



2011 Digital Storage for Media and Entertainment Report

*-- Digital Storage for the Capture, Creation,
Editing, Archiving and Distribution of
Entertainment Content --*



Thomas
Coughlin

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Associates

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Table of Contents

Acknowledgements	8
The Author	8
Executive Summary	9
Key Points	9
Introduction	12
Cinema and Video Formats	17
Media and Entertainment Professional Storage Survey.....	21
Content Creation and Acquisition.....	22
Feature Film Acquisition	22
TV Production.....	30
Film Scanning	30
Storage Capacity Projections for Digital Content Acquisition.....	31
Post Production including Editing and Special Effects	38
Non-Linear Editing (NLE).....	38
Special Effects and Other Post Production	43
Summary Post-Production Digital Storage Capacity Demand	43
Storage Capacity and Storage Revenue Projections for NLE, Special Effects and Other Post Production Activities.....	44
Geographical Distribution of Post-Production Facilities	44
Media and Entertainment Content Distribution.....	56
Local Broadcast	57
Cable Distribution.....	62
Satellite Headend	67
TV Networks.....	67
Digital Cinema	76
Professional Media and Entertainment Internet Distribution	83
Video on Demand (VOD).....	91
Summary of Non-Archive Entertainment and Media Storage.....	99
Archiving and Digital Preservation	110
Digital Conversion of Older Analog Content	118
Costs of Long Term Storage	119
Archiving of Digital Created Content.....	121
Total Archive and Preservation Storage Projections	121
Archiving Storage: Off-line, Near-Line.....	122
Uses of Archived Content—Making an Archive ROI.....	127
Migration of Content to Avoid Format Obsolescence.....	127
Capacity Requirements by Market Segment.....	130
Storage Revenue Estimates by Market Segment	136
Media Unit Projections	143
Conclusions.....	152
Some Media and Entertainment Market Companies	156
NEWSLETTER SUBSCRIPTIONS.....	159

Table of Figures

Figure 1. Digital Entertainment Content Value Chain (An Accelerating Positive Feedback Loop).....	12
Figure 2. Digital Entertainment Content Workflow (after StorageTek Chart).	13
Figure 3. Hybrid Motion Picture Production and Post-Production using Digital Intermediates.	16
Figure 4. Red Camera Resolution Comparisons	18
Figure 5. Content is made up of Essence plus Metadata.....	19
Figure 6. Uses and Flow of Metadata in the Entertainment Content Process	20
Figure 7. ARRI Stereoscopic Video Camera Setup	23
Figure 8. Percentage of Various Recording Media in Professional Video Cameras	24
Figure 9. FOR-A Video Archive Recorder.....	25
Figure 10. Percentage of Captured Content Formats.....	25
Figure 11. Content Shot for an Hour of Completed Work	26
Figure 12. Panasonic Flash Memory Camcorder Module	26
Figure 13. Panasonic P2 and Sony SxS Flash Memory Camcorder Modules....	27
Figure 14. Sony SR Flash Memory Camcorder Module.....	27
Figure 15. Maxell iVDR Storage Module on a Sony Professional Camera	28
Figure 16. Do you Reuse your Digital Media?.....	29
Figure 17. Do you Archive your Digital Media?	29
Figure 18. Percentage Scanned into Different Digital Resolutions.....	31
Figure 19. Digital Content Acquisition Storage Capacity Projections.....	36
Figure 20. Annual Storage Capacity Growth for Digital Content Acquisition	37
Figure 21. Professional Non-Linear Editing Model System.....	38
Figure 22. DAS vs. Shared Storage and Number of Post Seats.....	40
Figure 23. Distributed Collaboration or Content Distribution Across Geographic Regions.....	42
Figure 24. NLE Storage Capacity Annual Demand (TB)	48
Figure 25. Physical Distribution Formats for Proxies or Completed Post Work..	49
Figure 26. Projections for Post Production, CGI and Special Effects New Storage Requirements	51
Figure 27. Price of Storage/GB for Facility Niche	52
Figure 28. Projection of HE/MR NLE Facilities Network Storage TAM (\$M).....	54
Figure 29. Estimated Post Production Facility Breakdown by Geography	55
Figure 30. Local Broadcaster Content Distribution Storage Capacity Analysis..	60
Figure 31. Estimate of Local Broadcaster Distribution Network Storage TAM (\$M)	61
Figure 32. Worldwide Distribution of TV Broadcasters	62
Figure 33. Cable Headend Distribution Storage Capacity Analysis.....	65
Figure 34. Estimate of Cable Headend Network Storage TAM (\$M).....	66
Figure 35. Satellite Headend Distribution Storage Capacity Analysis.....	70
Figure 36. Estimate of Satellite Headend Network Storage TAM (\$M).....	71
Figure 37. TV Master Network Delivery Storage Capacity Analysis.....	74
Figure 38. Estimate of TV Master Networks Network Storage TAM (\$M)	75

