DEAR JUAN & ALICE, You'll never guess who just signed up for VisiON! (Of course, there are lots of others, but they aren't announcing those yet.) Digital Research, which had been promising its own friendly integrating (LisaLook) interface, has suddenly decided to go with VisiCorp's VisiON for a graphics interface (although it's still developing its own text-based interface and others aimed at markets such as secretaries and users-at-home). It's a coup for both sides, of course. Certainly VisiCorp didn't need any persuading, because DRI's endorsement is a real plus -- and so is the absence of DRI as a competitor for VisiON. On the Digital Research side, Digital has joined a club that became more worth joining by that very action.

The situation now is that Microsoft still has a big advantage in the interface wars because it controls the de facto standard operating system for the 16-bit machines that will use those interfaces. VisiON is of course designing its system to work with Microsoft's MS-DOS, but it's likely to get only grudging support from Microsoft (which would rather sell MS-DOS for use with VisiON than not at all). VisiCorp has the advantages of having announced (not delivered) first and, by all accounts, of a more ambitious system. By working closely with Digital Research, and especially with DRI's CP/M-86 OS, VisiCorp makes it much easier for a hardware vendor to offer VisiON than would otherwise be the case.

Correspondingly, because VisiON will now be easier to install (unless you're IBM) on CP/M-86, we can expect more OEMs to start using CP/M-86. It all seems to be part of a much more aggressive and pragmatic marketing stance Digital Research has been taking lately, to the tune of winning 112 hardware OEM contracts for CP/M-86.

This new stance of DRI's probably helped to win VisiCorp's enthusiastic participation. Although Microsoft's MS-DOS has by far the majority share of 16-bit operating systems in use, DRI's strong marketing efforts to hardware vendors, and its support of application developers, are beginning to redress the imbalance a little. Just last week at Comdex, DRI and Software Distributors made a joint announcement offering bundled "Integrated Solution Packs" consisting of

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Concurrent CP/M-86 with bundled CP/M-based applications software. There's currently an accounting pack and two programmers' packages; ones for administrators, secretaries, professionals, and others are to follow. Like the joint effort with VisiON, this makes CP/M-86 more attractive by making it immediately useful. Also likely to increase the use of CP/M is a line of pre-installed CP/M applications software exclusively from Software Distributors for machines such as the DEC Rainbow, NEC APC, Epson QX-10, and several TeleVideo systems, also announced at Comdex. While the impetus was Software Distributors' (there's a similar, less-extensive arrangement for SofTech's UCSD p-System), the arrangement is bringing DRI some significant hardware allies. Their presence in turn makes DRI a more attractive ally for VisiCorp (although VisiCorp will of course continue to work with Microsoft as well). As operating systems and environments and applications become more closely linked, and as hardware vendors become aware of their importance, such alliances will become increasingly significant.

**SHOW & TELL: WHAT WE SAW AT COMDEX**

On a scale of 1 to 10, what makes a 10 software product? An 8 from a good family, of course. Much of what we saw at Comdex -- notably PFS:WRITE and Friday! -- was interesting as much for how well it will sell as for its inherent qualities. There's a lot of reasonably good product that doesn't stand a chance against equally good product with a strong company and an installed base to link into.

A notable exception is DesQ, an operating environment described in the April 14 issue of RELease 1.0, which comes from "nowhere" -- a Santa Monica start-up called Quarterdeck. DesQ, a $395 windowing environment, captured enormous attention from both software and hardware vendors attending the show. Not only is the product relatively portable -- an advantage for hardware vendors who want it on their machines -- it's relatively open, working easily with most applications software. It's a quick and easy way of offering some of the advantages of VisiON and Lisa, although there's no integration among packages beyond file transfer and there are no graphics such as Lisa's LisaDraw. Integrated families of packages, such as the pfs:series or the "Easy" series (to indicate only two of the ceos we saw in the crowds around the Quarterdeck booth at the backwater Atlanta apparel mart) or graphics packages, would nicely complement DesQ.

**Friday!** Friday! is a low-end, friendly version of dBASE II from that product's creators, Ashton-Tate. No, it does not stand for Fantastic Realtime Integrated Database Aimed at You; it's a play on Good Man Friday (and its derivative Gal Friday), along with a reference to Friday as the deserved end to a long hard week. Friday! is a little slow in spots, such as when you're setting up formats, but it's easy to use and speedy once you're going through your data. One of its nicer features is that you can interrupt what you're doing to do something else without having to go back to the main menu.

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RELease 1.0, May 4, 1983
One of Friday!'s great assets is the 104,000-strong installed base of dBASE II, of which it is a user-friendly implementation. It is both a subset, because it lacks many capabilities (most notably the programming language) of dBASE II, and a superset, because it includes many additional routines that make things easier (but less flexible) for the novice or casual user. Files can easily be moved from one program to another, and the two can work together effectively. (For graphics, you could use Lotus 1-2-3, which operates on dBASE II files, but uses a totally different set of commands that might confuse a novice.)

Although in this unpenetrated marketplace (unlike the mainframe marketplace) new users are more important than repeat customers, the large installed base has created a pool of dBASE II free-lance programmers and dealers familiar with the product -- and by extension, with Friday! Moreover, we expect to see a fair number of Friday! copies bought to be used by non-programmers on files created by veteran dBASE II users, much as terminals surround a host. Friday! is unlikely to gain quite the popularity of the PFS:REPORT/FILE combination, with which it is most directly competitive (at a price of $295, versus $250-300), but it should certainly bring some of the excellent capabilities of dBASE II to a much wider audience, attracted by (among other things) radio commercials with the punch line "... but it doesn't do coffee!"

