Blending of Disk and tape in a Removable Environment

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The Premier Advanced Recording Technology Forum

THIC Inc.

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Premises:

- Big swath of customers prefer disk to tape
  - NBT
  - Familiarity
  - Perceived Reliability
  - Perceived Cost
  - Don't need any software
- So what's stopping them?
  - Disk isn't removable
  - Disk isn't cheap
    - Tape costs when you buy
    - Disk is the cost that goes on giving
  - There's no software

So What's it Going to Take to Put you in This Car?

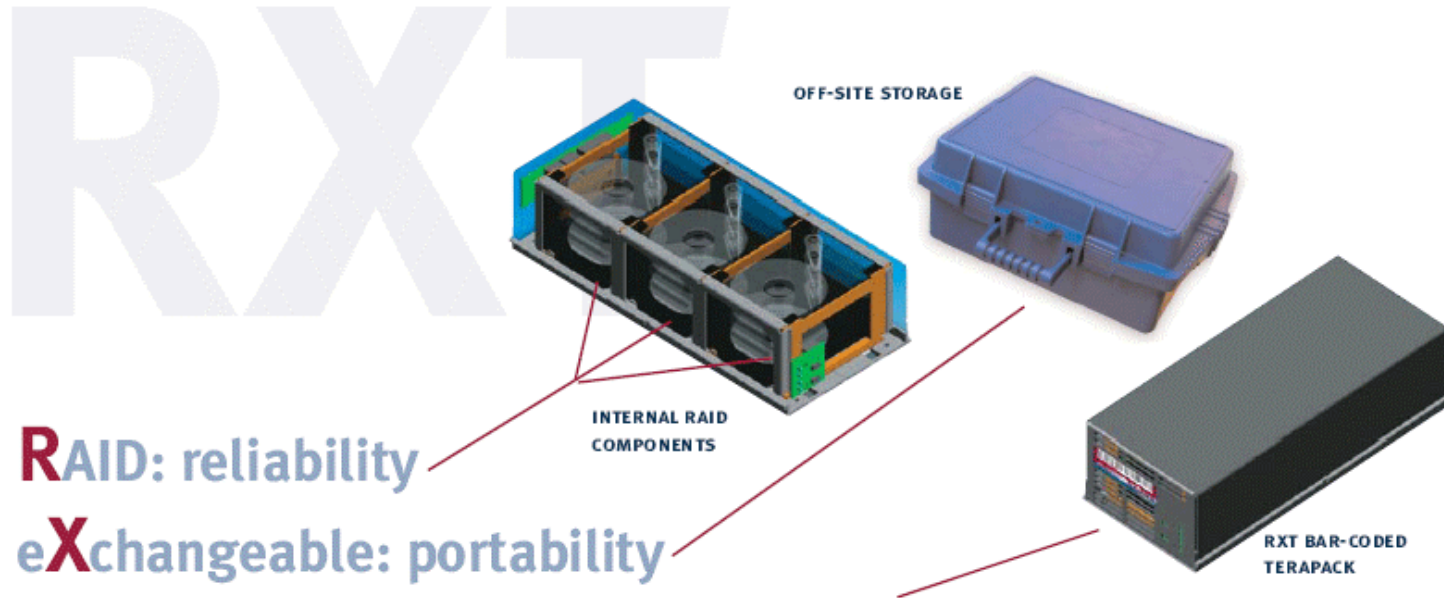# Removability

What Do you Want?

- DISK
- Raid
- Removable

Introducing RXT
Removable Disk Media

TeraPack Portable RAID Automated in a T950 Library

The First Automated Portable RAID

RXT Three Key Features

OFF-SITE STORAGE

INTERNAL RAID
COMPONENTS

RXT BAR-CODED
TERAPACK

RAID: reliability

e**X**changeable: portability

TeraPack™: rugged, sealed enclosure, sized for both capacity and ease of handling, bar coded to simplify data and media tracking

What has Changed to Make Automated, Removable Disk Feasible?

