◆ IEEE CE Society ◉

Annual
CES Download

- Gary Sasaki – DIGDIA
- Mike Demler – DIGDIA
- Chris Pedersen – nVidia
- Tom Coughlin
     – Coughlin Assoc

		2010
256%	LED Displays	
236%	OLED	
129%	Ethernet-enabled TVs	
127%	e-Readers	
95%	Ethernet-enabled Receivers	
95%	3D TVs	
92%	>60 inch Plasma	
85%	>60 inch LCD	
84%	HTiB w/Blu-ray	
74%	Ethernet-enabled Blu-ray	
55%	Soundbars	
55%	Phones with GPS	
46%	TVs with Widgets	
44%	Netbooks	CEA

Guess What the Big Buzz was About?

Panasonic

XpanD

Sony

Sisvel

cubicVue

digdia

Gary Sasaki - DIGDIA

3D TV

Marketing

R&D

See report on 3D at www.digdia.com

digdia

3

TV Refinements

Panasonic

Samsung

Samsung (0.3") LG (6.9mm)

Sharp

CELL TV

Toshiba

digdia

4

"Mobile Electronics"

Chevy Volt

Ford Lincoln

digdia

5

Spy vs. Spy

Pocket Radar

FLIR

Tazer
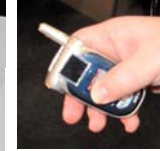
Ideal Creations

Aigo

digdia

6

Green

Klipsch

Sharp

Acbel

ACBEL POLYTECH

Samsonite

Tunebug

digdia

7

Fashionable

Deos

Nanobrick

Hannspree

Victorinox

Ed Hardy Icing

digdia

8

Cool Stuff

CarMD

Modiv

Moen

Samsung

Brother

digdia

More Cool Stuff

dtv Interactive

MileageTracker

Burton

Sony

Guitammer

digdia

For that Special Person

Oregon Scientific

See more photos at digdia.com

ElectroJoe

Parrot

Zomm

Shapeways

Simplism

11

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Highlights from (in & around) CES

Mike Demler

Senior Strategic Analyst

digdia
DIGITALMEDIA

Additional photos and articles at
The World is Analog

http://the-world-is-analog.blogspot.com/

Google Nexus One

- The long-anticipated "Google phone"
- Sold directly from www.google.com/phone
- Manufactured by HTC
- 1st phone with Android 2.1
  - Voice input to all text fields
- Qualcomm Snapdragon processor
- 3.7-inch (diagonal) AMOLED touch screen
  - 800 x 480 pixels

digdia

AT&T Supports Android

- Android now on all major carriers
- AT&T plans 5 Android phones in 2010
  - 1st up: Motorola "BackFlip"
    - with MotoBlur UI
  - Dell enters U.S. market: mini 3
  - More HTC Android phones
- AT&T planning for loss of iPhone?

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Android Beyond Smartphones

- Qualcomm-HP netbook
  - Concept vehicle
- ARM vs. Intel-Atom
  - Snapdragon again
- Android adapted for larger screens
- Android in e-book readers
  - Barnes & Noble nook
  - Spring Design "Alex"
    - Dual-screen ePaper + browser
    - Announced agreements with Borders, Google books
- ICD Ultra tablet
  - nVidia Tegra
  - 1080p HD video

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Verizon's 1st Public Demo of LTE

- 4G competition for Clearwire/Sprint WiMAX
  - Alcatel-Lucent network
  - ICD tablet
    - nVidia Tegra-powered
  - Creative Labs
  - Video, video, video…
  - M2M applications
  - 4Home security

digdia

Mobile TV

- ATSC-M/H mobile DTV for local broadcast
  - Approved in Oct-09
  - 1st test market in Washington D.C. Q1-2010
- Samsung
  - Added TV to Moment™ Android smartphone
- iMovee Telly NAV
  - combined GPS + TV (?)
- Qualcomm FloTV
  - Subscription-based proprietary format
  - Re-using UHF channel 56 spectrum
- Telegent
  - Chips for analog mobile TV handsets
  - Regions where NTSC/PAL is available
    - Asia, Eastern Europe, Latin America, Middle East & Africa

