

Why Storage networking, What is SAN, Why Brocade

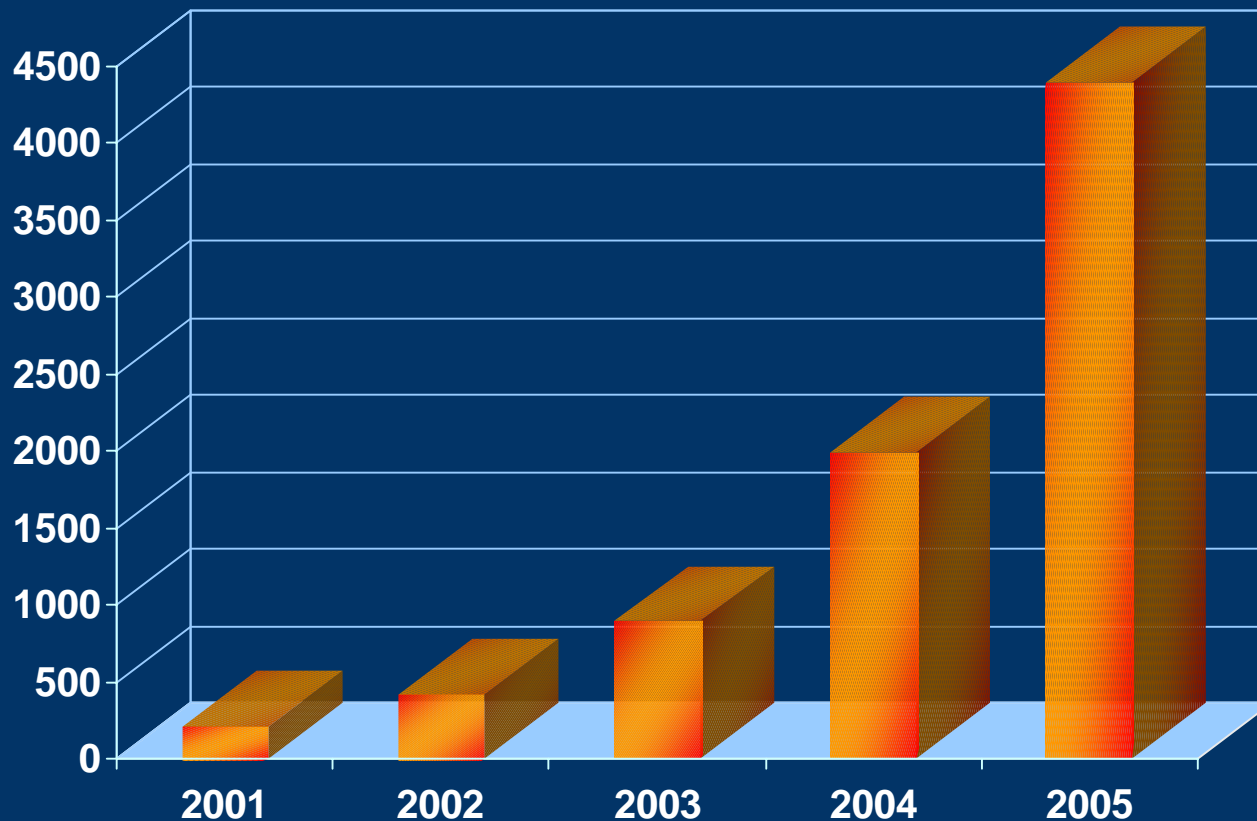


Why Storage networking



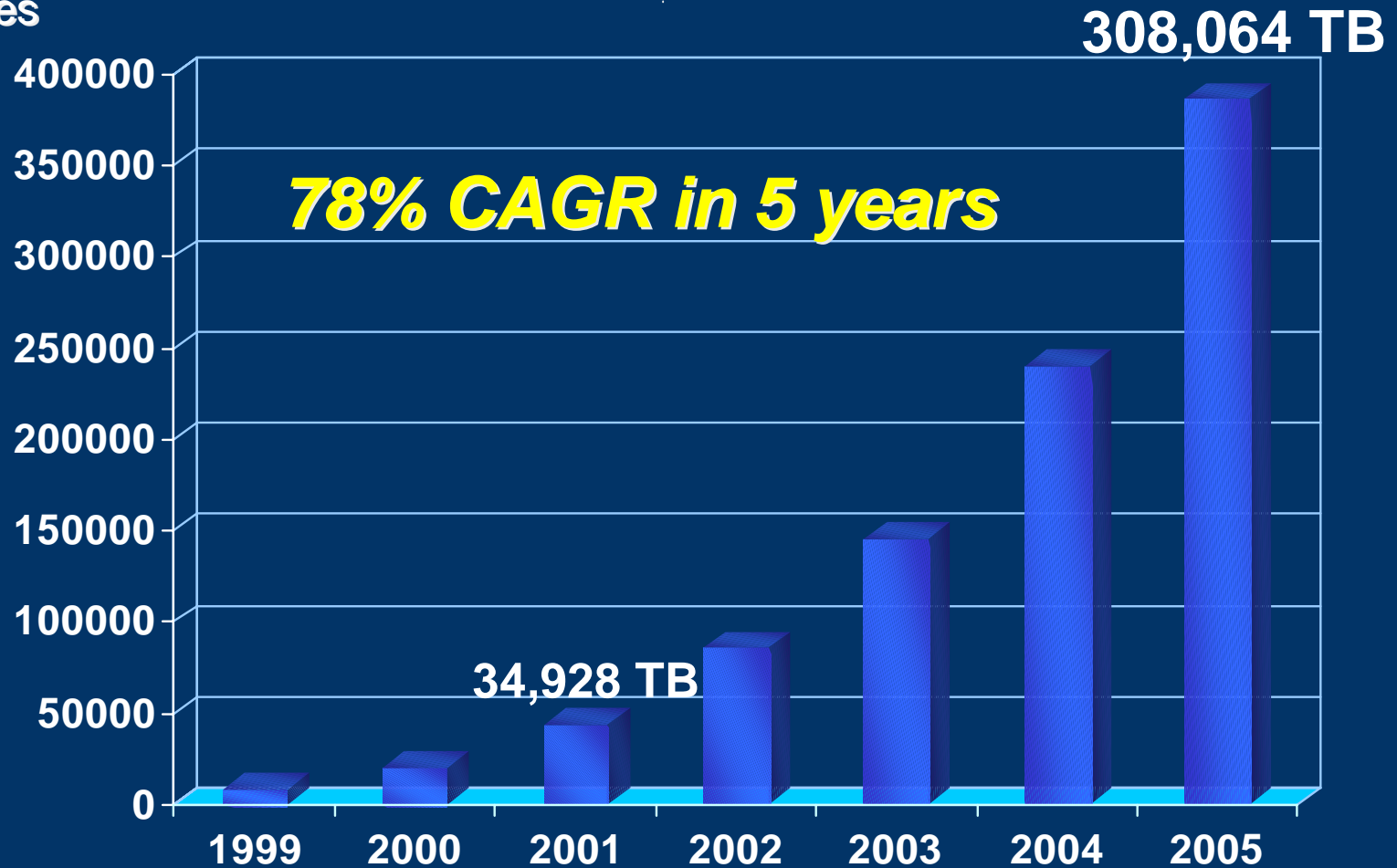
Storage Requirements are Out of Control

Nearly 4500 petabytes of external storage will be purchased in 2005 *



Strong Storage Growth in Asia Pacific

GigaBytes

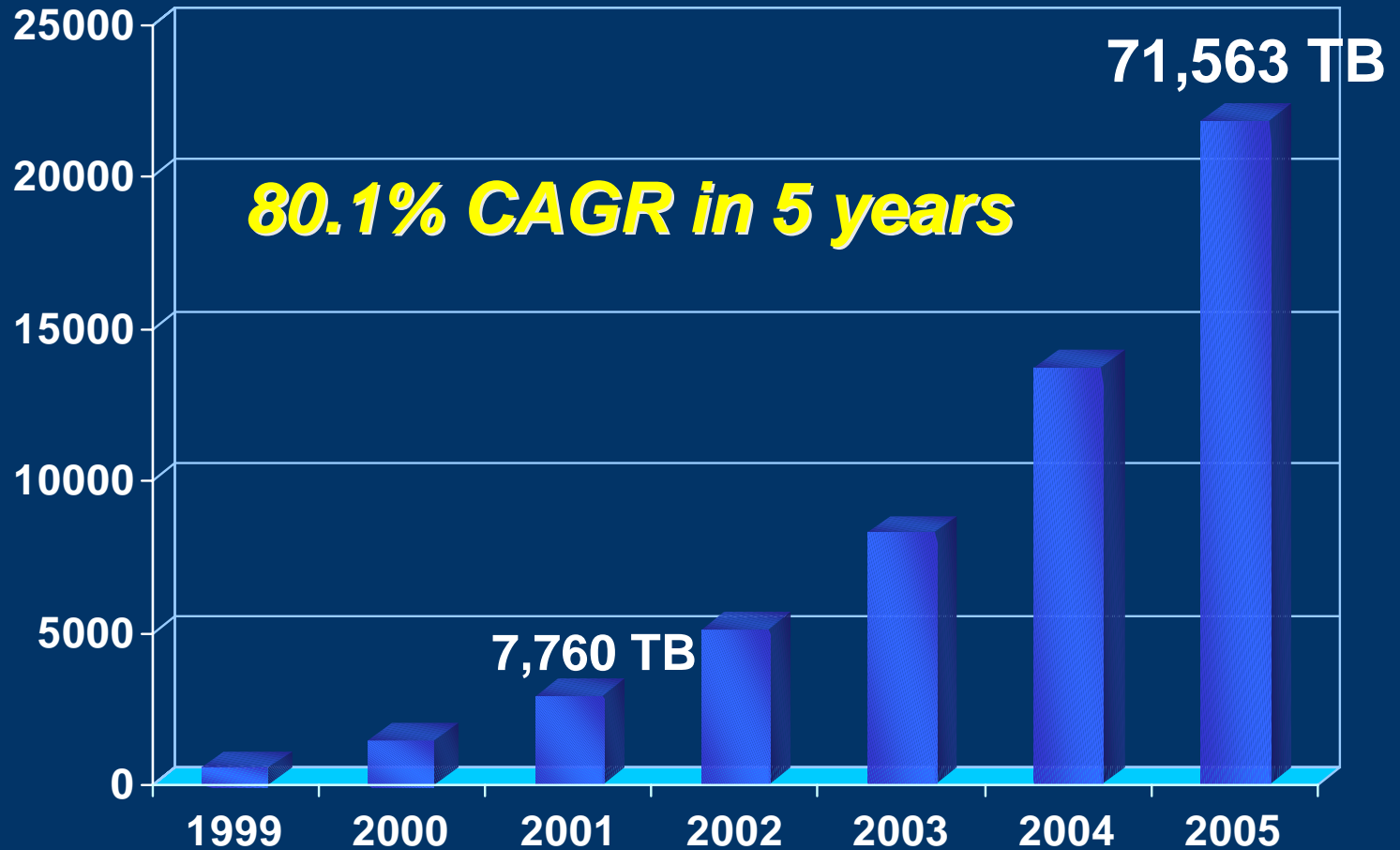


Source: IDC Asia Pacific 2001



Even Stronger Growth in Korea Market

