

Tape Storage

Yesterday (10 yrs ago)

Today

Tomorrow (10 yrs ahead)



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RECORDING TECHNOLOGY, INC.

5/9/2002

Yesterday (1992)

Major Products

- 3480 Cartridge
- DC6150 Data Cartridge
- 8 MM Exabyte
- 4 MM DDS



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Yesterday (1992)

Primary Applications

- Data Transfer
- Back-up
- Archive



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Maximum

Capacity:

200 MB



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Today

- **Major Products**

- 100 MM Cartridge – DLT & LTO
- “Quarter-Inch” ⇒ 8 MM – Travan and SLR
- 8 MM – Exabyte & S-AIT

- **Applications**

- Back-up
- Archive

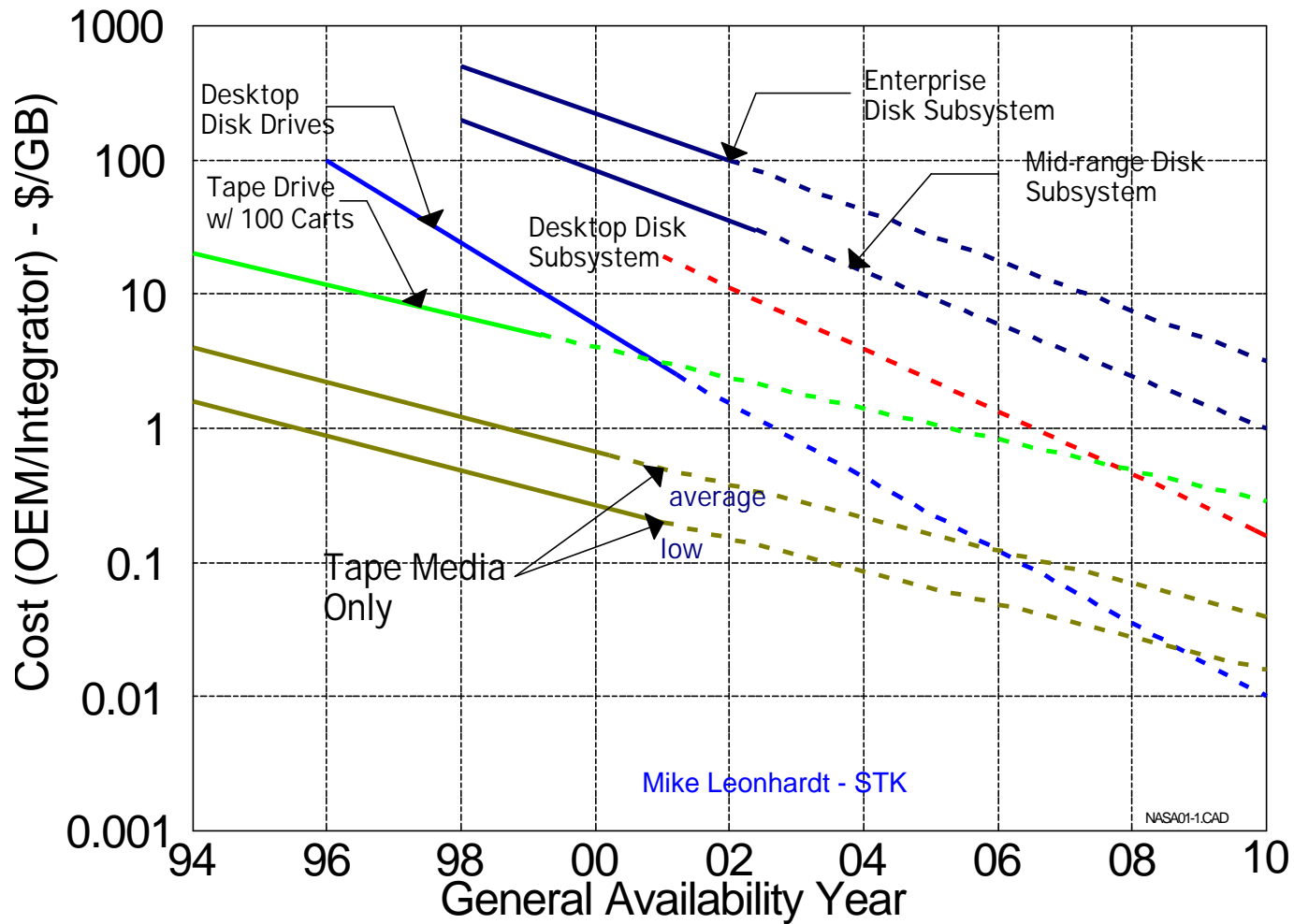
- **Capacity: 100 GB**



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Today's Tape Challenge:



