MONTEREY DEBRIEFING

Talk to any venture capitalist worth his salt, and he'll agree that, yes, distribution and marketing are key concerns nowadays. Hardware and even software are close to being standards, although there's always room for a little improvement here and there. So how come most of the marketing/distribution companies at the recent American Electronics Association Monterey conference for less-developed companies -- a sort of meat-market for venture capitalists -- were virtually ignored? Aside from Softsel (see The Letter of February 22), which has -- deservedly -- gained a big reputation elsewhere and received perhaps 80 visitors over the course of ten meetings, most of the distribution companies garnered fewer than ten tirekickers in total. Perhaps part of their trouble was their modest goals -- typically less than a million in funding. Another problem is that bankers and MBAs feel uncomfortable investing in people; they'd prefer something tangible like a disk drive or a 68000-based box with a logo. One can imagine a banker insisting plaintively, "At least show me a warehouse with a forklift!"

Never mind that willy-nilly these investors are still investing in people: The success of the disk drive rests on people's manufacturing skills and engineers' ability to improve on the original design for next year's contest; the success of the box depends on marketing people's expertise and support people's supportiveness. There are few secure franchises in this business.

We're not saying that distribution ventures will all pay back ten times your investment (those days never existed except for a few rare situations), but they merit a look at least as much as the 54th and 55th entries in the disk-drive sweepstakes.

Promises, Promises

We were discussing the possibility of adding up all the companies' projected 1985 revenues to get a figure approaching that year's GNP, when a friend of ours had a better idea: Add up all their valuations, which tend to be a multiple of revenues, for a truly astronomical figure. Enough!
TALKING WITH STRAIGHT TALK

How does Straight Talk operate? Imagine a search for John's manager's salary. First the system must find John, next select and follow the pointer from John to his manager, and then follow the pointer to the manager's salary. In a relational model, you (or the system at your direction) would first look up the employee table -- which you must call up by name -- find John, find his manager, then call up the manager table (or the salary table) to find the salary. There are advantages to each approach, of course. The semantic model is more flexible in storing and retrieving data, but the relational model is more time-efficient in updating or adding most data. Either way, the effectiveness of a data base depends more on its implementation -- and features such as natural language which Straight Talk has and computational powers which it currently lacks -- than on the underlying structure.

As far as the user is concerned, the system starts with a basic English vocabulary and learns as it goes. I.e., it knows that things and persons have relationships to other things and persons. Qualities are expressed as relationship to things, such as "The color of Fido is black," or to attributes, which are usually expressed numerically (e.g. weight, height, age). The system also takes dates, but it cannot yet calculate time periods.

Encountering new words, WIZ asks questions: "QUESTION: What is Fido? ANSWER: Fido is a/an __." The user types in "dog." The machine responds: "QUESTION: What is a dog? ANSWER: A dog is a/an __." And so it goes until you hit a word it understands, such as animal (which you may have defined earlier in a discussion of cats). The machine responds: "Setting thing's instance to dog." Now you may wish to note that "Fido has a weight of 30 pounds." The untrained machine will respond:

"Weight is a new numeric attribute. 'How __ is Fido?' means 'What is the weight of Fido?'
Please fill in the blank."

When you respond, "heavy," the machine will ask: "QUESTION: What is the opposite of heavy?" You might then proceed: "Fido is 30 inches tall," in which case the machine will ask: "What attribute is associated with tall?" looking for the word height. With this training, it can then answer "How heavy is Fido?" as well as deal with issues like heavier or lightest, the number of dogs with weights under 50 pounds, and so forth.

The cursor moves through a sentence word by word and then (if you've kept to familiar words) flashes "Understood!" on the comment line and proceeds to answer your question. With proper training, it can answer questions like "What is the average age of the managers of the managers of the R&D employees with salaries between $20,000 and $50,000 and Phoenix locations?" (It will answer such an ambiguous question on the assumption that it is the R&D employees with the specified locations and salaries, and give you the average age of their managers' managers.) It will also respond to "Show me a graph of employees' salaries as a function of their ages." But it can't do it by sex because the graphs work only with numeric attributes at this point.

The system also works easily with tables and forms, and can accept or produce data in any of these formats interchangeably.

* * * * * * *
ANNOUNCEMENT

The 1983 Rosen Research/L.F. Rothschild, Unterberg, Towbin Thirteenth Annual
Semiconductor Forum will begin Sunday, June 26 and will conclude Wednesday,
June 29, at Hotel del Coronado in San Diego, California.

Conference registration and hotel information will be mailed shortly.
Only subscribers to RELease 1.0 will receive this information.

Proceedings of the Sixth Annual Personal Computer Forum, held January 23 to 26,
are currently being edited and will be published shortly.

Remember:


--Renee Sawyer

Like life, the Monterey conferences are what you make of them: After an initial
general session where some 60 companies take eight minutes each to entice you to
attend their full-length presentations (but there's only time for ten, plus as
many private breakfasts, lunches, banker-sponsored dinners and barside encounters
as you can stand), there follow two half-days of hotel-suite meetings. You could
easily have spent your whole time with vendors of disk drives, or semiconductor
production equipment, or network interfaces. We chose a somewhat more eclectic
approach. Here, then, is RELease 1.0's Monterey Conference:

Query Me: Symantec

Symantec, developer of a user-friendly information management system for micros,
was easily the star of the conference, with a packed suite for all 10 sessions.
The company's original backer, Machine Intelligence Corp., spun it off when the
original group's charter focused more and more on machine vision, while a
subgroup, now Symantec, turned more and more to the use of artificial intelligence
in language. While the company has raised all the money it wanted and more since
Monterey (quick work!), it does not aim to be selling out at the peak; rather,
it's using the funds for further development of the product it showed -- which it
stresses is not yet announced.

