

# MEMOREX TIMES

Worldwide Storage Equipment Marketing

Volume 3 Issue 3 2Q August 1984



## Improved Performance Through Cache Memory

Disc Storage Subsystems provide external storage to compliment the data storage of processors. Cache memory attached to a Storage Control Unit (SCU) of a disc storage subsystem provides the ability for improved overall throughput by enabling faster access to data.

This is accomplished by keeping frequently referenced data in the cache memory. Overall data service times are better than if all data references are satisfied by disc access. This factor can provide more consistent terminal response and batch turnaround times, which can result in increased user productivity.

IBM and STC already market cached SCU's. Both Amdahl and NAS have made formal announcements of the feature with CDC having made some informal announcements.

IBM's application cache SCU is the 3880-13, which is available with 4 and 8 megabyte memory sizes, and supports 3380 subsystems. Although operator commands are available to provide real-time timing of the 3880-13, there are weaknesses with the product. The preinstallation analysis programs require data, which during collection, creates high overhead to the systems environment and does not define the real benefit that will be achieved with the cache.

The software enhancement should initially provide benefits over the 3880-13, but the long-term availability of this approach is questionable.

As to the NAS formal and CDC informal announcement of cached SCU's, very little can be said at this moment. Both vendors are believed to

## Marketing Update: 3864 Program Status

The 3864 Program, which started a year ago, is now on track and expected to be in full swing throughout 1984.

First quarter orders for 1984 have already exceeded all orders received during the entire year of 1983. The market has never been better for the 3864 because more and more satisfied customers are willing to vouch for it. Once a 3864 is installed, it creates very apparent improvements in CPU throughput and user response time; customers cannot afford to let the 3864 go. In some cases, a 3864 is installed for comparing performances with a STC 4305 and the 3864 has demonstrated its capability to outperform 4305's in every situation.

We have many success stories: Cryovac was the first in the U.S. Amdahl,

as a CPU manufacturer, recognized that the 3864 complemented the throughput of their high performance CPU and presented their successful 3864 experience at the "SHARE" meeting in March of this year. Other installations are in banks, automotive manufacturing plants, telecommunication companies, and government accounts... and all are satisfied customers, simply because the 3864's keep ticking away and have shortened response time. A customer reference list is being compiled for distribution to the field shortly.

A new advertisement was placed in *Computerworld* and in *Computer Decisions* starting in the month of May. New data sheets, posters, and slide presentations will be sent during the

continued on page 2

continued on page 2

# Letter From The Editor



As of the last Galaxy special issue, I have taken over the responsibility of Editor for the Memorex Times.

Louise Biggs, your previous editor, has been promoted to Manager of Market and Competitive Analysis within the Strategic Planning group.

The Memorex Times will continue to publish current and informative news items relating to recent market developments to help in your sales effort.

This publication needs your support. Please continue to submit noteworthy articles, news items, and publicity leads of interest to our readers.

Your contributions are appreciated.

Sincerely,

*Julie Ross*

Julie Ross  
Editor

## 3864 Status

continued from page 1

months of June and July.

To keep the momentum going, the first quarter bonus for sales has been extended through 2nd quarter. In addition, the very first incentive bonus plan for systems engineers was also included in the 2nd quarter plan.

Now with all the sales tools in place, your 3864 program can keep picking up speed!

## Improved Performance

continued from page 1

be producing fully 3880-13 compatible products. Should this be correct, then both will experience the performance problems and limited product application that IBM has encountered.

Memorex is committed to producing an application cache, and is using experience gained with the 3770, the first subsystem cache ever produced. It is believed that a fully 3880-13 compatible approach is necessary to ensure that any enhancements produced by IBM may be utilized. However, while producing a compatible product, the need for larger cache memory, a separate microprocessor for cache management, improved cache update, and comprehensive preinstallation analysis programs has been recognized.

Also recognized is the need to define cache eligible data at a level lower than the volume level, as experienced with the IBM and STC alternatives. However, it is believed this may be provided in a manner unlike Amdahl, which requires the addition of nonstandard software.

The management of cache memory by the storage directors creates contention and affects data flow to and from the disc subsystems. Finally, the maximum 8 megabytes of cache memory is low in relation to potential maximum 20 gigabytes of storage that may be attached to the 3880-13.