Mike Leonhardt - STK

NASA01-1.CAD

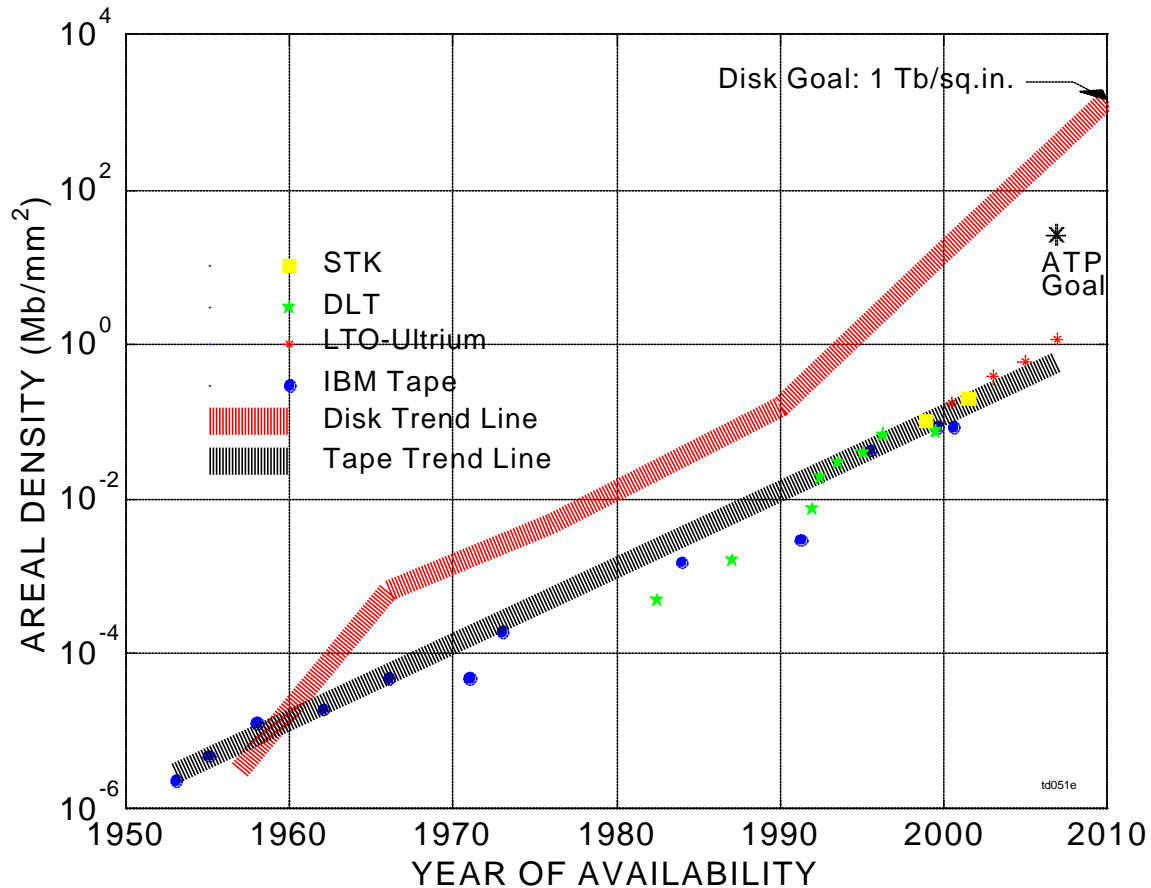


