PC FORUM TUNES UP

One of our favorite experiences is listening to an orchestra tune up: There's anticipation in the air, a sense of craftsmanship, little snatches of familiar tunes as the oboist tries out a few bars, the pianist practices a tricky passage. This issue is intended as a tuning-up for the Forum. It can be read by Forum-goers as a guide, and by regular readers as a state-of-the-industry in microcosm, limning some of the issues of the year ahead. We are not attempting to precis the discussions we will lead or the speakers' speeches; indeed, we hope they will offer some new ideas beyond the ones presented here. Perhaps a better metaphor would be not an orchestra, but a jazz band.

Most of the companies mentioned here will be present(ing) at the Forum, but not all; see Part II of this issue, distributed at the Forum, for the full list. (It comprises the agenda, photos of the speaker/panelists, and a list of attendees.)

STANDARDS FOR/VS. INNOVATION

The big issue here is whether standards retard or foster innovation. Do they retard innovation by requiring adherence to fixed rules, which are obsolete the day they come out because all improvements thereafter cannot be incorporated? Or do they foster it by providing a base around which one can build improvements? If you had to reinvent the wheel every day, it would be tough to get much work done on designing the rest of an automobile.

Of course, standards do both, and they also allow different innovations to co-exist. The Diablo 630 "standard" used by Apple, for example, enables IBM PCs to address its LaserWriter -- even though it

WELCOME BACK, FRED!
functions only as a typewriter replacement in that mode. The pfs interface (from Software Publishing) is used by Symantec in Q&A because it's a tried-and-true interface that millions of people have found -- and millions more will find -- easy to learn. Behind that interface, Symantec has innovated, developing a faster and more powerful product that also offers another, natural-language, interface. Ansa has done the same with two standards: Its Paradox dbms looks like Lotus, but uses the dBASE file format to make transfer of data as easy as loading a file. Javelin has done neither, because its product offers innovation both in the interface -- with a variety of metaphors rather than Lotus's (imitating VisiCalc) rows and columns -- and in the underlying structure. More innovation, yes -- and more cost to the user who has both to rewrite his files and retrain his people to benefit from that innovation.

ADVANCES IN SOFTWARE

Whereas the standards vs. innovation argument is largely theology masquerading as technology, here we consider technology itself, and its impact on software development. (Pricing and distribution will be dealt with later.)

Multiware

The biggest current system hurdles to progress in applications software are the 640K memory barrier and the single-tasking nature of the current OS standards. How many more things would you do on your computer if you didn't have to store and reload your main task to do them? Probably quite a few, as indicated by the success of RAM-resident programs such as Sidekick, Spotlight, and Ready! More of these are coming out every day.

Addware

Microsoft's Windows offers multi-tasking, but can't expand memory capacity or addressability to make much use of it. That will happen soon, we've been assured, and within the operating system itself. With widespread multi-tasking there will be less need for the RAM-resident add-ons in their current form, but they'll still be useful utilities. They simply won't have to worry about keeping out of the way of, or grabbing control from, the "main" program. Overall, users will be more willing to try more different programs in addition to their main application, since it will no longer require abandonment of one task to perform another. Multi-tasking, along with adequate memory, may actually bring forth the long-awaited desktop-on-a-screen (with or without w/Windows), which users will rely on all day to accomplish most of their business.

For applications software, this means a heyday for ancillary programs, ones that weren't worth devoting an entire machine to. People use them already, but more people will buy and use them and use more of them without the penalty of lost access to other programs. The beneficiaries range from complete secondary applications such as project management and expense accounting, to high-end add-ons such as General Optimization's What'sBest? (an optimizer for Lotus 1-2-3 discussed here in the December 32 issue), to front-ends, report generators and the like. Most of these last sell for $100, plus or minus 50 percent. Among them are Lotus/Concentric's 1-2-3 ReportWriter, the RAM-resident programs already mentioned, and Reports Plus,
an open-minded report generator that handles files from 1-2-3, dBASE and others simultaneously, due out this month from Softsync of New York.

Netware

No pc is an island, and the more powerful systems described above will help make it so. Improving interconnectivity will absorb huge amounts of programming talent this year -- and if developers are successful, users will never see the fruits of all that effort. They'll simply find it easy to transfer not just files but specific pieces of data to one another, to talk to programs running on other computers, to update a common data base without running into mistakenly locked files, or, on the other hand, inadvertently wiping out someone's unlocked files. ("I never thought anyone else would have a file called 'blackbook!'" said Juan in amazement.)

Clearly, the arrival of the network will mean a whole lot of attention to multi-user software. We expect to see a lot of data base systems that offer this capability, as well as a lot of other applications that rely on underlying multi-user dbmses. After all, what is multi-user all about but sharing files -- and making sure that the other guy doesn't mess up what you're doing?

The actual applications won't look much different to the user, but the multi-user underlay may also include a controlling overlay, managing programs such as a multi-user office scheduler where a designated person has the right to set individuals' priorities. Once managers get multi-user applications, they will also want to coordinate those users.
Denver-based FCMC's Staffware, which controls the flow of work and disposition of tasks among a group of users, is one good example. Consider also the much-touted field of "electronic publishing," which most people take to mean simply the prettification of output. The real issue will be document management, performed by multi-user editing systems that automatically control the flow of copy from writer to editor (and back to writer!) to proofreader to layout person to typesetter or laser printer. Such a system might also manage the scheduling and format of such documents, producing realtime customized messages such as, "I need that two-grapher on sneaker laces for overweight yuppies by 3.15, or else!" or "Laces and Losers is 15 lines too long. Please cut!" (An artificially intelligent system might even go so far as to suggest where to cut, but that's some time away. On the other hand, it wouldn't be hard to develop a system that could recommend placement of subheads on a page governed by rules of thumb for esthetics and length.)