STC's product is the 8890 Sybercache, which is available with up to 12 megabytes of memory, and currently only supports 3350

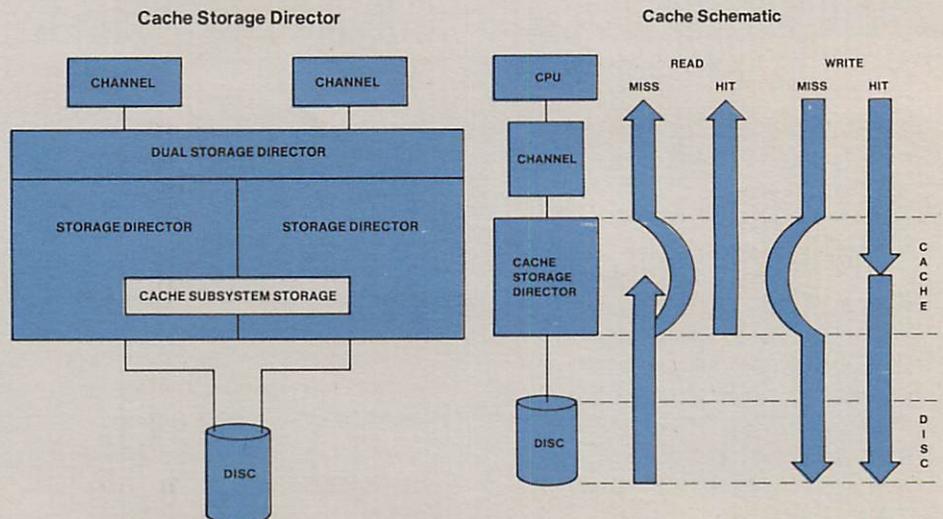
compatible products. However, it is understood that 3380 compatible products are being beta tested with the Sybercache.

Although the Sybercache only enables read operations to be cached, a separate microprocessor is used for cache memory management. When combined with comprehensive preinstallation analysis programs, this enables STC to identify maximum benefits and convince users to change the systems environment so that these may be obtained.

This strength camouflages the weaknesses of the Sybercache in that it not IBM compatible, but merely IBM transparent. Should IBM introduce a new cache SCU, correcting its problems with cache management and preinstallation analysis, while building on the strength of real-time tuning, STC may have difficulty in responding.

The same applies to the cache SCU announced by Amdahl. Although the selection of cache eligible data has been enhanced by software to the volume extent or data set level, it is also IBM transparent.

The objective is to provide a feature for the 3888 that will obtain the greatest benefit available on the market, and maintain our assertion that the 3680 is the best 3380 performance alternative. In line with the policy of integrity, the formal announcement of the feature will be made when firm commitments on price and availability can be made.



# Competitive Response To The IBM 3480

## Memorex's Response

Memorex is the only plug compatible manufacturer that offers every disc and high performance tape drive that IBM has announced and shipped to the large IBM computer market. Therefore, there will be no exception to the latest IBM 3480 cartridge tape subsystem announcement. We have plans to offer a compatible subsystem with improved performance and ease of handling as we have done with the 322X and 326X subsystems in the past, and the newly announced 328T subsystem. They all have benefits over the existing IBM tape products.

Our commitment to the 3480 cartridge tape subsystem can be best illustrated by Al Conover's quotation in Electronic News dated April 2, 1984: "We have been working with Fujitsu on cartridge tape drives, developing the 1/2 inch tape cartridge technology. . . ."

Memorex also has a licensing agreement with Electronic Processors Inc., and we are proposing the EPI 1/2" cartridge as a standard to ANSC (American National Standard Committee). As for the actual product announcement, Memorex is taking time to study the 3480, evaluating the strengths of in-house development capability with the available technology in the market. Since the 3480 will not be available until the first quarter of 1985, an early announcement would be premature.

However, we will continue to work on product enhancements/developments to find niches in the market. We are also participating in joint ventures to accelerate product development as we have done in thin film head, thick substrate disc development, and many other advance recording technologies through licensing agreements. We shall be finalizing our product enhancement plans for tape subsystems by the 4th quarter of this year.

## Other PCM Responses

STC—No formal response has been made. STC believes that users would not be willing to convert to a cartridge format. Therefore, STC has turned their efforts toward developing the tape buffers and consider their buffered tape subsystem the alternative to the 3480.

## Newsbriefs

- Gartner Group and Datamation have analyzed the top 100 data processing vendors for 1983. The following is a combined excerpt of their findings:

1983 Rank	Vendor	1983 DP Revenue (millions)	% DP Revenue Foreign	% Growth 1983/1982
1	IBM	\$37,367	38.0	18.7
3	Burroughs	4,038	50.5	6.0
4	CDC	3,507	33.0	6.3
16	StorageTek	860	20.0	-16.5
19	Amdahl	777	35.7	68.3

StorageTek topped the "List of Unfortunates" among the top 100 as a result of the cancellation of its CMOS mainframe resulting in a loss of about \$65 million, in addition to excessive development costs for an optional disc drive. (For the complete study see *Computer Decisions*, June 1984 and *Datamation*, June 1984.)