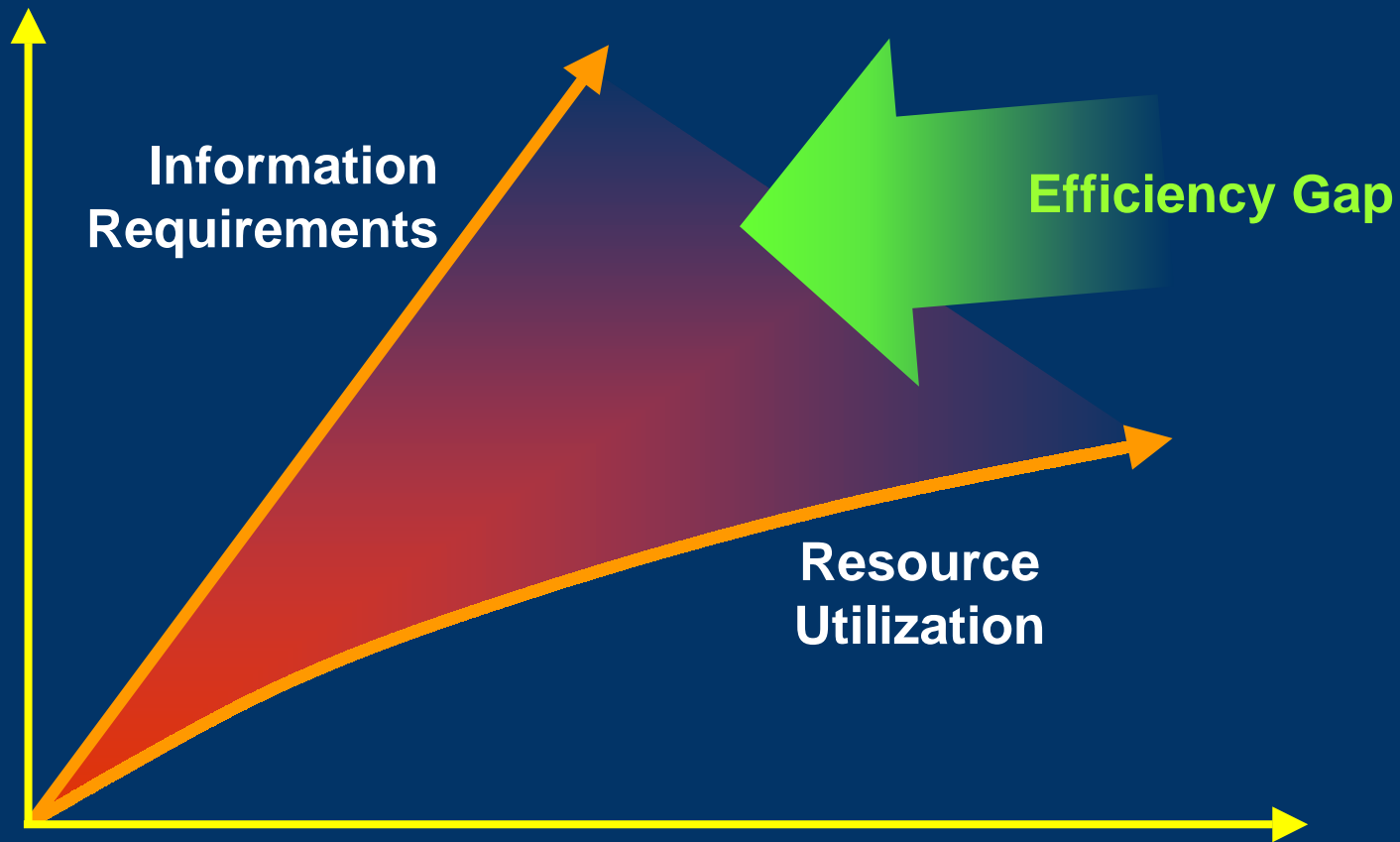
GigaBytes



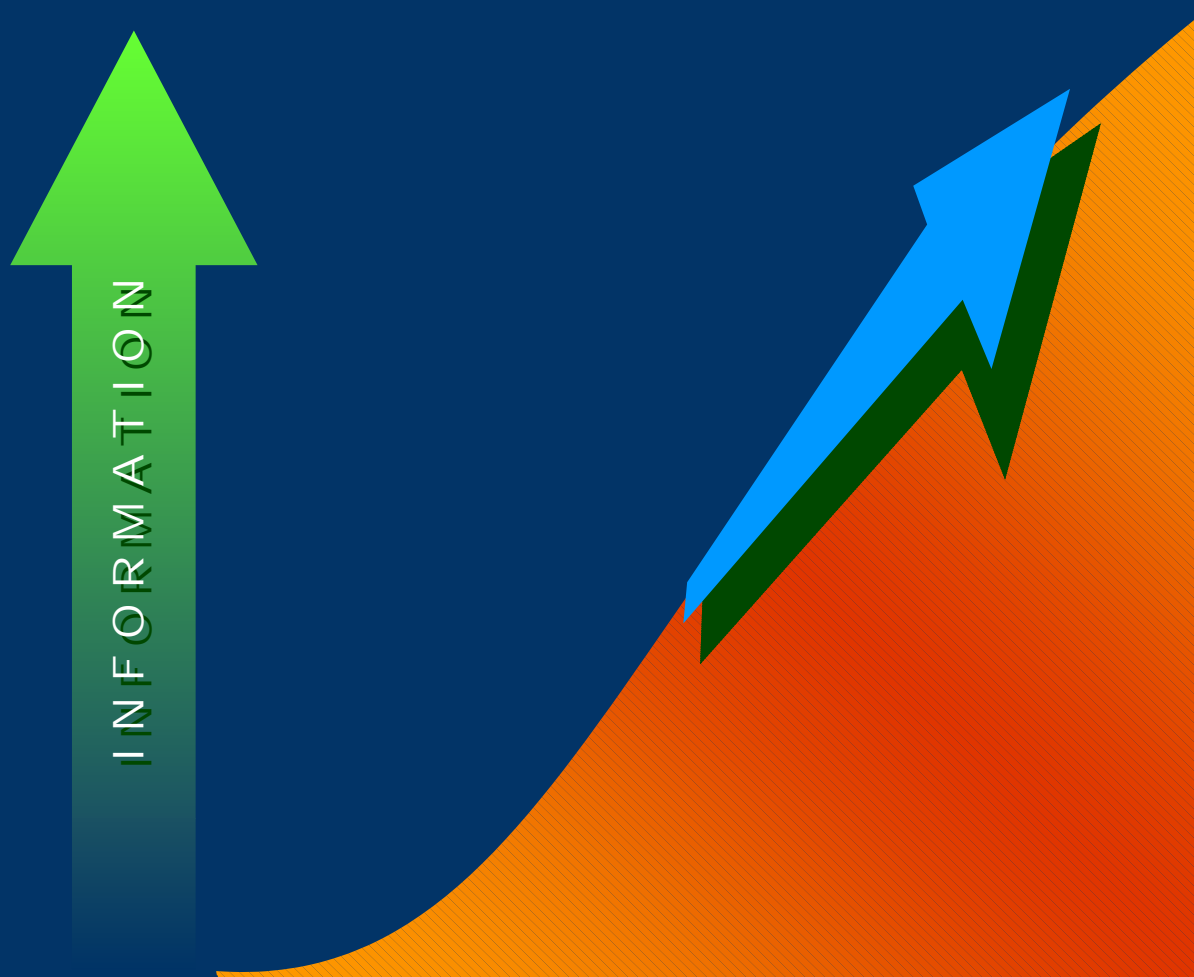
Source: IDC Asia Pacific 2001



Legacy Storage Infrastructure Creates an Efficiency Gap

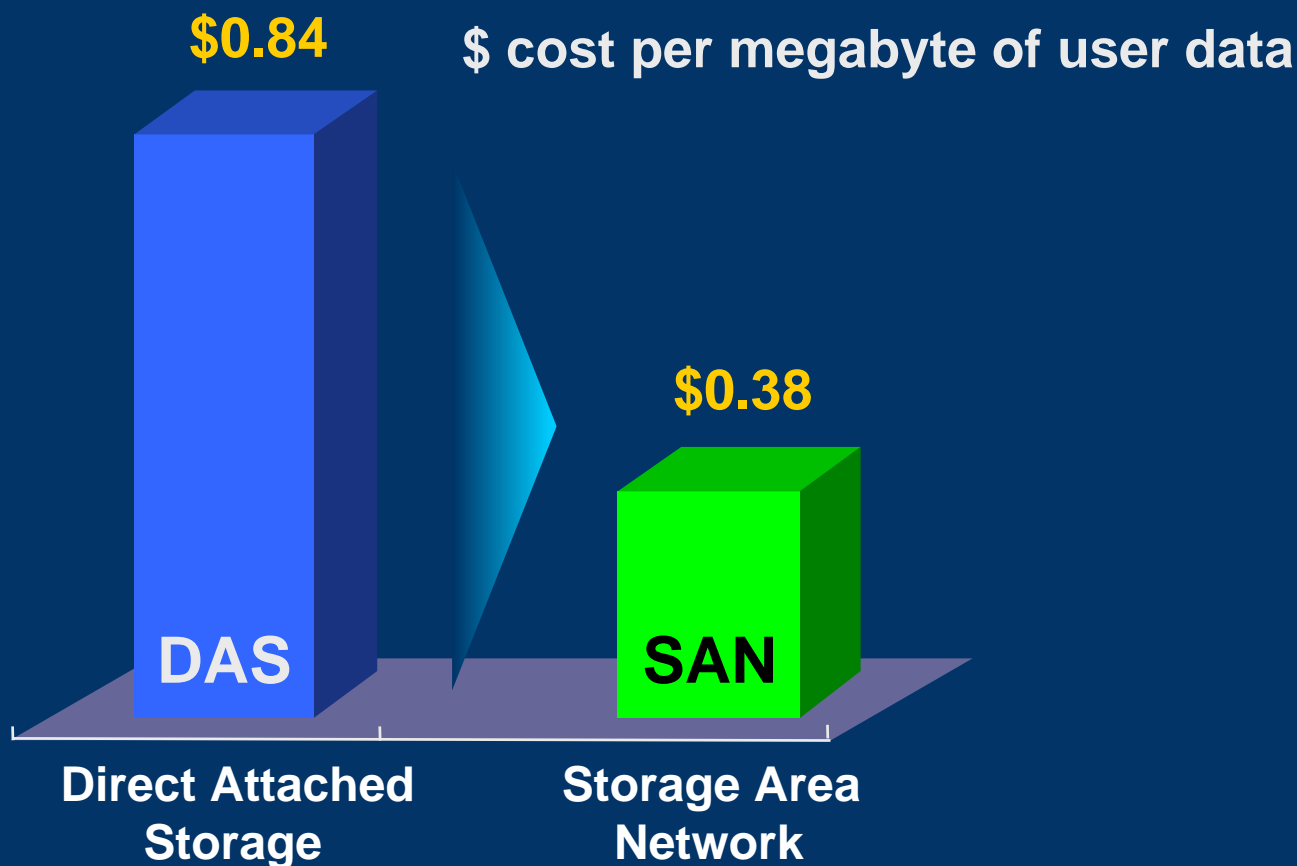


Containing Data Management Costs is Critical



**Data
Management
Costs are 5-7
times
Acquisition
Cost ***

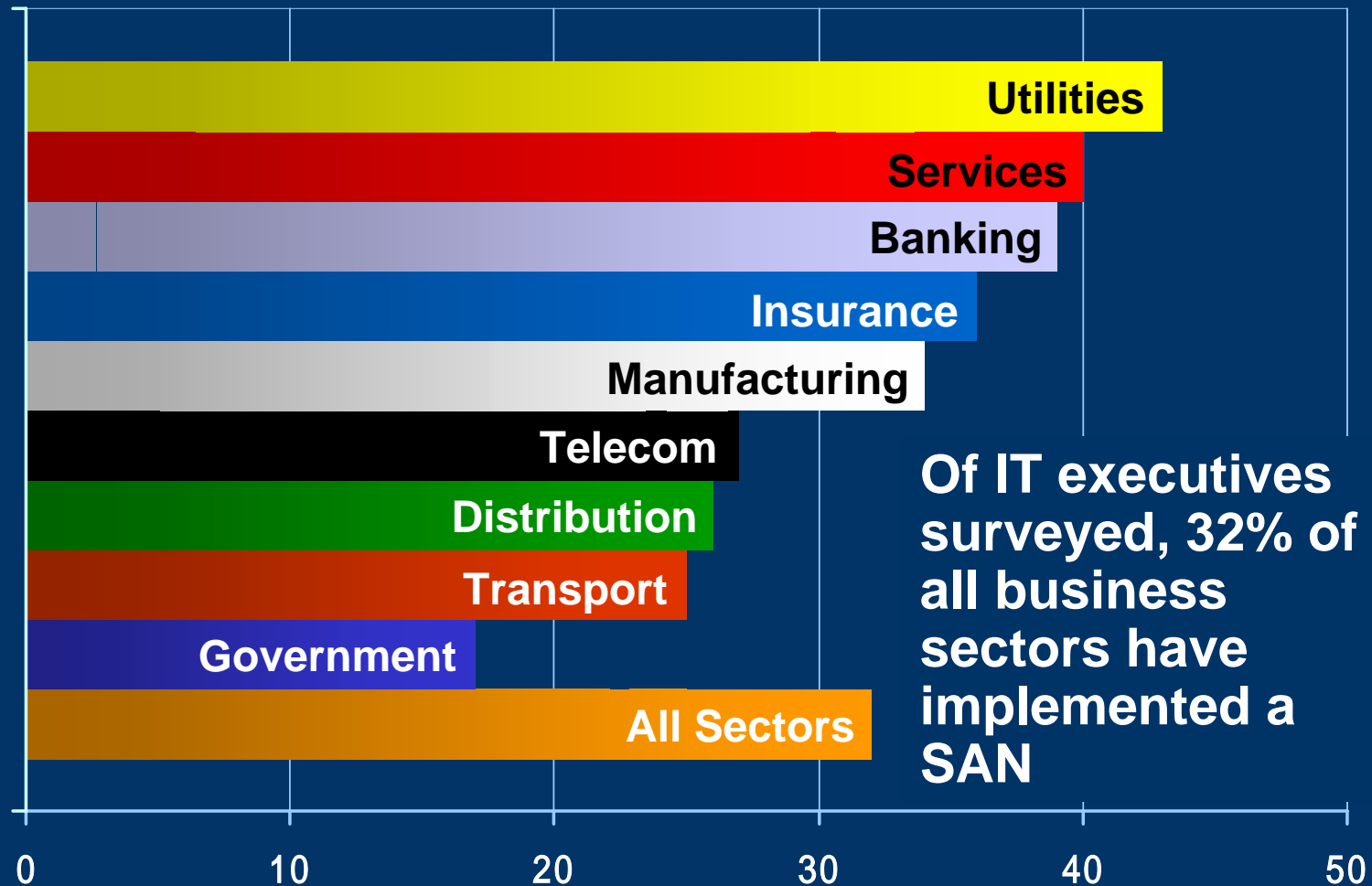
Networking Storage Halves the TCO for Storage



