

Portia Isaacson Wright, Ph.D.

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FUTURE THINKER

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How much of your market research comes from other computer vendors?

Wouldn't it be better to
ask the *customers*?

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The logo for INTECO CORPORATION. It features the word "INTECO" in a large, bold, sans-serif font, with horizontal lines above and below it. Below "INTECO", the word "CORPORATION" is written in a smaller, all-caps, sans-serif font. The entire logo is contained within a rectangular box that has a stippled or textured background.

INTECO
CORPORATION

Towards more reliable planning

FEATURE REVIEW

Dave Vellante knows where his bits and bytes are stored. And I like the way he presents his business — straightforward, understandable, credible, open and hype-free. Educated in math and computer science and experienced in assembly language programming and market research (IDC's Processor Service), Dave launched Storage in 1983

A good tactical analysis of the information business

Something old, something new, and consumption models to die for!

The first piece was mainframe storage, building on IDC's strength. The IDC Processor Census gave Storage the means of doing very credible market numbers. Later, Storage leveraged IDC Financial Services to bolster its offerings for end-users of mainframes concerned with asset management, by forecasting the changing values of mainframe storage devices. OEM tape (mainframe tape was already covered), optical storage, and OEM Winchester disk drives were added. According to Dave, optical storage is still pie-in-the-sky. The OEM Winchester segment is the fastest growing for IDC's Storage Service — and it's easy to see why. Those consumption models are just what every OEM and Winchester vendor want. They look simple, but that data is oh-so-hard to get . . .

Storage: An IDC Peripheral Market Planning Service International Data Corporation

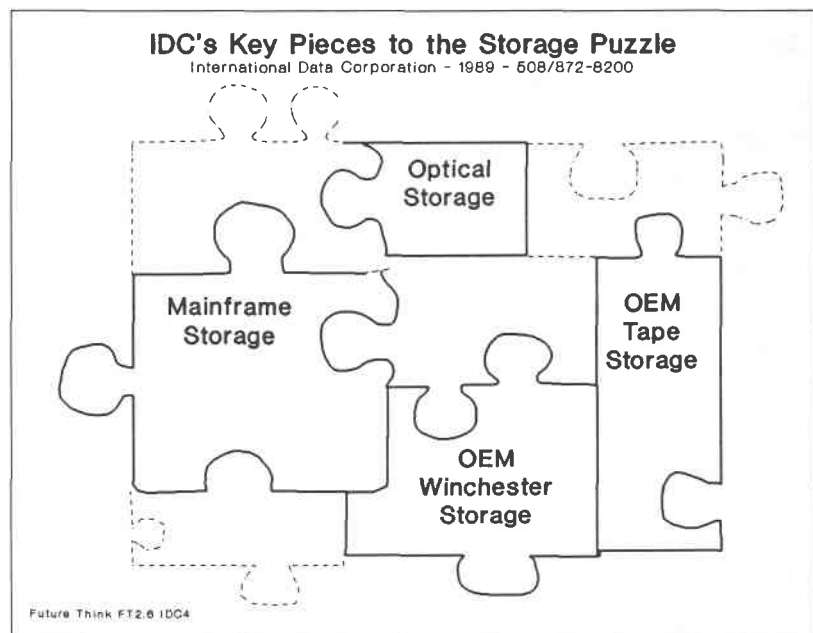
Born with a Silver Database

Descended from IDC's *Processor Service*¹, *Storage* is making its own unique place in the ever evolving, frequently mutating, and often puzzling landscape of computer storage.

Storage spun off IDC's *Processor Service* in 1983 with its birthright of information on major processor vendors, particularly IBM and DEC. Its first niche was mainframe vendors. Its early challenges: mainframes were far from the most rapidly growing market segment, and storage companies were on the West Coast (far from IDC) where there were several entrenched *Storage* competitors.

Dave met these challenges by recognizing that "storage" is one of our industry's most all-encompassing terms. Dave looked at the vast storage horizon and saw four pieces of the puzzle where IDC could compete.

Putting It Together



What's a consumption model?

A consumption model reveals who buys what from whom and how many (and sometimes at what price). Such a model is feasible in those markets where there are only few major suppliers (Winchester vendors — e.g., Seagate) and a few major purchasers (OEMs — e.g., computer vendors such as Sun — IBM).

Such accurate data is often treated as confidential by the companies involved, so getting it takes a big ear to the ground and a big eye on the industry. IDC does not use official information that is provided to them in confidence, so sometimes a consumption model for a specific company is not available

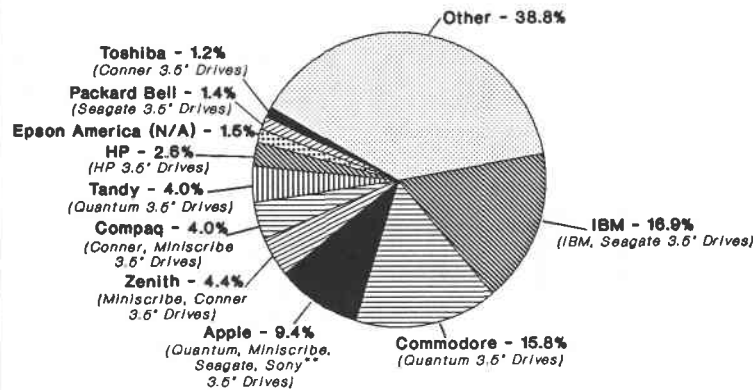
Complete consumption data would provide the number of Winchester drives by model purchased from each of its suppliers by a given computer manufacturer. It would also provide the number of drives by model purchased by its customers (computer manufacturers) from a given Winchester supplier. Since each Winchester supplier is dependent on just a few customers, consumption data is required to predict their performance. OEM Winchester consumption models can be done only by a market research firm that tracks computers in several segments in addition to tracking storage — IDC is leveraging its other research to create a unique position.