PFS:WRITE. We've seen a number of new word-processing packages lately, but few with the simplicity and elegance of PFS:WRITE. The others seem to offer -- and charge for -- too many features for all but people who make a profession of it, such as documentation writers. PFS:WRITE, by contrast, follows the Software Publishing formula of "don't frighten the user away before he gets to learn the package." Once he learns it, he'll keep using it to avoid learning anything else. PFS:WRITE is simple, uncluttered, and probably lacks 20 mostly unnecessary features espoused by the competition. It also has the usual PFS:PRICE -- $140 (IBM PC) or $125 (Apple IIe) at retail.

For all this simplicity, however, PFS:WRITE is a fairly sophisticated program, and readily accepts data and text from the other PFS:PRODUCTS, including user 105,000 copies of PFS:FILE, as well as VisiCalc and other files. Although you can't see the graph on the screen (because PFS:WRITE doesn't generate characters, it uses the monitor's text mode and just shows you "*graph.TK*" instead), you can incorporate a graph into the body of a letter and have it print out on a single page incorporating text and charts on a single page -- which is more than Lisa can do at this point. Additionally, it handles incorporation of names, addresses, and other information into boiler-plate text (letters briefing seminar speakers with specific reference to each orator's session time and topic, for example), complete with envelope-printing capability. We expect PFS:WRITE to do very well, although it will have a lot of catching up to join PFS:REPORT, PFS:GRAPH and PFS:FILE as the best-seller in each of their respective categories on the Softsel Hot List. The IBM version starts shipping next month; the Apple version in the late summer.

Not shown was PFS:SCHOOL RECORDKEEPER, which works only in conjunction with PFS:REPORT and FILE. For $150, on the Apple II or IIe only, the product saves a harried school administrator lots of time with four pre-designed forms and 30 pre-designed reports covering everything from PTA mailing labels to class schedules and purchase order analyses. It's about as unexciting -- and as useful -- as peanut butter and jelly sandwiches. We suspect it took SPC a few days at most to develop, with more time for documentation. For what it costs, the price is high -- but appropriate for a limited market. For what it does, the price is right.

Release 1.0, May 4, 1983
Clever Promotions. Software Distributors, via Susan Croft Associates, has picked up on our perennial favorite, Softsel-Simon/PR's duration-of-show invitation to offset the ravages of other people's cocktail parties at a local health spa. Croft offered a free foot massage at the same parlor while Softsel handed out Softsoles, OEM'ed from Dr. Scholl, we believe. Ashton-Tate, making practical use of data base management, offered numbered key rings so that lost ones can be identified by Ashton-Tate. A-T also held a sumptuous outdoor party with good weather and T-shirts for all, while Micro D dressed its people in Rhett Butler/Scarlett O'Hara finery for a lavish "Georgia bash." And Gavilan took the press on bus tours, ostensibly to demonstrate the product's "mobility" but more likely to shield us from telephone calls and other distractions.

Portables. Portables, notably the Gavilan and the TeleVideo, will be covered in the next issue along with Tandy's Model 100 and the Olivetti/MicroOffice system, as well as new "luggables" from Osborne and (we hear) PC-PCM maker Columbia Data.

* * *

SEXY SYDIS, NUBILE NBI, STATIC STAR

Following hot on Lisa's heels is a host of new "integrated" systems which include hardware, integrated productivity software and friendly user interface all in a single, comprehensive box. (Most, however, lack Lisa's stunning graphics capabilities.) In many ways the most interesting of these is Convergent's recent announcement of the MegaFrame -- which wasn't even positioned as a LisaRace entry. Convergent's MegaFrame is in fact a highly modular supermini with 68000s and 186s galore. But its office-automation terminals (PTs), while they rely mostly on the MegaFrame, also have a little intelligence of their own -- and offer concurrently-running windows, productivity software, and a modicum of friendliness. The point is that even people who aren't trying -- wait for the Ultra later this year to see what Convergent can do when it is trying -- are offering windows and the like. Already, even before it's widely in use, the LisaLook has become not state-of-the-art but de rigueur.

Sydis. Sydis, as a start-up, has pragmatically decided not to take on Lisa, VisiOn and all the rest by itself, but rather to go through OEMs, especially phone and interconnect companies. That makes a lot of sense because the system is more phone-oriented than any we've seen. Come to think of it, most managers are more phone-oriented than the individuals envisioned by most of these companies. Sydis' VoiceStation may well be the answer to people who dismiss the phone companies as a threat in the workstation market because they're all technology and no sex appeal.

The system, scheduled for production shipments late this year, offers the usual array of concurrently running windows, bit-map graphics, network tap, UNIX (Microsoft's XENIX) and integrated productivity packages running on a 68000 workstation. What renders Sydis unique is its telephone and voice capabilities, which make it as much an extension of the telephone as a workstation. Most managers probably spend a lot more time talking on the phone than working at a keyboard or writing and reading. The system can receive and store voice. What's more, it can "display" messages -- they'd look something like this:

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-- so that the user can move the cursor through the messages and annotate, amend,
delete, or add to them. You don't just read the help messages; you watch them do things while they talk to you. While this seems a little odd at first, it looks like something one could get used to -- and fall in love with -- pretty quickly.