Symantec is essentially the creation of former SRI man Gary Hendrix. We first
heard of him from Larry Harris, president of Artificial Intelligence Corp., when
we asked who might duplicate AIC's English-like data base interface, Intellect, on
a microcomputer. Harris suggested a visit to Symantec, in Sunnyvale. Unlike the
Artificial Intelligence product, which works with a variety of standard data base
management systems and their related applications (all on mainframes so far),
Symantec's system has its own dbms. The good news is that Symantec got it all to
work on a micro; the so-so news is that it leaves you wondering, Wouldn't it be
neat if this could work with other applications too? The product's first imple-
mentation, which we saw one Saturday evening in November, is on the Dictaphone
6000, under the name of Straight Talk. An IBM PC version will be out in the fall.

Straight Talk is an "information management system," with a dbms (data base
management system) at its heart and a shell all around. The shell includes a
natural-language (English) query language, graphics, and tables and forms which can be used to enter or retrieve data on a query-by-example basis (i.e. you leave a blank in the table or form for the system to fill in). The dbms is based on a semantic, not a relational, model. I.e., data are stored in a format that links them by pointers, rather than disperses them among tables.

To look at (though not to design), the product is both simple and elegant, and a good learner. Its salient feature is its ability to learn. Its data base can incorporate an unlimited number (subject to the hardware's memory) of words for attributes or objects. Some of the learning has been pre-learned. From the start, the system knows about 150 words, such as person, thing, is, are, be, have, with, of. The user supplies it with its own nouns -- customer names, for example, or part numbers, employee names and data, or whatever.

On the other hand, Straight Talk doesn't handle most verbs except as forms of to be, to have or to be the ---- of. It could understand John walks Fido only as "John is the walker of Fido." It can't multiply everyone's salary by 130% (don't we wish!), or even add two columns together. It can't be updated automatically -- data must be replaced one by one rather than added to or multiplied. That, of course, shows up one of the system's limitations: It's really meant for single users, for a salesman's customer list, for example, rather than for a high-security corporate data base. You wouldn't use it to compute paychecks, but you might very well use it to find out who's in line for a salary review. One problem with using this system is going to be to keep it up-to-date, because it won't track your transactions automatically. However, with some customization it can read tables created by other applications.

But that's not what it's supposed to do. As a single-user data base, it's by far the friendliest we've seen. Now the trick is to hook it up to some transaction-processing capabilities and get some arithmetic in there. Fortunately, Symantec claims, most of its limitations are those of not having gotten around to it, rather than inherent limitations of the concept. Building the system's vocabulary -- its ability to handle verbs and dates and so forth -- requires the same sort of training that one might give a child (in a less formal manner): lots of rules and many examples. Nonetheless, the system's implementation so far clearly suits it for data management rather than large-scale data manipulation.

Teach Me: Centurion Industries

On the subject of intelligence, more or less, we went to hear Centurion Industries, which has been selling teaching aids to schools ever since 1974. It wasn't until recently that anyone noticed that Centurion's Digitors, Alphators and Versators had microprocessors inside. (Prices range from $140 to $360, with additional solid-state "learning modules" at $60 each.) These are dedicated drill-and-practice machines: "2 + 2 = 5" and you get a frowning LED face; "2 + 2 = 4" wins you a smile and another question. We had learned the term "drill-and-practice" only an hour earlier from Bill Bowman of Spinnaker Software (makers of educational game software), who used it disparagingly, to say the least. We too found drill-and-practice, as demonstrated, less than titillating. Yet here were some people who swore by it, and who had sold 10,000 such units ($1 million worth at wholesale) in 1982. Perhaps that's one difference between artificial intelligence and the real thing: Gary Hendrix's system needs no drill-and-practice; it remembers after one explanation. We, on the other hand, are less reliable but more flexible. After all, why should 2 + 2 always equal 4?

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The fact is, it does so often enough that it's probably worthwhile to come up with four automatically. Centurion has a large number of loyal customers who think so and are willing to testify in its behalf. As noted in the Wall Street Journal (and elsewhere) recently, buying a computer is only the beginning of the problems a school faces in using computers. For rote learning -- as opposed to computer literacy -- a dedicated machine is cheaper, faster, and foolproof. Like the new math, the new machines may teach children to think before they have learned to add -- with a predictable backlash.

Nonetheless, Centurion faces a tough battle selling against the more flexible, increasingly cheap micros now flooding the market. They may not be good at teaching arithmetic, but they can stretch a child's mind -- or teach him computer literacy. Moreover, while Centurion has the advantage of selling a complete hardware/software system, which means its software can't be copied by unscrupulous teachers (or parsimonious principals), potential customers consider this a disadvantage. The ultimate vendor solution to this problem is to sell into homes, not schools, the tack taken by companies such as Spinnaker and the Learning Co.

Sell Me: K-Comp, Technology Solutions, Ekos

Then there were the distribution outfits. All three use some form of multi-level marketing through independent distributor/salesmen. They reflect the difficulty of effectively using direct employees to sell small computer systems: Salesmen are just too expensive; retail stores don't provide enough support; employees lack the proper motivation; and so on and so forth. The first two, K-Comp and Technology Solutions, both address a variety of vertical markets, a promising area that requires specialized software as well as specialized salesmen; Ekos sells to consumers, along the lines of Avon or of Fort Worth-based Tronics, the largest reseller of TI's 99/4A home computer.

As editor of this publication we frequently talk with people, Mr. Pearlswein for example, who worry that we'll reveal their strategies for competitors to copy. In fact, Pearlswein should only be so lucky! His competitor Mr. Rockefeller knows all about Pearlswein's strategies (he's hired away two of Pearlswein's crack salesmen with the lure of a higher payout ratio) and he thinks they're all wet.

So it is in this case. Although TSC's president Ralph Williams used to work for K-Comp's president Marc Kloner as executive vice president, and Ekos president Steve Gerbsman was on K-Comp's board of advisors, all three men are careful to point out that they run different kinds of businesses. Kloner's company relies on the extraordinary effectiveness of one man; Kloner believes its strength will continue to lie in the people he's so good at finding and motivating. Williams, by contrast, is attempting to build a structure that will ensure his people's success. And Gerbsman, a mass-marketing maven, is looking at a more consumer-oriented operation where sheer numbers of salespeople will ensure reasonable volumes even if each "salesman" does nothing more than buy a system for his own family.