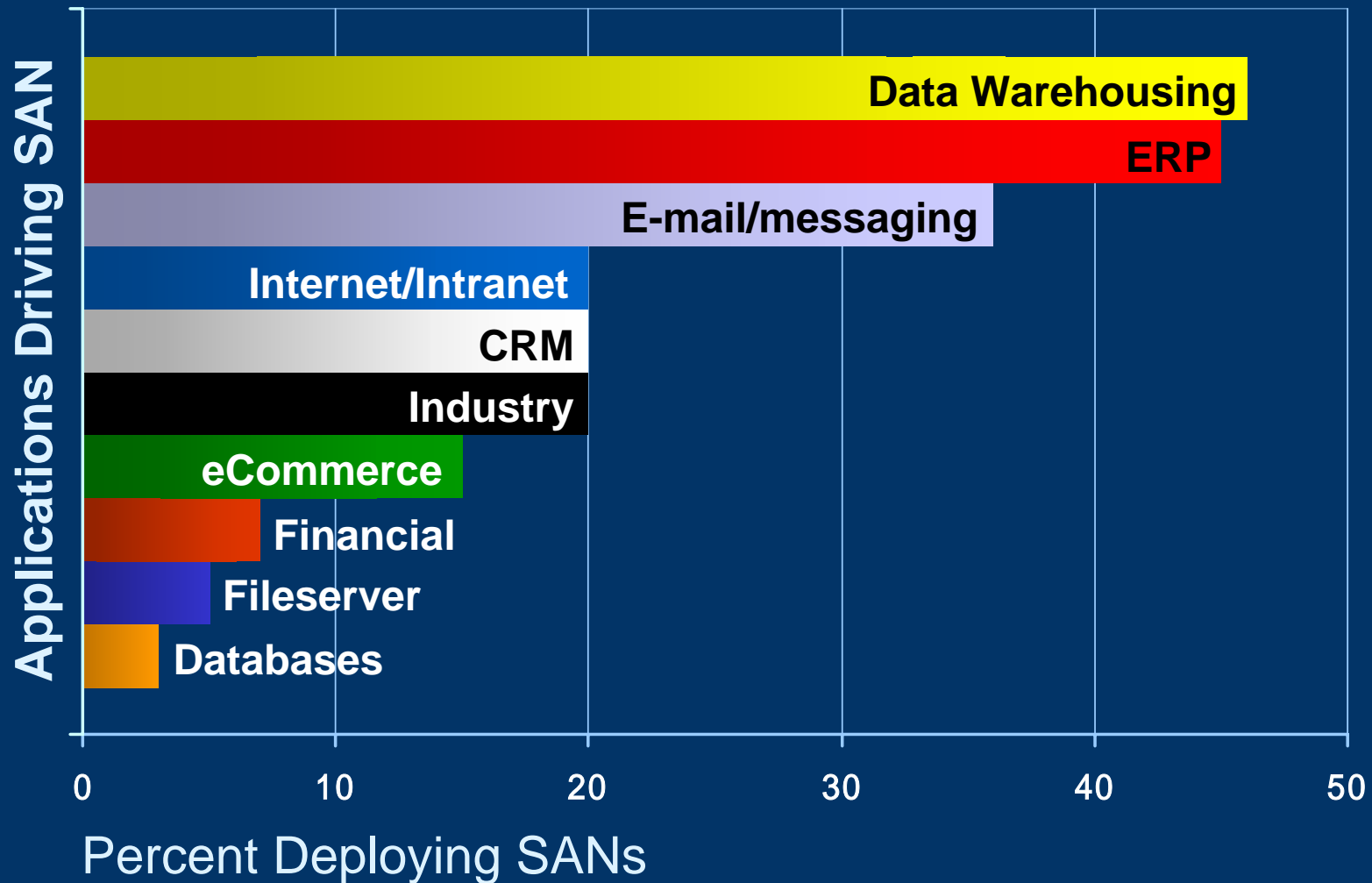
Based on a 3-Year total cost of ownership

Source: McKinsey & Company, Merrill Lynch June 19, 2001

SANs are Strategic Across all Industries



SANs are a Platform for Business-Critical Applications



The Changing Face of the Data Center

- The Business
 - 7 x 24 x 365 global operations
 - Extreme downtime costs
 - Profitability/Productivity
 - Customers' "Internet expectations"
- The Data Center
 - Heterogeneity
 - Vanishing backup windows
 - Disaster tolerance - not optional
 - ROI required!



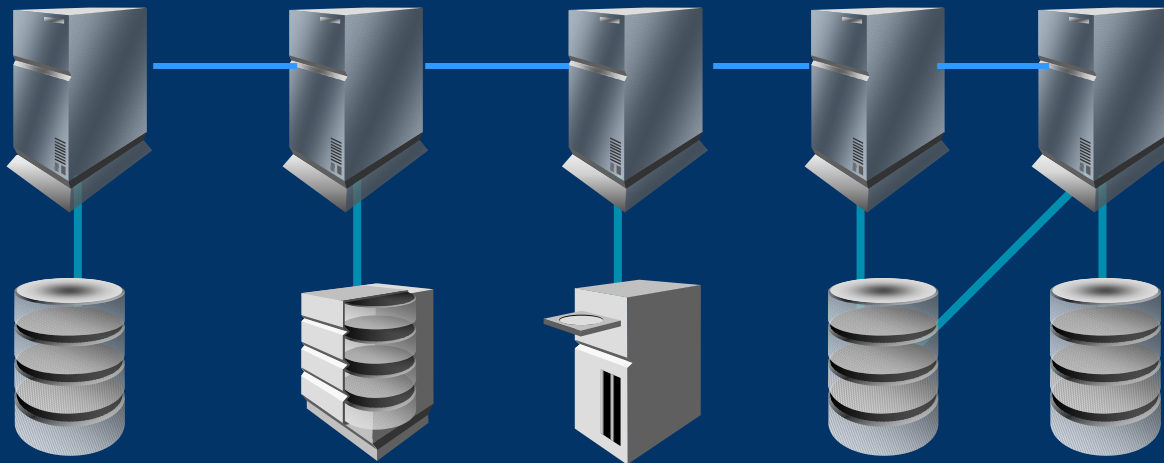
What is SAN



Direct Attached Storage Doesn't Scale

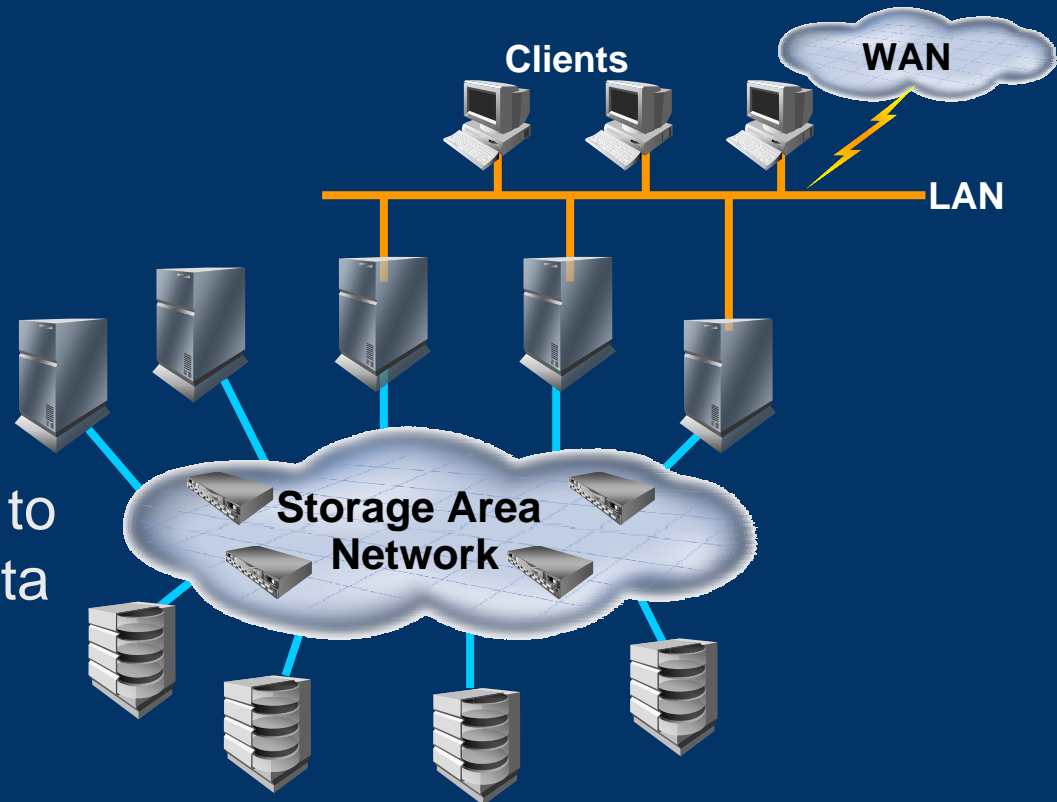
Direct-attached storage makes it hard to optimize:

- Compute resources
- Storage resources
- Bandwidth



SANs Bring Networking to Storage

- Make server and storage purchase decisions independently
- Consolidate and centralize servers and storage
- Centralize storage management
- More efficient, reliable way to backup business-critical data
- Enable high availability for applications and data
- Enable disaster tolerance



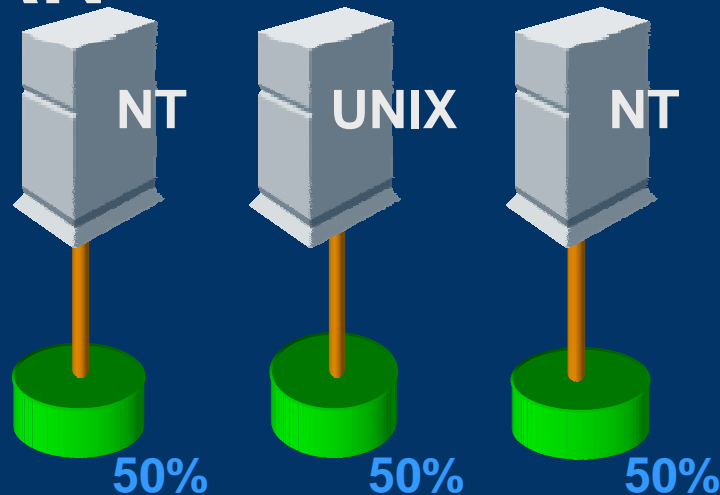
Business Value of SANs

- Benefits quantified for SAN applications:
 - Storage Consolidation
 - High Availability
 - Backup and Restore
- SAN benefits that drive financial and operational return
 - Reduced capital expenditures
 - Higher system and application availability
 - Highly scalable, flexible storage architecture
 - Enhanced ability to efficiently exploit the full value of a company's information assets



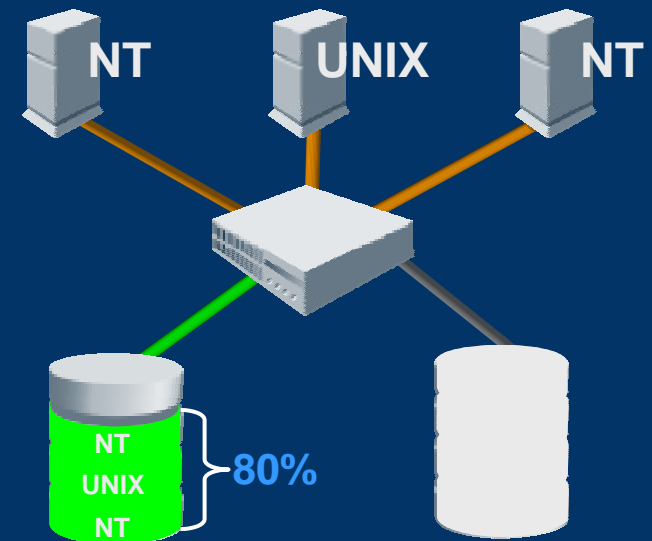
Application – Improve Storage Utilization Through Storage Consolidation