Sydis's other distinction is its architecture. Like the Star, it can't run standalone; most of the software and processing power reside in a multi-68000 host. With SyLink providing 320K/sec, full-duplex communications over a telephone wire to the host, the user doesn't see any difference except for the smaller, 122-sq. in. footprint of this 22-pound terminal, but the purchasing manager does: For a 16-station system the cost is about $7,000 per user.

How successful will Sydis be? As usual, the question is the marketing. It's an extremely attractive system, but it has to overcome its lack of name recognition and its non-standard software. Both these issues are less important in the OEM market, but they're still a disadvantage.

**NBI.** NBI's offering, modestly called SYSTEM ONE, is scheduled for shipment next winter. (A separate "Integrated System Server," available in mid-1984, is necessary to enable the system to link closely with the rest of NBI's product line, with which it is incompatible.) As described, SYSTEM ONE beats the others all hollow in raw power. In addition to the usual 68000 family central processor (a 68010), UNIX, mouse and windows, it has twice the resolution (1024 x 768 on a 14-inch screen) and 10 times the screen update speed of Lisa, a 12-megabyte hard disk (with 24 megabytes optional), three coprocessors for disk management, screen management and general I/O, NBI word-processing, and four megabytes of virtual memory for each task.

Like the others described here, System One offers applications that can run concurrently in several windows; i.e., you do not have to freeze one window to work on another (as you do with Lisa and the Star). Most impressive of all, SYSTEM ONE sports a true relational data base management system (with a kernel from Ingres) which underlies all the applications and provides true integration: Your graph will automatically update when you change the figures in your spreadsheet. The system is based on UNIX, which means easier integration of some outside software than into, say, the Lisa environment, where UNIX is only an add-on separate from the system's standard environment. SYSTEM ONE's major flaw is its price, $12,500, which looks high to us despite all the edges the system has over the $10,000 Lisa. NBI, however, insists that the price is necessary given all the support that the company intends to provide along with the system.

Simultaneously, the company announced an Ethernet-based local area network, although it seems open to adopting the forthcoming IBM-TI protocol too; available; an MS-DOS workstation, the 2000; an IBM PC interface to its OASys 64 host processor; and a follow-on to its 3000 word-processing workstation, the 4000.

Intriguing in this flood of announcements is NBI's clear segmentation of the big-corporation market: SYSTEM ONE is for high-class professionals; the 2000 is for lower-level professionals or technicians, the MBAs and engineers; and the 4000 is for the traditional clerical/secretarial worker. With much less forethought, IBM has one by one brought out: the Datamaster for small businesses, the Displaywriter for secretaries, and the PC for all manner of professionals, with Visi**ON** to turn it into an executive workstation. Correspondingly, DEC offers the Rainbow with industry-standard CP/M software for small businesses, the DECMate II for word-processing, and the Professional, with or without Visi**ON**, for "all other."

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Xerox. Xerox, like NBI now, is focusing mostly on the big-business market. It offers the Star for the executives, the 860 for word-processing, and the 820 for lower-level professionals (plus some haphazard retail distribution) -- which proves that market segmentation alone isn't enough. Late last month the company held a press conference in New York to reaffirm its commitment to the office systems market in all its comprehensiveness, and to make a few product announcements. While it wouldn't disclose the number of Stars installed, Xerox management did note that it has sold 400 Ethernets and proclaimed them the largest installed base of such networks -- thus rudely relegating Datapoint's 5,000-strong installed base of ARCnets to the realm of "distributed data processing."

As for the tangible announcements, they included, for the Star: 768K more internal memory and Release 4.0 of the software, encompassing tables, curvilinear graphics (but not freeform like LisaDraw) and the capability to use up to nine different languages simultaneously (but still no development system for third-party programmers), increased speed, and a number of other nice touches. No price cut, however. Also announced was a direct Ethernet hookup for the 820, and a hint that an interface to the IBM PC is on the way.

We question Xerox's devotion to its impressive but money-losing Office Systems business at a time when competitors with single entries are rapidly staking out claims to bits and pieces of the market. Xerox's argument, among others ably articulated by chairman David Kearns, is that in the long run it will win by offering a uniquely complete, soup-to-nuts solution to all the needs of its customers.

That might have made sense in the days of non-standardization -- but when Xerox is promoting widespread use of Ethernet and the Xerox Network System protocols, and is itself preparing an interface to IBM, that rationale rings hollow. Secondly, an integrated, one-vendor system makes sense if you're talking about small customers -- but the customers Xerox addresses are large corporate purchasers who fancy themselves systems integrators and would feel remiss if they left everything to a single vendor rather than searching out the best components from several.

The Year of... So, is this the year of the integrated workstation? The mouse? Or the local area network, which all of these systems will offer? Not quite. We'd rather call this the year of the announcement. Defining our year rather liberally, we start it last November with the announcement of Visi, scheduled for this summer. Next came Lisa, available soon. In recent weeks, we've had Sydis, Quarterdeck, NBI. Only the Star, whatever its flaws, is currently in regular production. Regardless of what Microsoft eventually announces along these lines, its self-restraint in the face of all these announcements is commendable.