K-Comp started life as a sole proprietorship when Marc Kloner, a software consultant for NASA's Jet Propulsion Laboratory, decided he could do even better by reselling the system he had built to control the Shaklee distributorship he ran on the side. For three years Kloner trekked around the country as a one-man band selling and supporting 400 of these systems. The next step was to bring his Shaklee experience to bear. He has since found 70 fellow-entrepreneurs who are
now distributing the product in 20 states and Canada. Twenty-two of them are also among Shaklee's top 50 (out of 2 million) distributors; another eight are dentists who use K-Comp's more recently developed dental office management system. Revenues hit $1.9 million in the fiscal year ended last May, and are projected to reach $4.6 million in calendar 1983.

To hear Kloner talk, support of the salesman is as important as support of the customers. K-Comp will even send its own people along on a new distributor's first few sales calls on request. After a sale, the distributor may elect to install or support the system, although K-Comp generally takes over (for a fee). Support includes custom programming, an 800 hotline, and hardware maintenance.

While distributors also make money by sponsoring other distributors, they forfeit that income if their own direct sales are too low -- a clever way of ensuring that participants stay actively involved. Nonetheless, most distributors are only moonlighting and work full-time as something else.

K-Comp uses primarily North Star equipment, although the company is open-minded and is looking at the possibility of adding the IBM PC. One advantage would be the availability of software. Although K-Comp developed the software for its Shaklee and dentist packages, the company's future choice of vertical markets will depend on the availability of existing third-party software......which all just goes to prove where the value-added really is.

Technology Solutions Corp., unlike K-Comp, stresses after-sales support and wants dedicated salespeople. (The extreme for moonlighting is an outfit like Tronics, which has some 30,000 salespeople -- who average something less than one system per month.) President Ralph Williams, the K-Comp alumnus, is setting up a two-tier organization to attract and support his salespeople. The first level will consist of some (eventually) 17 "master-area franchisees" ("Technology Solutions Companies") who will run office complexes out of which "sub-area franchisees" will operate. The master franchisee has to be a good businessman and sales manager; Williams considers mini or mainframe sales managers ideal for the job (while Kloner is searching for born entrepreneurs). The sub-franchisees need to be good salesmen and have some vertical-market expertise. The sub-franchisees pay rent on the office space they use and share demonstration equipment maintained by the master-area franchisee. Conversation in the reception area might run thus: "You're a dentist? Go down the hall to the right to see Dr. Gruzhinsky. You're a restaurant owner? Check with Mr. Giovanni around the corner on your left. You need a system for your health club? Rusty's out jogging with a customer right now but I can get you an appointment for tomorrow."

The company's first sales office, in Los Angeles, is currently being managed by a salaried employee. The plan is that he will leave in a few months to open up the second sales office, in Newport Beach, and let a franchisee take over.

Each master-area office will also host a Technology Solutions Institute, with two or three training/support people paid directly by TSC. This follows the rule of giving your sales people commissions/equity, and your support people salaries. It also enables TSC to exert some direct quality control on the product -- support -- while leaving the sales side up to lean and hungry salespeople. The first TS Institute, where customers and prospects alike can attend, and pay for, courses on various aspects of computing, is now open, side by side with the company's first sales office.
Like K-Comp, TSC is broad-minded and uses a variety of hardware, notably Eagle's powerful 8086-based 1600 series. TSC also serves as a distributor for Solvation (see The Letter of December 20, 1982), which uses Vector Graphic and Sony hardware. Solvation acts as a systems integrator for vertical markets such as CPA firms and ad agencies, and originally fancied itself a marketer as well. But once again, reality demonstrates that products, even with user-friendly software with online support, remote diagnostics, and a host of other modern conveniences, just don't sell and support themselves. That requires people and, says Williams, a structure that helps to make them effective.

Ekos did not in fact appear at the Monterey Conference, but we heard about the company soon afterwards from a venture capitalist, so we figure it qualifies. Based in San Rafael, Ekos was founded a year ago by Gerbsman and his partner Bill Binch, both former executives at Itel. The two had wanted a home computer but were intimidated by a 22-year-old in a local computer store. Several focus groups and computer parties later, the two started Ekos (for home or household, as in economics -- which originally meant the art of household management).

Ekos's literature stresses the tax advantages accruing to distributors and the low upfront investment ($99), promising the opportunity to "Generate a Second Income in Your Spare Time" by becoming a Family Home Computer Consultant. The success of this business rests on Gerbsman's ability to manage it effectively, with the guidance of advisors including luminaries such as Will Luden, director of retail merchandising at MicroPro; Mark Bunzell, president of CompuVision (a Softsel affiliate); Dennis Jay Cagan, vice chairman of David Jamison Carlyle, a distributor of computers to large commercial accounts; Thomas Chek, a marketing whiz from Levi-Strauss; and Sherwin Steffin, chairman of Edu-ware. The quality of distributors is secondary, as long as sufficient numbers can be attracted, trained, and instilled with the confidence (by way of AV training materials, classes and so forth) befitting a Family Home Computer Consultant.

So far, Ekos has signed up 100 would-be consultants in its first three weeks of seminars, and has a sizeable backlog. The company's other edge is a series of "training centers," which provide for-fee courses in topics such as VisiCalc, word-processing, and LOGO (for children). Such training is geared to ensure that the equipment is actually used -- and that the company can benefit from a healthy aftermarket. Like Tronics, which gets about 75% of its revenues from software and other add-ons, Ekos expects to generate a substantial amount of its sales from add-ons for the VIC-20s, Commodore 64s and Franklin Aces that it sells, as well as for other computers it does not carry.