- **Availability of Highly Reliable Mobile SATA Drives**

  - 900G Shock Protection (non-operating)
  - 1,000K Hour MTBF
  - 80GB per Spindle and moving to 100+ GB soon
  - 80MB/sec Data Transfer Rate

- **Tape Library Design that Accommodates Media TeraPack Magazines**

  - Robotic Transporter for Media (TeraPack) Handling
  - Media Storage Chambers for TeraPacks
  - Import/Export Ports for Off-site Storage & Retrieval

SPECTRA LOGIC

RXT Components

- RXT Media - RAID TeraPack® (SATA disk spindles) in rugged, sealed enclosure

- RXT Drive — drive with an embedded RAID controller, Power, Pkg. and Ultra320 I/F

RAID TeraPack media

RXT drive in the T950 library
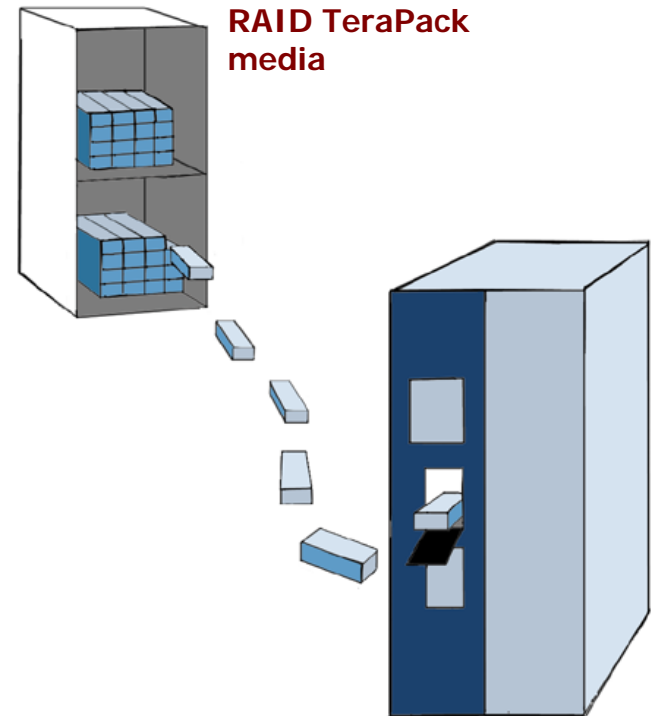
RXT Desk-top Drive

RXT media for stand-alone and T950

Data Protection/Backup Scenario

Current Environment

- Conventional Removable tape
- Conventional Fixed disk (Performance)
- Separate Disk and Tape Sub-Systems

New Environment/Options

- Removable RAID media with Tape
  - Combines disk's performance, reliability tape's portability
  - More than just performance enhancement and tape emulation
- True Integration within Automation (T950)
- Stand-Alone Removable RAID
  - Desk-Top, Server-ready, Rack-mount

RXT Disk in Any Storage Environment

RXT Desk-Top

RXT Server-ready

RXT Rack-mount

RXT leverages existing storage applications and preserves investments in backup technology