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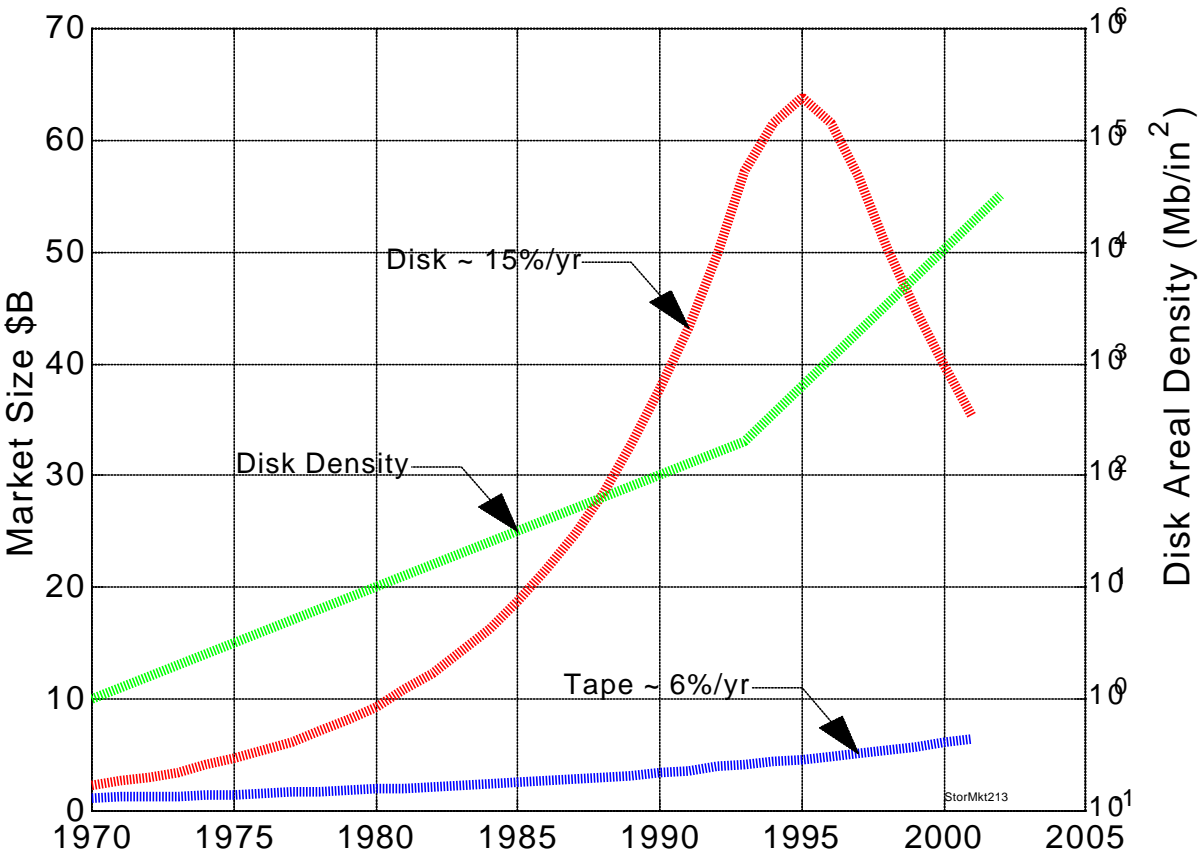
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