Storage Perspectives — A Sampling

In a recent Bulletin analyzing Seagate Technology, Storage published a wealth of consumption-model data — e.g., a supplier/purchaser relationship matrix for 3.5" Winchester vendors including: Conner, Miniscribe, Quantum and Seagate. Seagate's customers were shown as: IBM (20MB), Apple (40MB, negligible 1989 volume), Olivetti (20MB) and Amstrad (60MB). Although specific units purchased and/or forecasted by each OEM were not shown, the 1988 PC market by unit market share of each PC manufacturer with its 3.5" drive supplier was provided — excellent basis for understanding and forecasting Seagate's performance

Top PC Vendors With 3.5" Drive Supplier(s)

International Data Corporation - 1989 - 608/872-8200



14,190,000 PC Units Shipped* - 1988

Future Think FT2.6 IDC1

* U.S.-based vendors' worldwide shipments
** Unconfirmed

In the same bulletin the projected life cycles of different capacities of 3.5" Winchester drives with units shipped or forecasted was shown

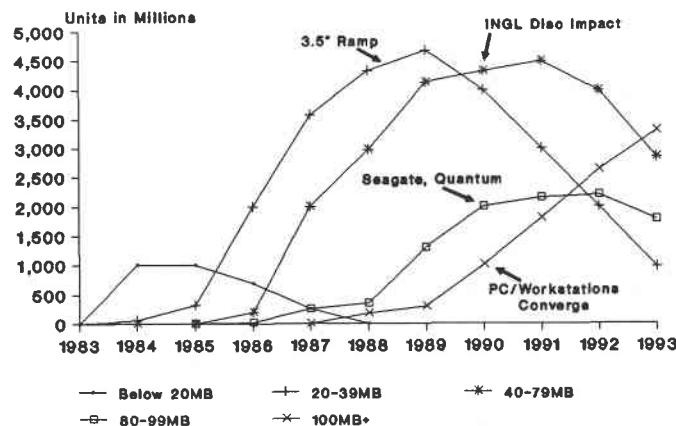
Analyses based on consumption models and understanding of the end-use markets are all too rare in the market research business. After sampling a few in Storage, I will never be satisfied again with only supply-side analyses

If such consumption-model based analyses had been available for semi-conductors sold to PC vendors back in 1984, perhaps we would not have been so surprised at the resulting oversupply

Life Cycles - PC Winchester Drives

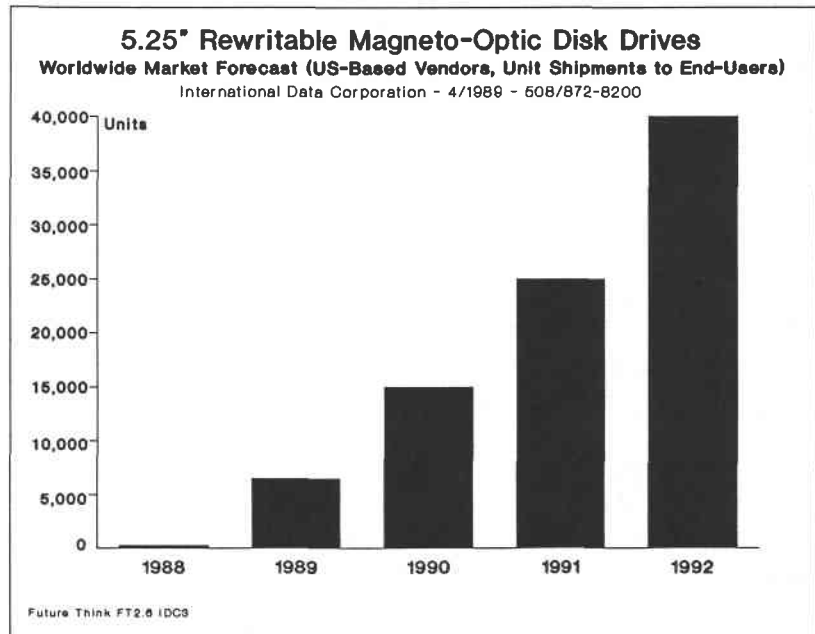
3.5" Non-Captive Units Shipped

International Data Corporation - 1989 - 608/872-8200



Future Think FT2.6 IDC2

According to IDC, optical storage is presently a niche market with demand in workstation-based imaging systems, minicomputer backup and archive applications, and in high-capacity disk storage applications where data must be removed and secured. To burst out of these niches: prices must come down (under \$1,000 OEM drive price with media under \$50), product weaknesses must be addressed, and image processing software must be available "off-the-shelf" for departmental PC and workstation imaging systems. IDC is forecasting unit shipments for only 3 years (they usually forecast 5 years) because of the iffy-ness of this technology and market. This forecast assumes no significant IBM presence until 1993



Storage Service Components

The components of **Storage** are delivered to the clients over a one-year period. They include:

The inquiry service is heavily used

Recent Bulletins include: Digital Storage Systems — Future Products Road Map, Low-End Winchester Vendor Update: Seagate Technology, OEM Winchester Vendor Update: Maxtor Corporation, and Hewlett-Packard Adds Rewritable Optical Disk Technology to OEM Storage Offerings

There is no IDC conference on storage, subscribers can attend any IDC conference

To some subscribers, onsite briefings are worth the price of the service

For: Mass storage vendors, computer manufacturers, and computer end-users

Authors: David C. Vellante, Donald C. Bellomy, Jay Bretzman, Robert Callery, Frank Gens, David Moschella, Peter Burris, Robert Taylor

What: Service

Price: \$16,500/year

- ✓ Consultant-on-Call — Inquiry service
- ✓ Bulletins — 2-5 per month, 4-10 pages. Each Bulletin deals with a specific issue and frequently includes data and numbers. Consumption models are published as Bulletins.
- ✓ Reports — 2 per year, 24-42 pages. Reports are sometimes based on phone surveys of at least 100 MIS managers. Recent titles: *370/Architecture Storage: MVS/ESA—Impact on Storage Devices* (9/1988) and *OEM Opportunities for Half-inch Tape Vendors* (5/1988).
- ✓ Conferences — 3 tickets to any IDC Executive Conference or Regional Briefing.
- ✓ Onsite customer Briefings, 1-4 per year, are included with the service (no additional charge for travel).
- ✓ Consulting available at extra charge.

For Additional Information Contact:

International Data Corporation
5 Speen Street
Framingham, MA 01701

617/872-8200 Fax: 617/626-4205

1. We salute our industry's venerable market database, *The IDC Processor Census*.

PERIODICAL REVIEW

The Wohl Report on End-User Computing Wohl Associates

The perspective Amy brings to the analysis of personal computing trends is especially valuable because of her nuts and bolts experience with end-user word processing — and she was close to the glitz of the office automation dreams and schemes of the decade preceding the launch of The Wohl Report

In the future expect to see more on groupware (office automation revitalized), UNIX (Amy says that the market is going to take off), word processing incorporation of images, and multimedia (natural evolution). Expect to see less on desktop publishing (Amy says it's being incorporated into word processing)

The Wohl Report recently presented a very informative exploration of one of our industry's hottest buzz-subjects — groupware — comparing the groupware applications available on office automation systems with those that are expected on personal computers. The Wohl Report says that "Right now we're still in a 'groping for groupware' market phase, with only a trickle of products to choose from and lots of vendor indecision over what will make a best seller. But be prepared. A flood of more innovative groupware and revitalized office automation offerings to glue together the millions of PCs now encamped on corporate user desktops is about to arrive."