T950 Library with RXT

T950 with RXT – Best in Class Automation

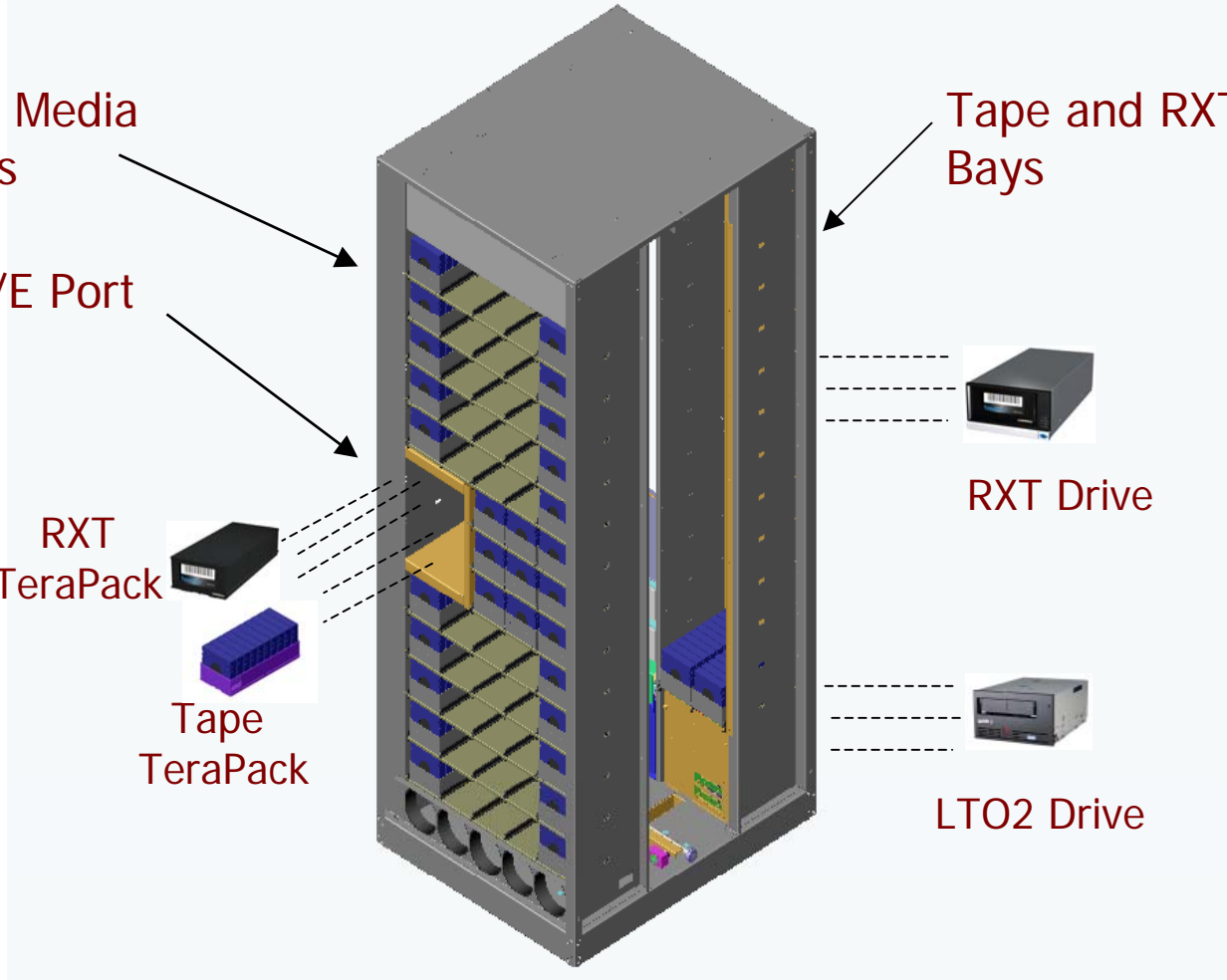
TeraPack Media Chambers

E/E Port

RXT TeraPack
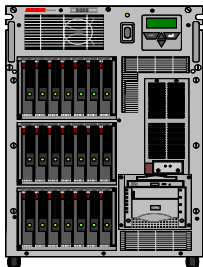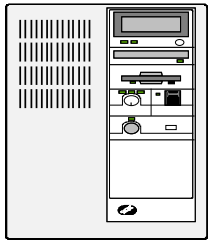
Tape TeraPack

Tape and RXT Drive Bays

RXT Drive

LTO2 Drive

Preserving the Backup Investment

Servers

T950 With RXT and Tape

VERITAS

**Backup
To Disk**

(Virtual Tape)

Once The Backup Is complete:

1. Leave Data On RXT For Fast Retrieval

OR

2. Export RXT For Off-site Storage

OR

3. Copy RXT To Tape (Vaulting)

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RXT – A Solution Apart

Portability
- True removable RAID media
- Interchangeable with tape
- Spectra partnership with Iron Mountain