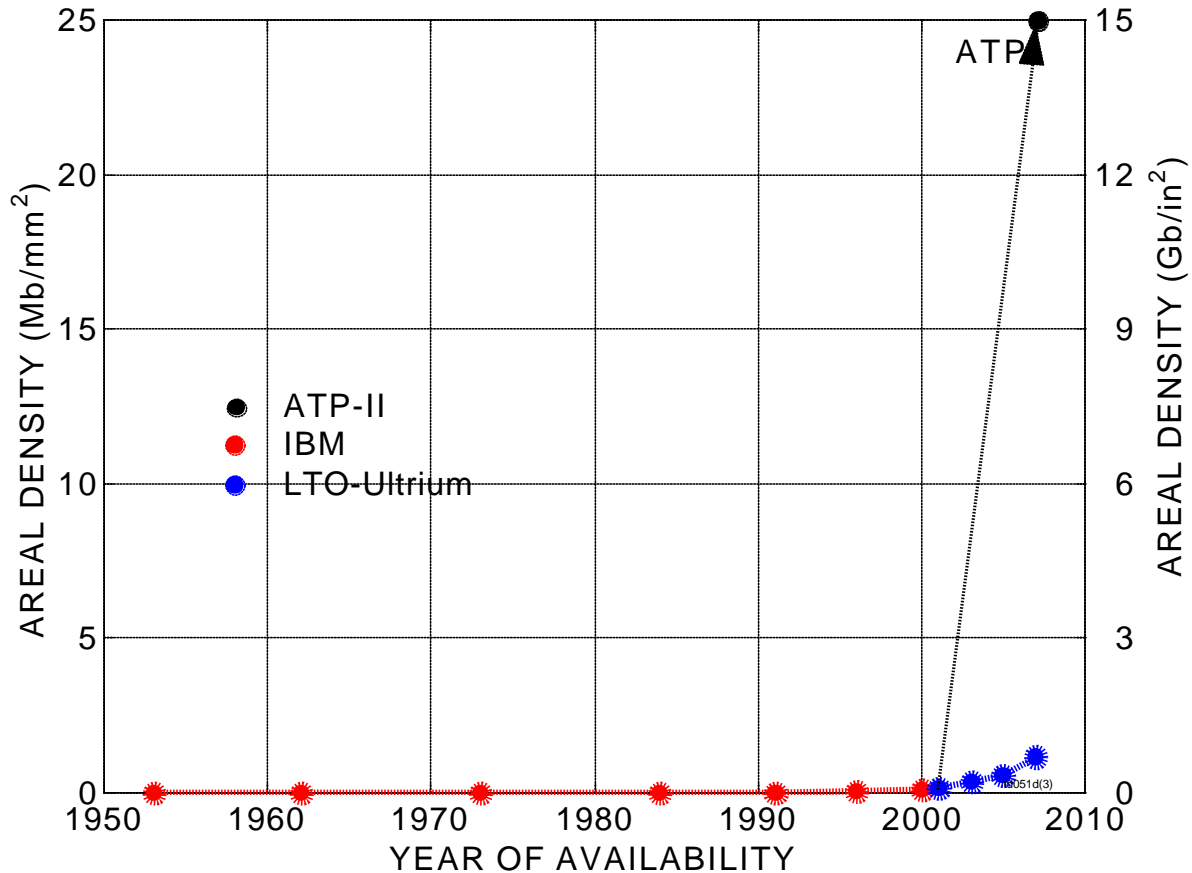
Growth of Disk Density vs. Tape Density