Figure 39. Schematic of a Play-To-Screen Server with Functional Blocks (Thompson Grass Valley) 77

Figure 40. Annual New Storage Capacity for Digital Cinema 81

Figure 41. Estimate of Digital Cinema Storage TAM (\$M) 82

Figure 42. Internet Content Distribution System (CDN)..... 83

Figure 43. Increase in Revenue due to an extended content lifecycle with on-line content 84

Figure 44. Internet Content Delivery Storage Capacity Analysis 89

Figure 45. Estimate of Internet Content Delivery Network Storage TAM (\$M) ... 90

Figure 46. Examples of Flash-based Content-Delivery Servers 92

Figure 47. Video on Demand Total Storage Capacity Model 96

Figure 48. Annual Growth in Video on Demand Storage Capacity..... 97

Figure 49. Estimate of VOD Storage TAM by Category (\$M)..... 98

Figure 50. Non-Archive Media and Entertainment Annual Network Storage TAM Estimate..... 100

Figure 51. Non-Archive On-Line Network Annual Storage TAM Estimate 101

Figure 52. Non-Archive Near-Line Network Annual Storage TAM Estimate..... 102

Figure 53. Non-Archive Direct Attached and Local Storage Annual TAM Estimate..... 103

Figure 54. Total Non-Archive Storage Annual TAM Estimate 104

Figure 55. Non-Archive Network Storage Capacity Annual Demand Estimate 105

Figure 56. Non-Archive On-Line Network Storage Capacity Annual Demand Estimate..... 106

Figure 57. Non-Archive Near-Line Network Storage Capacity Annual Demand Estimate..... 107

Figure 58. Non-Archive Direct Attached Storage and Local Storage Capacity Annual Demand Estimate 108

Figure 59. Non-Archive Total Storage Capacity Annual Demand Estimate 109

Figure 60 HDD Cartridge Products (iVDR and RDX)..... 110

Figure 61. LTO Projected Tape Generations 111

Figure 62. Cloud-based Media Asset Management System at NBC Universal 113

Figure 63. Percentage of Digital Long-Term Archives on Various Media..... 116

Figure 64. Percentage of Tape Formats Used in Digital Archiving..... 117

Figure 65. Comparison of Estimated Annual Cost to Save 1 PB for 20 Years. 121

Figure 66. Total Annual Digital Storage Demand Projections for Archiving and Digital Content Conversion & Preservation..... 125

Figure 67. Growth in Near-Line and Off-Line Digital Storage for Content Archiving 126

Figure 68. Schematic Showing Workflow for Archiving, Accessing and Using Archived Content in Distribution 128

Figure 69. Media Annual Revenue Estimate Summary (\$M) 146

Figure 70. Tape Cartridge Annual Unit Shipment Projections..... 149

Figure 71. Flash and Optical Disk Unit Annual Unit Shipment Projections 150

Figure 72. HDD Annual Unit Shipment Projections..... 151

Figure 73. Distribution of Storage Capacity for Entertainment Creation, Archiving, and Distribution Segments (2011)..... 152

Figure 74. Distribution of Storage Capacity for Entertainment Creation, Archiving, and Distribution Segments (2015)..... 153

Figure 75. Media and Entertainment Market Storage Revenue Share by Segment (2011)..... 154

Figure 76. Media and Entertainment Market Storage Revenue Share by Segment (2016)..... 154

Figure 77. Market Share of Storage Media by Storage Capacity Shipped (2011) 155

Figure 78. Market Share of Storage Media by Storage Capacity Shipped (2016) 155

List of Tables

Table 1. Example Resolution, Data Rates and Storage Capacity Requirements for Professional Media Standards 17