Flexibility
- Transparent to host applications
- Scale to wide range of capacities and performance
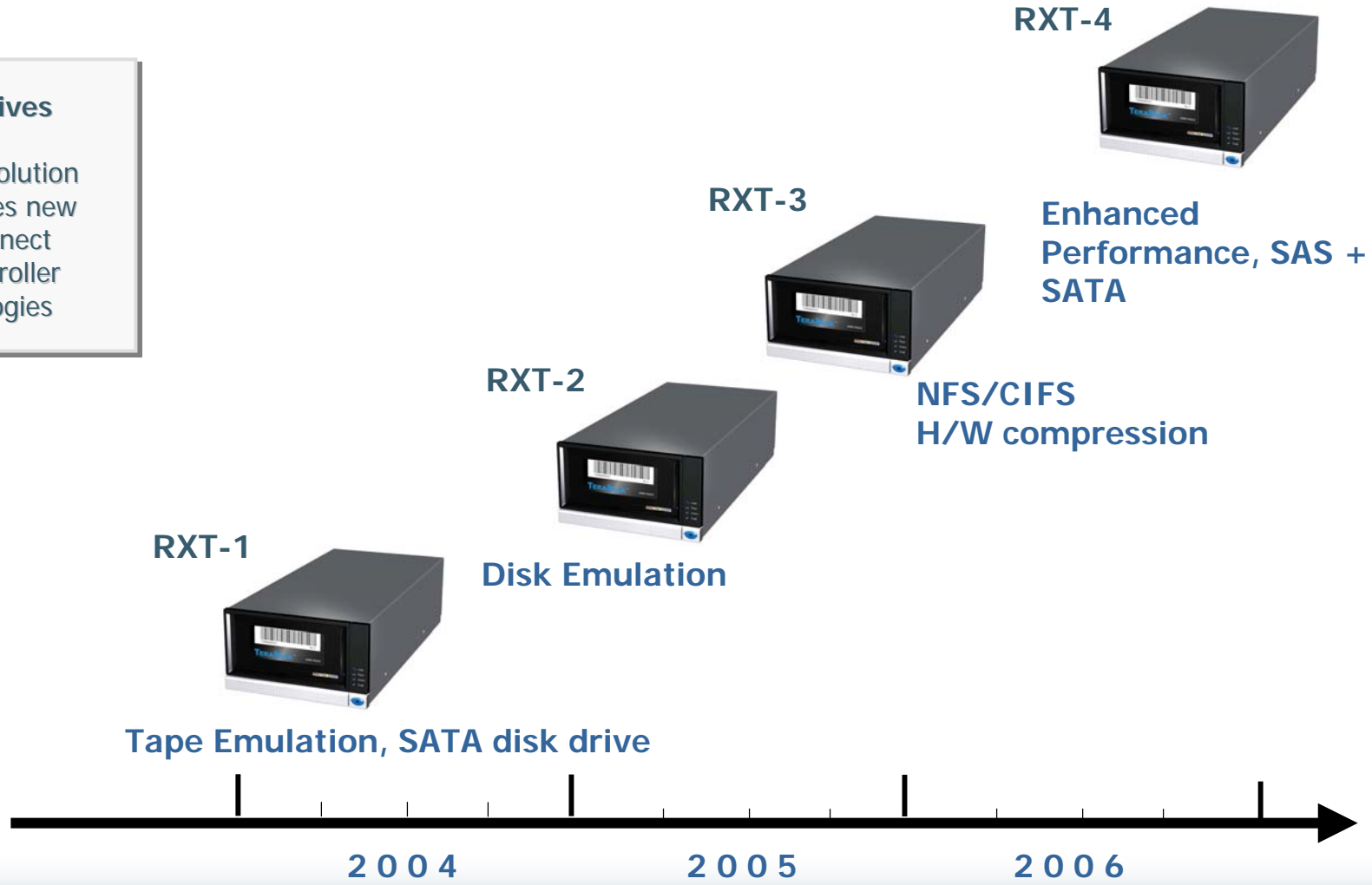 - More than just disk caching with add-on boxes

Range of Storage Application Environments
- True integration through the T950 for Data Protection
- Desk-top, Server-ready, and Rack-mount RXT Removable Disk Storage