Indeed, 1983 may be notable as the year with five quarters (as in "available in the last quarter"). The problem is software, which has a curious property still unknown to many: A 15-day half-time to completion. That is, most development teams can finish half a software project in 15 days. It takes another 15 days to do half the work remaining, and so forth....

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Release 1.0, May 4, 1983
MICROS, MAINFRAMES MINGLE SOME MORE

In the last issue (April 14) we discussed recent announcements of mainframe-micro links from Informatics General/VisiCorp (VisiAnswer and Answer/DB), and Execucom (IFPS Personal). They were only two in a rush of solutions to the question of how to get micros and mainframes to communicate effectively. This means not just transmitting files back and forth, but actually making the power of an application on one available to the user of the other. The list continues to grow:

Cullinet. Someone recently asked us, Off the record, do we believe Cullinet's recent announcements live up to all the advance promotion? We're quite happy to answer, on the record, that they do not. But so what? Who really thinks that California is always sunny (especially lately), that Certs will improve his dreary sex life, that a computer can accomplish anything at the push of a single button? Cullinet's link-up between mainframe data bases and micros (available late this year) is exciting, timely, impressive - and no more than we expected from a leader like Cullinet. It won't change software history, but it will help move it along. If we didn't have Cullinet, we would have had somebody else (just as we wouldn't all be computing by candlelight if Tom Edison had been felled by a runaway horse).

Indeed, Cullinet's products aren't revolutionary nor even the first of their kind. There have been a lot of micro-mainframe links announced recently and relational dbms isn't new, although the effective combination of relational and networking structures is. As the IBM of its business -- mainframe software -- Cullinet is a master at taking the best of the ideas and trends floating around, packaging them right, and selling them to anyone with six-figure purchasing power.

Cullinet actually announced four products: IDMS/R, a relational version of the company's IDMS network dbms which is suitable for both production and end-user applications ($75,000, but a free upgrade to existing IDMS users); Information Database ($65,000), a dbms front-end which provides access to IBM's IMS, DL/1, Software AG's ADABAS and other dbmses as well as Cullinet's own IDMS; Cullinet Personal Computer System (price to be announced), a set of the usual productivity packages for the IBM PC, with an interface to the Information Database enabling the PC System to get at data in the mainframe; and an agreement with Apple to develop and market a similar interface for Lisa (available free as part of Lisa's operating environment). Through the use of the Information Database, a dp manager can make data accessible to numerous end-users; he can also control which data they get and prevent them from updating the corporate data base directly.

What makes the Cullinet micro-mainframe link stand out is its universality (an attribute shared by the recent Informatics/VisiCorp announcement). Most other micro-mainframe links -- McCormack & Dodge/Lotus (see below), Comshare's

MICROS MANGLE MAINFRAMES
IN PRESS COVERAGE

Osborne Product

The Osborne Computer Corporation has introduced a personal computer designed for business executives, offering what Osborne said were improvements on its "portable" computer. The company said the new computer can store up to 128,000 characters of information and includes a seven-inch video display that shows lines of text 80 characters wide. The new system will retail for $2,495, including some software. Separately, the Amdahl Corporation said it would introduce a communications processor, the 4705E, that would increase the performance and memory support for its 4705 mainframe office computers.

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Distributed W System, Execucom's IFPS for micros, VisiCorp's own VisiLink with DRI and PLANMAN with ASK, Peachtree's PeachLink -- work only with specific mainframe applications. Cullinet's Information Database front-ends to virtually any mainframe data base -- Cullinet's own IDMS, IBM's IMS or DL/1, Software AG's ADABAS, etc. -- as well as to VSAM and ISM file structures. That's all very well, of course, but we suspect that the vast preponderance of sales will be to IDMS customers. Informatics, with Answer/DB, which also interfaces to IDMS among others, will probably garner the major share of equivalent IBM installations -- which happens to be about half the IBM dbms market to IDMS's quarter (although Cullinet is gaining fast).

Because these systems are sold primarily to dp managers at large companies, it makes sense to examine the mainframe end first -- that's where all-important account control resides. On the micro end, Informatics has chosen to join up first with the ubiquitous, million-strong base of VisiCalc and other Visi users. Cullinet, by contrast, is adopting the more ambitious strategy of developing its own as-yet unnamed line of "productivity" software -- CulliCalc and CulliGraph, perhaps. We expect to see interfaces to the VisiSeries and other series fairly quickly, however. There's one already -- announced that is -- with Lisa.

Perhaps the most interesting part of Cullinet's fairly predictable announcement is its joint marketing and development agreement with Apple, whereby the two companies will work together to develop an interface between Cullinet's Information Database and the Lisa. Certainly, this announcement should be significant in establishing Apple's credibility in Fortune 10X accounts. Nonetheless, this is a marketing agreement, with joint ads and such, not a selling agreement. Cullinet's salesmen are not going to be pushing Lisa; they'll be trying to hook up to whatever they find on the premises.

McCormack & Dodge/Lotus. Was there any champagne left over from the celebration of McCormack & Dodge's acquisition by Dun & Bradstreet for $50 million upfront? If so, it probably went to fete M&D's announcement last month of the Interactive PC Link, between its mainframe accounting applications and Lotus Development Corp.'s 1-2-3 on the IBM PC (and later on DEC and TI Professionals, Zenith, Columbia, the NEC APC, Victor, etc.). The PC gets into the applications through HiLite, an on-line query system developed by M & D in 1981. The Interactive PC Link costs $25,000, plus $2,500 for each PC. That price includes 1-2-3, for which M & D has been named a remarketer.