- NAS has reduced monthly lease payments for the AS/6600 series by about 20 percent and has implemented new monthly lease arrangements whereby a customer with an AS/6620, AS/6630, or AS/6650 on a 48-month base can upgrade after that period to another product family (AS/80X3 or AS/90X0). The other lease arrangement involves accruing lease payments towards the purchase of an AS/80X3 system. (*MIS WEEK*, May 1984.)
- CDC is apparently having problems pushing its IBM compatible 33800 disc unit out the door. Some say problems have arisen in mass production, and even if solved, may still force CDC to reconsider entering this market because of excessive delay. (*International Marketing Management Bulletin*, May 1984.)
- Memorex completed the installation of 112 3680's at a large customer site in Pennsylvania at the end of June. For further details see Marketing Flash No. 52.

Nonetheless, STC has claimed that the development of their thin film head 18-track cartridge and double density bpi has been going on for *over a year* and may make an announcement at any time. (It is believed that IBM took 5 to 10 years to develop the 3480).

NAS—NAS also claims to be developing a 1/2" cartridge tape drive with Hitachi, their peripheral and CPU supplier. However, no current plans have been made to announce a 3480 compatible cartridge drive yet.

## Users Response

The cartridge tape drive will help create new interests in the tape market, which has been rather flat for the last few years.

To back up a 3380, however, the

cartridge tape subsystem requires 11 cartridges—exactly the same number as tape reels, in spite of the fact that a cartridge can store 20% more data. A cartridge also costs about the same as a reel of tape. Software conversion is not currently available (for matching the 6250 bpi to the 38,000 bpi in the cartridge). Initial operational problems, conversion costs, and auto-load are additional unknown factors. These factors will aggravate the pain of migrating towards cartridge tape drives. The industry in general believes it will take at least 5 or more years to penetrate 50% of the market.

The acceptance of the cartridge tape drive could be painful to users. It may be dependent upon their willingness to make new long-term investments.

# U.S. HIGHLIGHTS

## Memorex Attends NCC

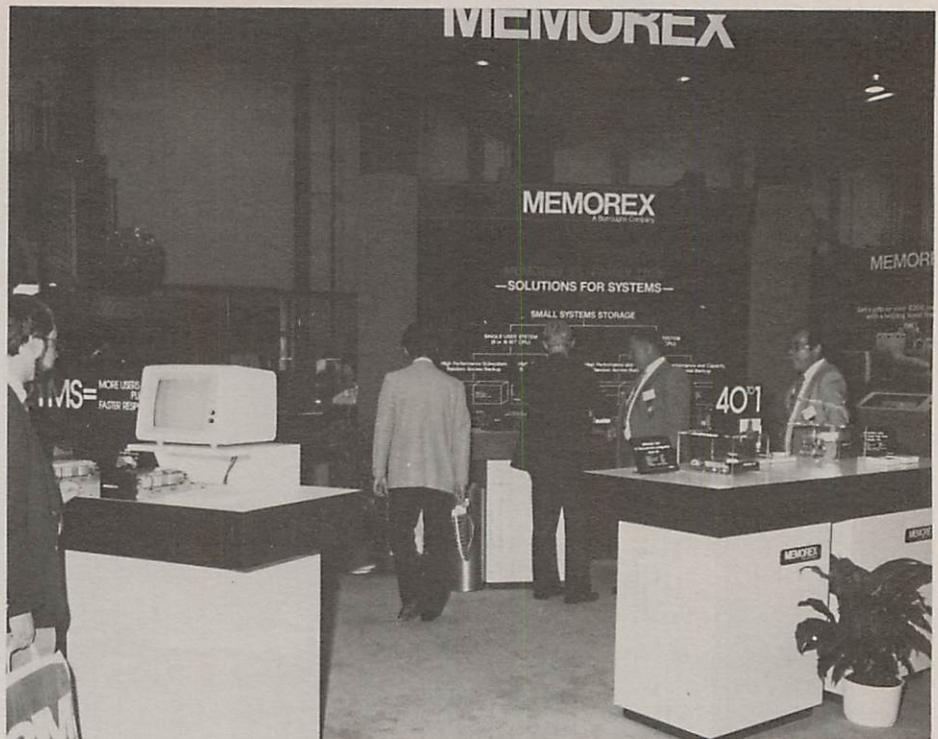
by Hank Czeranko

It's time again for NCC and Memorex was there! This year NCC was held at the Las Vegas Convention Center, July 9th through the 12th.