Pre-SAN



- Server attached
- >50% of storage maybe unused to allow for storage expansion (white space)

Post-SAN

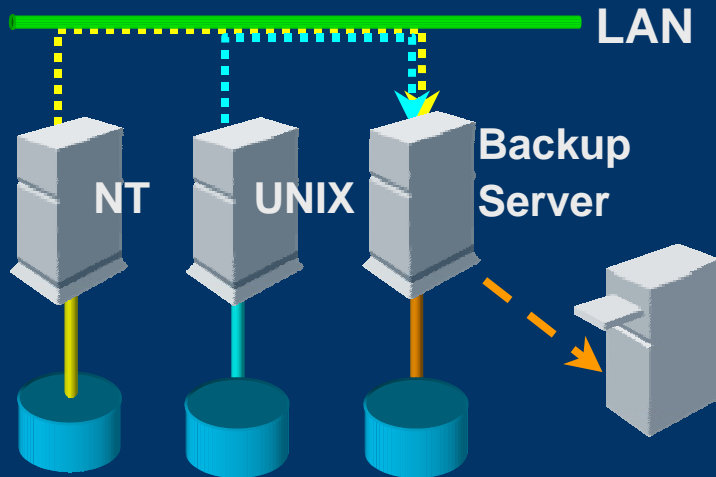


- SAN-attached storage
- Need only 20% white space for storage expansion
- Enable just-in-time storage provisioning

“Get more out of your storage”

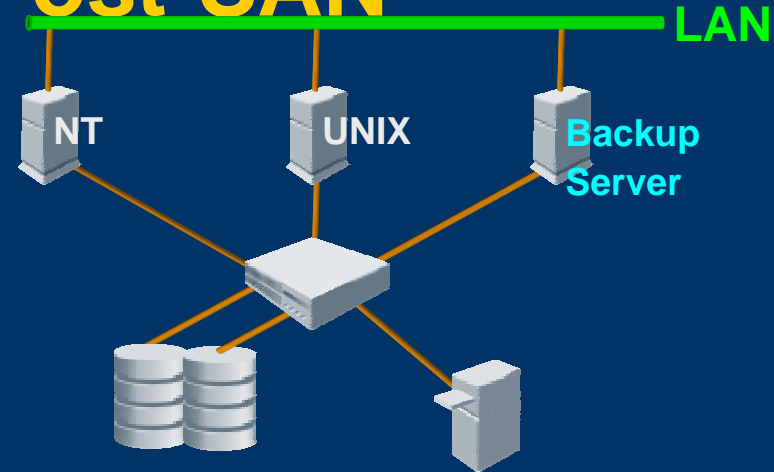
Application - Improve Availability of Enterprise Information (via SAN-based Backup/Restore)

Pre-SAN



- Backup traffic clogs corporate LAN
- Backup/Restore time is lengthy
- Application and information not available during backup/restore

Post-SAN

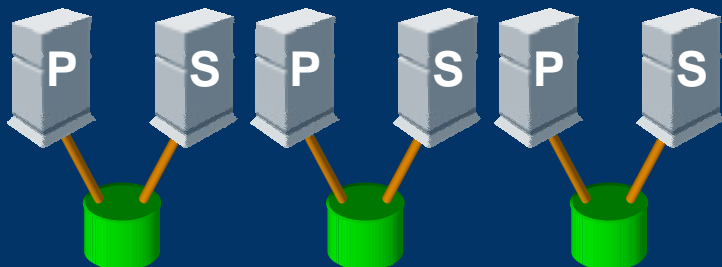


- SANs enable backups quicker than network-based or Direct-Attached
- Enterprise applications back in service quicker
- Reduced unscheduled downtime to restore lost or corrupted data
- Improves Enterprise Productivity

Availability of information keeps your business running

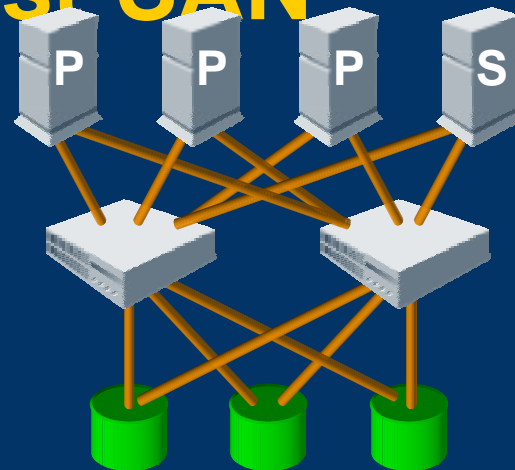
Application - Improved Availability of Mission-Critical Applications using High-Availability

Pre-SAN



- 3 mission-critical application servers
- Requires 3 standby servers
- 1:1 Fail over – Very Expensive

• Post-SAN



Highly available solutions MUCH less costly with SAN clustering

- 1 standby server can support multiple production servers
 - N:1 Fail over
- Lower capital/software costs
- Lower maintenance costs

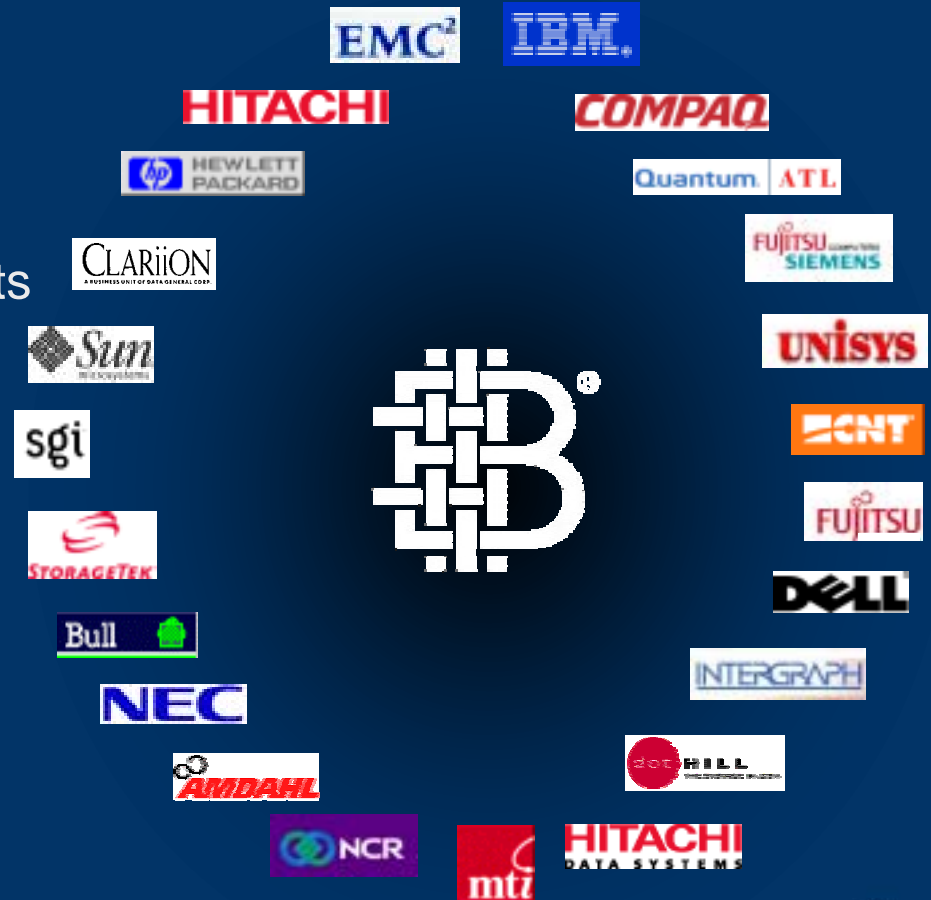
Highly available mission-critical applications at lower costs

Why Brocade



The World's Storage Networking Leader

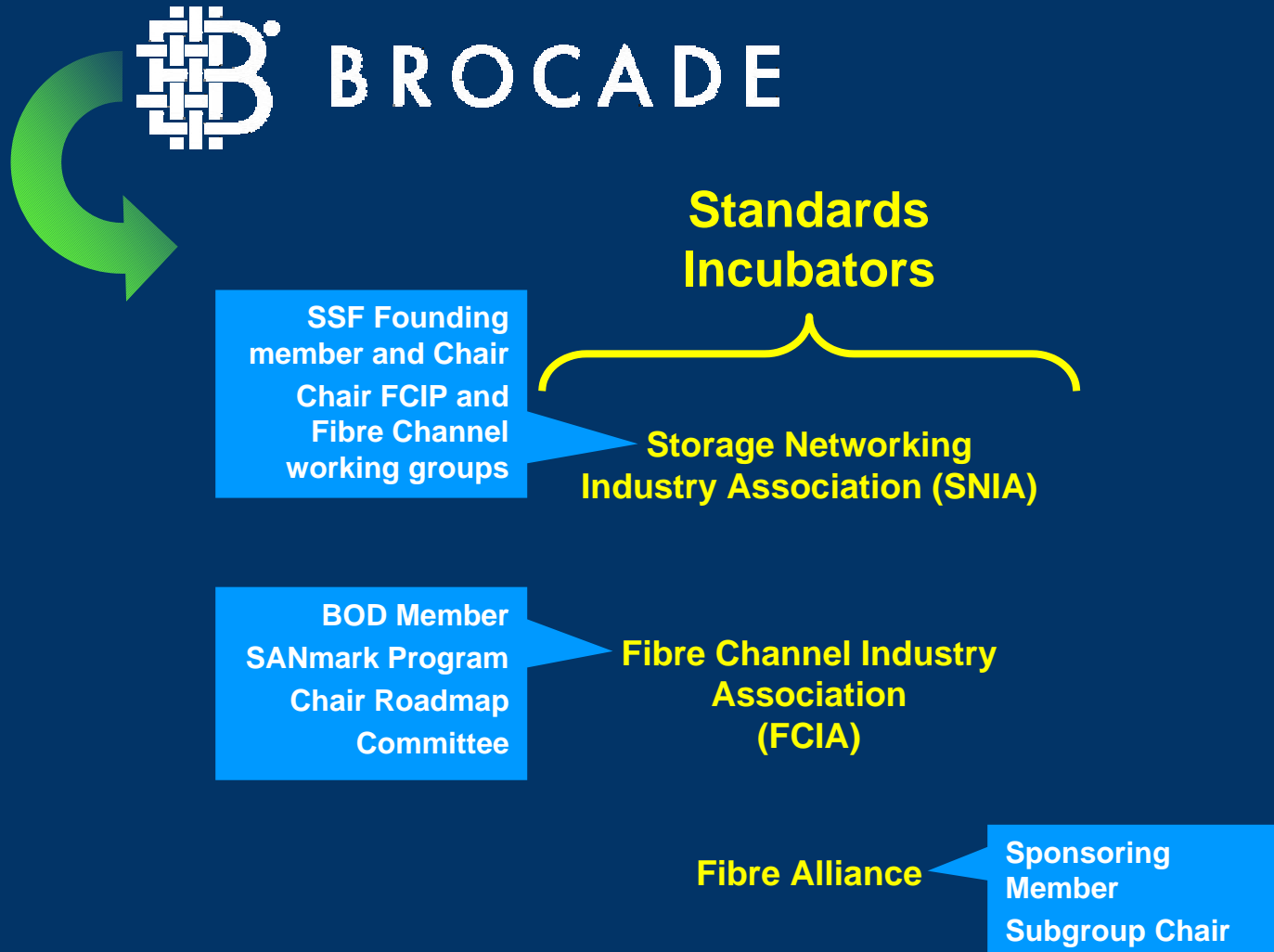
- World's leading provider of SAN infrastructure
- Partners supply 100% of world's external storage
- 1,000,000 Gigabit Fibre Channel ports shipped to date
- 90%+ market segment share: Fibre Channel fabric switches*
- 60%+ market segment share: SAN infrastructure**
- Nasdaq: BRCD - Financial results
 - FY 00 Revenue: \$329.0 million
 - FY 00 EPS: \$0.28



Investing in Customer SAN Success



Brocade Standards Contribution



Brocade Standards Contribution



Standards Bodies



Major Standards Milestones

1994

- FCA formed, Kumar Malavalli elected

Jan. 1998

- SNIA is formed
- Brocade Chairs FCWG within SNIA

Dec. 1998

- Brocade (Kumar Malavalli) elected chairman of NCITS/T11 committee

1999

- FCIA formed (as a merger between FCA and FCLC) and Brocade elected to FCIA's BOD
- 10/99: Brocade elected to SNIA BoD