This system's closest competition will be MSA/Peachtree's PeachLink, which costs $4,000 per pc and links MSA's accounting packages (typically $60,000) to any pc using Peachtree's PeachCalc, PeachText, and other productivity packages. Although the product was first shipped last fall, the company won't release sales figures, pointing out that MSA does most of its business in the fourth quarter. Neither system has much relevance to anyone outside the respective installed bases of the mainframe software, but they're good examples of what every mainframe application vendor should be able to offer.

VisiCorp/Communications Solutions. Hot on the heels of its announcement of VisiAnswer, a link into mainframes via Informatics General's Answer/DB, VisiCorp has acquired Communications Solutions Inc., a software house specializing in SNA. SNA, of course, is IBM's Systems Network Architecture, the system of protocols and network structures that ties the IBM world together. It defines the sharing of
data, programs and other system resources in the IBM mainframe world, and is the area you have to wrestle with once you've established the physical links. (SNA is not the only way to network, but it's IBM's system of choice.) As discussed in our January 6 issue, SNA is a far more interesting proposition than Ethernet or IBM's not-yet-announced token-passing net, which merely tie a system together physically. For a company with VisiCorp's ambitions (whatever they are!), this acquisition provides much-needed artillery for the move into serious-dp land.

**Portability.** The links discussed above all involve interfaces between mainframe software and complementary applications on micros. Typically, much of the work is done on the mainframe (Informatics' Answer/DB, M & D's HiLite query system), by an access or query system resident -- originally just a way of making mainframe terminals behave more like micros. The micro simply gets some software enabling it to frame queries and updates appropriately for the mainframe access system, thus limiting the amount of time it spends on-line. These systems treat micros for what they are -- highly interactive machines with applications software already familiar to the end-user, who doesn't want to give it up just in order to manipulate mainframe data.

There's also been a spate of offerings which provide essentially identical software for both mainframes and micros, allowing for easy transferability of data, models, etc., and treating micros just like little mainframes. Aside from Execucom (discussed in the April 14 RELease 1.0), others include the Oracle relational dbms (RELease 1.0, February 22), Comshare's System W (announced in January), and Computer Associates' Universe data base management system (promised for later this year). The quality of the micro software in these offerings is akin to that of the mainframe version -- and much mainframe software has been getting more accessible (or "user-friendly") over the years. For example, in the case of Oracle, not originally intended as an end-user system, much of the work on the new versions, both mainframe and micro, has involved the development of easier-to-use access procedures, productivity software, and other micro-like innovations.

Also along the lines of micro-mainframe links, we find intriguing Ryan McFarland's recent announcement of a set of COBOL compilers that will permit the same COBOL programs to run without modification on anything from an IBM mainframe to an IBM PC. (You can argue all day about the merits of COBOL, but it remains a widely used language with numerous adept disciples.)

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RELease 1.0, May 4, 1983
ASK Gains a New Dimension

ASK Computer Systems, one of last year's hottest new issues -- and still with us as a hot stock -- will soon spend roughly $12 million of that stock to acquire Software Dimensions. This is not, at first blush, a "synergy" merger: SDI's micro products (with an installed base of 20,000 units) don't run on ASK's HP and DEC equipment, and SDI will keep its own retail distribution channels. Nonetheless, it must mean something. Even long before ASK tied up -- loosely -- with VisiCorpor the PLANMAN interface between ASK's MANMAN general ledger system and VisiCalc on an HP 125, ASK president Sandy Kurtzig was getting more and more interested in the micro marketplace.

Software Dimensions, which sells accounting packages to small companies and had profits of $400,000 on revenues of $3 million last year, fits nicely under ASK's world. ASK is one of the few companies that has shown an ability to sell turnkey systems profitably into relatively small companies as well as larger ones, although it offers time-sharing for the smallest of them. While the Software Dimensions target market consists of even smaller units, ASK already has an infrastructure of support, paid for by its larger customers, across the nation. We've been waiting for a long time for someone who could really make a go of selling and supporting accounting and manufacturing applications to small businesses. So good luck, Sandy!

Prices Plummet

We'll spare you all the boring details, but here's a list of some (we may have missed others) recent price reductions in the personal computer market. The chart shows only the lowest of each range of price cuts, since averages are misleading.

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<thead>
<tr>
<th>Company</th>
<th>Percentage Cut</th>
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<tr>
<td>Altos (580-10)</td>
<td>8%</td>
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<tr>
<td>Apple ///</td>
<td>23%; low-end 128K version discontinued</td>
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<tr>
<td>Columbia Data Products</td>
<td>15-17%</td>
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<tr>
<td>Morrow Designs</td>
<td>10-11%</td>
</tr>
<tr>
<td>NCR Decision Mate V</td>
<td>14-30%</td>
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<tr>
<td>North Star</td>
<td>10-20%</td>
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<tr>
<td>Onyx</td>
<td>5-7%</td>
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<tr>
<td>TI</td>
<td>192K extra internal memory free (list price $700, for a 21% imputed discount)</td>
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<tr>
<td>Wang</td>
<td>4%; add-on memory, 50%</td>
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<tr>
<td>Xerox 820-II</td>
<td>26%</td>
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<tr>
<td>Victor</td>
<td>8-17%</td>
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<tr>
<td>Zenith</td>
<td>12%</td>
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</table>

Are these attributable to IBM's recent 15% overall reduction on the PC, coinciding with announcement of the PC XT? Or was IBM itself just expressing a broader market trend? It hardly matters. Onwards and downwards!

