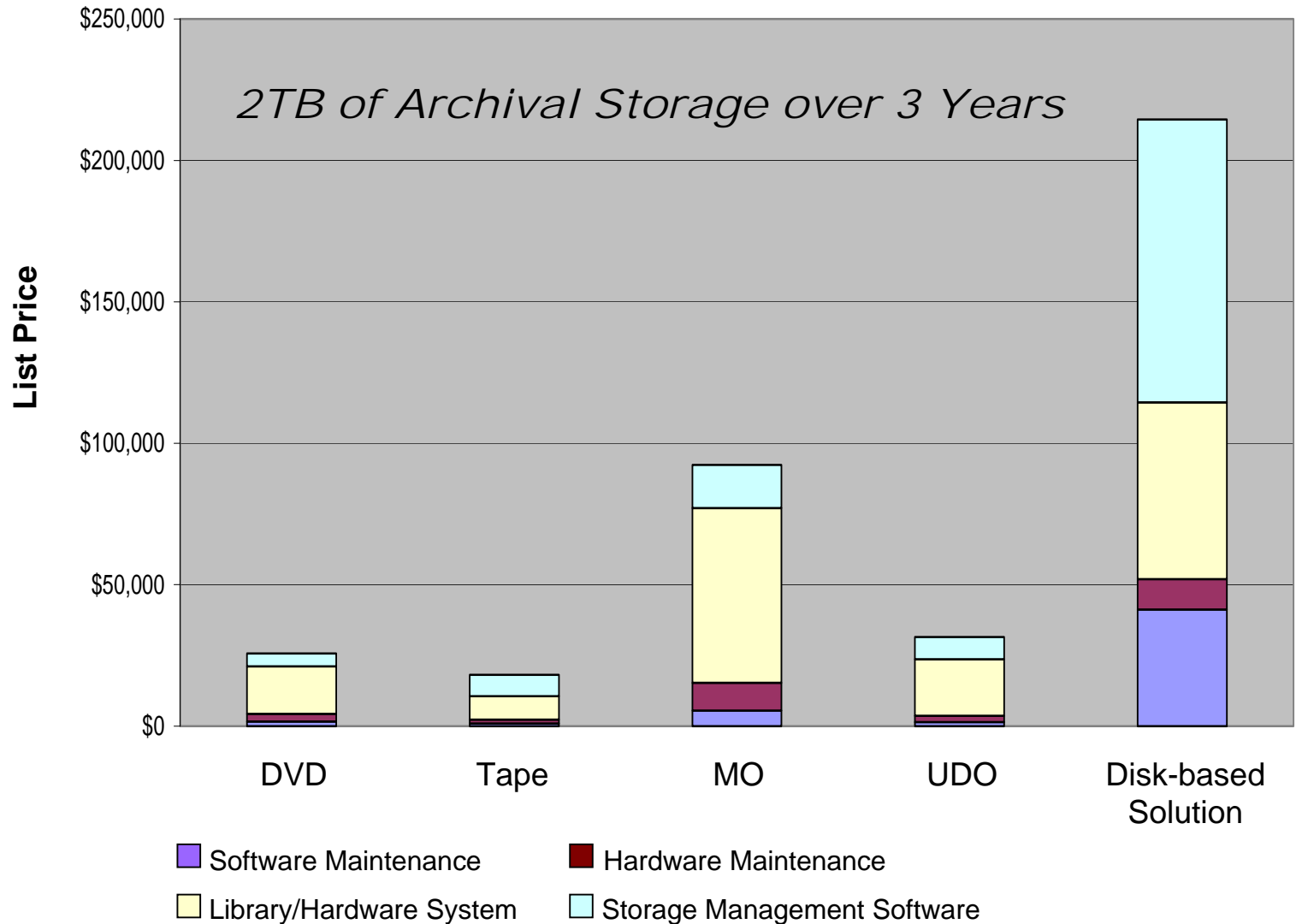
UDO Technology - Drives and Media

- **Robust professional drives**
 - Precision Pentax mechanisms
 - 750,000 load cycle rating
 - Up to 8MB/sec data rate
 - Fast 25 msec access time
 - Future generations are backward-compatible

- **5.25 inch ISO standard media format**
 - Compatible with existing libraries
 - Robust cartridge requires zero media maintenance
 - Removability enables lowest cost off-line archiving

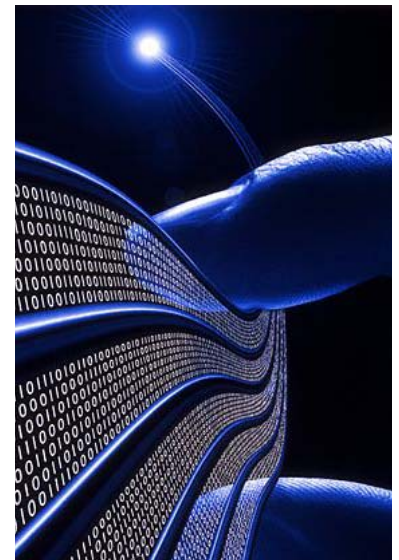


Archival Storage TCO



The Momentum Continues to Build

- Computer system vendors / Other OEMs
- System Integrators
- Third party technology providers
- ISVs
- Customers



Computer System Vendors / Other OEMs

- Plasmon
 - **Market leader**
 - **Already shipping full line of libraries**
- HP
 - **Integrating UDO in its StorageWorks Optical libraries**
- IBM
 - **Providing native support for UDO in IBM OS/400**
- Dell
 - **Currently promoting**
 - **Positions UDO as alternative to Centera for archival storage**



Medical Imaging System Integrators

- Medical SIs using DVD are ripe for professional grade archival alternative
- GE Healthcare
 - Standardized on UDO as archival solution
 - Libraries, drives (including desktop drives), media, archival appliances
 - Broad range of modalities: MR, CTI, X-Ray, Workstations, Ultrasound & others
- Siemens
 - Already standardized on UDO
 - Currently using Archive Server
- Other SIs expected to follow



SIEMENS



Technology Partners

- Verbatim
 - Formally announced UDO cross-licensing and second source relationship
 - Participating in joint marketing at AIIM and CeBIT
 - Production in Q2/Q3 2004
 - Long term partner for UDO II & III
- Pentax
 - OMA supplier
 - Ramping production
- Nichia
 - Longest Blue Laser supplier
 - Allows Plasmon to benefit from cost decreases
 - UDO is currently largest customer



UDO Business Partners

Extensive Industry Support

- OEMs and platform providers



- System Integrators



GE Medical Systems

- Third party technology providers



- Global network of distributors and VARs



UDO Software Partners

More than 25 ISVs support UDO technology

- Data life cycle management
- Direct access archival storage
- Automated data migration applications
- Vertical market solutions for Email, Banking, Document Management, Insurance, Legal, etc.

 Tivoli software

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 PEGASUS
Storage Management Software

 VERITAS®

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DIGITALE
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NETWORKS

 FILENET

 DST
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Archiving Software

 IXOS
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 LEGATO
Keeping the World's Business-Critical Information Available

 QSTAR
TECHNOLOGIES

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SOFTWARE

 NetStorage

 Plasmon

Summary

- New demands are being placed on archival storage solutions
- UDO meets the growing requirements of professional archival storage
- UDO has overwhelming industry support
- UDO is the only storage technology specifically designed for professional archival applications – and is available today!