Real World, but with a Long Term Perspective

The Wohl Report has been published since 1985 as the flagship of Wohl Associates. It was a natural, given that Amy Wohl was already a veteran in our industry at advising office automation users and vendors which, with product evolution, became indistinguishable from personal computer users and vendors.

The audience for *The Wohl Report* is not end-users of PCs, rather it is those who decide what hardware and software end-users will use; e.g., Microcomputer Managers, Information Center Managers and MIS executives. The other half of the subscribers are PC manufacturers and software publishers.

The goal is to illuminate products and trends in the end-user computing environment. Recent issues have covered:

- ✓ IBM's OfficeVision (SAA, mainframes for corporate data, PS/2-OS/2EEs on desks, and PS/2-LANs in departments),
- ✓ Apple connectivity offerings (finally big system and LAN connectivity but with chinks),
- ✓ IBM's 486 upgrade for the PS/2 Model 70-A21 (racy for IBM),
- ✓ The future of real world desktop computing (e.g., Amy says that DOS will live well into the 21st century), and
- ✓ Laptops (wait to buy if you can).

The Wohl Report Sampler — From Groupware to Street Prices

Groupware	
Wohl Associates - 215/667-4842	
Office Automation Groupware	PC/LAN Groupware
1975 - 1985	1985 - 1995
mini/mainframe + dumb terminals	PCs + LANS + Servers
single vendor solution	multiple hardware & software vendors
proprietary platforms	industry standard platforms
single software vendor (the OA vendor)	many independent software vendors
no popular software (e.g., 1-2-3)	latest popular software with Groupware extensions
character-based user interface	multi-window graphic user interface (GUI) that integrates software from different vendors
	multimedia systems - (data, text, graphics, voice, video)
Future Think FT2.6 WOHL8	

BUSINESS OPPORTUNITY REPORTS

Published by BUSINESS COMMUNICATIONS COMPANY, INC.

Industry Research Studies and Technical-Market Analyses of Telecommunications and Electronics.

JAG-074N

THE EXPLODING LAN MARKET

Close on the heels of the boom in microcomputers comes the boom in local area networks. *In fact, the LAN can become the computer.* This timely BCC report centers on the drivers and trends in the LAN industry. It analyzes the strategies of the vendors and describes the typical user implementation scenarios. Issues surrounding ISDN, PBX digital capacities, interfaced amalgamated systems, trends in the computer industry, the role of the minicomputers, the emergence of microcomputers that replace desktop configurations, the users' demand for internetworking multi-vendor equipment, and the adoption of open systems by the major players are addressed.

Published January 1989

162 pages

Price: \$2250.00

JAG-070R WIRE, CABLE & FIBER OPTICS

BCC report identifies the wire and cable industry segments that have grown and those that will grow in an environment affected by fiber optics. It covers the products and materials used for electronics, building installations and the internal makings of apparatus and it tabulates the present and likely future needs of the telecommunications, computers, electronics and defense industries with estimates and forecasts of materials consumption based on analysis of quantitative and qualitative trends. The study factors into its conclusions the problems and opportunities that emerge with new technologies, a competitive environment, and regulatory issues.

Published September 1988

131 pages

Price: \$1750.00

JAG-111 LAN MEDIA

BCC report covers coaxial cables (Ethernet trunk cables, thin Ethernet cables, broadband trunk and drop cables, MAP), twisted pair cables (IBM cables, Ethernet transceiver cables, unshielded twisted pair cables), and fiber optic cables. U.S. market demand is assessed by product type with a description of their comparative advantages and disadvantages, a review of prices for products, and an analysis of the competitive environment. In each case, the sizes of the present and likely future markets are estimated by value and footage. Technologies, channels of distribution, suppliers, strategies, standards, construction types, applications and activities of leading companies discussed.

Published January 1988

119 pages

Price: \$2250.00

JAG-107 PAY TELEPHONES & PAY-AS-YOU-GO SYSTEMS

This report presents an up-to-date picture of the pay telephone business, examines the ways people use pay telephones, explores how this "new" business will grow in the years through the end of this century, evaluates payment systems, and shows where opportunities lie for local and long distance telephone companies, for equipment suppliers in both the communications and computer industries, for banks and other payment facilitators and for the owners of major pay phone locations.

Published February 1987

207 pages

Price: \$1750.00

JAG-097 TELEPHONE BYPASS

BCC report makes a statistical and qualitative assessment of the prospects of telephone bypass. It examines call volumes and values; types of bypass now available or on the horizon; present and potential bypassers, their needs, preferences and methods of bypass; the load voice and data transmission will place on integrated systems; bypass media; and equipment and services employed in constructing a bypass with cost comparisons between systems and present and projected sales volumes and values. Covers RBOC, CALC, CATV, private microwave, VSAT, WAN and T3 services issues. Revenues lost, cost-based pricing and revenue outlook are fully discussed.

Published March 1989

126 pages

Price: \$1750.00

JAG-114 THE OUTLOOK FOR T1 SERVICES & EQUIPMENT

BCC report explores how T1 services will affect the opportunity for PBXs, integrated voice/data multiplexers, microwave equipment, network management systems, and applications equipment used at customer premises. A full assessment is made of fiber optic transmission systems which are the basis for the new T1 services, providing both the digital capacity needed, and the beneficial economy of scale. The study analyzes the digital services outlook for carriers, and manufacturers. Comparisons of offerings and prices, percentages of conversions, company profiles, market shares, forecasts.

Published May 1988

140 pages

Price: \$2250.00

JAG-110 NETWORK MANAGEMENT SYSTEMS

BCC report presents the "ideal" network management system from a user's viewpoint, and reviews

current offerings of all products and third party services in comparison to that ideal. Projections of percentages of current networks using such products or systems are given, as well as an outlook of how big this market will be in the future. Implications of the influence that will be generated by the T1 multiplexer vendors on this market are noted, along with implications of the U.S. government awarding a network management contract to a third party.