**Link Me:** Protocol Computers, Inc.

PCI sells into the quickly-growing IBM/ASCII protocol conversion market. Much of its product goes out under the names of such customers as Tandy (The Tandy Communications Controller 76, which enables the Tandy pcs to operate as IBM crts and printers), Apple (the 3270 Emulator, which does the same thing for the IIs, ///s and Lisas) and Codex (the CDX 268/17, which does the same thing for Codex's ASCII terminals). While IBM too offers the ability to use a PC as a terminal, the IBM approach (like those of most "emulation" companies) requires co-ax cable linking each modified PC to a 3274 terminal controller. By contrast, the PCI box replaces the controller and leaves the pcs (IBM's or someone else's) alone, which means a more cost-effective solution (one box "converts" up to seven pcs into part-time terminals) and limited extra cumbersome equipment. You can use your pc

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as a terminal without special cabling at your desk, or, if you're so minded, you can carry it around and access your terminal controller by telephone. This product, called the 1076, works with standard IBM mainframes, front-ended by a 3705 communications processor.

PCI also offers the 1051 for similar connection to IBM's Systems 34 or 38 (about 80,000 installations), a market with somewhat less competition. There is a company, Techland of Mount Vernon, New York, with similar products for the 34/38 market, but it is just in start-up and doesn't have PCI's full range of products, which also includes 3278 look-alikes, elsewhere hard-to-find bisynch-to-SNA converters, the PCI X.25 series (ASCII to SNA through X.25) and a host of other "IBM" products.

PCI, founded in 1980, had revenues of $3.2 million in the fiscal year ended last September. The company has been profitable since inception, with pre-tax margins of 22.5% on revenues of $1.6 million in the most recent quarter. It's got a tough business selling products against IBM, but it's got a nicely skewed approach that makes them more than just imitations of what IBM is offering.
Dear Juan & Alice,

What a couple of weeks! I can't wait to see you to tell you all the latest gossip in detail, but for now the bare bones will have to do. Everybody, just everybody, is announcing micro-mainframe linkups. Some of them are doing it by themselves, like Execucom and Computer Associates. Computer Associates has just announced an impressive new mainframe data base management system written in C and says it plans to move it down to micros by the end of the year. Cullinet (which hasn't announced yet but everybody knows what at least part of its April 19 meeting is all about) has acquired Computer Pictures, an Altos OEM, to get the requisite micro expertise. Still, I hear that Cullinet, as befits an arch IBM competitor, is going to be tying up with Apple. Data Resources, ASK and now Informatics are also doing joint efforts, all of them with VisiCorp. And of course there's MSA-Peachtree's Executive PeachPak, which kicked off the whole thing.

What makes this so interesting is that we're finally seeing a practical side to all this data communications fuss. Communications and protocol conversion are nice for shipping data around, but they start getting really useful -- from the dp manager's point of view -- when you can use them to make sure everyone's sharing the same data off the corporate mainframe. From the user's point of view, he can have his secretary take his shirts to the laundry instead of spend her day typing in figures off a corporate printout. The trick is to get the ease of use and flexibility of the micro combined with the massive storage capabilities and raw power of the mainframe. It's easy enough, of course, to use a pc as a terminal -- but then you're dealing with god-knows-what-all mainframe access language, and you have all the interactivity of a fly trying to converse with a rhinoceros. (There are some exceptions, such as Walker Interactive's mainframe accounting systems, but they're rare -- and they usually don't do word-processing.)

The problem is, once you stop talking physical data links and ASCII codes, you have to start talking specifics. The issue is not linking to a 24-megabyte IBM 3081; it's linking to an application or a data base management system running on that machine. In other words, there's the usual trade-off between flexibility and accomplishment. With a 3278 emulator I have the potential to say anything I want to the 3081, but the system leaves me helpless in trying to say something in particular. What I really want to know is, How can I talk in VisiCalc to this machine? Well, that's not a question that can usefully be solved -- for my purposes -- in general. It has to be solved in particular. Take Alpha Software's otherwise-wonderful new package [described on page 12], which is touted as allowing data transfer from mainframes. It can indeed receive files from mainframes, but it's no help in trying to get the right files from a mainframe.

That's why we're going to see a stream of link announcements, none of them big enough or all-encompassing enough by itself to solve the linkage problem. Until we have a standard world -- all mainframes running, say, IDMS or Oracle, and all micros running MS-DOS, VisiCalc, WordStar, and dBASE II, the problem won't be solved. In the meantime....

Yours fondly,
ED

(text continues on page 10)

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VisiCorp, which has made a point of being open to cooperation with other vendors, offers mainframe software companies an extraordinarily attractive market: A base of close to a million users hungry for data to fit into their VisiCalc models. Its latest tie-up, with corporate-market old-timer Informatics General, is the most significant and broad-based in a series that started with Data Resources (VisiLink, see The Letter of November 29) and ASK Computer Systems last fall. These first two enabled data from the DRI data bases and from ASK's manufacturing management and accounting systems, respectively, to be selected and loaded directly into VisiCalc models (and back up again).

The Informatics link-up, by contrast, is novel in the wide range of host data bases it can address. Working on the IBM PC (with other target machines likely later), VisiAnswer links to Informatics' Answer/DB package, a data-access system that works with IBM's IMS and DL/1 data base management systems, Cullinet's IDMS, and IBM's VSAM and ISAM file structures. The user never needs to worry about communications protocols nor about the intricacies of rummaging around inside a massive mainframe; it all looks like VisiCalc (or VisiTrend/Plot, or the other Visis) to him. Answer/DB provides a listing of the data available to each user; VisiAnswer can store a user's sequence of requests so that, for example, he could download and then run "what-if?'s" on the same inventory and purchasing reports each month. (Once the reports are downloaded, they can be joined up with VisiLink reports from Data Resources, enabling the user to integrate internal and external data in a single spreadsheet, using DRI's price forecast in his own internal cost model, for example.)

The system also addresses the concerns of the dp manager — data security, with central determination of which users can get which data; data integrity, because all the data are centrally stored and maintained; data uniqueness, because they're permanently stored in only one place; efficiency, because the micros are off-loading his mainframe; cost-savings vs. the use of terminals, because communications are limited — and of course, central control. We can imagine an advertising campaign that runs, "All those PCs out there making you nervous? Control them with VisiAnswer/DB!"