Meanwhile, there's similar action on the home computer front, with TI scheduled to lower the list price (with a $50 rebate) of its 99/4A to $100 -- so low that it may not be able to sell its own low-end 99/2 effectively. Tandy has lowered the
prices of its Model III micros by about 20%, heralding the arrival of the follow-
on Model IV. Atari has announced a $100 rebate on its over-priced ($899 at list) 1200XL, following a $105 total rebate (to end-users and dealers combined) on the 400. The most unkindest cut of all, however, comes from master price-strategist Commodore: It's offering a $100 trade-in on any used home computer or video game with the purchase of a Commodore 64. This brilliant move aims right at the source of its competitors' profits -- the aftermarket.

HIHO, or, Hype In, Hype Out

We recently received a press release from Cromemco announcing proudly that the company has increased its share of the (narrowly-defined) personal computer market by 25 percent. Good news indeed! We quickly called the company up for details; there were few in the press release. It turns out Cromemco's share has increased from 4 percent to 5 percent.

* * * *

RELease 1.5: HUMAN ERRORS

Percentage Error: Micro Distributors is 67%, not 75%, owned by AGS Computers. Sorry, Denny!

Parentage Error: Applicon is owned by Schlumberger, not by GE.

Patronage Error: Bert Kehren now works for Mostek, not TI (since last November).

Other Error: National is not the only U.S. vendor of CMOS microprocessors; RCA, TI, and Harris are also significant factors in this business.
AN EVENING WITH ANDREW GROVE

It was not necessarily our dream date, but since it was on Intel, and at the Trianon Restaurant in New York's Helmsley Palace, we eagerly accepted the invitation to dinner. Checking at the front desk for a Mr. Grove of Intel, we found only a Dr. Andrew Grove, a name which implied a long and possibly pompous evening. We sighed with some relief, therefore, when it was just the familiar no-nonsense and little-pretense Andy Grove who showed up.

The Coming of Theory G

Grove was in town to negotiate marketing strategy for his new book, High Output Management, due in the stores September 15. One of the main titles on the Random House list for the fall, its first printing will be a whopping 25,000 copies and its price a relatively low $16.95. This means that the people at Random House believe they have a major seller on their hands -- that businessmen around America will soon be speaking in hushed tones about the inspiring common sense of Theory G. Previously available only in ad hoc "G-Grams" (according to the Intel Dictionary as we recall it, "pithy, astringent and nearly illegible missives" from Grove) the President's wisdom is now apparently to be burned in on a 288-page Random House iROM, to be sold in bookstores across the land.

This is a new step forward in the Intel program of putting its operating systems into firmware. Editors at Random House divulge that the four key principles of Grove's system of high-output management are: (1) extensions of manufacturing principles: understanding, for example, "that the billing department is a manufacturer of invoices"; (2) high leverage: defining output and simplifying work at the crucial points; (3) peak performance: "evaluating one's own emotional state and the state of subordinates when making decisions" and "creating a work environment resembling a field of athletic competition, where participants continually put forth their intrinsic best"; and (4) maximum team output: "elicited by supervisors working closely with subordinates."

Grove owes his good fortune as an author partly to the astonishing success of books on Japanese management which cite Intel as a prime U.S. case in point. But Random House stresses that Grove's productivity strategy is "all-American," apparently more Vince Lombardi than William Ouchi. As Grove points out, nearly all other management books are written by professors who lack practical experience and show amazing "naivete." Except for Robert Townsend's Up the Organization!, written by the head of Avis, Grove's work will be the first major book on management written by an active manager. His editor at Random House, Grant Ujifusa, a Japanese-American from Wyoming, found some of the prose suggestive of the memorable style of Grove's previous work, The Physics and Technology of Semiconductor Devices (Wiley, 1967). But most of the new book is reportedly written in the pithier G-Gram idiom.

Grove as Horatio Alger

Grove is one of the great stories of American business. Fleeing Hungary in the aftermath of the revolution of 1956, he stumbled across the raw dirt of a field near the border, plunging headlong into the mud with each blast of an illumination grenade. He scrambled into Austria with the tromp of soldiers' boots and the echoes of explosives still ringing in his ears. After a stormy two-week trek across the Atlantic in a Liberty ship crammed with other refugees, he arrived in New York penniless, deaf in one ear, dumb in English, and with an education from
communist Hungary which left him an image of U.S. technology as an array of ballpoint pens for capitalist chicanery and bacterial poisons for use in Korea. Four years later, The New York Times could report: HUNGARIAN REFUGEE GRADUATES FIRST IN CLASS AT CCNY (City College).