Table 2. Feature Film Metrics (24 fps, 10-bit deep, 3-color file assumed) 18

Table 3. Percentage of Survey Participants in Content Market Segments..... 21

Table 4. Survey Participant Location 22

Table 5. Uncompressed Format Assumptions for 1 Hour of Content..... 23

Table 6. Survey Question: What % of your Content is Born Digital..... 24

Table 7. Feature Film Projection Assumptions 33

Table 8. TV Broadcast Assumptions..... 34

Table 9. TV Episodic Assumptions 34

Table 10. General Assumptions for TV Content 34

Table 11. Feature Film Scanning Digital Storage Requirements..... 35

Table 12. Assumptions for Film Scanning Projections..... 35

Table 13 Professional NLE Bandwidth Requirements..... 43

Table 14. Professional NLE Storage Assumptions..... 45

Table 15. Professional NLE Storage Projections..... 46

Table 16. Special Effects and Other Post Production Activities Storage Projections..... 47

Table 17. World-Wide Post Facilities Capacity Growth Estimates (On-Line, Near-Line and DAS/Local)..... 50

Table 18. Post-Production Facility Spending Assumptions..... 52

Table 19. World-Wide HE/MR NLE Facilities Network Storage Spending Estimates..... 53

Table 20. Percentage of Content on Physical Media for Professional Content Distribution..... 56

Table 21. Additional Assumptions on Local Broadcast Content 58

Table 22. Estimate of WW Local Broadcast Storage Capacity Requirements and Spending..... 59

Table 23. Cable Headend Assumptions..... 63

Table 24. Estimate of WW Cable Headend Storage Spending..... 64

Table 25. Satellite Headend Assumptions..... 68

Table 26. Estimate of WW Satellite Headend Storage Spending..... 69

Table 27. TV Master Network Assumptions 72

2011 Digital Storage for Media and Entertainment Report

Table 28. Estimate of WW TV Master Network Storage Spending	73
Table 29. Comparison of Costs for Distribution with Various Optical Media as well as Hard Disk Drives ³	76
Table 30. Digital Cinema Expected Cost Reductions	77
Table 31. Digital Cinema Storage Estimate Assumptions.....	79
Table 32. Digital Cinema Storage Estimate.....	80
Table 33. Internet Content Delivery Assumptions	87
Table 34. Estimate of WW Internet Content Delivery Storage Spending	88
Table 35. VOD Capacity and Bandwidth Requirements.....	91
Table 36. VOD Capacity Model Assumptions	94
Table 37. Video on Demand Storage Capacity Model (TB).....	95
Table 38. Percentage Growth Rate of Archival Media Types.....	117
Table 39. 2011 Estimated Costs for Archiving Motion Picture Materials on HDD Arrays and a Tape Library for 5 Years (\$/TB)	120
Table 40. Assumptions for Archiving and Digital Preservation.....	123
Table 41. Archiving and Digital Conversion and Preservation Storage Projections.....	124
Table 42. Annual New Capacity Projections by Media and Entertainment Market (Petabytes)	131
Table 43. Annual New Direct Attached and Local Storage Capacity Projections by Media and Entertainment Market (Petabytes).....	132
Table 44. Annual New Total Networked Storage Capacity Projections by Media and Entertainment Market (Petabytes).....	133
Table 45. Annual New On-Line Networked Storage Capacity Projections by Media and Entertainment Market (Petabytes).....	134
Table 46. Annual New Near-Line Networked Storage Capacity Projections by Media and Entertainment Market (Petabytes).....	135
Table 47. Total Entertainment and Media Storage Revenue Estimate (\$M).....	137
Table 48. Direct Attached and Local Storage Entertainment and Media Storage Revenue Estimate (\$M).....	138
Table 49. Total Network Storage Entertainment and Media Storage Revenue Estimate (\$M).....	139
Table 50. On-Line Network Storage Entertainment and Media Storage Revenue Estimate (\$M).....	140
Table 51. Near-Line Network Storage Entertainment and Media Storage Revenue Estimate (\$M).....	141
Table 52. Off-Line Storage Entertainment and Media Storage Revenue Estimate (\$M)	142
Table 53. Media Unit Storage Capacity and Price Assumptions.....	145
Table 54. Detailed Annual New Media Unit Breakdown by Application.....	147
Table 55. Annual New Media Unit Summary.....	148

Acknowledgements

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Executive Summary

This report is the ninth report on data storage and emerging applications and the seventh report on data storage and the entertainment and media market published by Coughlin Associates.