The next step beyond multi-user software, which lets different users interact, will be cooperative processing, whereby different applications interact. In other words, networks (with appropriate software) can be used to connect applications as well as to distribute their capabilities to several users. This certainly exists on a specific level --- all those micro-mainframe packages grabbing data from mainframes, but there are so few standard conventions that most such systems work like device-drivers, addressing only specific other applications that are carefully defined. The original Lotus/Cullinet Symphony Link announced last March would have linked only those two companies' packages, but now each company has decided to sell on its own a product that will offer one-to-many links from its own software (plus a few others) to a wider variety of complements on the other side. IBM's LU 6.2 specification is an attempt to foster many-to-many links, by way of standard protocols for inter-application cooperation. Control Data's Communications Solutions unit, among others, is currently shipping LU 6.2 development tools, but packages using LU 6.2 will mostly be in design rather than in production during 1986.

Soundware

On top of the invisible network software there will greater visible and even audible friendliness --- some of it talking, thanks to the efforts among others of IBM (in "blessing" voice recognition last fall) and of Dragon Systems (in implementing it). Voice recognition is a natural complement to natural-language capabilities such as those in Lotus's HAL, Microrim's Clout, and Symantec's Q&A. In the short run, as long as natural-language still requires processing power beyond that of the typical desktop PC to recognize words at anything near the speed of natural speech, voice recognition will work best instead with menu-driven programs, where the range of choices is limited. That's why phone systems that ask you to specify the name of your mutual fund from a list or an inventory system that uses part numbers (only ten digits need be recognized) can work while more general systems will not (yet). And, of course, it's easier for the system to recognize many words by a single speaker than the same number of words by many speakers.

Seeeware

But many new products, such as Javelin, Paradox, Arborist, and Singular Software's Interlace (all described in recent issues), depend in part on

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visual effects for their charm, and will be less susceptible to the use of voice for input or output. They use graphics as a medium of communication about relationships, flows, and other non-numeric concepts (see the illustrations on pages 3 and 7). Another category, products such as Software Publishing’s Harvard Presentation Graphics and Business & Professional Software’s entire line, generates graphics output by letting the user manipulate images directly on the screen. (The old way -- where you gave it instructions such as "start a box at location 10,23; make it 30 spaces wide..." but usually in more cryptic language -- would still work fine with voice.) These dedicated graphics packages should also prosper as the standard business document upgrades to include not just multiple-scenario (hopeful, optimistic, and incredible) spreadsheets but also graphs, diagrams and multi-font text.

Underware

Underlying power will infuse applications with greater responsiveness and even initiative. Imagine a word-processor that lets you type: "Letter to Alice Hanes." It searches your files and asks you, "Do you mean Alice Haynes?" If you type "Y," it promptly prints out the first few lines. The system also tells you what you may be replying to, and asks you to identify the topic of this letter for future reference:

February 16, 1986

Alice Haynes
VP Corporate Appearance
Computer Confusion
3000 Sand Hill Road
Menlo Park, CA 94025

Dear Alice,

Last letter: January 3, 1986
Topic: dirty uniforms; salesperson hygiene
Topic of this letter?

For more information on Alice Haynes, type "MORE"

It starts your letter for you, and offers you further information on Ms. Haynes -- whatever you gave it earlier: her birthday, her boss, her secretary’s name, her purchasing authority, etc. You may have a bunch of favorite phrases for starting letters, and it would ask you which to use. Or you may even have a file of form letters to customize, such as "answering a complaint," "requesting a payment," "refusing a charity solicitation," "thanking an unsuccessful job applicant," "referring a customer to Henry," etc.

For all this, of course, you would need lots of memory and on-line storage, a fast processor, etc.; network access to a company data base would probably help. These are available now; it’s in the hands of the software developers to write the software that’s so easy to use that people will start to use it. Part of that easiness (call it user-friendliness if you must) is due to the increasing incorporation of artificial intelligence...

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Artificial intelligence is not something we care to define; it’s simply a collection of mostly symbolic (as opposed to numeric) processing techniques. It’s metaphors and rules, scripts and frames, decision trees and tree editors, garbage collection and truth maintenance, multiple worlds and blackboards, inheritance structures, all kinds of data representation.

In the end, what matters is not how AI works, but how well. AI is not a market; if anything, it’s an underlying technology that will improve some existing applications and make possible certain new ones. Among those will be rule-based expert systems, and better yet, applications that include rule-based systems to control the execution of the applications. In other words, they decide to run the payroll early the day before a holiday; they know to shut down a catalytic cracker if the temperature gets unusually hot.

The AI "market," represented in part by several of the panelists, consists of optimized hardware, symbolic processing languages, and development tools and environments. These are simply the capital equipment for all the applications that people will make for end-users. In fact, the AI "market" is like the dp world of 20 years ago: The customers are builders of applications rather than users of them; the products have barely seeped out into the real world. Technicians are selling to technicians, touting technology rather than benefits. Of course, that’s changing, just as dp vendors now sell to departments and functional people -- mailing-list brokers, sales managers, travel planners -- rather than MIS departments. IntelliCorp, for one, will show at the Forum a videotape of the Northwest Orient Airline Seat Advisor, a large-scale expert system that advises Northwest pricing managers to increase or decrease the proportion of discount seats on various flights. The system considers such factors as the availability of competitive seats, days to flight time, day of week, and, of course, current bookings.

Should Johnny use LISP?

The biggest controversy rending the commercial AI world is the use of standard hardware and software. The middle view asserts that optimized equipment and software should be used for development, while standard environments serve well for delivery, but there are lots of more extreme views on either side. Palladian's Corporate Financial Advisor is delivered on a regular-issue LISP machine (although it reads mainframe data bases), while Persoft's mail-list analyzer was developed on a mainframe in COBOL.

Perhaps IBM’s RT PC, if it becomes a standard, could help to connect the two worlds. Is it a standard environment, offering a version of UNIX, C, etc., on a non-standard vehicle, RISC technology? Or is it a non-standard in standard clothing, a perfect target machine for LISP and other AI dressing? Does it really matter?