Initially at least, Informatics will market both products, because the system by definition sells only to largeish corporations with mainframes — and you won't find many stores that want to stock a $30,000 Answer/DB package in case a needy dp manager walks in.
Execucom, the Austin-based vendor of the IFPS (Interactive Financial Planning System) decision support system package for mainframes, will soon offer an extension of the system onto micros -- the IBM PC in particular, with others likely to follow. IFPS/Personal enables the user to download data or models from a mainframe and manipulate them locally. While the large-scale IFPS offers the same capabilities and more (there are some complex mathematical modeling functions that won't run in the micro version), the use of the micro version offloads the mainframe, provides a quicker response time, and lets a PC user have access to IFPS without having to add a terminal to his desktop.

The product will be sold mainly to IFPS users and potential users. The minimum order of 10 copies costs $20,000, with discounts down to about $500 per copy at high volumes. And, of course, you need a copy of the $64,000 mainframe version.

A private company, Execucom already has roughly 600 installations of mainframe IFPS supporting thousands of users, for revenues of about $20 million in 1982. Although the base is less extensive than that supported by Informatics' Answer/DB (to say nothing of the databases potentially addressable), IFPS/Personal offers a nice enhancement and sets Execucom squarely ahead of its competition -- for the moment. This is the kind of announcement every vendor of mainframe applications oriented to end-users will soon have to make to keep up with the Joneses. If they can't talk to all those micros out there, we know someone who can....
RETAIL BY ANY OTHER NAME

Attending Future Computing's informative Fortune 1000 Personal Computer Market Forum recently, we got to thinking about retail. Like so many other terms in this market, it needs definition before explication. Future Computing's figures show that retail ("computer stores") is currently supplying 40% of the Fortune 1000 market; the rest comes direct from vendors (48%) and "other." By 1987, Future Computing predicts, retail will have acceded to 44% of the market. We disagree; many Fortune 10X companies, as they regain control over end-user purchases of micro equipment, are going to want to deal directly with manufacturers or software publishers. We think retail's share will decline, while direct and "other," especially the time-sharing companies such as Dun & Bradstreet's National CSS, GE's GEISCO, McGraw-Hill's Data Resources, and Tymshare, will rise. New entrants such as DEC and Victor, who will be taking an increasing share of the business, are perhaps the clearest seers of this trend and are relying on their own sales forces to penetrate the Fortune 10X. In contrast to IBM, they have never made even a pretense of setting up "national accounts dealers" -- a strategy that inevitably leads to conflict. Meanwhile, Apple's once-strong Fortune 10X presence, established through dealers, is slipping, and we doubt that North Star's recently announced national accounts dealer program is likely to swing back the balance much. VisiCorp, while it continues to make a point of selling through dealers, has just set up a "Service Marketing" group to provide support -- customer-site seminars, books, software maintenance -- to end-users. In sum, we see a diminishing role for retail in supplying national accounts, although we're not rash enough to posit our own numbers.

Some of the confusion may arise because the character of retail itself will change. There's also the issue of IBM's leadership. Future Computing acknowledges its numbers may need revision if IBM starts focusing more on direct sales of the PC. We think that's "when," not "if." When Victor or DEC walks into a large account with its own salesmen, IBM is hardly going to leave its case in the hands of a local dealer. (See box.)

Many Fortune 10X companies, as highlighted in the Future Computing conference, are setting up their own "company stores" to sell computers. But here again there's a question of definition: Some of these are information centers, libraries, or support groups. The distinction has little to do with computers, but more with the company itself: Does it typically set up profit centers that charge other divisions, or does it keep the books centrally? In any case, it's unlikely these "stores" are going to be serviced by local dealers. From the vendor's point of view, at least, this channel is direct sales. And then of course there's Softsel, which has just announced as-yet unformulated plans to sell not just software but also training (value-added) directly to Fortune 10X accounts.

As for retail itself, we see two divergent trends. At one end, many outfits are rapidly moving upscale. MicroAge positions itself as a supplier of multi-user systems for substantial small businesses; On Line Microcenters spent nine months reassessing itself and has just hired John Purcell from Sears Business Systems Centers to implement the chain's newly upscale policy. Stores like ComputerWorks of Westport, Connecticut; Morris Decision Systems of New York City; and Businessland of all over are becoming consultants rather than retailers. Those storefronts are intended to be inviting primarily to the invited.

And, although we're now talking small-business, not Fortune 10X, a host of vertical-market "retailers" are springing up, among them K-Comp and Technology
Solutions (see page 5). These outfits are really franchised selling firms: "We supply the hardware and software; you supply the vertical-market expertise and salesmanship." Their people sell out of offices, not stores. (Even a doctor's office, of course, needs to look inviting, but this doesn't make it a "medicine store." That's called a pharmacy.)

At the other end, store design consultants are seeing a booming business. Software is being repackaged for "perceived value" and rackjobbed so that retailers can sell stuff they don't necessarily understand. Vendors are plying retailers with demo routines, slide shows, and other paraphernalia to ease the retailer's role into showman and space-provider for goods that sell themselves. Anyone with some spare change is being enticed into opening a software store -- less money upfront than a hardware/software store, and you can be the first on your block.

IBM SHIFTS ITS WEIGHT

IBM is happy to use dealers or value-added remarketers for the PC, but only to get business it would otherwise lose. As micro purchases come under the grip of central purchasing and as IBM's salesmen's interest in selling micros increases, IBM's need for outside dealers, relatively, diminishes. Proof comes in IBM's recent (November, but this kind of news travels slowly) shift in PC-marketing policy. Up until that time, all direct marketing of the PC was handled by a small internal group. The regular salesman on an account would hand the business -- and the commission -- over to this group. But now, the salesman handles the sale himself, and gets the commission. While PCs don't stack up too large against a $4-million 3081, they represent incremental volume and, increasingly, a fundamental component of a system sale (as illustrated by the increasing indistinguishability of PCs and terminals, what with PC emulators for terminals and terminal emulators for PCs).

