A Media Maniac's View of Future Technology

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THIC Gathering
of Recording Specialists

October 18, 1995

AIIM: The Association for Information and Image Management, International

AIIM International's approach to future technology:

EmTAG
The Emerging Technology Advisory Group

Officially founded: 1992
Served as Chair: 93-95

Charter:

To identify and investigate emerging technologies in relationship to existing information and image management technologies and behaviors, and to communicate the knowledge gained from these efforts to our audience.

Audience:

The AIIM Board of Directors
Long Range Planning Committee
AIIM Special Interest Groups
AIIM Chapters
AIIM Members at Large

Balanced Membership:

Members and non-AIIM members
Technologists and specialists
Corporate presidents
Industry leaders
Limited to 20 participants
Maximum term: 3 year

Representatives:

Vendor organizations
Consultant community
End users organizations
Others (Academia, Futurists)

EmTAG FORMAT

Quarterly meetings around the country

Usually special half day tour, or educational program
followed by day long meeting.

Plan
AIIM National Conference presentations
(select panel of experts and theme)
Publication releases,
Services to provide community.

To apply:

Send a letter and resume to
Membership Chairman: Tom Magazzine at Vantage Technologies
1400 Park Meadow Drive
Cbantilly VA 22021
PH: 703-818-2800 x 840
FAX: 703-818-2362
or TMAGAZIN@ZELLAR.VANTAGE.GTE,com
or Priscilla Emery at AIIM: 301-587-8202

MAGNETIC DISK STORAGE

In March 1995, IBM demonstrated 375 MB per square inch

How:
Advanced version of magnetoresistive (MR) recording heads
and
Thin film magnetic hard disks.

Head flies over disk at 2 millions of inch
visible light cannot pass through gap.

Results:
180,000 bits per inch stored along concentric tracks with packing density of 16,500 bits per radical inch.

Where:
Advanced Magnetic Recording Laboratory, Almaden, CA.

BER: E-12

Ready: 3-5 years

WAVEGUIDE HOLOGRAMS

May 1995

Tamarack awarded $22M from DoD
Advanced Research Projects Agency (ARPA)

Goal:
Develop 125 GB storage systems
no moving parts

3D environment supports writing all through the media,
not just on the surface.

Wavelength-agile laser will provide data access,
and the optical system will feature multi-mode beam steering.

100 times improvement in speed and storage
over current WORM or erasable systems.

App: Video-on-demand or transaction processing.

SUGAR CUBE TECHNOLOGY

3D two-photon photochromic storage funded by Rome Laboratory and developed by UCSD Irvine.

Requires no moving parts and
supports near instantaneous retrieval.

Capacity: 125 GB
(250 file cabints of documents)

Should be ready for commercialization by 1999.

PIN TECHNOLOGY

Los Alamos National Lab has developed a non-erasable, high-density ROM storage device that can store 117 GB on a 1 inch stainless steel pin.

Uses ion etching technology to carve lines 150 billionths of a meter. Can store video, ASCII, image or bit mapped data.

Reading is done with atomic force microscope.

Data should last up to 500 years.

Available in 5-7 years.

BREAKTHROUGH FOR 3.5” OPTICAL

Fujitsu laboratories have developed
dual-sided 3.5” disk with 2 GB per side

Total : 4 GB
(Current capacity is 384 MB)
10 x improvement

Due out: 1997

Will be backward compatible to their 230 MB
being sold now.
(DynaMO)

OTHER 3.5 INCH OPTICAL NEWS

Olympus:
ISO Standard
640 MB direct overwrite by Spring 1996

Sony, Hitachi and 3M:
non-ISO Standard
650 MB direct overwrite

follow with 1.3 GB disk by 1997

2.5 GB by 1999 or 2000
(backward compatible to 1.3 and 640 MB)

Toshiba:
1.3 GB on dual-sided phase change disk

2.6 GB by 1999

“BUGS FULL OF BYTES”

Halobacterium from brackish lagoons
around San Francisco Bay.

Laser beams focused on photosensitive protein
could create a fast, matchbox-sized optical storage device
that could store 480 GB.
(960 file cabinets of document images)

Demonstration of technology by 2000.

Interesting use of toxic waste?

NANOTECHNOLOGY

"The Closer the Better"

Ohio State University

Used:

A lubricating film one molecule thick
on supersmooth aluminum surfaces,
resisted abrasion 80 times better than expected

Results:

A hard drive's read/write head
reduced to fraction of current size
and positioned closer to the disk.

End Result:

400 fold increase in storage capacity.

ADVANCED TECHNOLOGY AWARDS
August 1995

3M, Seagate Advanced Research Corp.

Advanced high speed magnetic tape, linear recorder to record various data at different rates. Intent: match or exceed performance and capacity of helical scan at 1/10 the price.
Initial rate: 240 Mbps
Goal: 800 Mbps

LOTS Technology

Development of a 3480-cartridge unit holding phase-change WORM optical tape media from Kodak. Systems will be compatible with most automated handlers or grippers. Applications include: archive backup, data warehouses, scientific data acquisition, critical records management.
Capacity: 1 TB
Initial rate: 120 Mbps
Goal: 800 Mbps

Optex Communications

Laser light will be used to stimulate microregions of a chemical phosphor layer on the optical disk. Original problem was that light sensitivity lead to erasure upon reading the disk.
The goal is to hold an entire movie on a 5.25 inch disk. Other applications include computer hard drives and virtual reality games. (In late 80's goal was 15 GB)

Terabank Systems, Polaroid, SAIC, Xerox, Carnegie Mellon, Energy Conservation Devices, NASA GSFC, and Univ. of AZ.

Product offering will be an phase-change WORM optical tape media housed in a sealed 8 mm unit. Tape must move at 2500 centimeters per second (close to a mile a minute).
Initial capacity/transfer rate: 100 GB @ 48 Mbps
Goal capacity/transfer rate: 800 GB @ 800 Mbps

Hutchinson Technology

Improved suspension mechanism in hard drive will allow the placement of 2-3 times the number of tracks on a disk. Replaces parts of stainless steel mechanism with lighter materials. Increase of 100-200% expected.

Kodak, SDL, Inc., and Carnegie Mellon

Proposing multilayer technology and development of blue laser to reach 67 times improvement over current 14” disk capacity. Two main challenges are the application of the thin layers to result in the multi-layered disk, and the availability of blue lasers. They also need to solve resulting storage geometry and a processing approach to the complex data signals.
Capacity: 1 TB per 14 inch platter.