AI's razor blades

For all the excitement over AI tools, the vast majority of the value-added in the AI "business" will lie in the specific applications that they are used to build. These applications will represent embodied wisdom and experience in hundreds of real-world problems, while the AI tools and languages and environments are merely the generic reasoning and structures that under-
lie it. Certainly there's value in these tools, just as there is in the
concept of a spreadsheet, but not enough to support the number of companies
that have jumped into the business. The closest analogy is probably the
dbms business, one not exactly welcoming to newcomers nor even kind to most
of its incumbents. Many of the tools companies are currently searching for
VARs, resellers of tool-based applications with specific knowledge of an
application area. Among these tool vendors are Aion of Palo Alto and
Silogic of Los Angeles, who do not sell to end-users at all.

SOFTWARE DISTRIBUTION

The software distribution business -- or rather, software distributors --
are fighting fiercely among themselves even as they fend off attacks from
outside. Alternative channels include catalogue and mail-order houses
(Channelmark, 800 Software and a host of others), direct sales by vendors,
and corporate resellers, intermediaries such as Mort Rosenthal's Corporate
Software that bypass distributors and sell directly to end-users.

The software distributors' great problem is that their role is becoming less
necessary. High-volume products can be sold unbundled from support and ser-
vice (or without it) by corporate resellers or directly by vendors. Site
licenses and volume discounts make such sales unprofitable for distributors.
Then, too, smarter shoppers are looking, asking for demos and even buying
the occasional package at full-service outlets, and then they go elsewhere
to buy in volume. Disgruntled dealers complain that software constitutes
barely 5 percent of their sales, and an unprofitable 5 percent at that, down
from 15-20 percent just a few years ago. So they aren't about to waste
extra funds on supporting it.

Long-run, too, as such products become commodities, their prices will drop
at any volume. The countervailing trend to more powerful packages doesn't
quite offset this erosion. Theoretically, dealers should sell new, non-commodity packages at higher margins -- but customers don't seem to want to buy those!

New vendors generally start out with a limited dealer roster. But when a dealer goes all-out to support a powerful new package -- Paradox or Javelin, say -- he knows that success of the package will ultimately mean broader distribution and lower profit margins. So why should he speed the process? For that six-month window where he has the package and few others do? Most of the volume buying (if any) even by the initial customers will occur after the six-month period.

Bill Gates has even gone so far as to suggest (at a panel we ran at Comdex) that vendors should pay dealers a million dollars upfront to help launch a new product, but so far no one we know has taken the idea seriously. Tactics such as the ubiquitous six-months' or year's exclusive with Softsel (pioneered by Vern Raburn at Lotus) are another form of such blandishments, but for uncertain rewards.

**Vanishing value**

The trouble revolves around value-added. That, ultimately, is what people get paid for. There's a lot of value in software if it lets you do all the things 1-2-3, say, does, but as time passes and there are lots of other spreadsheets, that added value diminishes. It can be maintained somewhat by advertising, and by the lingering effect of being an industry standard; competitors to Lotus stand little chance selling an equal product, and have a tough time selling a "better" one. Call the need for retraining and file conversion or even model rewriting, and the risk of buying a non-standard, "value-subtracted" -- a serious deficit to overcome.

There is also value-added in retail software distribution and support if people don't know what to buy and can't find anyone down the hall to teach them its use once they've bought it. But dealers who used to add value by advising people to buy 1-2-3, by demoing it, by training people in it, are finding those functions unnecessary or better-performed by buyers' colleagues or internal staffs. So how can they add value?

They probably can't -- except by providing availability and low prices, as done to perfection by Egghead Discount Software for one, or by selling unique products to people with unique problems and charging accordingly. That's the tack Businessland and a host of would-be dealer/VARs hope increasingly to take.

**Direct me to your profit leader**

Meanwhile, we see strong growth for all those direct-sale channels. Companies such as Borland have made their names that way, and are now selling at retail as well. (Priced around $100, their products don't make much money for dealers, but they don't require or get a lot of support, either.) The cataloguers -- Software Publishing's Power Up!, now independent and renamed Channelmark, and Symantec's Turner-Hall -- and mail-order houses are successfully selling not just the standards but private-label and new products and helping to make their names. Turner-Hall's Note-It, a 1-2-3 add-on, is probably the most visible of the breed. (Catalogue houses sell...
products described in a catalogue; mail-order houses sell products so well-known they need no description. But the distinction is a fuzzy one.)

Meanwhile, Corporate Software sells direct to end-users. First Software has plans, currently on hold, to insinuate itself into the loop with Corporate Access, in which it handles site-licensing agreements in return for a commission to the retailer who brought in the business (carefully refraining from competition with its own customers, the retailers).

Delayed but not derailed

Long-run the distributor's function -- getting software from creator to user -- will wither with the advent of electronic distribution. Long foreseen (and pre-seen, certainly, by us among others), electronic distribution will ultimately take the place of trucks and delicate floppy disks or even robust three-and-a-half-inchers. As packages become more and more tailored to specific needs -- because that's the only way software vendors can make any money -- it will make less and less sense to create (i.e. duplicate) those programs until a specific customer asks for them. Then they can be downloaded (with proper security). Also, as corporations become more automated, the proportion of company-specific data to generic software will change, necessitating the development of internal software-delivery systems that will be used for purchased as well as for internally generated software (both programs and data).

Once corporate purchasers are satisfied that the security problems have been solved (for them if not for their employees, who would like some medium beyond corporate control to store their little black books and their black thoughts), they will shift to internal production and delivery of software. General Electric's recent site-license deals with Office Solutions, Computer Associates and Planning Control represent the company's wish not only to standardize and to reduce software purchase costs, but also to reduce the corporate record-keeping burden. Departments get the corporate software for "free" and without red tape, while other packages must be specially ordered, tracked and paid for.

