



# Designing Storage Architectures for Digital Preservation: Format & Technology Migration

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# Overview

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- Data Storage Media Options
- Data Storage Media Product and Technology Roadmaps
- Digital Preservation
- Summary

# Data Storage Media Options

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## Magnetic Tape

- High Capacity
- High Transfer Rate
- Low \$/GB
- **30 year life**



## Optical Disc

- Low Capacity
- Low Transfer Rate
- Low \$/GB
- Random access
- **5-50 year life**



## Flash

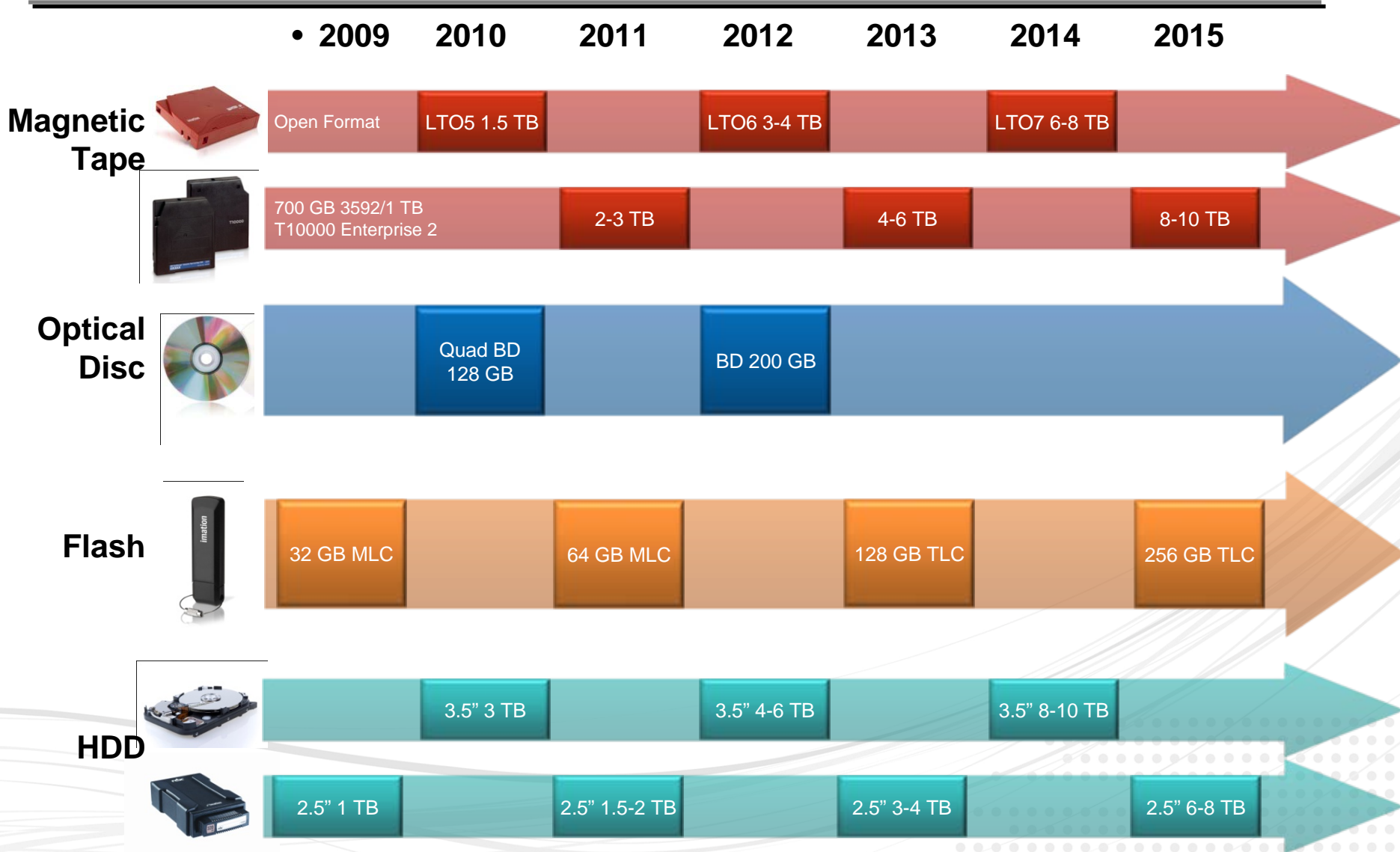
- Low Capacity
- Low Transfer Rate
- Very High \$/GB
- Random and very fast access
- **10 year life (100k read/write - SLC)**