June 2000

- Brocade FSPF Routing Protocol accepted by ANSI as industry standard for inter-switch routing. FSPF included in FC-SW-2, the standard for switch interoperability

Aug. 2000

- Brocade is permanent participant in FCIA SANmark interoperability program

Nov. 2000

- FC-BB standard approved by T11
- Brocade chairs FC-BB-2 group; Complementary to FC over IP
- Major contribution to FC-GS3: Management / Name Server

Dec. 2000

- Brocade selected by IBTA as Sponsoring Member

Jan. 2001

- Joined DMTF as voting member and elected to chair IB subgroup
- 6 months later introduction of IB into CIM 2.6
- Authored/co-authored majority of Fibre Channel standards

Feb-Jun 2001

- Brocade chairs FCIP Group within SNIA
- Brocade is founding member of SSF, Chairs SSF forum within SNIA
- Extending SAN standards beyond Fibre Channel

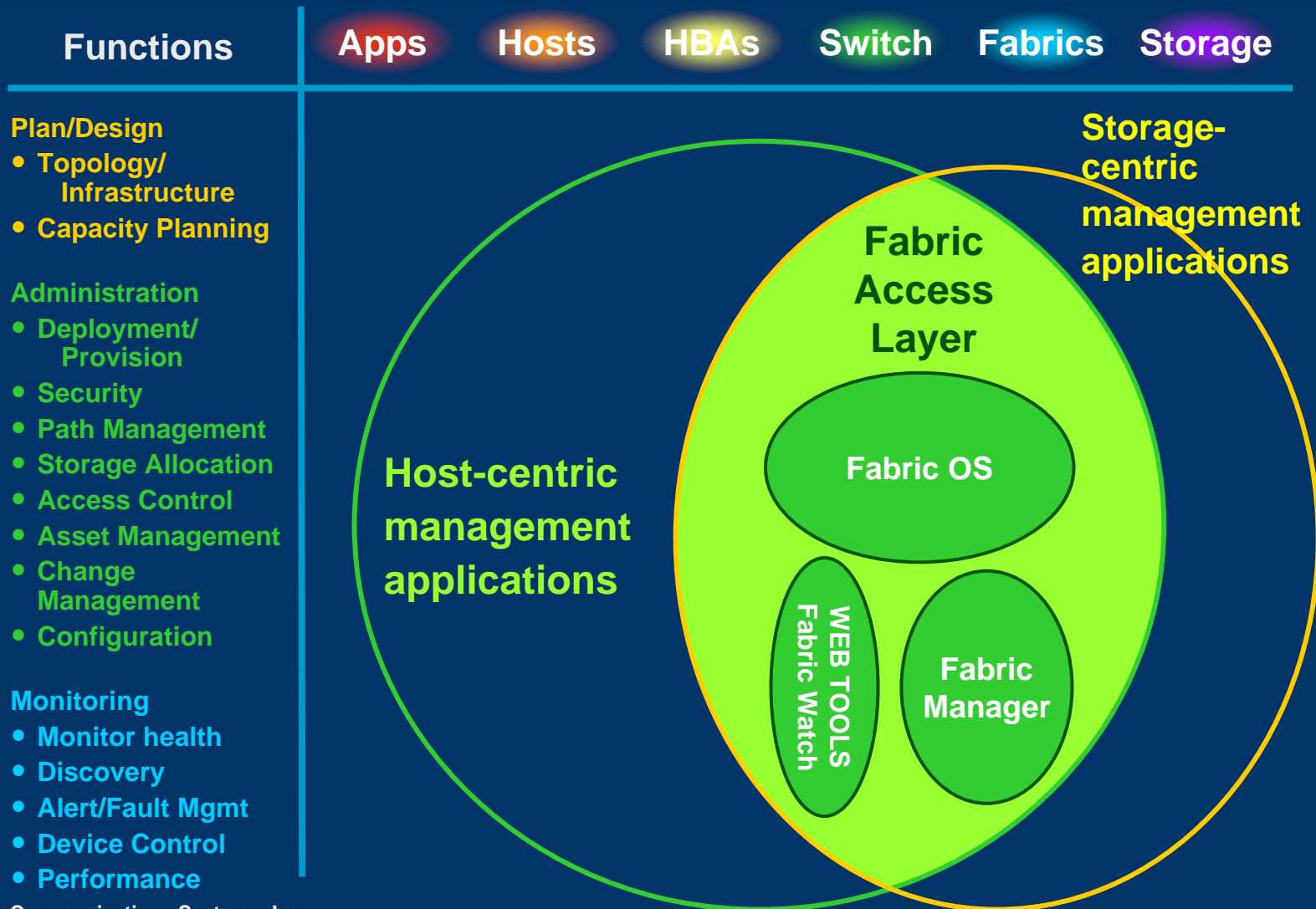


End to End Interoperability

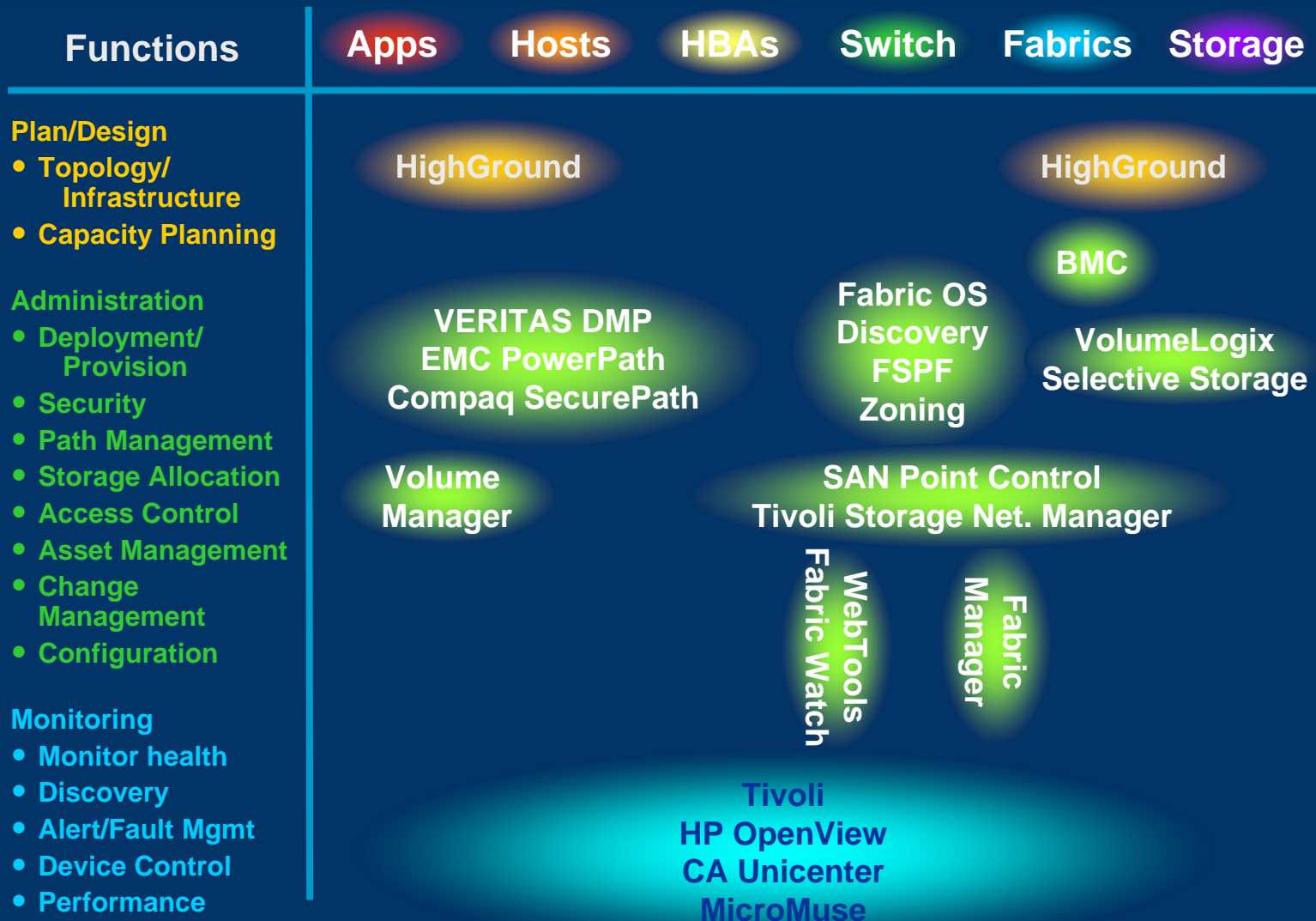
- Brocade Interoperability labs verify Brocade products with leading solutions:
 - Storage, tape, HBA, server, bridges
 - SAN internetworking: DWDM, IP, ATM
 - Storage and SAN applications
- Fabric Aware program
 - 40 partners committed to verifying compatibility with Brocade
- SOLUTIONware library
 - 50 reference guides: verified configurations speed SAN implementation
 - Available free from Brocade website