RXT Drive Roadmap — A Step Ahead

RXT Drives

Product evolution incorporates new interconnect and controller technologies

RXT-4

Enhanced Performance, SAS + SATA

RXT-3

NFS/CIFS H/W compression

RXT-2

Disk Emulation

RXT-1

Tape Emulation, SATA disk drive
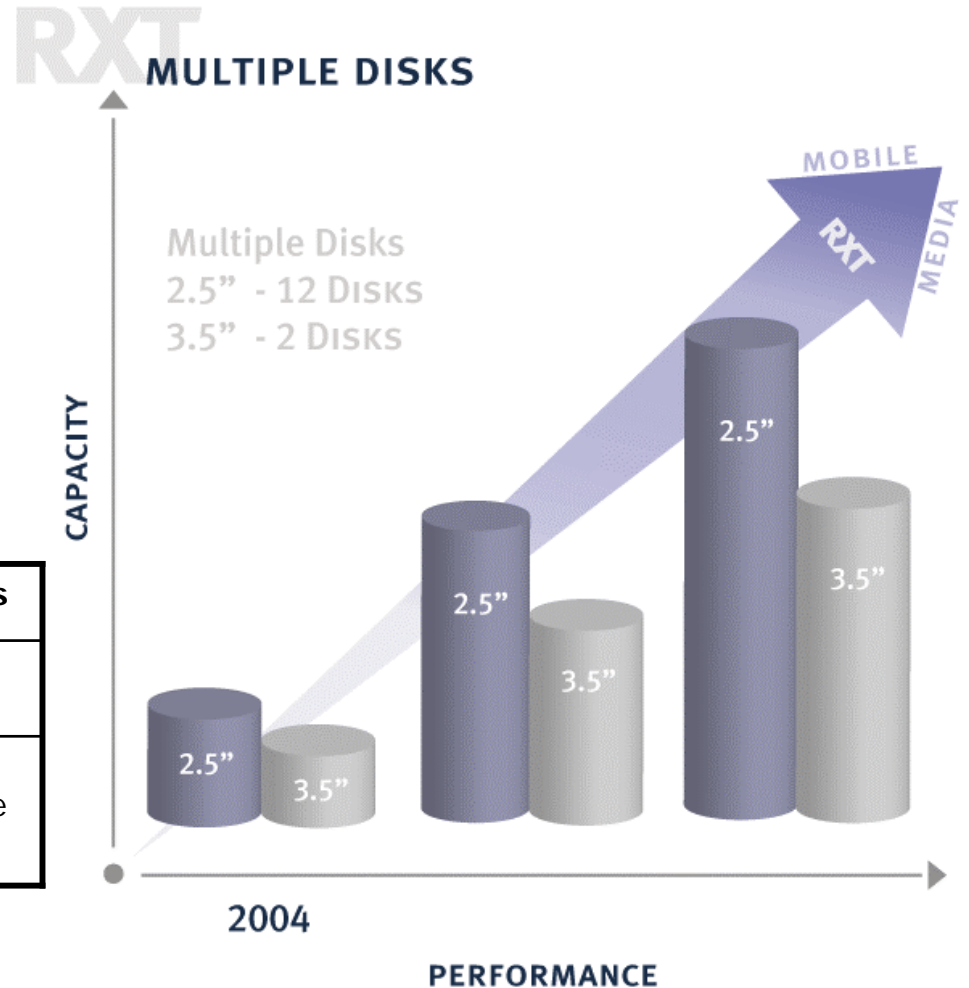
2004 **2005** **2006**

RXT Media Evolution

RXT media uses SATA drives; as SATA drives grow in capacity, cost effectiveness and performance, so will RXT media.

- 3 ½″ media — greatest Terabyte/$ value in RAID 0, 1. ~$2,000 for 800GB

- 2 ½″ media — highest throughput, transportability in RAID 0, 1, 5. ~$6,000 for 960GB

	Current RXT Media options	
Configuration	(2) 3 ½″ SATA drives	(12) 2 ½″ SATA drives
Capacity	800 GB per TeraPack case	960 GB per TeraPack case
RAID Level	0, 1	0, 1, 5

RXT

MULTIPLE DISKS

MOBILE

RXT MEDIA

Multiple Disks
2.5" - 12 DISKS
3.5" - 2 DISKS

CAPACITY

2.5"

2.5"

3.5"

2.5"

3.5"

3.5"

2004

PERFORMANCE

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RXT- You Asked For it

- First portable RAID media
- Combines the best features of RAID disk and tape technologies
- Provides high performance, capacity, reliability
- Supported by automation through T950 library
- Software support via tape backup applications
- Provides lowest cost of ownership

Cash or Charge?