IEEE CE Society
Annual CES Download

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

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

Guess What the Big Buzz was About?

3D TV

Marketing

See report on 3D at www.digdia.com
Cool Stuff

CarMD
Modv
Moen
Brother

More Cool Stuff

dTV Interactive
MileageTracker
Burton
Sony

For that Special Person

Parrot
Zomm
Oregon Scientific
ElectroJoe
See more photos at digdia.com

Highlights from (in & around) CES
Mike Demler
Senior Strategic Analyst

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

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?

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

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
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

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

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

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
  - SC34D 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
3D HDTVs are coming in 2010

Sony | Panasonic | Toshiba
--- | --- | ---
Samsung | LG | Sharp

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

CUDA-GPU Co-processing Turbocharges Atom

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

SV 2010, CES, Showstoppers and ICCE Storage Recap

Thomas Coughlin
Coughlin Associates
www.tomcoughlin.com
Total Recall!

Publish Date
September 2009

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Everything a Recording Device

Portable Internet Broadcasting

© 2010 Coughlin Associates

Threats to long-term assets

- Large-scale disaster
- Human error
- Media faults

- Component faults
- Economic faults
- Attack
- Organizational faults

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

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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.

Metadata Layer Model

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

Network Storage

Plug Computers

- Build networked computers into everything…
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

USB Storage Devices

USB 3.0

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)
SSDs

External SSD Torture Test

Optical Disc Technology

In the next decade

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

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
Professional Video

Sony Stereoscopic Projector (what every home needs!)

Odds and Ends

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