Free market

We've heard software vendors express dismay at such large deals: Can a single vendor cut out all others through a site license? Of course it can; that's the idea. But any vendor is free to offer a site license or a huge discount. The savings offered to the customer reflect real savings to the vendor in marketing and distribution costs -- or at least a marketing "investment" that he hopes will ultimately pay off. Site licenses are the current version of the mass licensing deals -- most notably MicroPro's WordStar pact with Osborne -- that helped launch products in the early Eighties.

Pricing pressures

All this is a fairly long-term threat. Some software will always come in packages, just as some water comes in Perrier bottles. What will happen this year will be the expansion of site-license programs -- still far less prevalent than all the talk about them -- and, more widely, deep discounts to volume buyers.
There's considerable, continuous discussion about software pricing: Is it going up or down? One factor causing confusion is that software is tough to measure in units. While on the one hand we have expensive micro-mainframe packages -- some, like Network Innovations' Multiplex, with mainframe components costing thousands of dollars -- on the other hand we have lots of utilities, add-ons, add-ins, etc., that cost under $100 and require little support. It's fair to say only that, like hardware, software will offer more power, and generally more accessible power (i.e., built-in support), per dollar. In essence, the software that needs lots of direct support is getting more expensive, while the commodity-like packages best sold without the cost of intermediaries are getting cheaper. Neither category will provide much profit to third-party distributors, whose main challenge over the next few years will be to increase efficiency.

Overall, it's hardly surprising that all the software distributors are trying to increase the relative strength of their hardware lines before the software slump does it for them. Micro D's strength in hardware distribution was one of its primary attractions to recent 50 percent-purchaser Ingram Software -- and indeed to the other distributors that also pursued it. (See Release 1.0, January 28.)

Dealers, VARs and others who provide substantial support to small business customers may make money selling low-volume packages to specific well-defined markets; their challenge will be to develop the requisite support capabilities.

SYSTEM TRENDS

It's a truism that cost reductions are in some sense self-defeating: Suppose that the cost of one part of a system -- the central processing unit, say -- declines by half each year. Its impact on the cost of the total system will decline each year, given that each succeeding year it constitutes a smaller part of the total. Thus the extraordinary declines in processing cost -- or the extraordinary increases in processing power -- have decreasing impact on system costs. Also keeping system costs from dropping as fast as they "should" is the huge capacity of the market to absorb increased performance. Memory capacity of the hardware and memory needs of the software rise in mutually reinforcing escalation. The result is that average selling prices of systems sold will probably stay flat or even rise.

While everyone is waiting earnestly for Microsoft and IBM to solve the 640K memory barrier with appropriate software -- and provide multi-tasking too -- software vendors are more concerned with what users actually own. The 512K machine seems to be on the verge of becoming the average system: Most buyers of IBM PCs are buying 640K because they can easily afford to, while clone-buyers start at 256K and have enough left over to buy an add-in card eventually. Symantec, selling a 512K package to inexperienced or at least casual users, decided to address the problem by offering an optional 256K memory-expander for $50 ... and found that only about a third of its customers are buying it; the rest evidently already have 512K in their machines. Hard disk drives are also becoming standard, and will be necessary once people start multi-tasking.
Bluff and belief

These macro system trends are entirely clear. More interesting is speculation on the role of the Macintosh and the RT PC. Three interacting players will affect their futures: the customers; the third-party vendors, mostly of software; and the vendors themselves. Each is watching the other two carefully, trying to gauge their level of commitment to these machines and adjust its own commitment accordingly. Like most developments in the computer business, it's an interplay of bluff and belief -- fascinating to follow and fruitless to forecast.

The Macintosh has a new lease on life with its one-megabyte version, the Plus, but users and third parties are waiting for the new open Mac. Will the electronic publishing market be enough to secure the system's future? Or will the EP vendors abandon Mac for the PC? What of other business markets, and all those happy users who fear the PC and its a>? The Macintosh's strong character and consistent interface render it attractive to a large segment of the potential market -- if Apple can reach them.

By contrast, the peculiar character of the RT PC (and of RISC technology in general) is its characterlessness; the underlying processor could be suited for almost any kind of task depending on the accoutrements it gets from IBM and third parties. So, will the RT PC replace the System 36 as a department processor? Or the Sun, Apollo and DEC workstations as a scientist's workbench? Or will it wither away -- along with those other machines -- with the advent of a series of 80386-based machines from IBM, due in 1987? What is IBM's commitment to the machine? How will it position it against, or alongside, the PC, with which it has some compatibility?

Networks

If this is the first real year of the network, is it also close to the last one? Networks are likely to become so popular that they vanish inside the machines as standard equipment, just as modems are doing. (Ask Hayes, which sees that happening and is preparing to become more of an OEM supplier and offer enhanced versions.) Yes, that will require the selection of standards and the development of chips so cheap that it will be cost-effective to have Ethernet or Token-Ring capability (for example) built in. Currently that would add about $50 to a volume manufacturer's cost for Ethernet and $250 for Token-Ring, with those costs slipping down substantially over the next few years. There's considerable disagreement, however, on exactly how fast Token-Ring costs will approach those of Ethernet -- and whether it will be TI or Japan supplying the chips when they do.

For "network" vendors, the money-making part of the network is likely to be the file server: Ask 3Com, which sold $5 to $6 million worth of its $7000 (list) 3Server in its most recent quarter, accounting for a third of its business, from a standing start a year ago.
CORPORATE ENVIRONMENT

The corporate marketplace carries tremendous cachet, and the numbers it represents are enormous. But it's also an intensely competitive market: While corporate customers buy in huge chunks, they expect huge discounts.

Do they really prefer to buy direct from a corporate-account vendor, or indirectly from (several) retailers? There is no one answer, but we suggest the business-card test for any single company: Get the business cards of several individuals from different divisions or subsidiaries. If the cards are all alike, you're dealing with a centralized, direct-purchase company. If they all look different -- or the people don't have any -- consider them fertile ground for retail or dealer sales.