Published February 1988

190 pages

Price: \$1950.00

JAG-109 ISDN: IMPACT ON CUSTOMER PREMISE EQUIPMENT

Report delves into the way that ISDN will foster switched digital applications to develop for voice, video, and facsimile. Implications for vendors of these devices are drawn, and forecasts by application are given. A timetable is drawn based on the review of digital architecture, the driving forces from both interexchange and local communications companies, and the user need for switched digital services.

Published November 1987

203 pages

Price: \$1950.00

JAG-115 THE CHANGING INFORMATION SERVICES MARKET

This BCC report focuses on the joint ventures and alliances between the RBOCs and data service companies and the manner in which they will impact the structure, size and capabilities of the information service industry. The infrastructure of gateways, directories, billing and identification services, actual data, and terminal supply are discussed. The potential cost structure changes/improvements through ONA and how the long-term revenue/profit potential of these ventures compare with other ventures in which the BOCs are involved are assessed.

Published March 1989

19 pages

Price: \$1950.00

JAG-032R THE NEW WAVE OF COMPUTER SOFTWARE

BCC report analyzes technological trends (including scenarios of the future), industry structure, markets and business opportunities for systems software, office automation and specialized software markets. It covers mainframes, minicomputers, and microcomputers and discusses regulatory issues, international markets, the increasing need for standard vs. custom products, the effects of the emerging synthesis of commercial and information technologies, and the implications of AI.

Published December 1987

153 pages

Price: \$1750.00

JAG-116 HIGH-TECH FIBER OPTICS:

New Markets in Sensors

More than a decade of research and development is now paying off in a new generation of sensors based on optical fibers. Simple, with no moving parts, and extremely sensitive, they can detect sound, temperature, strain, pressure, rotation, magnetic fields, flow, and chemical composition. This BCC report examines the technology and markets for fiber optic sensors which are now estimated at about \$122 million worldwide and growing at a rate of 20% a year. Applications discussed cover virtually every industry.

Published June 1989

149 pages

Price: \$2450.00

JAG-104R OPTICAL DISKS

The BCC study analyzes the four basic kinds of optical media viz., videodisk, compact disk, WORM and erasable and their subcategories describing the technology and their applications. Worldwide and domestic markets are tabulated by disk drives and units for each media. Forecasts for home and industrial use are broken down by industry classification and by application with an analysis of large disk systems vs. workstation-based optical disks. The report makes a thorough examination of the materials currently used as well as an array of material trends (glass, polyester substrates, metallic vs. organic layers, thin films, rare earths) with consumption forecasts, costs, sources and suppliers.

Published March 1989

149 pages

Price: \$2450.00

JAG-117 NEURAL NETWORKS, NEUROCOMPUTING & BEYOND

BCC report evaluates the current R&D, competing technologies, new companies and large corporations, along with the emerging markets. Assessments are made of the performance claims for adaptiveness and responsiveness. Technical evaluations and market projections are presented for such application areas as image and signal processing, decision-making systems, and knowledge processing. Covers backpropagation, counterpropagation, and other hybrid models. Considerable attention is also given to the hardware involved.

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Take part in the largest electronic imaging exposition and conference. Wang Laboratories president and chief operating officer Frederick A. Wang will kick off this year's show.

Eurofax '89 Amsterdam 10/30 - 11/1
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Status and Forecast of the IC Industry

Aug. 9, Scottsdale, AZ
Aug. 16, Sunnyvale, CA
Aug. 23, Costa Mesa, CA
Aug. 29, Boston, MA



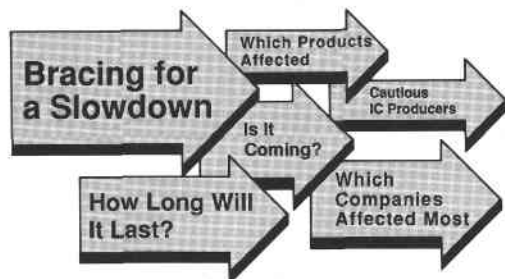
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- Merchant IC Manufacturers
- Hot IC Products
- IC Technology Trends
- ASIC Highlights
- IC Economics

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MID-TERM 1989 REPORT
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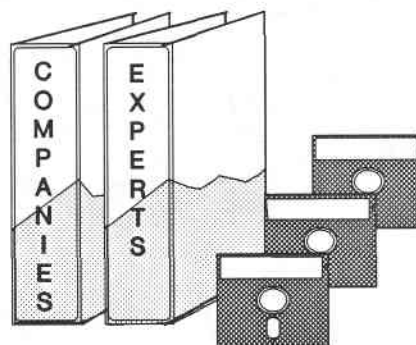
ICE has just released its much acclaimed mid-year report on the IC industry.

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See Business Information Classifieds,
Page 14b, for details

Future Think, Inc. - 719/598-9000

Clever, clever, clever!

Large corporation buyers of PCs and software are influenced by The Wohl Report's Street Price Indices

The Street Price Indices are seen regularly in the press

*8 of The Wohl Report's 16 pages are Street Price Indices
I wish I had some data . . .*

Each month The Wohl Report publishes the lowest advertised prices for PC hardware and software collected from newspaper ads in major metropolitan areas. These lowest prices are published and analyzed in product categories. The major product categories for hardware are PC/PS Desktop Computers, PC/PS Laptop & Portable Computers, and Apple Mac Computers. Within each major category there are several subcategories (e.g., 80286 PC/PS Desktops within the PC/PS Desktop Computers major category). Within each subcategory, computers are listed by brand and configuration (e.g., Compaq Deskpro 286 — 12 MHz, 640K, 1.2 Mdd, 40Mhd, VGA Monitor). For each model/configuration the lowest price and the retailer or mail order firm advertising it with address and phone are shown. Lowest software advertised prices are published in 16 categories (e.g., database management). For selected computer categories graphs are published for price trends on specific models for the past 12 months

With 3 1/2 years of data there is much one can learn (e.g., when there is in undersupply or oversupply and when a product is dead). Wohl Associates had been collecting this data for its own use when a client suggested publishing it — once again we learn that some of the best ideas for information products come from users of the information

Many newsletter marketers have discovered the advantages of offering a regular feature of data that is of broad interest. Among these advantages are:

- ✓ Influence increases subscribers, and regular data can create influence if it quantifies something important about suppliers, especially if that something affects purchases of the supplier's product.
- ✓ The press loves numbers and will consistently quote or feature influential numbers from market research firms — great free publicity.
- ✓ A newsletter is easier to write if some of its pages are always the same — only the numbers change.
- ✓ Readers come to depend on the data, so renewal is automatic.