Enabling Integrated End-End Management

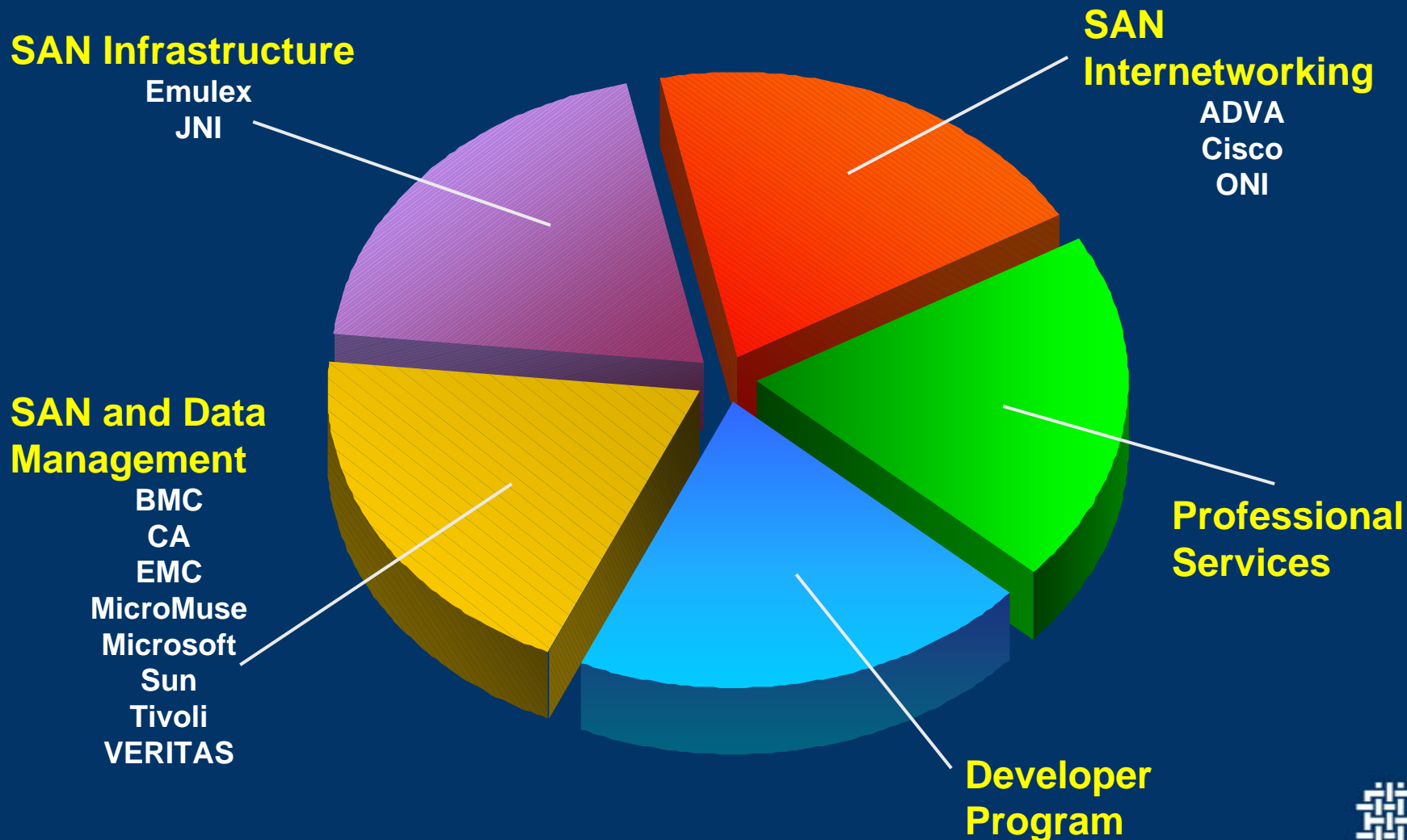


Network Storage Management Patchwork



Global Alliances

Enabling Better Solutions Through Partnerships



Global Alliances

Enabling Better Solutions Through Partnerships

Professional Services



SAN and Data Management

BMC
CA
EMC
MicroMuse
Microsoft
Sun
Tivoli
VERITAS

SAN Infrastructure

Emulex
JNI

SAN Internetworking

ADVA
Cisco
ONI

WAN



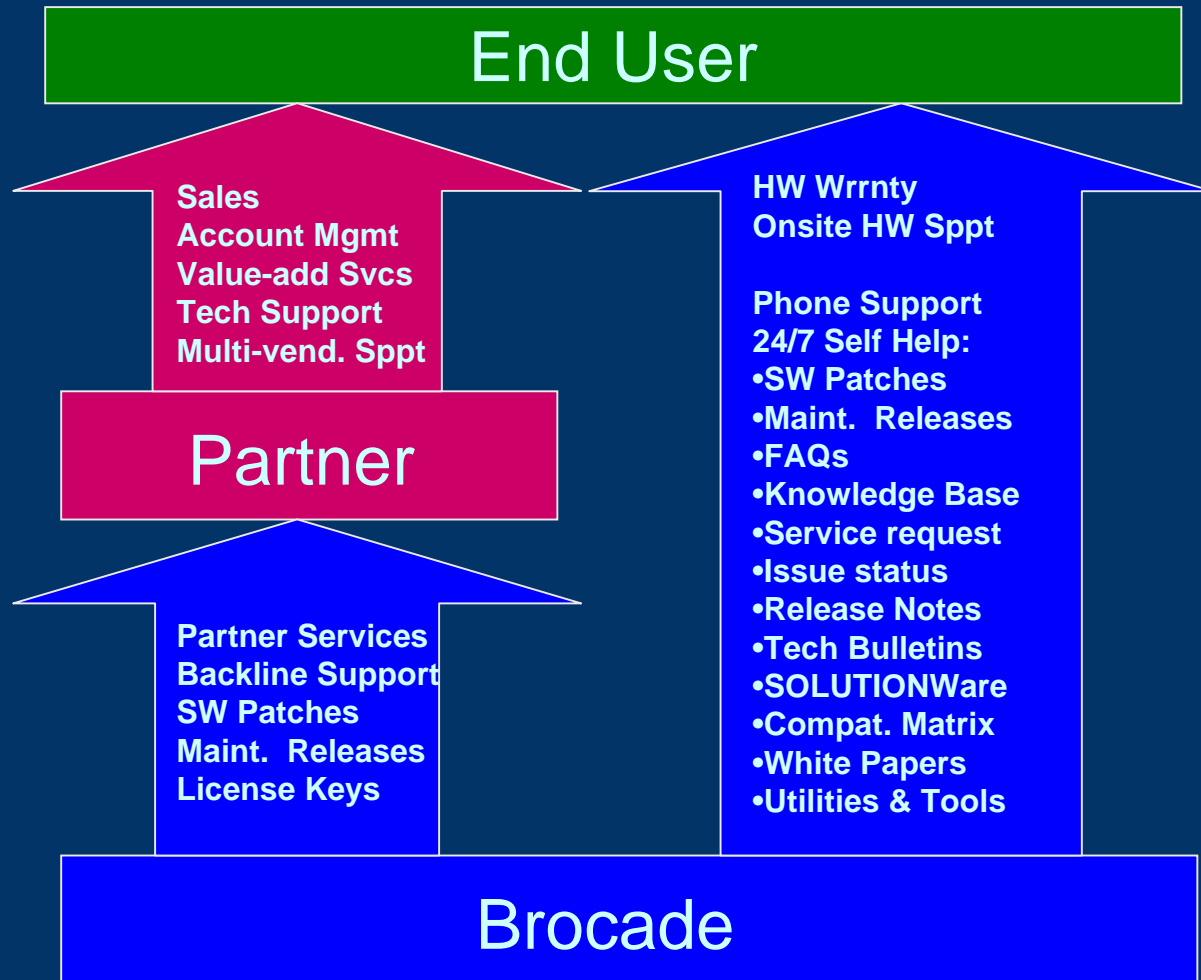
Support Services

Available to sell today:

- Flexible, complementary service options
- New and Improved Brocade Service Plans
- Expanded capacity, geography
- World class infrastructure



Complementary Service Options



New and Improved Brocade Service Plans

Brocade Service Plan	Brocade Global Technical Assistance		Software Releases	Hardware Repair/ Replace
	Telephone Hotline	Web Support & Knowledge Base		
Standard	9/5 Full Access	Unlimited 24/7 Access	Bug Fix Releases Maintenance Updates Feature Updates	NBD Onsite with parts
High Availability	24/7 Full Access	Unlimited 24/7 Access	Bug Fix Releases Maintenance Updates Feature Updates	4 hour Onsite with parts
Mission Critical	24/7 Full Access	Unlimited 24/7 Access	Bug Fix Releases Maintenance Updates Feature Updates	2 hour Onsite with parts

See Brocade's terms and conditions for Service Plans, available at www.brocade.com, for important details.



Service Plan Features

- Designed for Brocade Fabric Partners to offer to your customers
- Access to Brocade WorldWide Support Services
- SW Maintenance releases and patches
- Published service level objectives and escalation paths
- 24x7 coverage
- Web, e-mail and telephone access
- Online Self Help
 - Submit service requests, check status
 - Web distributed patches/fixes
 - Software maintenance releases (V.RR.MM)
 - Online Knowledge Base
 - Compatibility matrix, SOLUTIONware, white papers
 - Release notes/technical bulletins
 - Documentation



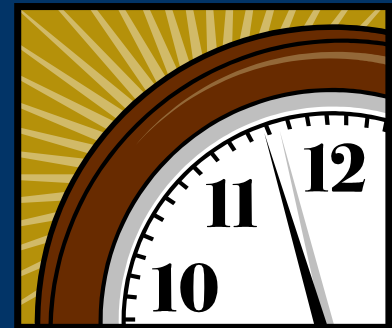
Expanded Capacity, Geography



Global

- Over 240 Field Service locations in 27 countries
- 2 Call Centers - San Jose and Geneva
- Planned expansion to Asia/Pacific Q1 2002

7x24 Coverage



Education and Certification

Available to sell today:

- Comprehensive education curriculum
- Industry-leading certification program
- Flexible delivery options



Brocade Education Services

- Brocade and our education partners provide industry-leading SAN education services for IT professionals
 - Experienced instructors in hands-on lab environments
 - Broad curriculum teaches SAN best practices
 - From SAN 101 to SAN assessment and design
- Certification program for IT professionals
 - Certified Fabric Professional
 - Certified SAN Designer
- Mobile units for on-site training
- Customized training available

Contact www.brocade.com/education_services



Flexible Education Options

- Brocade education centers

Atlanta

Denver

Geneva

Austin

San Jose

- Every course 50%+ hands-on
- \$400k+ lab facility provided for each class
- Fabric Partners earn margin for reselling Brocade Education
- On-site, custom courses
 - Brocade supplies equipment, materials and instructor
 - Fabric Partners also earn margin selling custom courses

For more information on reselling Brocade Education, contact your Master Reseller or Brocade Education



Brocade Certification Program

Brocade Certified Fabric Professional

- Installation, configuration and troubleshooting various Brocade solutions
- Recommended classes to prepare for exam
 - FCH150: Fibre Channel Fundamentals
 - SWT250: SilkWorm Administration and Theory of Operations
 - SWT300: SilkWorm Diagnostics and Troubleshooting
 - *or* CFP200: Accelerated BCFP Certification Track



Brocade Certification Program

Brocade Certified SAN Designer

- SAN design and expertise in implementing complete SAN solutions
- Recommended classes to prepare for exam
 - SAN100: SAN Components
 - SAN200: SAN Design and Assessment
 - SAN300: SAN Applications



Professional Services

- Brocade certified Professional Services Providers
 - Proven methods and configurations
 - Professional project management
 - Top tier technical experts
- Capabilities
 - SAN needs assessment and ROI analysis
 - SAN design, architecture, implementation
 - Storage infrastructure management
 - Project planning and management

Contact profservices@brocade.com



Direct Benefits for Partners

- Give customers what they want – sell a total solution
- Complementary, flexible choices – pick and choose where you want Brocade to back you up
- Focus resources on core business strengths
- Leverage Brocade's industry-leading expertise
- Incremental revenue on new sales
- Service-level upgrades to sell to existing customers
- New margins without associated cost of delivery
- Scale service capacity without adding infrastructure
- Leverage Brocade to service larger geographies



Fabric Partner Benefits - Build Competency

- Brocade Partner Network Web site
- Education and certification benefits
 - Discount off Brocade education courses
 - Limited 90-day 20% education discount for *new* Partners
 - On-site education pricing
 - Margin on education sales to End User customers
 - “Get Certified” incentive
 - Brocade University
 - Quick Facts guide, SAN Basics guide, product launch kits
- Demo equipment program



Brocade Partner Network

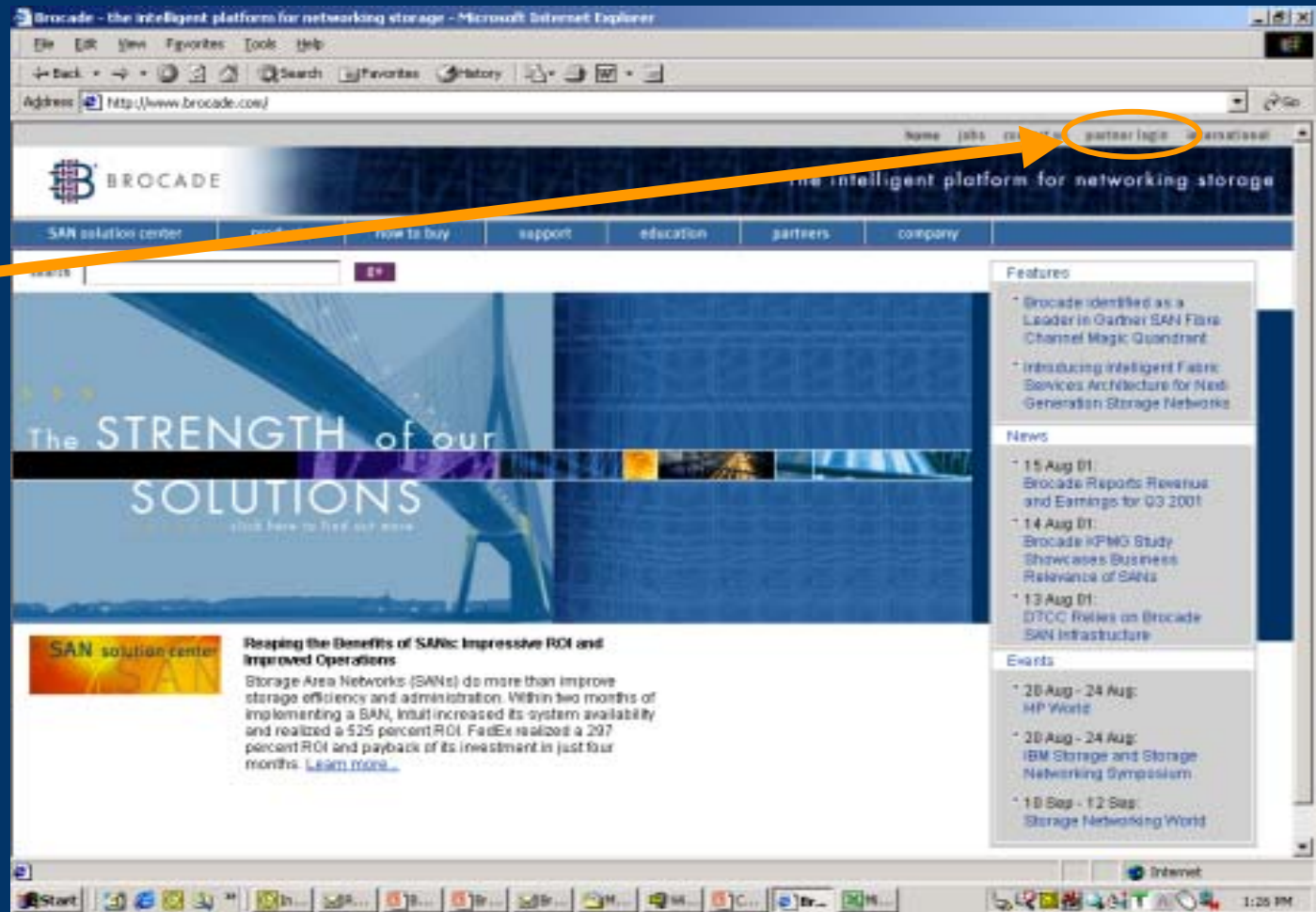
- Online Collateral Ordering
- Compatibility Matrix
- Archived Webcasts
- Press Releases
- Sales incentives
- Best Practices Guides
- Product documentation
- Channel Threads e-newsletter
- PRM
- Logos and Product Shots
- Brocade Funds Guidelines
- Datasheets & White Papers
- Price Book Download
- Firmware Downloads
- Equipment Maintenance Programs
- Sales Presentations
- Solutionware

Send questions to channel@brocade.com



Brocade Partner Network

Click here
to get to
login
page



Brocade Partner Network

- Login here
- ID request info

Brocade - the intelligent platform for networking storage - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites History

Address entForm/login.fc?TYPE=33554433&REALPID=06-3ee07e5-7e40-810e-0000-4fc100004fc1&SUID=8SPWUT&REASON=06&TARGET=http://partner.brocade.com/2010/index.html

Name www.brocade.com 44815 log out

B BROCADE Brocade Partner Network

Login

User ID:

Password:

Log In

To Request a User ID and Password

If you are a current Brocade Partner, please e-mail your request to partnerweb@brocade.com with the following information:

- first name
- last name
- company name
- name of Brocade Partner Program your company participates in
- e-mail address

Note: This site uses public/private key one way encryption based on RSA Security's [MD5](#) hash to protect your password and interaction with this site.