IBM has also changed its pricing policies. There used to be no discounts on end-user orders of fewer than 20 machines, and limited discounts above that. Now, IBM has deepened its discount schedule, including under-20 orders. Moreover, it is telling large customers, "Hey, we know you're a big account. You just order them when and how you like. We know you'll order enough by the end of the year to earn the 1,000-unit discount" -- 25% or more. (Above 250 machines the rate is negotiable.) This is particularly galling, say dealers, when you consider that IBM is not fighting price-resistance; after all, shipments are production-limited. IBM is fighting other distribution channels.

Rapidly, the retail channel is dividing into these two factions. In traditional retail, a bunch of erstwhile computer nuts are finding themselves competing with a host of savvy merchandisers ranging from K mart, B. Dalton and Pacific Stereo to the brilliant used-car salesman who's been pushed by the invisible hand into the retail computer business. Prices in this market will be set by the lowest common denominator, and advertising (read economies of scale) will be key.

In what we'll call "consulting retail," newly grey-suited dealers are competing with vendors' sales teams and indirectly with accountants, consultants, time-sharing companies and the host of other professionals who always circle around wherever there's purchasing authority. These dealers are slowly learning to charge for service and support; once they do, they may well find that actually stocking the goods is merely a pesky headache requiring excessive cash and real estate for little incremental return. It's the doctors, not the pharmacists, who make out like crazy, isn't it?

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Apple Joins the Pepsi Generation

Scooping Apple by a weekend, PepsiCo recently announced the departure of John Sculley to become president and chief executive officer of Apple. He will replace Mike Markkula, who has long confessed to a desire to leave the rat race behind as soon as he could find a suitable replacement. We don't know the man, but we suspect that the arrival of this master consumer marketeer heralds the importance of Macintosh and Apple's hunger for the consumer market (although it takes good management as well as marketing to compete with Coca-Cola -- or IBM). So much for Apple's delicate interest in becoming an "office systems company" with the Lisa as its flagship. Lisa looks to be left a little in the cold. On the other hand, consider the number of liberal lawyers who turned into rigid conservatives once they were appointed to the bench, and vice versa.... Perhaps Sculley has been hankering for a way out of consumer marketing into something more "serious."

Nonetheless, it appears that Floyd Kvamme, who until recently sold into the corporate marketplace for National Advanced Systems, will probably concentrate on the Lisa campaign while Sculley spearheads the company's new -- or atavistic -- focus on the consumer market.

Alpha Integrates Other People's Software

Displaying commendable humility, Alpha Software, developer of (among others) the Apple-IBM Connection, an Apple-IBM file transfer package, has eschewed the invention of a friendlier VisiCalc, a more elegant WordStar, a spiffier Multiplan. Instead, Alpha has just announced Data Base Manager II, a $295 dbms (available next month) which unifies some of the best of the productivity packages already on the market: VisiCalc, Multiplan, 1-2-3, WordStar, and many more. In essence, the product allows easy transfer of files (six keystrokes prompted by a menu), in manipulable form. Thus the user doesn't have to give up the power or features of the applications he's used to -- and his own expertise with them -- in order to benefit from it; the product gives him a Chinese menu of his favorite applications rather than confining him to a single family of Visis or Multis or Stars or Supers or Easys or Peaches. In addition, he gets a nice, powerful dbms with all the usual features: Sorts, mailmerge, file joins, and so forth.

This is the kind of integration we were looking for in The Letter of February 22, when we said: "...most of the 'integrated software' offerings include a 'dbms,' but it tends to be just another application, rather than a foundation." True, Alpha's package is not quite a foundation: The other packages weren't built around it and the data transfer isn't automatic, especially if you don't store your applications on a hard disk (a particular problem with copy-protected programs like 1-2-3 and VisiCalc). Nonetheless, Data Base Manager II's file reformatting and data management capabilities manage to make it a central component unifying all these disparate packages. This is a signal achievement.

Quarterdeck Opens Windows

Fulfilling the same sort of functions as Data Base Manager II but without a dbms and with a totally different character is DesQ, a product to be announced at

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Comdex for shipment in the fall. (DesQ's creator, Quarterdeck, is a Santa Monica-based start-up consisting mostly of former employees of Axxa, which developed an office automation system for Citibank.) How does DesQ compare with Data Base Manager II? In essence, both are addressing the same problem: Integration of existing applications. DBM II is concentrating mostly on the underlying data formats, and DesQ on the user interface. DBM II's advantage is its simplicity and its own powerful data base management system; DesQ's is its almost jazzy user interface which permits task-interruption and automatic resumption. Moreover, DesQ will easily support additional data interchange structures (it calls them "agents") as time passes and as Quarterdeck or third parties get around to it.

At first glance DesQ looks like another VisiON. It offers windows, menus, a mouse, data transfer between applications, and so forth. Unlike VisiON, it even offers color. Also unlike VisiON, it uses existing applications with virtually no modification. In other words, you can pick your favorite applications and, with a little tweaking, run them under DesQ. Like a word-processor preconfigured for the most popular varieties of printers, DesQ will come with pre-set interfaces for WordStar, VisiCalc, and other best-selling packages.

Now for the on-the-other-hands: Precisely because it doesn't modify the applications and is so easy to install, DesQ so far offers only a limited level of applications integration. Yes, they all come with the same interface, and they can move in and out of windows, but data transfer is still cumbersome and the range of interfaces is still limited. While the user interface is rich and full-featured, it can be daunting to the novice user.

But Quarterdeck's major problem is, How does one sell the thing? Microsoft's and Digital Research's efforts, initially at least, are likely to be offered as extensions of those vendors' operating systems (MS-DOS and Xenix, and CP/M-80 and -86), while VisiON will be made available in conjunction with IBM (probably), TI, DEC and other hardware manufacturers. Who will distribute DesQ? With VisiCorp proclaiming that price will not be an obstacle to the adoption of VisiON, Quarterdeck will face a tough market. Its saving grace is its flexibility in absorbing new applications packages and functions; it's the ultimate open system.