The corporate market is a major force for standardization. They want to be able to trade formatted data among departments or branches, and send people to internal training classes. They want to distribute software and updates internally. They want everyone's expense reports to follow the same lines.

General Electric, for example, recently concluded site-license agreements for SuperCalc 3, OfficeWriter, and EasyTrak (a mini-based project manager). We assume Lotus and MultiMate were offered a chance to bid, but couldn't meet their competitors' terms. Mort Rosenthal of Corporate Software says he still sells substantial amounts of 1-2-3 and MultiMate to GE, but notes that it's easier for company employees to use the standards because they aren't charged to departmental budgets.

Both a prerequisite and an impetus for all this standardization and internal communication is the proliferation of networks. Vendors say that's happening, with 20 percent of Businessland's systems, for example, going out network-equipped. At retail, 3Com is currently the leader, but Token-Ring is gaining fast. Eventually networks of all kinds will proliferate, with workgroups connected to other workgroups by backbones that may be based on different technologies.

The customers, themselves

What is happening to all these much-sought customers? On the one hand, they're getting smarter, as they accumulate years of experience and pass on their wisdom to others in their organizations. On the other, they're getting dumber, as the roster of computer-users within each company grows to encompass more and more of the ranks. In fact, a new breed akin to VARs, developers who customize generic packages, is growing up within corporations. Vendors have to sell to these people, while also providing products (or facilities to develop products) that will appeal to the computer-naive.
NON-CORPORATE ENVIRONMENT

The non-corporate environment consists of "all other" -- small businesses, vertical markets, functional markets (e.g. sales departments, personnel management), education, scientists and engineers (IBM's "technical professionals," or white-sock professionals), and lawyers and doctors (white-shirt professionals). In the years ahead, "all other" may well account for the bulk of the profits to vendors, just as it accounts for the bulk of the unique business problems to be solved.

Vertical markets are getting much attention in the computer business, but the real action is going on far from this Forum. We know of one company, for example, that's going to announce its system shortly at a trade show in Honolulu -- but it's not a trade show most of us have ever heard of.

White shirts

In one sense, computers are getting more and more flexible, but in another, they're getting more and more specific. That's because people by and large are no longer buying hardware, but systems. Computers, so to speak, were tools; people bought tools to create systems to handle problems (or to look at data). Now people are less willing or able to do the work themselves; they are buying pre-built production lines. Of course, just like production lines, application-specific computer systems are flexible enough to produce a lot of variety, but the basic functions are fixed, be they medical record-keeping, salty-snack distribution, or document transcription as handled by BaronData, a recent acquisition of Convergent Technologies.

This change betokens an equal change in distribution patterns. While some erstwhile retailers are attacking the corporate market and launching field salesforces into the corporate battlefield (see Release 1.0, 28 January), others are finding a niche or two and going after smaller customers in specific markets. Word-of-mouth works well in these markets: Juan of Juan's Taco Town may not talk to Alice's Restaurant across the street, but he talks to Joe's JunkFood across town (at least until Joe computerizes and becomes so successful that he starts to expand onto Juan's turf. Then Juan will remember that computer system Joe was always talking about...). Vertical marketers are learning the value of sales seminars, direct mail, industry (not computer) trade shows, and the like -- as well as the advantages of building specific software around a standard core and leaving system software maintenance to the system software vendor.

Vertical markets, however, are smaller. Moreover, the dream of opening several vertical markets in rapid succession may be no more than just a dream. Each market requires a specific infrastructure of support and expertise that goes well beyond tailored software. Perhaps the only way to do it is something like the MicroAge approach -- franchising a number of separate organizations, each of which is uniquely tailored to its own specific market. Some MicroAge franchisees do indeed specialize in vertical markets; others simply cover a geographic territory where they can earn a good reputation simply by specializing in accounting for small businesses (not a vertical market).
The supra-business market

Above we pointed out that large corporations are forces for standardization: They want everyone in the company to be on the bus, so to speak. But intercompany communications also exert a strong impetus for standardization. As internal operations become automated and as companies wish to trade data externally with suppliers and customers, they start to adhere to industry-wide standards. Travel agents who want to make reservations, distributors who want to load vendors' price lists automatically into their local systems, doctors who want to expedite insurance reimbursements, all these know the impact of industrywide standards. Vendors who can foster the adoption of such standards stand to reap large benefits.

White socks

In the scientific and technical markets, the desktop pc is approaching the scientific workstation as power increases and prices drop. The clash of the Titans -- DEC and IBM, with Sun and Apollo perhaps the innocent bystanders -- is about to erupt. IBM has the advantage in capturing the slightly technical folks -- architects, statistical analysts -- who work close to the front of the shop; DEC and the other scientific workstation vendors are solidly entrenched in the lab. But scientists have to write and do spreadsheets too -- especially in these parlous days when even Bell Labs and Xerox PARC are supposed to make money.
SPEAKER PROFILES

BOB CARBERRY: MAINFRAMES TO MICROS

Bob Carberry is vp, product line management and operations, at IBM's Entry Systems division. In other words, he manages the design and production of the PC family. He came to this role from technical product management, and joined ESD only two years ago after 20 years elsewhere in IBM, getting well-rounded. In addition to the usual mainframe experience, he has also worked in the Federal Systems division and was once director of Engineering and Scientific Processor programs. He was responsible for development of the VM operating system for IBM's smaller mainframes, and for the 3090 vector processor. All this means that he brings a technical and mainframe perspective to the PC business -- a handy trait at a time when PCs, and ESD itself, are increasingly being integrated into the mainstream DP world.

In his talk, Carberry will discuss ESD's direction for 1986 and beyond, stressing the role of communications and networks, cooperative processing, and open architecture. He will also discuss support of "advanced technologies."