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Video Everywhere & Anywhere

- "Thumb-sized" Mini DV
  - 640 X 480px @30fps
  - Built-in Li battery for 2.5 hour recording
  - Supports 16GB Micro SD card
  - Snapshot function
  - Low illumination, high resolution image with 2 Mpixels
- Wearable Sports cameras
  - Liquid Image: Scuba masks, Ski goggles
  - GoPro: helmets, surfboards, race cars

digdia

mirasol® Color Displays

- Passive-reflective color display based on interferometric modulation (IMOD)
- Pixels are two nanometer-scale plates separated by an air gap equal to wavelength of light for R, G & B
- Displays video and static pages
- e-book reader to be available 2H 2010

digdia

Some Really Sweet Analog
(with a little digital)

- The Thiel CS 3.7
  - Jim Thiel's "lifetime achievement"
- Continuum Caliburn turntable
  - $65,000
  - + Cobra tonearm ($12,500)
  - + Castellon stand ($24,999)
- Thiel + Olive
  - SCS4D IP-based Loudspeakers
  - Burr-Brown 24-bit/192kHz DAC
  - 200W Class D Power Amp
- Olive HD HiFi Server
  - 2TB ultra-quiet hard drive
  - 4-port Gigabit Ethernet (wired)
  - 802.11n (wireless)
  - Analog and USB Inputs

digdia

3D HDTVs are coming in 2010

Sony

Panasonic

Toshiba

Samsung

LG

Sharp

JVC

Chris Pedersen - nVidia

Chris Pedersen - nVidia

NVIDIA 3D Vision Surround
The Ultimate Immersive Gaming Experience

140 Hours of Music, 16 Hours of HD Video, 6 Hours of HD Streaming Video
with NVIDIA Tegra

2-5x Faster Media Apps on an ION Netbook

GPU-CPU Co-processing Turbocharges Atom

SV 2010, CES, Showstoppers
and ICCE Storage Recap

Thomas Coughlin

Coughlin Associates

www.tomcoughlin.com

Storage Highlights

- Life-logs, e-Diaries
- Long term storage preservation
- Consumer metadata
- Network storage and plug computing
- New high speed/capacity SD card formats
- USB products and USB 3.0 first products
- SSDs and external SSDs
- 3D on Blu-ray
- Professional video products

28

Slide 1: Total Recall!

VIEVU PVR-PRO 2
- Enhanced low light
- Improved resolution
- 4 hours of recording
- 4 GB memory
- Waterproof
- $399.95

Capacity (GB)

PEN VIDEO CAMERA
FOR FUN, TO SPY, TO WRITE!

Only $24.99

A pen with all the works. Why stop at writing, when you can record, replay and reuse? Leave the load at home. The MP9 is the latest in pen camera technology that offers all the benefits of a pen without carrying a camcorder around. Fully functional, portable, and well priced, the pen camera does not weigh down your pocket or your wallet.
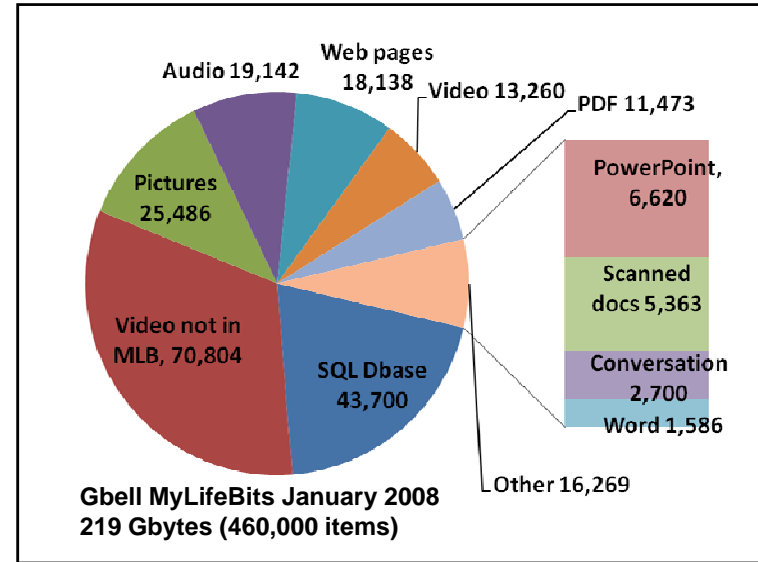
| 1GB | 2GB | 4GB | 8GB |
| $24.99 | $29.99 | $34.99 | $39.99 |

Add to cart

Chart legend:
- Commercial Content Capacity
- Personal Content Capacity

Y-axis: 120,000 / 100,000 / 80,000 / 60,000 / 40,000 / 20,000 / 0
X-axis: 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

Publish Date September 2009

HOW THE E-MEMORY REVOLUTION WILL CHANGE EVERYTHING

TOTAL RECALL

GORDON BELL and JIM GEMMELL
FOREWORD BY BILL GATES

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Slide 2

Audio 19,142
Web pages 18,138
Video 13,260
PDF 11,473
Pictures 25,486
Video not in MLB, 70,804
SQL Dbase 43,700
PowerPoint, 6,620
Scanned docs 5,363
Conversation 2,700
Word 1,586
Other 16,269

**Gbell MyLifeBits January 2008
219 Gbytes (460,000 items)**

Slide 3: Everything a Recording Device

Flashlight DVR — Compact Digital Video Recorder — Monitoring & recording concealed in a portable flashlight.