Good News from Intel

It has been straight up the ladder for Grove -- at Fairchild and Intel, and on to the Helmsley Trianon. He was in a good mood at dinner. Intel was about to announce a doubling of profits in the first quarter ending March 31 (about 40 percent of the increase coming from interest on IBM's new $250 million cash bonanza and a significant share of the rest coming from the Intel "job simplification" effort hailed by Grove in his book). Intel's stock was in the midst of a 12 percent surge in one week (from $43 to $48). Book-to-bill had leapt to one of the company's historic peaks, as the Semiconductor Industry Association's book-to-bill ratio for the industry set a four-year high in March, rising to 1.32:1, and April continued the surge. Sales of some hot Intel products, such as the 186 microprocessor, the auto engine microcontroller, and the 128K EPROM were catapulting upward at a pace exceeding all expectations. In response to continued Japanese price pressures in 64K EPROMs, Intel had just introduced its 256K product (i27256), made with its H-MOS II-E process on a tiny die (28,561 square mils). To preserve its diminishing margins on the 64K EPROM, Intel is also making the 2764 in H-MOS II-E, shrinking the die by a third to 11,449 square mils, nearly doubling the potential yield per wafer and assuring a long future for EPROMs as Intel's most profitable memory product. The new 2764A also will have a drastically lower programming voltage (12.5 compared to 21 for the previous part) and faster speed (200 nanoseconds compared with 250).

The Record-Breaking 186

The most exciting development at Intel, though, is the enormous success of the 186 microprocessor. The fastest growing product in the company's history -- with design wins at most of the world's leading users of microprocessors, including 10 top Japanese computer and robotics firms -- the 186 is an enhanced version of the ubiquitous 8086. It adds 10 instructions to the 8086 instruction set, improves speed and other features, and brings on-chip several support functions previously performed by 15 or 20 additional ICs. The result is a nearly seven-times improvement in cost performance (instructions per second per dollar) over the earlier chip set. Although the product has been on allocation for the last three months, Intel is rapidly shifting fab capacity to the 186 and expects to be meeting full demand in June. The reign of the 186 as the fastest rising product in the firm's history could well be short, however. The just-introduced Intel 188, a similar enhancement of the 8088, is following a similar trajectory of sales and design wins. Since the 8088 is rapidly becoming the standard in personal computers (used in IBM's, TI's and nearly all the Japanese models, for example), the 188 could well figure in portable or lower-priced versions of the industry best-sellers and eventually exceed the 186. Intel continues to consolidate its dominance of the microprocessor market, the driving force in the semiconductor industry's growth.

Andrew's Complaint

Nonetheless, like his boss chairman Gordon Moore, Grove saw a cloud behind Intel's silver linings: the "vulture capitalists" of Sand Hill Road. Asked how the Japanese could outperform the U.S. in so many fields, Grove stressed greater
Japanese company loyalty. A third of Intel's California employees must be replaced every year. Even the IBM money would not give Intel a major advantage, he said, because Intel's real achievements and technologies were valued far less by the market than the dreams of glory of renegade engineers. He spoke of a prized Intel employee who has seen his friends go off with Rolm and Tandem and wondered whether he was missing his big chance. He spoke of the 17 employees in Oregon who spent some $50 million of Intel's funds and more time than expected developing a disappointing 432 system and then, he said, scurried off at the call of the vulture capitalists. What Intel was buying in Oregon was to a large degree the experience which is the crux of semiconductor capital formation. But it was readily sold out from under them. He recalled a software firm in Maryland which first tried to buy rights to Intel's Ada language compilers, bit too low, and then hired away the company's top four Ada experts. And he again spoke of the renegades of Seeq, who he claimed had contributed little new to the E'PROM technology they had learned at Intel. Though less indignant at Xicor's people, he questioned the value of their technology and the valuation of their still profitless company.

Since he was friendly towards Zilog, begun in 1975 by key figures in Intel's microprocessor team -- Federico Faggin and Mayatoshi Shima, the designers of the 8080 -- Grove presumably had been mollified by Shima's return as head of Intel's design group in Japan. But Grove conceded that the case was actually similar to the later defections. Zilog's Z80, after all, was merely an 8080 with support chips brought on board the die, but the Z80 captured more than half the 8-bit microprocessor market from Intel. He even regretted the departure of Aryeh Feingold, who depleted Intel's microcomputer group to start Daisy, a computer-aided engineering company which does not compete with Intel (except for people).

We must admit that Grove has a serious grievance. Long-term investments in personnel become highly risky when they can freely join, or become, the competition. Intel shows no enthusiasm for assuming the role previously played by Fairchild as the Valley's leading source of postgraduate fellowships.

Intel Spurs The Vultures

In most cases and in varying degrees, such complaints are just and sincere. Life, as Jimmy Carter once observed, is unfair. But it has been fairer to Intel and to Silicon Valley than to companies and regions spurned by the vultures. Through the recent recession, Intel's fastest growing markets were new firms making microprocessor-based products. These startups promise to be Intel's and the industry's most rapidly expanding customers throughout the 1980s. Intel's own innovations, far more than the venture capitalists, are the driving force in the entrepreneurial boom of this period.

Moreover, the Zilog example suggests that even the most ostensibly menacing of split-offs -- direct competition in a key product -- can end up strengthening the parent firm. Zilog pioneered the very movement toward higher on-chip integration of support circuitry which has become the crux of Intel's strategy in microprocessors, now brilliantly repeated in the 186 and 188. The Zilog challenge may well have intensified Intel's efforts in microprocessors, driven down the price, expanded the market, established the 8080 instruction set, and ensured U.S. domination of this key semiconductor product.