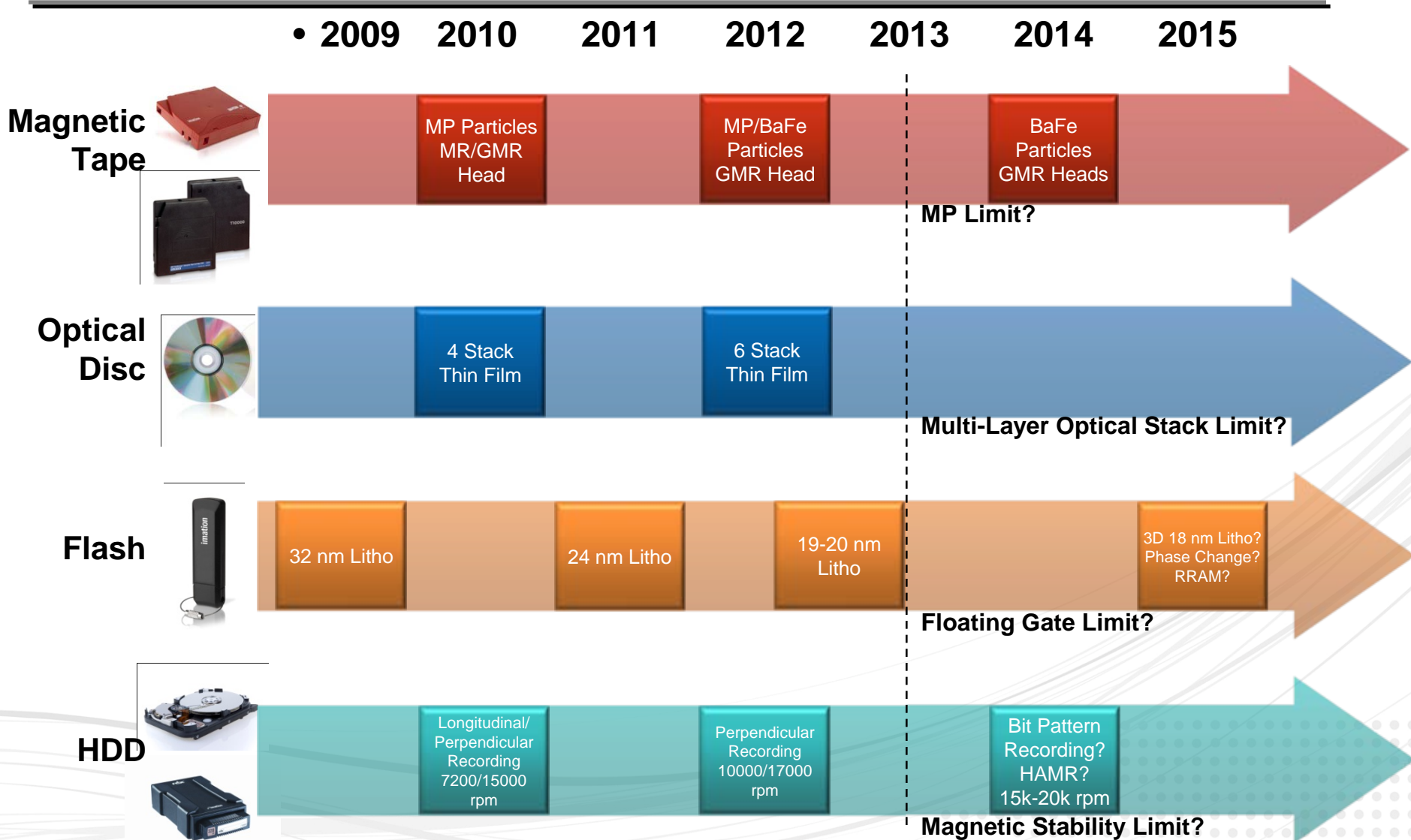
## HDD

- High Capacity
- High Transfer Rate
- High \$/GB
- Random and fast access
- **5 year life – HDD**
- **10 year life – Removable HDD**

# Data Storage Media Product Roadmap



# Data Storage Media Technology Roadmap



# Digital Preservation

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- Magnetic Tape continues to be one of the best formats of media to preserve data long term



- 30 year life is the best available choice
- Cost/GB and High Capacity make it practical to store lots of data for long time

- Other forms of media maybe suitable, depending on specific applications



- Varied claims have been made about preservation capability with optical disc



- SLC Flash has unique attributes that can be leveraged for preserving data long term



# Summary

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- Technology roadmaps are robust for Magnetic Tape, Flash and HDD
  - Optical disc technology roadmap is nearing its end
- While all technologies are expected to progress in the next 3 years, fundamental technology attributes are not expected to change dramatically to alter the landscape
  - Beyond 3 years, disruptive potential lurking....





Thank you