PC/PS Desktop Computer Street Prices

Wohl Associates - 5/1989 - 215/667-4842

80386 PC/PS Desktops

40M Hard Disk	Street Price	Source
AST Premium/386 (20MHz, 1M, 1.2Mdd, 40Mhd)	\$ 2955	Tri State Computers
AST Premium/386C (20MHz, 1M, 1.2Mdd, 40Mhd)	3150	47st Computer
COMPAQ Deskpro 386E/20-M40 (20MHz, 1M, 1.4Mdd, 40Mhd, VGA board)	3649	Montgomery Grant
DELL 310-M40 (20MHz, 1M, 1.2Mdd or 1.4Mdd, 40Mhd, VGA monitor)	3699	Dell Computer
IBM PS/2-80/16-M40 (16MHz, 1M, 1.4Mdd, 44Mhd, VGA board)	3995	Tri State Computers
NEC PowerMate 386 (16MHz, 1M, 1.2Mdd, 40Mhd)	2795	Tri State Computers

60M to 100M Hard Disk

COMPAQ Deskpro 386/20-M60 (20MHz, 1M, 1.2Mdd, 60Mhd)	4890	Tri State Computers
DELL 310-M90 (20MHz, 1M, 1.2Mdd or 1.4Mdd, 60Mhd, VGA monitor)	4699	Dell Computer
DELL 325-M90 (25MHz, 1M, 1.2Mdd or 1.4Mdd, 90Mhd, VGA monitor)	5999	Dell Computer
IBM PS/2-70/16-M60 (16MHz, 1M, 1.4Mdd, 60Mhd, VGA board)	5719	Exel
IBM PS/2-80/16-M70 (16MHz, 2M, 1.4Mdd, 70Mhd, VGA board)	4875	Buildog Computers
LEADING EDGE Model DS (16MHz, 2M, 1.4Mdd, 66Mhd)	3000	Tri State Computers

100M+ Hard Disk

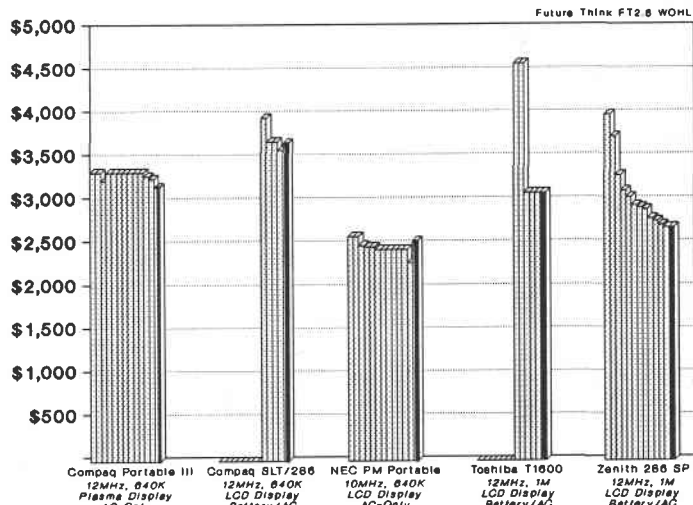
COMPAQ Deskpro 386/20-M130 (20MHz, 1M, 1.2 Mdd, 130Mhd)	6200	Tri State Computers
COMPAQ Deskpro 386/25-M110 (25MHz, 1M, 1.2Mdd, 110Mhd)	6995	Computer Discount WH
DELL 310-M150 (20MHz, 1M, 1.2Mdd or 1.4Mdd, 150Mhd, VGA monitor)	6199	Dell Computer
DELL 325-M150 (25MHz, 1M, 1.2Mdd or 1.4Mdd, 150Mhd, VGA monitor)	6499	Dell Computer
IBM PS/2-70/20-M120 (20MHz, 2M, 1.4Mdd, 120Mhd, VGA board)	5900	Tri State Computers
IBM PS/2-80/20-M115 (20MHz, 2M, 1.4Mdd, 115Mhd, VGA board)	6195	Buildog Computers

Future Think FT2.0 WOHL2

80286 20M Hard Disk Laptop & Lunchbox Computers

Street Prices - May 1988 to May 1989

Wohl Associates - 5/1989 - 215/667-4842



Amy is uniquely positioned to provide guidance during these chaotic years as word processing totally redefines itself. And I'm glad she's there because nothing on my PC is more important to me than my word processor — and I can't wait for the real integration of images

According to Wohl Associates, next generation word processors will offer:

- ✓ *Modeless operation — no switching between programs to create text and then to create graphics. We'll work on both text and graphics with the same program and the same display.*
- ✓ *Full functionality — text processing, drawing, charting, and layout all together in one program. Later we'll see voice annotation and image scanning and manipulation.*
- ✓ *Editable WYSIWYG — what we see on the screen will look just like the final printed copy including graphics, fancy fonts and complex layout, and we will be able to edit it while viewing it.*
- ✓ *Modern interface — menu, menu expansion (e.g., pull-down), point-and-pick, fast commands, and multiple windows.*
- ✓ *Integration across functions — e.g., word processing editor creates labels on drawings.*

The Wohl Report —

For: Microcomputer managers, information center managers, MIS executives, and PC and software vendors

Authors: Amy D. Wohl
John A. Murphy
Marshall H. Wohl
Faith E. Halpern

What: Monthly Newsletter
Pages: 16/month
Price: \$345/year²

2. \$370 outside U.S. and Canada

A Companion Publication — *The Strawman:*

A Specification for a Next Generation Word Processor

I doubt anyone is more respected on the subject of word processing or office automation than Amy Wohl. But during the glamor rise of personal computers, every analyst and consultant in the business was tempted to switch horses, especially if their expertise translated directly as did Amy's. And she has done better than well.

But now we've come full circle. The hot topic in personal computers is word processing as desktop publishing becomes embedded and as word processing becomes multimedia processing incorporating first images and, in the somewhat distant future, voice and motion video.

In 1988 Wohl Associates developed a much needed set of information — a very detailed bottom-up feature-wise comparison of today's leading word processing programs in order to understand how word processing is changing. This database — together with interviews with users and vendors of word processors — was used to extrapolate the features of next generation word processors, resulting in *The Strawman*.

A new *Strawman* is coming October 18

The 1989 Strawman Report will be released to software, PC and office automation vendors at a 1-day seminar on October 18th in Philadelphia.¹ A seminar tailored for end-users will be held the following day.²

If I were a word processing software publisher, an office automation vendor or a personal computer vendor with a significant market into word processing application, I would be there. Desktop publishing and graphics software publishers should also find a lot to chew on. Large end-users of word processing software will find much ammo for word processing upgrade time.