United We Stand

AGS Computers, which already owns 75% of Micro Distributors (see The Letter of February 22), is acquiring all of Microamerica Distributing. The principals of the two distributors are friends, and both recognize the importance of having critical mass in the increasingly competitive distribution business — especially the beginning-to-heat-up software distribution business. The obvious question is, Is this the beginning of a consolidation phase? It depends on how you count, but certainly the business isn't going to get any easier from now on. Competitors Softsel and SKU (both mostly software) and others have all raised money recently, and new entrants are still piling in, especially into the (currently) more lucrative software end of the business.

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EASTER RESURRECTION SPECIAL

Although Christians constitute only part of the semiconductor industry's variegated ranks, this year Easter, with its theme of resurrection, was a particularly appropriate holiday. Last year's springtime sprouts of demand for chips were quickly razed by the deepening recession, but 1983 affords new hope for the dead in the semiconductor world. We offer a hallelujah for the reemergence from well below ground level of such famous corpses in the industry as DRAM profits, magnetic bubble memories, and National Semiconductor Corporation.

Rebirth Number One: DRAM Prospects

The most important rebirth has come in DRAMS. As time passes, it is becoming increasingly clear that the reported collapse of prices to under $3 late in 1982, though briefly painful to all, was a quirk in the market. The predicted glut turned abruptly into a severe shortage, as problems successively at TI and Motorola converged with a huge upsurge in demand from makers of small computers and peripherals. Even the software folk got into the act, as VisiCorp began making a 64K DRAM add-in board for micros. By early April, many DRAM distributors were on allocation, IBM was seeking estimates on projected orders of up to 70 million units from one prominent producer in Japan, and prices were back near $4 (for 150-nanosecond parts) and heading higher. Estimates of the 1983 DRAM market have risen from some 200 million units as recently as last fall to close to 300 million today.

This was not a mere blip in the numbers. It was an early portent of a major secular turn in the marketplace. With the buy-ins and brownouts of many once independent semiconductor houses at the hands of large firms (no news of resurrection here), and with floods of venture money into fancy small boxes, the balance of bargaining power between makers and users of semiconductors was once again shifting in favor of the makers of chips. As usual in this contrarian world, the turning point came at the very moment when nearly everyone on Wall Street and Silicon Valley finally agreed to shy away from mainline semiconductors on the grounds that all the large profits would go to the users -- to the several hundred makers of small computers, disk drives and other apparatus for office automation.

Anyone want a chance to invest in another company making a desktop computer with networking capabilities and a UNIX-based operating system? Just wait a week. New offering tombstones in this field may soon be just that. But independent mainline semiconductor companies -- the indispensable source of the creativity, cost reduction, and distinctive performance features that spell life and death for the computer firms -- are increasingly rare and all too often undercapitalized. That's where the eighties are going to roar loudest.

Rebirth Number Two: Bubbles

Some of the computer features that will be most in demand are portability, reliability and performance under harsh or difficult conditions, from the factory floor to the airplane tray table. Providing these advantages is resurrection surprise number two: The bubble memory. We admit to being a detractor of this product, as in "give the riddle for which the answer is Lassie, Rin Tin Tin, and the bubble memory: That's easy -- name two famous movie stars and a dog [1981 Semiconductor Conference]." Bubble memories, in fact, have been buried more often than Vincent Price, and officers at the companies, from TI and National to Plessey
and Rockwell, that have interred their own bubble programs, are still eagerly kicking dirt on the device. It has piled up pretty high by now. But underground turns out to be one of the harsh environments in which bubbles thrive. (For example, Terra Technology Corporation uses bubbles in its field tester for coal mining gear and other below ground equipment and Targa Systems uses the device for storage of data from its pipeline monitors and hydrographic surveying instruments — they work under water, too.)

Bubble memories suffered from overestimates of the size of the market and underestimates of the technical challenge. In 1977, when the race began in earnest, TI and Rockwell were anticipating $100 million in sales by 1979 and $500 million by 1985. Expected to be cheaper per bit than RAMs or floppies and faster than disks, bubbles were seen as a threat across the entire range of long-term and medium-speed working memory functions. But by 1981, it became clear that bubbles would be costlier than either floppies or RAMs, that CMOS static RAMs with battery backup would perform many roles anticipated for bubbles (see, for instance, the new Radio Shack Model 100 portable), that E²PROMs would represent a new and more flexible alternative in many uses of non-volatile storage, and that the bubble market would come in far below projections.

At this point came the great magnetic bubble massacre, as first Burroughs and Plessey, then Rockwell, TI and National all cancelled their programs, and grim projections were made even at Motorola. "The drop in dynamic RAM prices was totally unforeseen by the industry; so were many performance improvements of floppy disks and Winchesters," summed up a Motorola executive. In that context, bubbles simply couldn't make the cut. Bert Kehren, marketeer of TI's program, declared that the device could not achieve learning curve cost reductions comparable to those of its competition.

So why then is the dog now wagging its tail? Gordon Moore of Intel, for no obviously persuasive reasons, rejected the case against bubbles and threw the best technology in the company into the breach, while bringing in the best outside personnel: Several magnetics engineers from Hewlett-Packard which was also bailing out of bubbles. Moore set the group up as Intel Magnetics. This group, under the leadership of Richard Clover, committed itself in late 1979 to drop the price of a megabit — including its formidable controller chips — from $1,000 down to $295 by the end of 1982. Having delivered on this promise, they will shortly sample a 4-megabit bubble memory — executed with X-ray beam lithography — that by 1985 is expected to drop to a price per bit close to RAMs and in reach of floppies. Since this device will be the industry's first X-ray product, bubbles have become a technology leader for Intel. Since Intel otherwise makes its bubbles chiefly with technologies shared with ICs, the device is plummeting down the learning curve with its more famous rivals.

Most important, although bubbles pose no significant threat to disk media for archival uses, to E² for "flexible firmware," or to E²PROMs for silicon software, the computer markets are moving rapidly in precisely the directions in which bubbles excel: working memory in remote or harsh environments where portability and reliability are crucial. For example, newspapers from The New York Times to the Mesa Tribune are using the bubble-based Teleram system for writing and filing stories, while the reliability and durability of bubbles are even more attractive on the factory floor. GE and Westinghouse, for example, are both exhibiting bubble-based gear at the mid-April robotics show in Chicago. By the end of the decade, robotics will constitute a major market for the product.