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For comments regarding our website, email webmaster@brocade.com

legal privacy The intelligent platform for networking storage

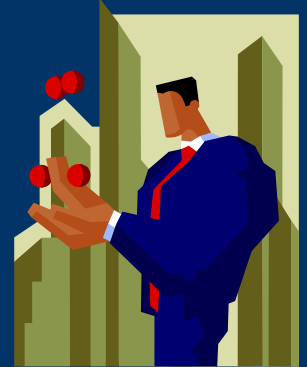
Done Internet

Start Taskbar icons 1:31 PM



Fabric Partner Benefits – Demand Generation

- Marketing tools
 - Brocade Campaign Guide
 - Direct marketing materials/messages
 - Web-orderable collateral
 - Brocade presentations
 - Company name listed on www.brocade.com
- Qualified leads
- Brocade promotions/campaigns
- Additional benefits for Elite or Premier partners
 - Brocade Funds
 - Joint advertising and press releases
 - Joint marketing planning (Elite)



Fabric Partner Benefits – Sales Support

- Pre-sales support materials on Brocade Partner Network
- Brocade Channel Sales team
- Brocade SOLUTIONware resources
- Competitive Guide
- Additional benefits for Elite partners
 - Brocade ROI tool and training
 - Brocade Authorized Education Partner



Customer Case Studies

- Named Customer Case Studies
 - Coming soon: DTCC, Fossil Watch, TerraServer, SunCorp Metway, MGM/Mirage, Loudcloud, Canada DOF
- Anonymous Customer Case Studies
 - Reference Architectures

BROCADE Enterprise SAN Solution

Industry Banking and Finance

Software Disaster Tolerance and High Availability

Challenge: One of the world's leading banks required a SAN-based storage architecture that could support its 100,000 users and 10,000 servers. The architecture had to be scalable, flexible, and able to support a wide range of applications and data types.

Solution: The bank implemented a SAN-based storage architecture that provided high availability and disaster tolerance. The architecture was designed to support a wide range of applications and data types, and it was able to scale to support the bank's growing needs.

Benefits:

- Increased data availability and disaster tolerance
- Reduced risk of data loss and downtime
- Improved performance and scalability
- Simplified management and operation

Computer Graphics

High Performance and Scalability

Challenge: A leading computer graphics company required a SAN-based storage architecture that could support its 10,000 users and 10,000 servers. The architecture had to be scalable, flexible, and able to support a wide range of applications and data types.

Solution: The company implemented a SAN-based storage architecture that provided high performance and scalability. The architecture was designed to support a wide range of applications and data types, and it was able to scale to support the company's growing needs.

Benefits:

- Increased performance and scalability
- Reduced risk of data loss and downtime
- Improved management and operation
- Simplified management and operation

Success: Memory-intensive Backup

Challenge: A leading backup company required a SAN-based storage architecture that could support its 10,000 users and 10,000 servers. The architecture had to be scalable, flexible, and able to support a wide range of applications and data types.

Solution: The company implemented a SAN-based storage architecture that provided high performance and scalability. The architecture was designed to support a wide range of applications and data types, and it was able to scale to support the company's growing needs.

Benefits:

- Increased performance and scalability
- Reduced risk of data loss and downtime
- Improved management and operation
- Simplified management and operation

Microsoft Pictures Success with TerraServer

Challenge: Microsoft required a SAN-based storage architecture that could support its 10,000 users and 10,000 servers. The architecture had to be scalable, flexible, and able to support a wide range of applications and data types.

Solution: Microsoft implemented a SAN-based storage architecture that provided high performance and scalability. The architecture was designed to support a wide range of applications and data types, and it was able to scale to support Microsoft's growing needs.

Benefits:

- Increased performance and scalability
- Reduced risk of data loss and downtime
- Improved management and operation
- Simplified management and operation

Yellowfin Keeps Its Content Flowing

Challenge: Yellowfin required a SAN-based storage architecture that could support its 10,000 users and 10,000 servers. The architecture had to be scalable, flexible, and able to support a wide range of applications and data types.

Solution: Yellowfin implemented a SAN-based storage architecture that provided high performance and scalability. The architecture was designed to support a wide range of applications and data types, and it was able to scale to support Yellowfin's growing needs.

Benefits:

- Increased performance and scalability
- Reduced risk of data loss and downtime
- Improved management and operation
- Simplified management and operation



SOLUTIONware - Value Proposition

- Targets

1) User Buyer

2) Technical Buyer

- Designed to overcome the objection that SANs are difficult to implement and lack end-end interoperability.
- Validates Heterogeneity
- Provide pre-tested and certified SANs from the application level to the storage device.
- Guides end user in SAN element decisions, ie HBA, Storage Device, Application.

Available on SAN Solutions Center
www.brocade.com/sansolutions



SOLUTIONware - Reference Designs

- Reference Designs and Application Descriptions
 - Consolidation - LAN-Free backup
 - Server-Free backup - High Availability
 - Disaster Tolerance - Remote Backup
- 55 Reference designs available on the web



SOLUTIONware - Tested Configurations

- SOLUTIONware Application Notes or “Cookbook” Reports
 - 21 Backup (Remote, Serverless, LAN Free)
 - 11 High Availability
 - 18 Consolidation
 - 5 Disaster Tolerance
 - Pre-tested and certified solutions
- Documented installation, configuration, and bring up procedures
- Include both homogeneous and heterogeneous configurations using: Veritas, Legato, Commvault, CA, Microsoft, Netapp, Compaq, Sun, HP, EMC, IBM, Hitachi, LSI and many others



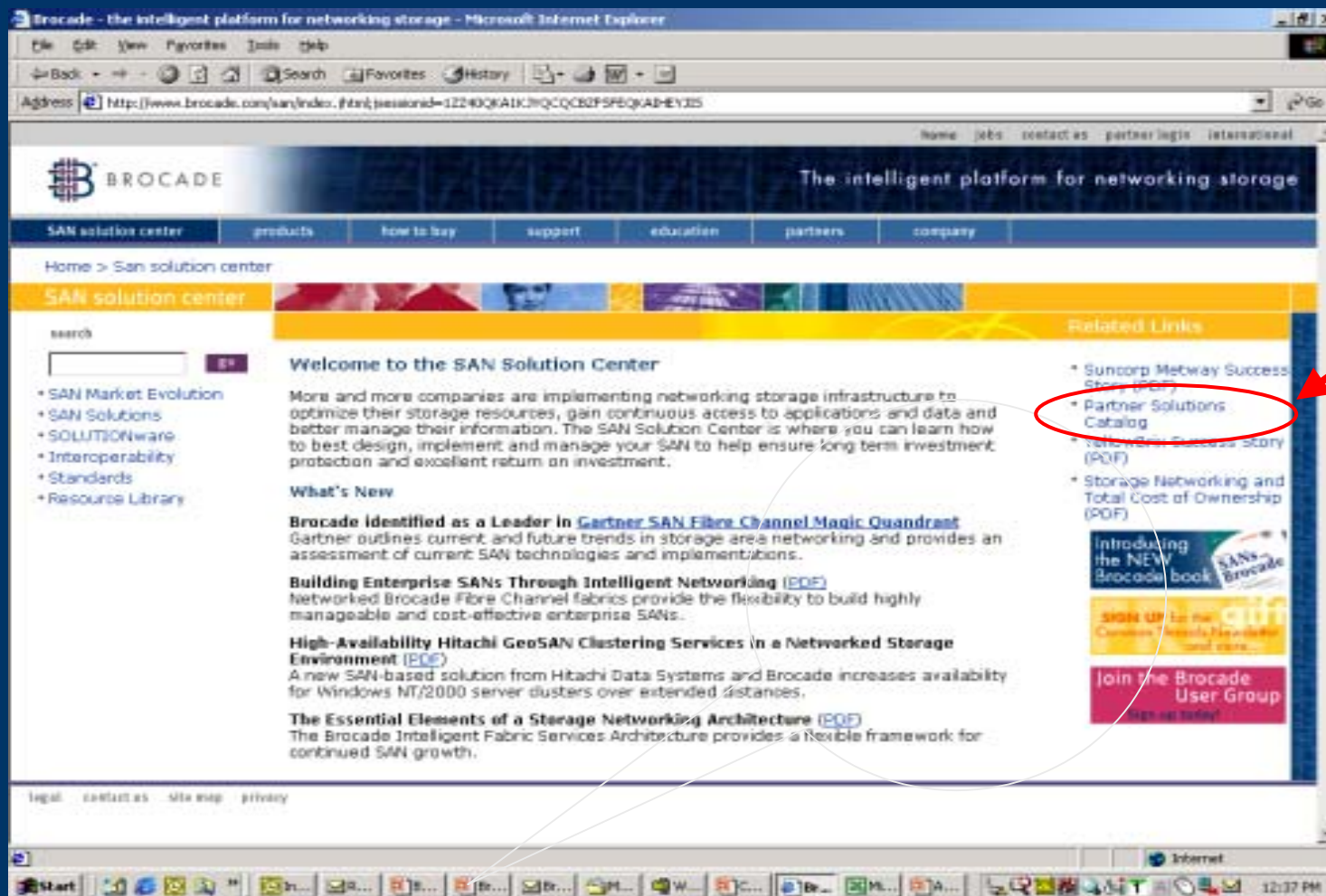
Brocade Partner Solutions Catalog

- Located on SAN Solutions Center and Brocade Partner Network
- Complimentary hardware and software solutions
 - Brocade Fabric Threads, Fabric Access & Fabric Aware Developers
 - Brocade OEM Partners
 - Brocade Strategic Partners
- Online catalog
 - Categorized by solution type
- Includes:
 - 75 word description of solution, supplied by partner
 - Partner's logo
 - Link to Partner's website
 - Joint Press Releases

Over 50 solutions and growing!