Now Xicor and Seeq have challenged Intel in its bastion of nonvolatile memories, in particular E'PROMs. Intel continues to invest heavily in E'PROM technology and is ready to move in aggressively as the renegades test the competing technologies,
develop the market, popularize the device, and provide ready-made second sources for it.

The Intel executives are wrong in their belief that employee loyalty is the major asset of the Japanese companies as they compete in semiconductors. Their major asset has been cheap and abundant capital, in a country with a savings rate three times ours for the last 25 years and with virtually no taxation of income from savings. The increasing willingness of Americans to invest in new technologies as tax rates drop and inflation subsides is one of the most positive elements in Intel's future, for both its own stock and the prospects of its customers.

Dealing with an environment of increasing venture capital is going to become a growing challenge to semiconductor firms in coming years. The venturers, led by Hambrecht and Quist, are opening offices even in Japan. Contrary to the usual assumption, venture capital — judging from the extraordinary success of venture firms — has been far too scarce in recent years, particularly in semiconductors. Of all the semiconductor firms begun in Silicon Valley in the 1960s, many had merged or changed their names but not one had gone out of business by 1983. The success rate in semiconductors exceeds that in virtually all other industries.

Americans are currently spooked by the Japanese, but the canny will soon notice that the prospects are now better for producing chips than for using them in yet another pretty box.

The Circle Game

Grove, of course, is not alone in his complaints. It so happened that our dinner with Grove followed by only a few days a dinner with another company president with a similar grievance. This president had proposed one of his employees, Anil Gupta, as Electronics Magazine's Man of the Year for Memories. Brandishing the award, which made him a hot property in venture circles, Gupta went off to help found a new company, Exel Microelectronics, with B.K. Marya, who has built fab areas for five companies, and Sam Young, who within the last two years has worked at Mostek, Seeq and Hitachi. The aggrieved company president was Gordon Campbell of Seeq, and he was altogether as enraged at Gupta's apostasy as Grove was indignant at Campbell's.

Still earlier in the week, we interviewed one of the founders of Fairchild who did not follow Noyce, Moore and Grove to Intel. Fifteen years later, he remains angry at the "wreckage" of Fairchild by the Intel group. He fervently believes that Fairchild could have been saved if the Intel defectors had made a full commitment to the company. Noyce, he said, could have taken over Fairchild if he and his associates had not been swept off by dreams of glory fostered by Arthur Rock and the earlier vulture capitalists who financed this most successful and most devastating of all breakaways. As the splits and spinoffs continue, we have mentally reserved an evening two years from now for a dinner session with B.K. Marya and Anil Gupta of Exel.

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RELEASE 1.0, May 4, 1983


GenRad Annual Meeting - Boston. Contact Raymond McNulty, (617) 890-4900.


Computer Consoles management presentation before the New York Society of Security Analysts.

Hewlett-Packard semi-annual meeting - New York City. Contact Sherry Shields, (415) 857-2211.

Avnet presentation before the Securities Analysts Society of San Francisco. Contact Irwin Lubalin, (212) 644-1050.

SEMICON/West - San Mateo. Contact Bill Galaraneau at SEMI, (415) 964-5111.

Avnet presentation before the Los Angeles Society of Security Analysts. Contact Irwin Lubalin, (212) 644-1050.


RELEASE 1.0, May 4, 1983
JUNE 13-16  Syntopican XL - San Francisco. Contact IWP Conference Planning Department, (215) 657-6300.


JUNE 22  Allied Corporation presentation before the Investment Analysts Society of Chicago. Contact Bill Lowden, (312) 444-4171.

JUNE 23  Sony Corporation management presentation before the New York Society of Security Analysts.


SEPTEMBER 11-14  Alex, Brown & Sons Computer Services Seminar - Baltimore. Contact Ken Burke, (301) 727-1700.


SEPTEMBER 29-OCTOBER 1  CP/M '83 East - San Francisco. Contact Northeast Expositions, (617) 739-2000.


RELease 1.0, May 4, 1983
OCTOBER 18-21  Data Show '83 - Tokyo, Japan. Contact Japan Electronic Industry Development Association, Kikai Shinko Building, 3-5-8 Shibakoen, Minato-ku, Tokyo 105, Japan.


NOVEMBER 8-10  Wescon/83 and Mini/Micro-West - San Francisco. Contact Lisa Humbert, Electronic Conventions, (800) 421-6816 or (213) 772-2965.


NOVEMBER 13-16  First Boston Corporation Third Annual High Technology Conference - Boston. Contact Sharon Rae, (212) 909-2381.

NOVEMBER 29-DECEMBER 2  Comdex/Fall '83 - Las Vegas. Contact Pete Young, The Interface Group, (800) 225-4620 or (617) 879-4502.


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FEBRUARY 5-8  SEVENTH ANNUAL ROSEN RESEARCH/L.F. ROTHCHILD, UNTERBERG, TOWIN PERSONAL COMPUTER FORUM - Phoenix. Contact Renee Sawyer or Rona Levine, (212) 586-3530.


Notes:

Wescon, usually scheduled for mid-September, moves to early November in 1983.

The Paris Electronics Show (Salon International des Composants Electroniques), previously an annual April event, becomes a biannual November show beginning in 1983. The Paris show will be scheduled in odd-numbered years with the Electronica show in Munich taking the even-numbered years (November 9-13 in 1982).