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Robotics, of course, is already big-time in Japan, where more than 160 companies are producing robots. The Japanese are more than a generation behind Intel in magnetic bubble technology, with Fujitsu just bringing out a one-megabit part while Intel samples four megabits. Fujitsu last month introduced its personal computer with one disk replaced, with great fanfare, by a bubble device using its own inferior product. In fact the problems of U.S. companies penetrating Japanese markets are epitomized by Intel's problems in selling this world-beating device to the world's leading bubble market. Intel sales teams get only a world-beating runaround from all but a few small companies in Japan. Since most Japanese gains in semiconductors stem from sheer excellence of productive skills (and more available capital), rather than protectionism, this reception of U.S. bubbles is both unnecessary and unworthy.

Nonetheless, the world bubble market, captive and Intel's, reached a total of some $70 million in 1982 (of which Intel won some $20 million in outside sales) and showed promise of handsome gains in the future as customers in robotics and personal portables ramp up to expected levels. With the product finally proven to observe Moore's law and the learning curve, the Intel chairman announced at his annual meeting in March a decision to close down the kennel and bring Intel Magnetics entirely into the fold as a full-fledged division of the company.

Rebirth Number Three: National Semiconductor

Around Sunnyvale, though, the resurrection watch has focused most fervently not on bubbles or DRAMs but on the awesome tombs of National Semiconductor Corporation, its wages long frozen, its officers beset with legal firepower from IBM and the Pentagon, its workers laid off by the thousands, its cavernous fabs in Salt Lake City lying mostly fallow. Its reputation as a leading innovator apparently died long ago with the defection of PR wizard Regis McKenna to Intel. The company grew a lot of hair and emerged instead in a less comely guise as the "Animals of Silicon Valley." After seven consecutive quarters with scarcely a profit, the chief sign of life at headquarters was an occasional growl to the press against Japanese imports. But the quotes were so unchanging that one supposed the reporters were merely reaching a recorded message on the abandoned telephone of Charlie Sporck, who has been busy negotiating deals with Oki and Hitachi for more Japanese imports.

Nonetheless, our visit to National headquarters on Kifer Road the Tuesday after Easter revealed no dead body or other signs of extinction. Instead we uncovered some evidence that the company is on the verge of a long-term revival as both a protagonist of technology and a manufacturer of chips.

Behind the facade of a tough and imitative production company in decline, living off its laurels in linear chips and bipolar logic, has been lurking for some time an ambitious technological leader. Under the direction of Sporck and chairman Peter Sprague and with the guidance of Pierre Lamond (National's erstwhile technical chief now in venture capital), the company made an all-out commitment to CMOS five years ago, long before its chief U.S. rivals. Now it offers the only major U.S. CMOS microprocessor and leads in CMOS static RAMs, while making heavy investments in CMOS processing technology and putting some 70 percent of its forthcoming designs into CMOS. With this approach now acknowledged as the way of the future, National holds a strong position as it moves into the mid-1980s.

Also hidden on the far frontiers of National has been one of the industry's best microprocessor design groups. The team, quartered in Herzlia, Israel, made a rare
but portentous appearance at February's ISSCC with a virtual memory-management unit for a 32-bit CPU, namely the NS16032. This is the latest exhibit in National's new 16000 family (see The Letter of June 1, 1982), also developed in Israel and widely recognized to offer an architecture significantly superior in several respects both to Motorola's 68000 family and to Intel's 8086. As early as the third quarter of this year, National will introduce its 32032, the merchant industry's first full-fledged 32-bit microprocessor, already in silicon and in the process of final debugging in Israel. National is also planning early CMOS versions of both these chips for low-power uses.

The 16000 family's major flaw is a practical one: A slow start, which has hindered the development of both a user following and a solid second source. Nonetheless, it has achieved design wins at a variety of computer and CAD companies, particularly in Europe, including Acorn of the BBC, Bosch and Diehl both of Germany, as well as in the U.S. with Datapoint, GE's Applicon, and possibly the embattled new Intel spinoff Sequel. Although far behind Intel and Motorola, National has mobilized a broad company effort, as well as considerable outside software support, for a venture in technical excellence that is attracting increasing attention in the industry. A good sign was the recent rejection by the 16000 family's marketing director Subash Bal of a major job in Intel's microprocessor division.

To redeem the debacle of its attempt at a triple poly 64K DRAM -- a failure that National executive John Finch ascribes to inadequate commitment rather than design flaws -- the company has turned to Japan's Oki Semiconductor. An entre-prenueiral company that did not take part in the Japanese government's VLSI R&D collaborative, Oki has created perhaps the world's fastest-growing semiconductor unit, rising from $5 million in fiscal 1980 to an anticipated $110 million in fiscal 1983, ending in June. It has perfected its 64K DRAM through six versions and already has a 256K DRAM in qualification at major U.S. accounts. According to Oki officials, National is gaining access to the benefits of Oki's extraordinary processing technology, which is giving yields of over 60 percent from its heavily automated clean rooms, in exchange for half the output up to a total of 25 million units. Oki thus will allow National to gain experience -- and reduce operating losses -- in its underused DRAM facilities, at a rate expected to exceed a million units a month by the end of the year, while preparing for a more significant entry at the 256K level.

National's 256K plans have not been announced. But there is good reason to believe the firm will not repeat its 64K blunders. Its triple-poly approach, with significant modifications, has been adopted for the NEC 256K DRAM, a 54,000-square-mil die introduced at the 1983 ISSCC. National now believes it is close to mastery of this process.

More significantly, the company has hidden away in its recesses, somewhere between Israel and Sunnyvale, a still more ambitious 256K design that may give it the chance to launch a major industry-standard DRAM for the first time in its history. In denying any interest in leaving National, Charles Sporck recently declared that the company is still only at the beginning of its trajectory of growth. If he can manage and market the array of innovations he now commands, he may well be right. National could pull off the biggest semiconductor resurrection of all.