GOSCAN Vehicle DVR — Built-in G-Sensor

CLEAR

GPS Logger   Record   G-Sensor

Portable Internet Broadcasting

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Slide 4: Threats to long-term assets

- Large-scale disaster
- Human error
- Media faults

Long-term content suffers from more threats than short-term content

- Component faults
- Economic faults
- Attack
- Organizational faults

- ➤ Media/hardware obsolescence
- ➤ Software/format obsolescence
- ➤ Lost context/metadata

32

Sam Fineberg, HP, Digital Forgetfulness, SV 2010
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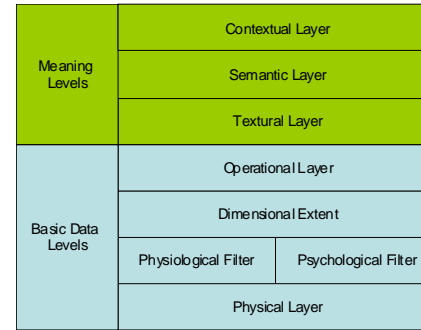
SIRF: logical container format

- Being developed by SNIA
  - For long-term storage of digital information

- Logical data format of a mountable unit

- Facilitate transparent logical/physical migration for long-term preservation

- Several implementations envisioned
  - Preservation models, storage interfaces, storage devices, etc.

33

Sam Fineberg, HP, Digital Forgetfulness, SV 2010
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Metadata Layer Model

Meaning Levels	Contextual Layer	
	Semantic Layer	
	Textural Layer	
Basic Data Levels	Operational Layer	
	Dimensional Extent	
	Physiological Filter	Psychological Filter
	Physical Layer	

- We need a consumer metadata standard that obeys 4 criteria:
  - Flexible
  - Scalable
  - Upgradable
  - Simple
- Plus something that can also integrate the professional standards

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Network Storage

© 2010 Coughlin Associates   35
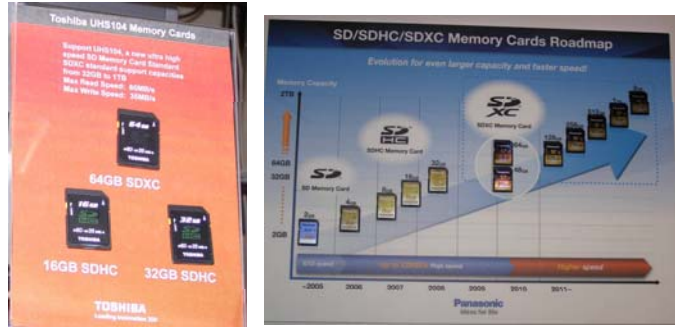
Plug Computers

- Build networked computers into everything…

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Higher Capacity, Higher Speed SD Cards

- Last year the SD card association announced the SDHC format
- This year Toshiba was showing product
- CE Devices using this available by 2011

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USB Storage Devices

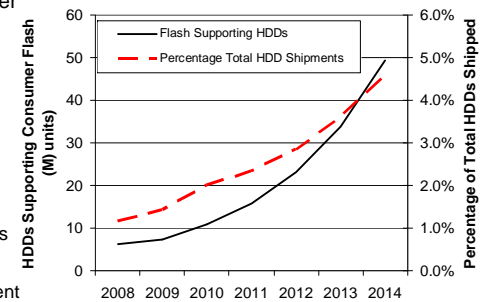© 2010 Coughlin Associates   38

USB 3.0

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Symbiotic Relationship Flash and HDDS

- Almost all consumer flash applications require HDDs
  - Music and video players
  - Cameras
- Consumer flash applications have created greater demand for HDDs
  - Downloads
  - Uploading photos and videos
  - Backup of Consumer Content

White Paper: Flash and HDD: Symbiosis or Survival of the Fittest? (Coughlin Associates & Objective Analysis)