An example



Located on
Brocade SAN
Solution
Center



Partner Solution Categories

- Bridge
- Disk
- HBA Vendors
- Professional Services
- RAID
- **SAN Application Software**
- Solidstate Disk
- Storage
- Storage Management
- Tape
- Test Tools
- Virtualization Software
- WAN/MAN
- xSP



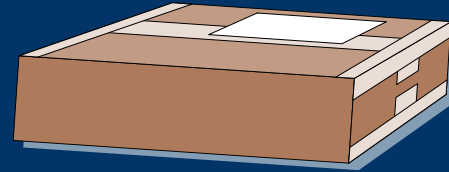
Brocade Tools - SAN Adoption Cycle

Introductory Meeting	Customer Application Discussion	SAN Design and Architecture Best Practices	The Brocade Offering	Implementation
CIO (Economic Buyer) (Technical Buyer)	CIO (Economic Buyer) Technical Buyer	Technical Buyer (User Buyer)	Technical Buyer (Economic Buyer)	User Buyer (Technical Buyer)
<ul style="list-style-type: none"> • Corporate Overview Presentation • KPMG ROI Study 	<ul style="list-style-type: none"> ■ ROI Sales Presentation ■ ROI Analysis SE Presentation ■ ROI Analysis Program ■ Reference Architectures 	<ul style="list-style-type: none"> ■ SAN Design Best Practices Guidelines <ul style="list-style-type: none"> - Design - Scalability ■ Brocade Resources <ul style="list-style-type: none"> - SOLUTIONeers - Large SAN Design Review Process ■ Professional Services Partners 	<ul style="list-style-type: none"> ■ Product Presentations ■ Datasheets ■ Comparative testing reports ■ White Papers 	<ul style="list-style-type: none"> ■ SOLUTIONware Customer Presentation ■ Compatibility Matrix ■ Professional Services ■ Brocade Education ■ Brocade User Groups



The Brocade Total Solution

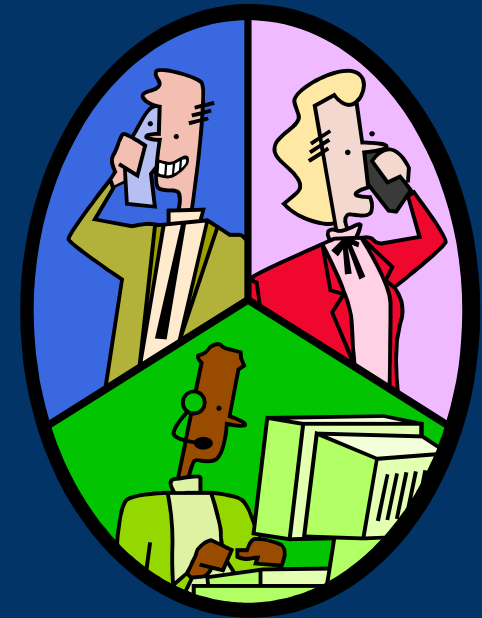
Products



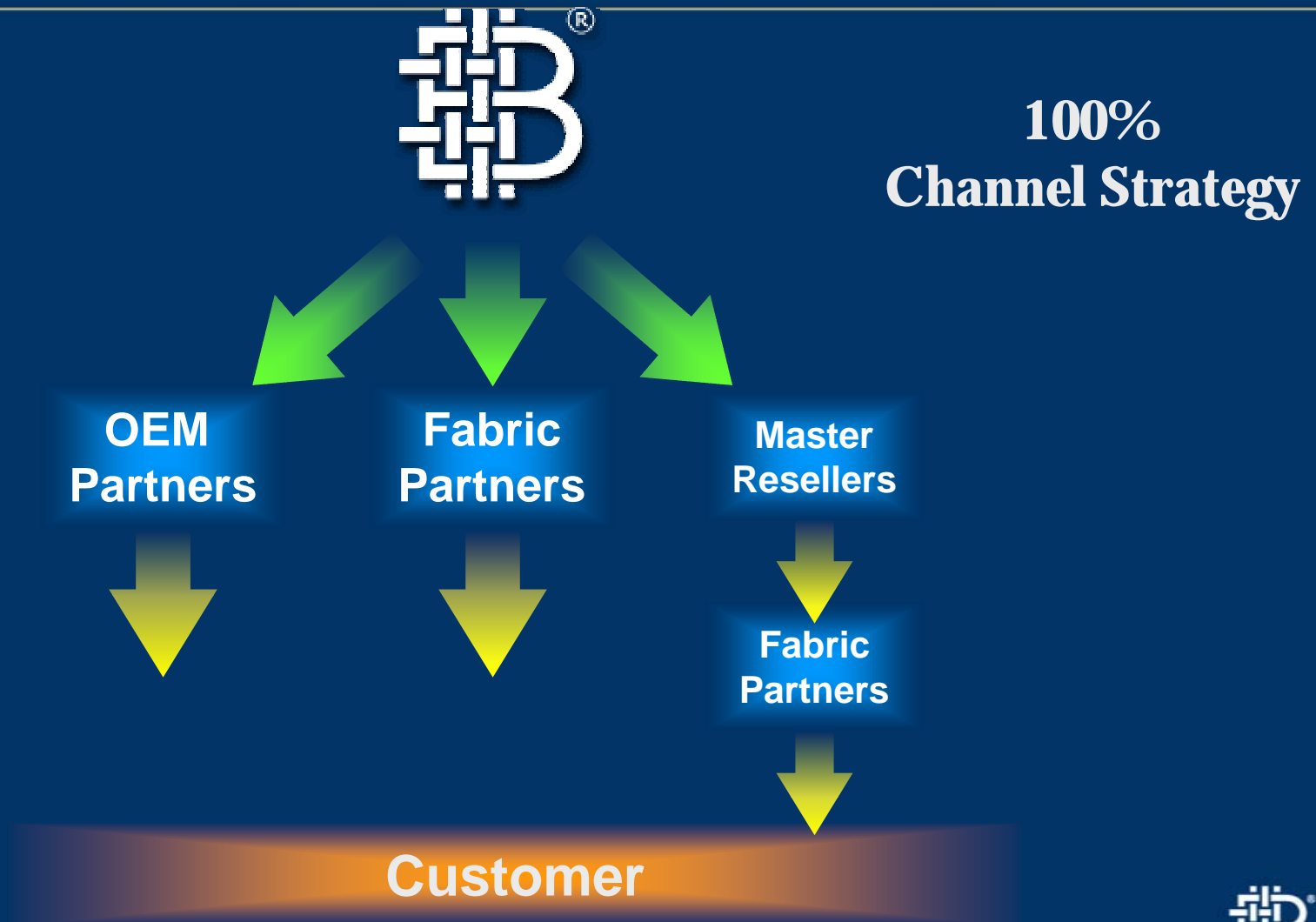
+ Partnerships

+ Service

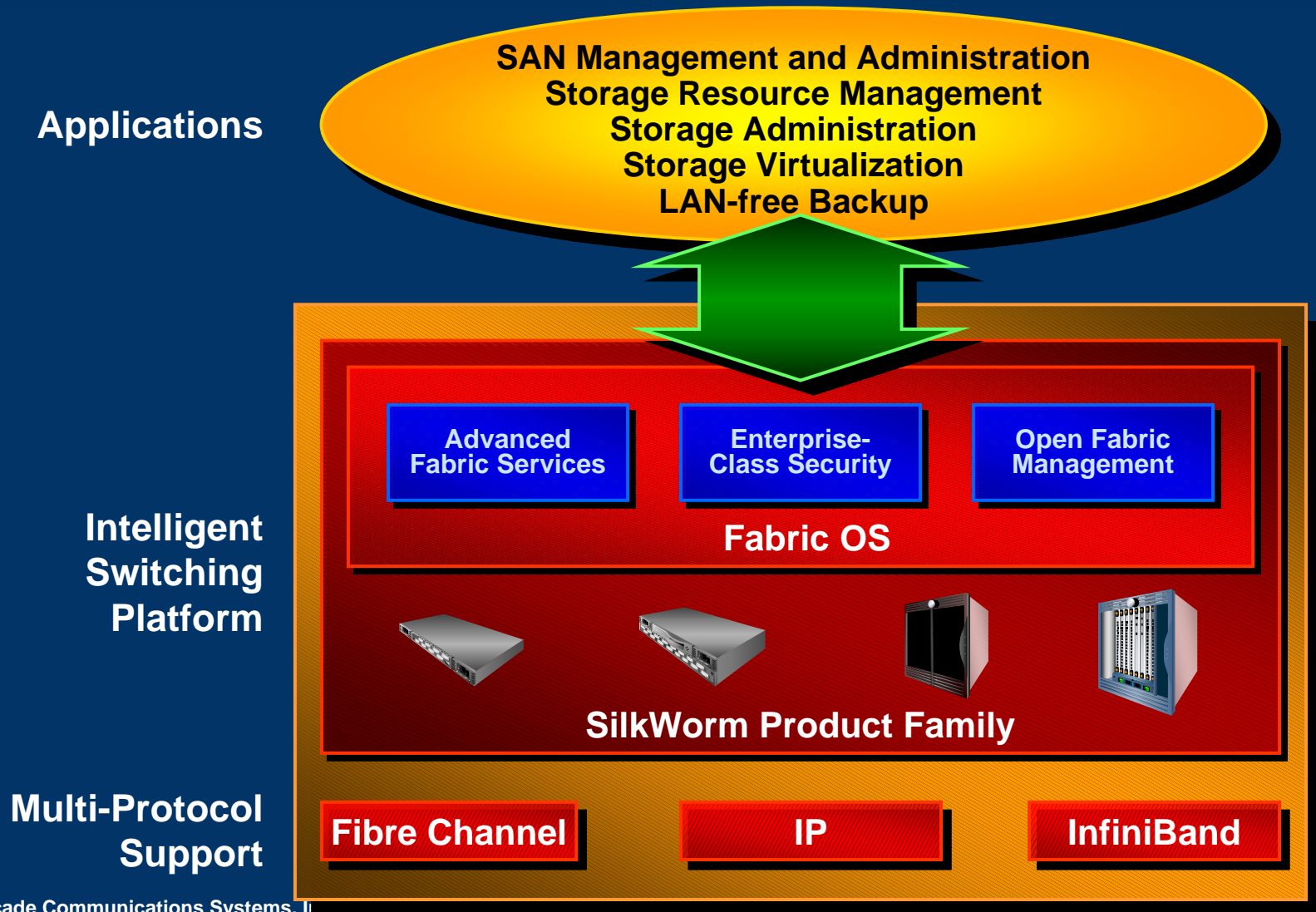
Total Solution



Brocade Sales Model

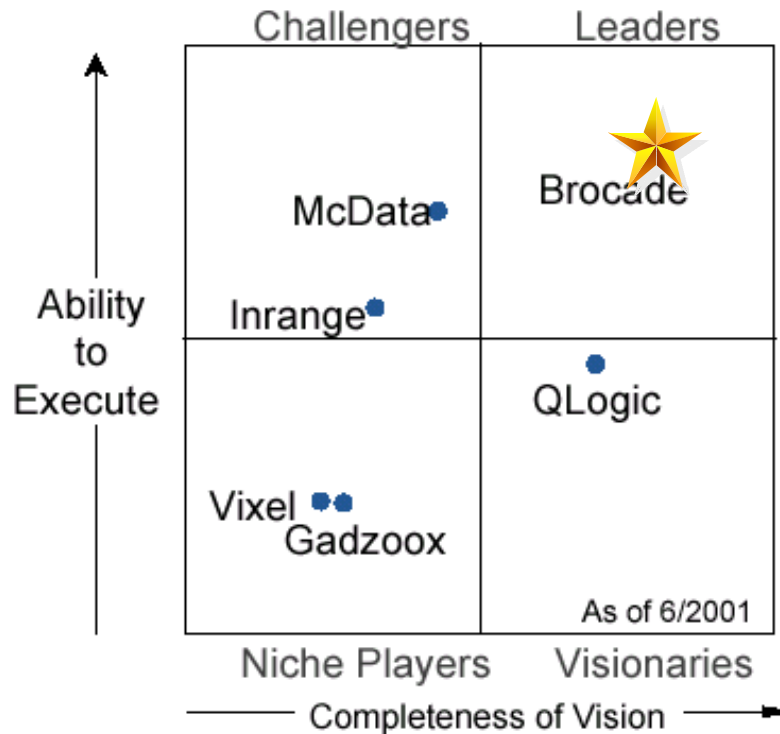


Brocade Intelligent Fabric Services Architecture



Recognized for Vision and Execution

SAN Fibre Channel Fabric Switch Magic Quadrant (1 Gbit)



Gartner

Source: Gartner "SAN Fabric Scenario", Storage Conference, N. Allen, June 2001
The Magic Quadrant is copyrighted June 2001 by Gartner, Inc. and is reused with permission.



SANs Reduce TCO of Storage Environments

- Optimize storage utilization
 - Share storage across multiple servers in an open environment
 - Enable storage resource management tools to optimize storage usage
- Reduce operational expenses
 - Centralize storage management
 - Optimize personnel resources
- Increase business competitiveness
 - Reduce time to provision applications' storage capacity



Brocade SANs are a High Return Investment

- Intuit: Prepares 25% of US tax returns

Storage consolidation & centralized mgmt	300% ROI	4 months
Reduced backup time from 26 to 3 hours	125% ROI	9 months
Increased availability of customer-facing web systems	525% ROI	2 months

- SunCorp Metway – Leading Australian Financial Co.
 - Increased storage utilization: 60 to 90 percent!
 - Increased storage application performance 75%
 - Immediate \$2 million ROI



Brocade Worldwide

- 1000 employees worldwide
 - Corporate HQ: San Jose, California
 - European HQ: Geneva, Switzerland
 - Offices in London, Paris, Munich, Zurich
 - Asia Pacific HQ: Tokyo, Japan
 - Offices in Beijing, Hong Kong, Singapore, Sydney, Seoul



Brocade Strategy in Korea Market

- Invest in SAN training & education
- Deliver quality support for partners & customers
- Drive SAN projects success in Korea
- Local partnership for joint win-win success
- Building local team with local market expertise
- Strengthen Brocade market leadership in Korea





Thank You

Q & A



BROCADE

The intelligent platform for networking storage