Looks like Amy is reasserting herself as the wizard of word processing — and I'm sure we will all benefit.

For Additional Information Contact:

Wohl Associates
555 East City Line Avenue, Suite 240
Bala Cynwyd, PA 19004

215/667-4842 Fax: 215/664-5725

1. The vendor seminar and *The Strawman Report* are \$2,500. *The Strawman Report* is available separately for \$2,000. An optional *Strawman Update and Newsletter Service* are \$1,000 per year.
2. The end-user seminar is \$495 and includes a summary of *The Strawman Report*, program demos, and sample software.

VIEW & REVIEW

... Computational Chemistry¹ Aberdeen Group

A View of the Future —

Chuck Casale sees the computational chemistry market developing in a gradual, steady and demand-limited manner — not the explosive market that some investors had hoped. But develop it will. Chuck expects 1989 revenues of \$311 million and 1994 revenues of \$1,370 million (hardware: \$1,200 million and software: \$170 million).

One thing is clear — computational chemistry applications will never have enough computer power. Here's a hint at applications and platforms

Even if you've never heard of computational chemistry, you may find this report well worth the price for its analysis of the future plans of IBM, Digital and Cray in the scientific processing area

The writing style is outstanding — more like a good book than a market research report. The design, graphics and production are also excellent. You would be comfortable handing it to your Chairman — and he or she would find it a delight and packed with insight

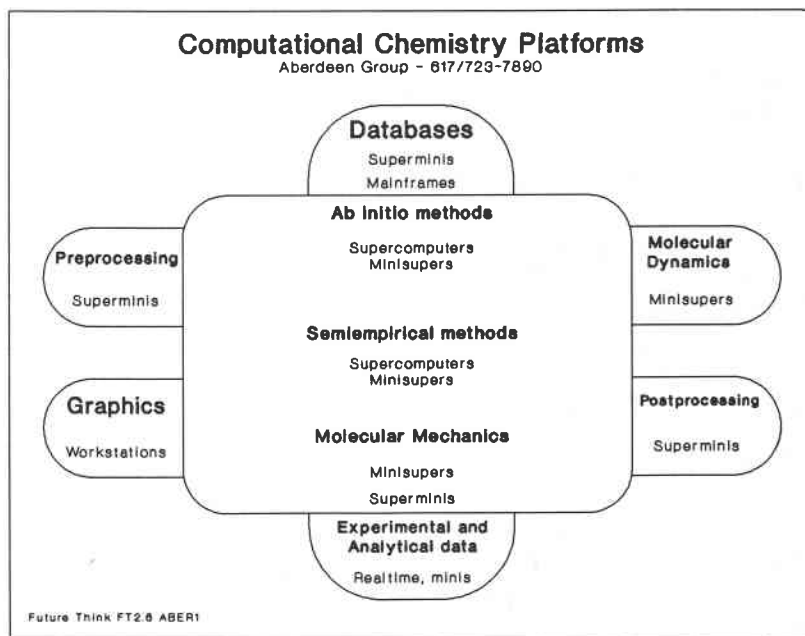
For: Computer manufacturers and software firms; chemistry and pharmaceutical executives; and investors

Author: Charles T. Casale

What: Report

Pages: 152 **Exhibits:** 38

Date: 5/1989 **Price:** \$895



And Review — Chapters include: Summary: What is Computational Chemistry: Market Size and Growth; Computational Chemistry Applications; User Profile: The Computational Chemist; Computational Chemistry Software Suppliers; Computational Chemistry Hardware Suppliers; The Chemical Industry; Science Issues; Investment Issues; The Drug Development Process; The Roles of Digital, IBM, and Cray; and Spoke-Node-Ring — The New Topology.

Stellar features — This outstanding multidisciplinary report presents a balanced view of science, the scientific process, computational chemistry, the computational chemistry market, computing technologies, and hardware and software suppliers.²

Limits or not so stellar features — The market for this report may be too small to justify its quality; but thanks, Chuck.

For Additional Information Contact:

Aberdeen Group, Inc.
92 State Street
Boston, MA 02109

617/723-7890 Fax: 617/723-7897

1. *Conflicting Trends in Computational Chemistry*

2. Having been a chemist, a physicist, a scientific programmer, and now a reader of pop science, I found this report a treat.

VIEW & REVIEW

A View of the Future —

Presentation Manager (PM) is a user interface, a windowing environment and a toolkit for creating PM applications. Tom says that PM is the standard and expects it on 60% of Intel-based PCs and workstations by 1993 — independent of OS/2's acceptance. Microsoft Windows (the DOS version of PM) is catching fire — 50-70K units per month. Motif (a UNIX PM) has been blessed by the Open Software Foundation, the Santa Cruz Operation, and is being considered by others. Microsoft is introducing PM/X to compete with Motif. PM is the basis for IBM's SAA Common User Access spec. Digital will use Motif in DECwindows in both VMS and Ultrix environments. HP will use NewWave (an extension to Windows and PM) across all its operating systems. PM printers have been announced, as have PM graphics accelerators to drive displays. I'm convinced — PM is the standard

The analysis of the Apple-Microsoft/HP litigation is a bonus. Now I understand the potential impact on the industry — none, according to Tom

For: Computer and software vendors

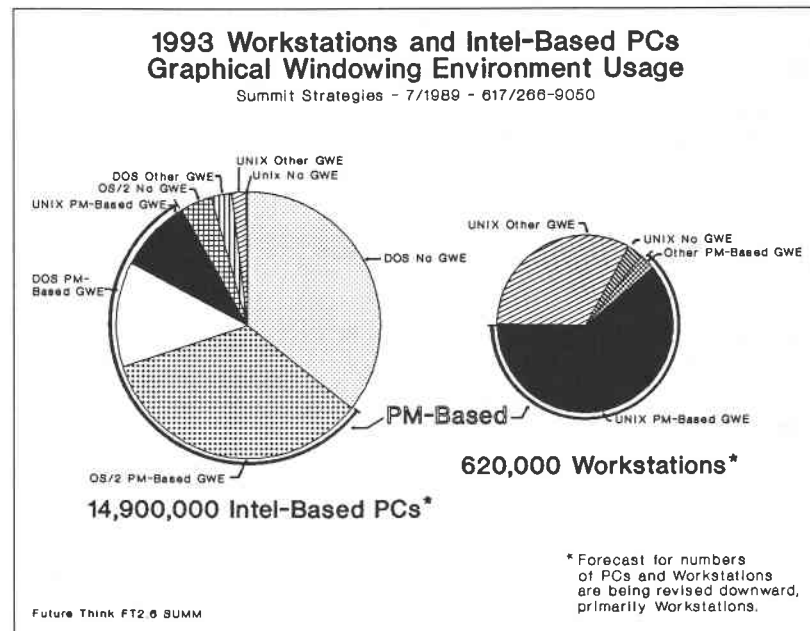
Author: Thomas Kucharvy

What: Report

Pages: 109 **Exhibits:** 26

Date: 6/1989 **Price:** \$1,395

Presentation Manager: Integrating the DOS, OS/2, and UNIX Markets Summit Strategies