Today: The Disk Market Paradox



Tomorrow (2012)



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Tomorrow

- **“New” Technologies:**
 - Multi-mode Track Following Actuators
 - Sputtered Metal Film Media
 - Copperless GMR Heads
 - Reduced Channel Spacing
 - Dimensionally Stable Stronger Substrates
 - Azimuth Recording (Sony demo)



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Tomorrow

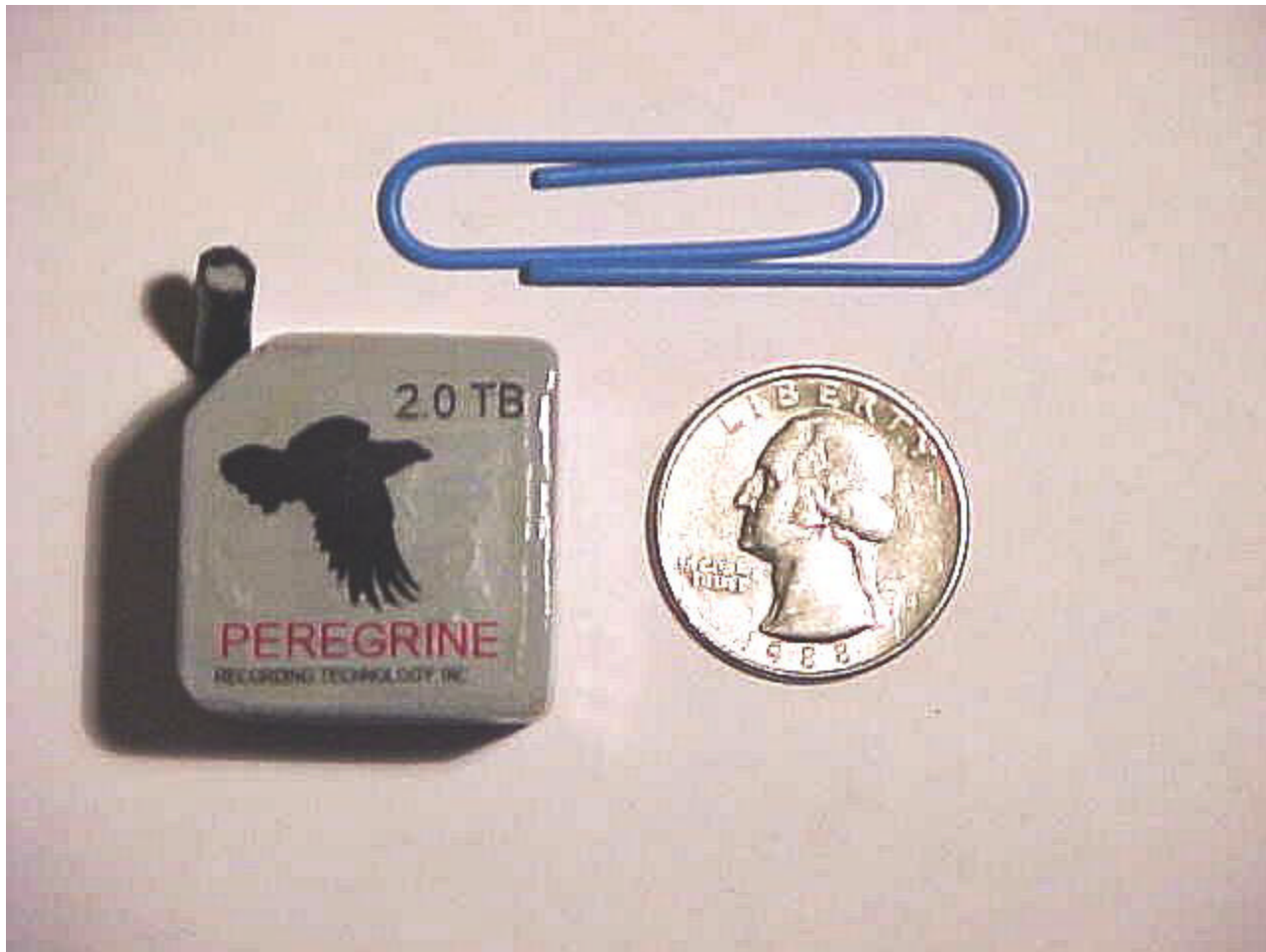
- **Densities:**
 - 15 Gb/in²
 - 10 TB/in³ (5b/μm³)
- **Capacity:**
 - LTO/DLT Cartridge: **40TB (native)**
- **Data Rate:**
 - >1 Gb/sec (>125 MB/sec)



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Tomorrow



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Tomorrow

- Disk Areal Density Growth:
–10X
- Tape Volumetric Density Growth:
–100X \Rightarrow 200X



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Tomorrow

- **Applications:**

- Large System Back-up
- Archiving
- Special Massive, Dense Applications
- Rugged Storage Environments



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