Data storage is a key element in the digital transformation of content creation, editing, distribution and reception. Data capacity increases, form factors, lowered product prices and the growing familiarity with digital editing, digital intermediates and various forms of digital distribution are key components in the continued growth and development of entertainment. Because of the large file sizes required for high resolution and stereoscopic images there is increasing demand for high capacity storage devices to support resulting large video files. The entire content value chain of content creation, editing, archiving, distribution as well as consumer electronics content reception devices provide an overall accelerating feed-forward mechanism. This drives growth in data storage for entertainment content applications.

For many archiving and distribution applications where content is relatively static low cost/high capacity ATA storage, optical disks and tape-based storage libraries will predominate. Hard disk drives as well as enterprise SSDs are also used in high performance storage applications where storage costs must be combined with performance enhancement.

For applications requiring rugged field use or fast playback response flash memory either as cards or solid state drives (SSDs) are becoming more popular.

Due to input from industry groups, SMPTE survey results and discussions with industry end users and equipment providers we have adjusted historical model data. Data back to 2008 is shown in this report to help past report clients in interpreting the new data. Some areas have gained in capacity and revenue while some have declined vs. earlier editions of this report.

We list some key points of the report in the following list.

Key Points

- Creation, Distribution & Conversion of video content creates a huge demand driver for storage device manufacturers
- As image resolution increases and as stereoscopic video becomes more common, storage requirements explode

- The development of HD TV and other high resolution venues in the home and in mobile devices will drive the demand for digital content
- Active archiving will drive increased use of HDD storage for “archiving” applications, supplementing tape for long term archives
- Flash memory will find wider use in cameras and content distribution
- Between 2011 and 2016 we expect the media and entertainment industry will see about a 7.7X increase in the required digital storage capacity and about a 5.6X growth in storage capacity shipments per year (from 11,248 PB to 62,736 PB)
- Total revenue for media and entertainment storage systems will increase about 1.7X from 2011 through 2016 (\$3.8 B to \$6.4 B)
- About 57% of the total storage capacity will be used for content archiving and preservation in 2011. We believe that this will increase to 60% of total capacity by 2016 due to more efficient and cost effective conversion services, lower overall storage costs and a greater ROI on long tail content
- In 2011 we estimate that about 43.6% of the total storage media shipped for all the digital entertainment content segments was tape with about 39.1% HDD, 17.1% optical and 0.2% flash memory (mostly in digital cameras and some media distribution servers)
- By 2016 tape units will decline to 39.1%, HDDs increase to 60%, optical decline to 0.6% and flash increasing in percentage to 0.3%
- Total revenue for storage media and devices will increase about 1.6X from 2011 through 2016 (\$485 M to \$760 M)
- The single biggest application (by storage capacity) for digital storage in the next several years as well as one of the most challenging is the digital conversion of film, video tape and other analog formats
- Over 61 Exabytes of digital storage will be used for digital archiving and content conversion and preservation by 2015
- Content distribution systems will drive the growth of network and direct attached/local storage in the projection period.
- Digital cinema is experiencing considerable growth, driven by the popularity of 3D content
- There is a pressing need to develop policies and procedures for format conversion to combat format obsolescence
- Several petabytes of storage may be required for a complete stereoscopic digital movie production at 4K resolution and there is some production work as high as 8K
- Non-linear editing requires high performance storage devices. Over the forecast period lower network storage costs and higher performing low cost storage networks will result in faster growth of network storage than direct attached and local.
- ATA HDD arrays are becoming the dominant mode for readily retrievable fixed content storage.

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- Magnetic tape will remain as an archival media although use in other applications is in decline, particularly content capture
- Digital cameras using optical media, flash memory, and hard disk drives will gain momentum over traditional video tape
- The storage industry experienced some softness in storage demand growth since the 2008 recession but the continued need to storage for higher performance and high capacity workflows are driving strong storage growth in the projection periods.

The data presented in this report is subject to change as the content storage market develops. We have additional information that we have gathered in addition to that included in this published report. We will continue to monitor and develop our models of this market as time goes on. We would be glad to work with customers on specialized presentations or reports and in general to conduct research to answer specific questions on a project or ongoing basis.



2011 DIGITAL STORAGE FOR MEDIA AND ENTERTAINMENT REPORT

This updated and expanded report is the seventh annual comprehensive reference document on this topic. The report analyzes requirements and trends in worldwide data storage for entertainment content acquisition; editing; archiving and digital preservation; as well as digital cinema; broadcast; satellite; cable; network; internet and cable VOD distribution. Capacity and performance trends as well as media projections are made for each of the various market segments. Industry storage capacity and revenue projections include direct attached storage, on-line as well as near-line network storage. Available in Spring 2011.

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