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SSDs

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External SSD Torture Test

IoSafe Demo-Lition

January 8, 2010

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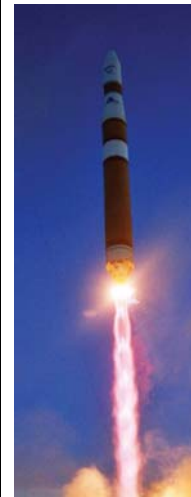
Optical Disc Technology

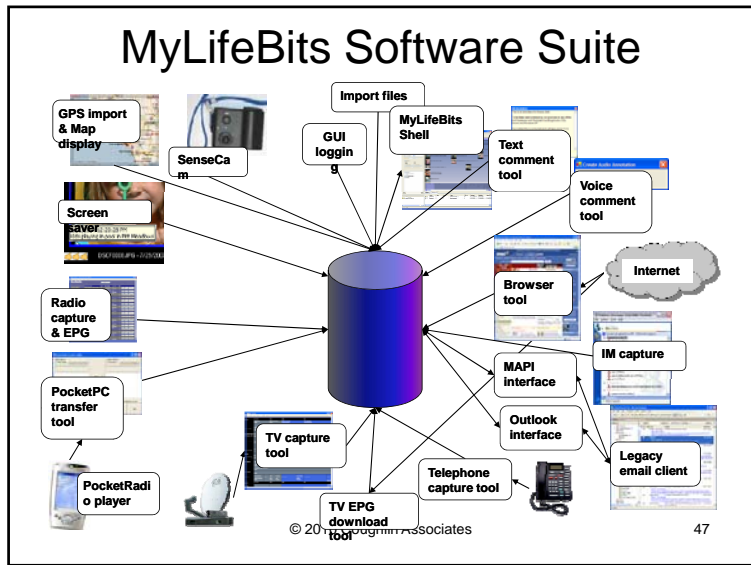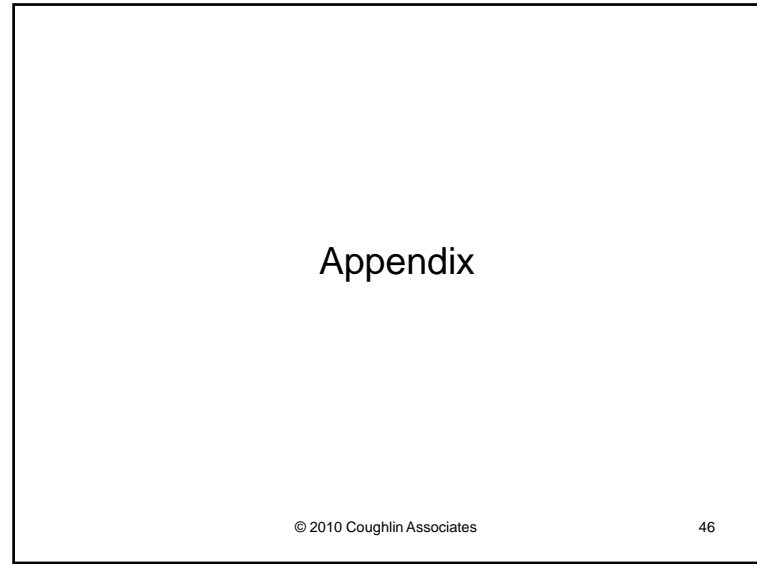© 2010 Coughlin Associates   43

In the next decade

- A terabyte in your pocket
- A petabyte in your home
- Exabytes in datacenters
- Zetabytes in the world

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Thanks

Appendix

46

MyLifeBits Software Suite

GPS import & Map display

SenseCam

Screen saver

Radio capture & EPG

PocketPC transfer tool

PocketRadio player

TV capture tool

TV EPG download tool

Telephone capture tool

GUI logging

Import files

MyLifeBits Shell

Text comment tool

Voice comment tool

Internet

Browser tool

IM capture

MAPI interface

Outlook interface

Legacy email client

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Preservation storage formats

- We can't predict the future
  - Systems will change, formats will change, systems will fail

- Preservation objects need to be
  - **Self contained** – to ensure objects are complete
  - **Self describing** – so software can interpret it
  - **Extensible** – so it can meet future needs

- A preservation storage format must
  - Facilitate storage of preservation objects
  - Map to a wide variety of storage devices and technologies
  - Be resilient to failures and change

48

Sam Fineberg, HP, Digital Forgetfulness, SV 2010
48

Professional Video

Sony Stereoscopic Projector (what every home needs!)

iVDR for Content Capture and Editing

49

Odds and Ends

50

13