And Review — Chapters: Introduction; The Capabilities and Advantages of PM Environments; Window's role in the DOS Market; The OS/2 Presentation Manager Market; The UNIX-Motif-PM/X Markets; Presentation Manager in Vendor-Specific Environments; PM as a Bridge Product; The Legal Challenges to Windows and PM; PM-Specific Hardware — Creating New Opportunities for Hardware Vendors; Opportunities For Software Vendors; Market Size, Growth, and Segmentation; and Conclusions.

Eminent features — Summit's usual good job of explaining a very complex technical/business environment. This report is so specific and logical in its conclusions that if a reader is not either delighted or anguished, then he or she is probably not in the computer business.

Limits or not so eminent features — Treats the intel-based market without explaining its relationship to the Apple market.

For Additional Information Contact:

Summit Strategies
P.O. Box 364, Prudential Center Station
Boston, MA 02199

617/266-9050 Fax: 617/266-7952

VIEW & REVIEW

Analysis '88: Definitive Guide to Advertising Expenditures Adscope, Inc.

A View of the Data —

Advertising expenditures of the biggest spenders and a few others, shown here, from 158 advertisers in the Database segment

According to Analysis '88, \$1.6 + billion was spent on advertising by computer, telecom and electronics firms in 1988. The big spender segments were Computers (\$262 million); Peripherals, Printers and Storage (\$234 million); Application Software (\$226 million); Electronics (\$165 million); Telecom (\$159 million); Resellers (\$148 million) and Systems Development Software (\$116 million)

In the Application Software group, the big spending segments were: Database (\$30.6 million), Graphics (\$17.4 million), Communications (\$14.9 million), Spreadsheets (\$13.7 million), Accounting (\$13.6 million), CAD (\$12.4 million) and Word Processing (\$11.9 million)

For: Computer, telecom and electronics vendor advertisers; ad agencies and publishers

Author: Sheila Clarke

What: Report

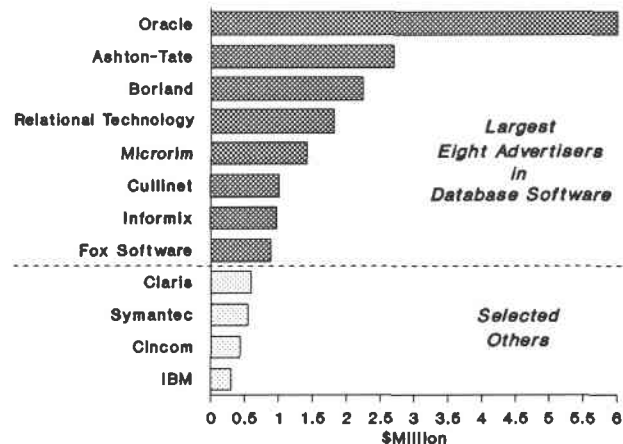
Pages: 1,088 **Exhibits:** none

Date: 4/1989 **Price:** \$485¹

1. Discounts for prepayment and multiple copies

1988 Expenditures of Selected Advertisers - Database Software

Adscope, Inc. - 1989 - 509/773-3701



Future Think FT2 6 ADSC1

And Review — Volume I contains 16,000 advertisers listed alphabetically with number of ads, ad pages and ad expenditures of each; and 180 publications listed alphabetically with number of ads, ad pages and ad revenue by product category (e.g., Accounting software) of each. Volume II contains 15 ad categories (e.g., Computers, Applications software, and Telecom) with ads, ad pages, and ad expenditures of all advertisers within each category; and by publication for each advertiser. Has partial addresses of advertisers (city, state and zip) and no phone.

Impressive features — Encyclopedic. Very useful for understanding positioning of publications by the advertising they run and by product category, and competitive analysis of advertisers by expenditures, product segment expenditures, and expenditures by publication.

Limits or not so impressive features — Bulky, of course.

For Additional Information Contact:

Adscope, Inc.
P.O. Box 226, 105 W. Main Street
Goldendale, WA 98620

509/773-3701 or 415/969-5652

VIEW & REVIEW

A View of the Directory —

Started by FIND/SVP and purchased in 1987 by Cambridge Information Group Directories, FINDEX is in its 11th year

About 20% of this directory is devoted to computers, telecom and electronics

Excellent 10-page Guide to Market and Industry Studies by FIND/SVP, including a discussion of what the ideal market study should include

For: Libraries and market researchers

Author: JoAnne DuChes

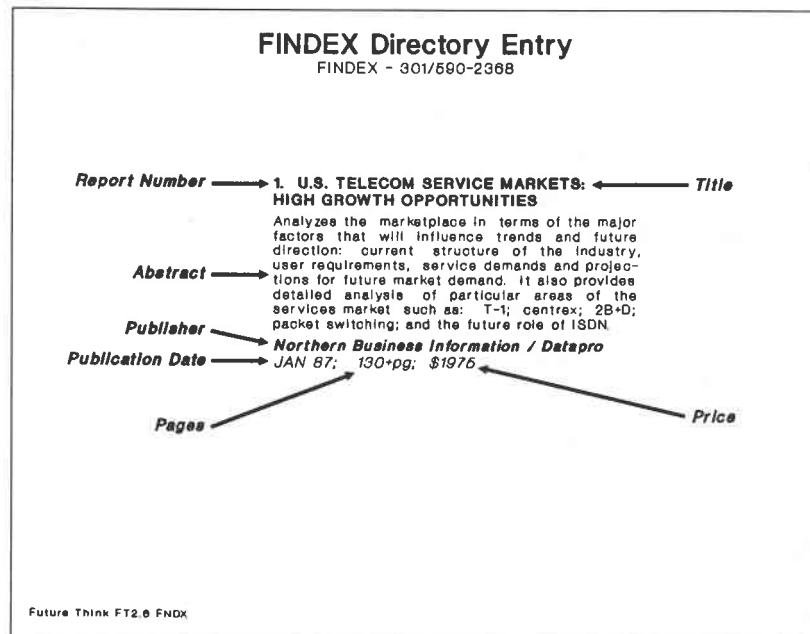
What: Directory.