BILL GATES: GRACE IN GROWTH

One of the big events of this season will be Microsoft's initial public offering. The prospectus of this company, founded in 1975 by Bill Gates and Paul Allen (who will also be at the Forum), makes interesting reading: The company will be valued at $400 to almost $500 million, or more than 2.4 times revenues and 12 times earnings. The most striking feature of the company is its diversity of products: No single product line accounts for more than 10 percent of revenues -- and thus, to the disappointment of analysts and competitors, little is disclosed beyond the breakdown into three categories: Systems (including languages), 54 percent; applications, 38 percent; and books and hardware, 8 percent. Domestic OEM sales account for 31 percent of the total; domestic retail 36 percent; international OEM 19 percent, and international OEM, 13 percent. There aren't many cherries to pick there.

Operating income is hovering around 30 percent -- not as high as Lotus in its heyday, but evidently more sustainable. Indeed, the company has been so profitable -- with $67 million in retained earnings -- that the government is considering suing it for personal holding company taxes to the tune of $30 million (which the company could easily pay out of its liquid assets of $38 million). Even if it escapes that peril, Microsoft's lawyers say, it may owe excess profits taxes. They conclude, however, that it's unlikely that Microsoft will ever have to pay up, given that it's an operating company rather than the income vehicle those laws are mostly designed to catch.

All these things, as well as foundering relationships with Japan's Kay Nishi and MS-DOS designer Seattle Computer Products, have been amply discussed in the press. More interesting is the company's success in building a solid company. We knock on wood even as we write, but Gates seems to have successfully brought in a number-two to whom he is gradually and gracefully yielding authority, without sacrificing control over those things, mostly
technical, that still matter to him. Those with long memories will recall that Gates tried this once before, unsuccessfully, but it was early enough in the company’s history to be a lesson rather than a disaster. Insiders note that Gates gladly defers to president Jon Shirley decisions that he would have handled himself even six months ago.

But Gates, now 30, is in no way losing touch. We attended the company’s recent Windows seminar, and watched him revel in addressing a group of techies and fielding their toughest questions. Now it’s on to the IPO road show -- quite a different crowd!

Watching Windows

We met several Macintosh designers there. We also ran into Patrick Perez of Palo Alto’s Neuron Data the week before; he plans to port Nexpert, one of the most powerful pc-based (actually, Mac-based) expert-system builders, onto the PC under Windows. Windows, way ahead of existing hardware (as was its onetime competitor VisiOn) when it was announced in 1983, seems ultimately to have been worth waiting for. It’s still ahead of its target system: It’s not worth much to be able to multi-task if you can’t fit two reasonable-sized programs into your computer. But those problems will be solved.

The most significant message from the seminar was this: If you design for Windows, you will de facto also be designing for the next significant release of MS-DOS. Microsoft believes (properly) that functions such as multi-tasking and memory management belong in the operating system, and it aims to put them back there. Then Windows will go back to being a program environment and leave operating system concerns to the OS.

JOHN SCULLEY: APPLE IN BLOOM

John Sculley, 46, came to Apple as president in April 1983, bored with a successful career in the advertising business and at Pepsi. Fully challenged now, he is leading the tumultuous transition of Apple from a product company to a systems company, striving to make headway in a market that mostly chooses IBM and compatible equipment by default. To succeed, Apple must offer a critical mass of advantages ... or find the markets in which its advantages are critical. As a speaker, Sculley represents the industry itself: its beginnings in Apple; its transformation into a marketing business by people like himself; and its future, where connectivity supersedes compatibility as the touchstone of consumer acceptance.

In fact, Apple won’t ever succeed; this is not a market in which you can ever win more than a battle in a continuing war. But the company has won a lot of battles.... Current operating results are stellar. Profits are at record levels, following severe cost-cutting and reorganizations last year. Those profits, due to Sculley’s efforts, put the company into fighting trim for the next battle -- gaining back market share in an increasingly cutthroat market. Apple’s weapons include a line of enhanced products and a new openness to the rest of the world.

Early this month Sculley was named chairman of Apple, filling the spot vacated by Steve Jobs.
AL RIES: CERTAIN THINGS TO CERTAIN PEOPLE

Positioned as co-creator of the concept of "positioning," Al Ries is chairman and founder of Trout & Ries, a New York ad agency with $30 million in billings that numbers Xerox, DEC and others among its clients. Together, Ries and president Jack Trout wrote Positioning: The Battle for Your Mind, first published in 1981 and re-released this year, and Marketing Warfare, published this year.

Ries's thesis

In very-brief, Ries contends that it's not enough simply to know your customer; you've also got to know your competitor and what he is doing to your customer. Which customers are underserved or ready to switch? Which customers are not yet buying the product because no one addresses their needs? Then you must position yourself to attack the competition's weaknesses and avoid its strengths -- unless you're very, very strong.

By this reasoning, Apple's yuppie ads make sense; its business-suit ones don't. Similarly, it probably doesn't make much sense for anyone but Lotus to sell a new spreadsheet, despite the huge market for them. If you must, then Adam Osborne's approach, positioning the $99 VP-Planner against Lotus's $495 product, is the way to go. Computer Associates' SuperCalc 3, by contrast, never really developed an identity -- positioning -- of its own.

This sort of thinking, taken for granted in the world of Coke and Pepsi, is new -- and belated -- in the pc world, where many companies didn't realize they had competition until it was too late. Think of all the companies aiming for 20 percent of any given hot pc market over the past few years... Think of all the companies trying to be better than, rather than distinct from, IBM... Think of all those echoes in a market that wants choices...

MITCH KAPOR/JERRY KAPLAN: THE KAP BROTHERS

Mitch Kapor needs no identification; among his many claims to fame, he has just been profiled in the United Airlines magazine. He will be sharing the podium with Jerry Kaplan, a founder of Teknowledge (going public shortly with a hoped-for valuation of about $72 million, or about 6 times the last 12 months' revenues; the last year was unprofitable). Kaplan, who joined Lotus last May, is the company's "principal technologist," the man who's supposed to help get the company into AI. He has some interesting theories; for example, that AI can best be accomplished on standard hardware in standard languages. This is reflected in Teknowledge's recent moves to put most of its AI development tools into C, where they run ten times as fast, the company says. (Kaplan is still a consultant to Teknowledge.)