Memorex was located in booth C3218, adjacent to Burroughs between aisles C3100 and C3500. Our 1200 square feet of display area was along the first main aisle entering the Convention Center. This was a very high traffic area.

The Memorex display was represented by the four major marketing groups: Storage Equipment, Communications, Media and OEM. In addition, we had a special display for Galaxy. This display was in tune with the new Galaxy advertising theme featuring Memorex storage equipment printers, and communications equipment surrounding the IBM 4300.

The new 4303 printer was featured at the show, as well as the 3264, the 3697, and the 3680. Also present was an open 3680 HDA and a graphics display demonstrating MAPS. This proved to be a real attention getter.



Memorex had a hospitality suite at the Las Vegas Hilton open each day of the show. We also held an open-house on Wednesday evening at the Sheffield Inn located next to the Convention Center.

This year's show was better than ever, and our message was clear:

When it matters, make it Memorex.

## 365X Pricing Offers Favorable Sales Incentives

By Hank Czeranko

The current pricing pressures on 3350 DASD are continuing to keep prices on an upward trend. Demand for these boxes continues to be high while supply is scarce. It is also interesting to note that the A boxes are rising over B boxes as a percentage of IBM list, suggesting a trend towards users adding new strings as well as filling existing ones. Our 5X order pattern does show a high percentage of full strings and our order rate has exceeded forecast throughout 1984.

For a January, 1984 to April, 1984 comparison of 3350 prices, see

Marketing Flash #43. We are seeing prices trending even higher during May.

The current market conditions suggest that there will never be a better time to sell 365X drives than now.

The current retail for a full string of 3350's is:

1	3350 A2	\$10,250
3	3350 B2's	24,300
	@ \$8,110	
		\$34,500

Sales Minimum Pricing for a similar string of 365X is:

1	3653-00	\$ 8,000
3	3650-00	19,500
		\$26,500

Your customer can "Make it Memorex" and save \$7,050.00. This savings puts Memorex at nearly 21% below the current retail for 3350's and you have the flexibility to make a deal where necessary.

If you need more throughput, you can sell IDI for an additional \$9,500 for a full string. Adding IDI would take the full string price of 3650's to \$37,000, or about 6 1/2% above the 3350. This cost is offset, of course, by a minimum 15-20% performance increase and may be negated by continued 3350 price rises.

As a reminder, there are several 365X sales incentives:

## SMB 3888 Enhancement: Exploring Selling Strategies

The Speed Matching Buffer permits attachment of the 3680 subsystem to an IBM or PCM equivalent block multiplexor channel with data rate lower than 3 megabytes per second. It provides both a migration and transition aid since it not only allows 3680's to be installed on processors without data streaming channels but allows 3680's to be shared between processors with and without 3 megabyte channels.

While the Speed Matching Buffer does provide a migration and transition ability, it also degrades DASD performance. This degradation is due to a "bottle neck" effect of the speed matching buffer through which all data must pass. Even channels with 3 megabyte transfer rates are degraded because they must wait additional time when a data transfer with a slower channel is in progress.

This performance degradation, together with the unavailability of the 3888 Speed Matching Buffer until 1Q 1985, indicates we should explore alternative selling strategies.

An effective strategy is to use 365X/Y with IDI as a logical alternative. 365X/Y with IDI will often produce throughput and performance results superior to those enjoyed by 80 class DASD utilizing Speed Matching Buffers (please refer to the 3652 Marketing Guide). You should recommend that users continue to use 365X/Y if they are utilizing an older processor type since you can achieve compatible data arrival rates with appropriate configuration design. Schedule 3680 deliveries to coincide with installation of new processors. If the customer is not planning to upgrade his processor in the near future, explore the financial viability of adding a data streaming option. If the data streaming feature can be added, the full benefit of the 3680's throughput and performance can be achieved.

If the Speed Matching Buffer is required when processors with and without 3 megabyte per second channels are required to share data, recommend that shared data remains on 365X/Y with IDI. As already stated, the potential exists to provide better throughput and performance to the

## WORLDWIDE MEMOREX NEWS

- The "Marketing Flashes" that have been produced since the March issue of the "Memorex Times" are as follows:

Number	Subject	Date Published
39	5X/5Y Support on 3888 Subsystem	March 16, 1984
40	The IBM 3480 Tape Subsystem	March 28, 1984
41	3888 With 8 Channel Switch Availability	April 6, 1984
42	3864 Contractual Status	April 16, 1984
43	365X/365Y IBM 3350 DASD	May 4, 1984
44	Investment in Quality Slide Presentation	April 16, 1984
45	Pull Out All The Stops!	May 11, 1984
46	3888 Feature Update	May 18, 1984
47	Competitive Newsletter No. 3	May 21, 1984
48	3680 Reliability	May 21, 1984
49	3864 Success Story	June 8, 1984
50	3864 Environmental Spec.	June 8, 1984
51	3680 Progress Report	June 12, 1984
52	3680 Success Story	June 15, 1984
53	3888 Feature Story	June 15, 1984
54	XA/DDR Support on 3680	June 15, 1984
55	3864 Improves Productivity A Hallmark Card Case Study	July 4, 1984
56	3680 vs. Competition Feature Comparison Matrix	July 13, 1984
57	Competitive Information Update Number 4	July 13, 1984
58	3680 Progress Report	July 13, 1984

If you need a particular issue, please call Kathe Sears in the U.S. at (408)987-2301, TELEX:MKTG, or Chris Ing in Hounslow at 01-572-7391.

- Memorex completed the installation of 112 3680's at a large customer site in Pennsylvania at the end of June. For further details, see Marketing Flash No. 52.

shared data in this manner. In addition, the full potential benefit of the 3680 can be achieved through dedication to the processor with three megabyte channels. This also avoids the cost of the Speed Matching Buffer, a cost which will only result in a degraded 3680 throughput and performance.

Before proposing a Speed Matching Buffer, be sure that the potential user fully understands the price to be paid for its use as a migration and/or transition aid. By demonstrating a full understanding of the problem, together with its solution, credibility can often be gained and a deliverable order obtained.

## 365X Pricing

continued from page 4

- 1) Quota points are increased by 25%
- 2) \$25 per box renewal/renewal bonus
- 3) \$50 per box lease-to-purchase boxes
- 4) Additional system-type incentives
- 5) Galaxy
- 6) Quick Delivery

Selling 365X can provide extra vacation cash this summer. Take a look at customers who use this type of storage and give them the opportunity to "Make it Memorex" and save 20%. How can anyone turn down a good deal like this?

Remember, this market won't last forever. Now is the time to act!

## Who's Who

The articles submitted by you enable us to publish the "Memorex Times". A special thanks to:

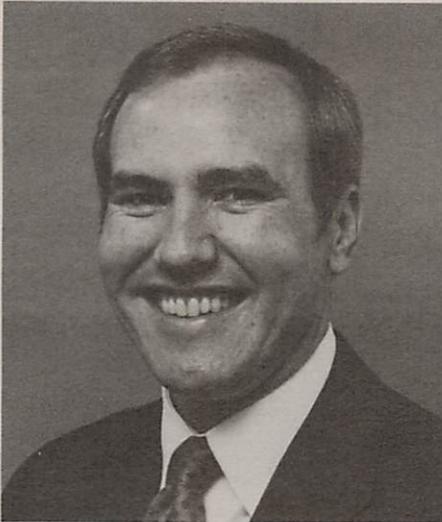
Hank Czeranko  
Product Marketing Manager

Frances Ma  
Product Marketing Manager

John Graham  
Manager, Systems Engineering

## SE Marketing Expands With New Large Systems Manager

In August, Storage Equipment Marketing will welcome Gary Kolesiak to the position of Marketing Manager — 3680/3864.



Gary has held various positions with Memorex over the past seven years before accepting his current position. Beginning his tenure as a systems engineer in Chicago, he then proceeded to Regional SE Manager, and was then

promoted to Product Sales Support Manager for the 3864.

In his current position, Gary will report to Steve Martin, Director of Marketing, and will be responsible for marketing support of the 3680 and 3864 product lines.

One of his primary objectives is to implement the concept of "Solution Selling" into the 3680 and 3864 products. Combining his direct sales and systems engineering experience, Gary is well prepared to integrate effective selling solutions into the marketing plan.

Another main objective is to surpass sales goals set for the 3680 and the 3864 in addition to exceeding corporate and personal objectives of the entire Memorex sales force. According to Gary, "In my first month as an employee with Memorex, Frank Sordello announced Memorex's intent to build the 3680-type device. Today, with the product still in its early life, my intent is to bring the 3680 to its full maturity."

## MEMOREX TIMES

This edition of the Memorex Times was published by Worldwide Storage Equipment Marketing, Mail Stop 12-17, San Tomas at Central Expressway, Santa Clara, CA 95052. Telephone (408) 987-9877, Telex: MKTG.

Publisher, Steve Martin

Editor, Julie Ross

Contributing Editor, Louise Biggs

Graphic Designer, April Bishop

**MEMOREX**  
A Burroughs Company