Kaplan contends that the use of expensive optimized hardware reflects AI's genesis in the military and academic communities, less price-sensitive than the commercial world. People have traded off cost for power, so far... Now, companies such as Lotus and Cold Hill are more interested in addressing a wider audience and will trade off performance in order to reach a larger market -- the growth of which will hasten their growth and further cut costs. Meanwhile, new hardware is speeding the process along.

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Mystery man

When Kaplan joined Lotus from Teknowledge the companies quietly mentioned a joint project, the fruits of which have yet to ripen. Kaplan is working on that, to be sure, and also on various other projects, possibly including a flexible data base.

Lotus has wisely not shunted Kaplan, who works out of the home he shares with his cat in Portola Valley, CA, into an "AI" ghetto. His most recent foray into visibility was an intriguing article in Lotus Magazine, where he describes spreadsheets as "the first effective environment for writing and running declarative programs. Naturally, the spreadsheet has become the tool of choice for problems that are best approached declaratively..." A nice conceit, that. And he ends on an inspiring note: "Existing spreadsheets are the 'assembly language' of declarative programming. Future spreadsheets will be the declarative equivalent of today's advanced procedural languages and programming environments." Is that a promise? And who's making it?

JIM PORTER: THE STORY ON STORAGE

Jim Porter, president of DISK/TREND, Inc., is the world's premier expert on the mass-storage market, and prides himself on delivering solid analysis while other people are getting "swept away by euphoria." In 1984 and 1985, for example, his predictions for the small-winchester market were lower than most -- and right on the nose. He credits this to hard work visiting all the suppliers at least once a year: "We get excellent cooperation on numbers from everyone except IBM. So when we forecast, we have a sense of history; we know whom to believe. And we know how we got to where we are, so we can tell where we're going."

Right now, Porter predicts that three-and-a-half-inch winchesters will swamp the five-and-a-quarter-inch competition, stealing two-thirds of the market by 1988. But he's less optimistic about CD-ROM, which he figures will be used with only 10 or 15 percent of pcs -- about 350,000 units, in 1988. "We're just pedestrian enough in our thinking that we don't see everyone using one," he says. Once it becomes writeable (and no longer ROM), Porter concedes, CD-ROM should have a large impact within four to five years.

Porter got into the business, he says, after "going through four companies during the period they got their first computer," in the Fifties and Sixties, and figuring he could do it better. He joined Memorex in 1968 in marketing management, and started his own consulting business in 1977.

ED FABER: TO THE RESCUE!

Ed Faber is widely heralded as the one man, if any, who can turn Computer-Land around. "Around and upside down," he says. The franchisor has gone through a well-publicized series of upheavals in which market pressures were aggravated by internal and external (or at least the Millards claimed that John Martin-Musumeci was external) strife. Mostly at the behest of the
franchisees, former president (and former IBMer) Faber returned to run the show. "When I came back, I was aghast," he said earlier this month. "The financial reports, the morale... We were probably within a week to 30 days of locking the doors. It wasn't the banks; it was the network [of franchisees] walking away. There would have been nobody to pay [our] salaries."

Since returning in October, Faber has reorganized the company to stress distribution; sold the airplanes; closed the company's lavish hillside Oakland offices to consolidate operations in industrial Hayward; handed off much of the software distribution function to First Software, which is far better equipped to handle it; bought its private-label supplier, GreatWest Technology, from ComputerLand founder Bill Millard; and cut ongoing costs by 35 percent. "We've put all of that and more back into the network," he points out, citing a two-to-three point reduction in franchisees' costs of doing business with corporate (fees, franchises, and costs built into product prices). ComputerLand corporate won't make money off the changes, but its dealers may, and that will help the whole organization to survive.

Aside from all the confusion and bitterness, Faber says, the main problem is that ComputerLand is now more a distributor than a franchisor, but no one had recognized that fact: "If 80 percent of our people, money, space and activities are devoted to distribution, then all we have to do is stop lying about it. Our value as a franchisor was our knowledge of store design, product selection... But two-thirds to three-quarters of our stores are more than three years old. They know how to run a computer store. They don't want to pay [royalties] for that." While the company is still looking for ways to add value with vertical market software and training, Faber will concentrate more on reducing cost through private-label programs and sheer efficiency in distribution.

DAVE NORMAN: THE WELL-ORDERED DEALER

When we went to visit Businessland chairman Dave Norman recently, he showed us roughs of the slides he would use. One of the more interesting ones showed the trend in dealer outlets: The 1985 fourth quarter showed 3962; the first quarter had been projected at 4050, but that was crossed out and shaved down to 3725. But Norman, 50, is above all meticulously high-end, so you're not likely to see those strike-outs on the slides he ultimately uses. (To prove the high-end point, what used to be stores are now called "centers," and there's debate within the company about calling them "branches.")

Amidst all the turmoil indicated by those figures, Businessland continues to prosper. It has grown the proportion of its business that goes to the Fortune 2000 from virtually nothing at its founding to 60 percent now. Long-term, the company wants to shade that down significantly, in favor of small businesses. Large customers ultimately will frequently buy direct from the vendor or through discount houses -- in either case commanding huge mark-downs that would make the business unattractive to a higher-cost, higher-service outfit such as Businessland. So, say Norman and chief marketer Enzo Senzabarba Torresi, the trick will be to sell to small businesses. It's not selling to them that's so hard, says Torresi; it's reaching them in the first place. And then you have to make sure that you have a unique offering. Show them Open Systems, for example, and they'll go off and buy

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It elsewhere at a discount, he says. So he's looking to form exclusive relationships with tightly targeted suppliers.

Another change at Businessland is the company's renewed willingness to grow by acquisition. Norman tried that once, back in 1983, with three stores in Phoenix (yes, you could stop by and check them out). The absorption process was rough, and tough on a then-tiny Businessland. Now, with a stronger corporate culture that can overwhelm any acquisition and more resources to throw into the breach, Norman feels ready to take on the challenge again, spurred by IBM's gentle pressure in that direction with its curtailment of new PC authorizations. He's looking for the leader in a local market -- Tulsa, say, or some other place Businessland hasn't yet reached on its own.

Like ComputerLand, Businessland is considering the private-label business, but gingerly. As any manufacturer knows, it ain't easy. And no one yet really wants to compete with IBM with a private-label cpu...

BEN ROSEN: A ROSEN BY ANY OTHER NAME...

Ben Rosen is known to -- and knows -- virtually everyone in the pc business. He also happens to have founded the Annual PC Forum back in 1977 or 78 -- when it consisted of 10 or 20 people in a New York hotel room. Typically peripatetic, Rosen was in Australia last week and couldn't be reached for reminiscences.

So, let us add this on a personal note: We used to work for this guy, and we still like and respect him, which says a lot. It's certainly as difficult to be fair in attributing credit for success as in laying blame for failure, but it's clear that all the companies in which Ben has had a strong hand have in common a fanatic dedication to quality. Everyone believes in quality, but when push comes to shove, other things take precedence. Not with Ben. That's probably why Paradox was shipping the day Ansa announced it; why 1-2-3 never had serious bugs (Ben is no longer on the board); why Compaq has never relaxed its strictures on selling only through dealers (even to friends...). Yet he's made enough mistakes to seem human -- Osborne among them.

One other accomplishment: He can balance a chair on his nose. (Demos Monday night.)

PETER SONTAG: A TRAVELING MAN

Peter Sontag, 41, is co-founder of Sontag, Annis & Associates, a travel management consulting firm. Since his days in the early Seventies working for Harold Geneen, a notably numbers-oriented manager, Sontag has appreciated the value of automation and information management. He grew a little travel agency to $200 million in annual revenues and sold it to Gelco, where it now lives on as Gelco Travel Services. In 1983 he formed Sontag, Annis with partner John Annis, the techie half of the team, who wrote American Airlines' internal accounting program. (Sontag has an MBA in finance from Columbia University.)
We invited him to speak at the Forum because he understands -- and espouses -- the strategic role computers can play in a business, not just to automate operations, but to gain competitive advantage. In the airline business, for example, computers help to maximize revenues by raising loads and yields per seat, and optimize the scheduling of planes and staff. Indeed, except for the minor task of keeping planes in the air, the airline business is primarily the management of intangible inventories. How do you schedule, price, and market seats? Who are the best customers and how much do they contribute to the bottom line? Do you wonder how many people on your flight from San Francisco to Phoenix got discount seats? Or did the airlines find out about the Forum and jack the prices up?

FRANK KING: MAKING IT REAL

Frank King is the father of SQL and of IBM's current implementation of RISC technology. His formal title is group director of Advanced Engineering Systems Development in the Engineering Systems Products unit in Austin, home of the RT PC.

A longtime technical wizard, he says "something happens to you around 40, and you get more interested in people" -- and in building products rather than tinkering. Now 46, he has twice taken technologies that "were waiting around to be made real," and turned them into products.

The first was the concept of relational data base management: "Ted Codd was an IBM Fellow running around with an idea. There were lots of academic prototypes [at Yorktown]; we did an industrial-strength version for Boeing and Pratt & Whitney and Upjohn. Ultimately we turned it over into a commercial product in San Jose." That became SQL/DS and DB2, IBM's two relational dbmses, and their Structured Query Language, the interface that has now become a standard for relational dbms. (Select name from speakerlist where...) King was manager, computer science, at IBM's San Jose labs during the years that project came to fruition, from 1978 to 1980.

In April 1983, after a stint on the corporate staff and in communications products, King joined the Austin independent business unit to shepherd the transformation of the 801 research project into a commercial RISC machine. King stresses that RISC is not the next technology; it's a next technology. "In the Seventies it was all hierarchical vs. networked vs. relational [dbms], and now no one really cares and all three still exist. In the Eighties, it's CISC vs. RISC [complex instruction set computing vs. reduced instruction set] -- and they'll also both be around years from now."

What's the next new technology after RISC? Right now King is more interested in raising the performance of the current technology by an order of magnitude. "The architecture of the chip already allows for that," he says. "It's simply a matter of scaling it down, adding caches, better I/O..." -- making it real.

[When we checked this back with him, Frank King laughed and said, "It's fine. Send it to my mother!"]
FORUM CLASSIFIEDS

Alice -- Sorry about last night. Juan.

Single software company seeks warm, mature, loving parent with strong marketing channels. Meet at poolside bar.

Exotic lady with foreign accent seeks impecunious engineer with security clearance.

Must sacrifice! 1000 128K PC clones at incredible savings. Your truck or mine.

Well-behaved application seeks disciplined environment.

Immaculate wafer fab facility available for immediate occupancy. Never used.

Decorate your cubicle!! Early Eighties stock certificates at $5 per $100,000 par value.

Lost: My margin. Please return to front desk. No questions asked.

Wanted: Experienced vp of marketing with consumer goods and systems experience. Need a proven track record.

Available: Marketing vp. No experience but eager to learn.

Tired of networking? Come try our gateway party and expand your circle of friends beyond that same old workgroup. Call J. Rubin.

Wanted: Visible visionary to sit on board of directors. No work involved. Must supply own D&O insurance.

VAR seeks hardware/software line that will sell itself into a variety of vertical markets. Support-intensive lines need not apply.

200 pre-embroidered satin jackets available in post-Comdex clearance. Apply to bankruptcy judge, San Jose.

COBOL laundry service. Your code cleaned and repaired overnight. Use bag provided in your room and hang on doorknob.

Juan -- Sorry about tomorrow night. Alice.

Now, write your own....
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