Pages: 867 **Exhibits:** none

Date: 2/1989¹ **Price:** \$285¹

1. Supplement is published in August each year and is included in the price.

FINDEX -- The Directory of Market Research Reports, Studies and Surveys Cambridge Information Group Directories



And Review — International in scope, this directory lists over 11,000 market research products (reports, newsletters, etc.) in over 150 segments (e.g., paper products, baby food, and mini-computers). Information about specific companies are profiled in a dedicated section. Directory entries include information up to 5 years old and as recent as 1 month prior to publication. The directory also has a listing of publishers of market information.

Quality features — Excellent indices by publisher, subject, geographic region and company. Includes toll-free inquiry service that provides more recent information to purchasers.

Limits or not so quality features — A directory of this type must rely on publishers to supply information on their information products, so the directory is never perfectly complete. If you notice your favorite publisher is missing, prod them.¹

For Additional Information Contact:

Cambridge Information Group Directories, Inc.
7200 Wisconsin Avenue
Bethesda, MD 20814

301/961-6750 Fax: 301/961-6720

1. Okay, okay! We'll send in Future Think's info soon. . .

VIEW & REVIEW

MicroLeads™ Vendor Directory 1989 Edition Chromatic Communications Enterprises, Inc.

A View of the Directory —

A typical company profile in MicroLeads Vendor Directory is shown here. The information is supplied by the company on a survey form sent to them by MicroLeads. In later years the company is asked to update the information. If the form is not returned, MicroLeads attempts to get the information on the phone — a challenging process when over 6,000 companies are involved. Inaccuracies do creep in when a company will not update its profile. Or a company may not be listed if they haven't responded to the original inquiry. My spot checks turned up a few errors and omissions and a wealth of accurate, valuable information — easily worth \$495 for those doing business in the microcomputer industry

This directory will be even more useful in magnetic form so that it can be used to produce form letters and mailing labels

For: Microcomputer industry vendors, dealers, and publishers

Author: Michael J. Shipp

What: Directory

Pages: 1,346 Exhibits: none

Date: 4/1989 Price: \$495

MicroLeads Directory Entry

Chromatic Communications Enterprises - 800/782-DISK

NCR CORPORATION
1700 S. Patterson Blvd.
Dayton, OH 45479
(513) 446-6000
(513) 446-7478

INDUSTRY MEMBERS

President	Charles Exley
V.P. PC Division	Vernon Yates
Asst. V.P. PC Division	Ron Stanczak

COMPANY PROFILE

Year Established	1884
No. of Employees	62000
Sales Volume	Over \$100 million
Form of Entity	Publicly held corporation

Geographic Coverage: National and Int'l.
Means of Distribution: Direct to consumers, retailers, distributors, OEMs, system integrators.
Industry Specialization: Retail, Financial, Banking.

PRODUCT LINE DESCRIPTION

NCR CORPORATION offers one of the broadest hardware and software product lines in the industry. NCR computers range from small business systems through powerful general-purpose processors, and are supported by a broad spectrum of terminals, office automation products, peripherals, data communications networks and an extensive library of software products.

Additional areas of involvement: printers/plotters, storage devices, monitors, other peripherals, system software, application software.

Future Think FT2.6 OHIO

And Review — In 2 volumes, *MicroLeads Vendor Directory* profiles 6,112 microcomputer industry companies in 15 sub-segments within hardware, software or other. An alphabetical index of companies refers to the segment where a company is profiled and shows other segments where the company participates. 18,000 people in these companies are listed separately alphabetically by name with title, company, address, telephone and page where the company is profiled.

Great features — Published since 1982, this directory is comprehensive — although Michael has over 2,000 more companies that should be added if they would only return their forms.

Limits or not so great features — Additional indices or segmentation of companies would be useful and is planned.

For Additional Information Contact:

Chromatic Communications Enterprises, Inc.
P.O. Box 30127
Walnut Creek, CA 94598

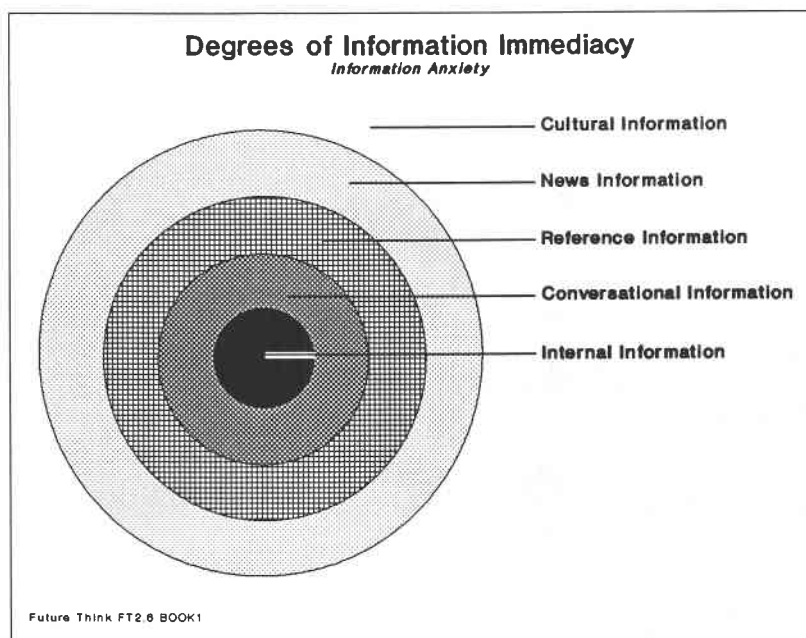
415/945-1602

BOOK LOOK

Information Anxiety

*The perfect book for Future Thinker readers — we're inundated with information about the business of information technology. Many of us feel guilty because we think that we don't read everything we should, and are anxious that we may be missing something important. And yet we create more information daily. **Information Anxiety** lends perspective. It is filled with practical advice on how to climb out of "the black hole between data and knowledge" — an entertaining and essential book. Easy browse*

Author: Richard Saul Wurman
 Pages: 356 Exhibits: 56
 Date: 1989 Price: \$19.95
 Doubleday
 666 Fifth Avenue
 New York, NY 10103

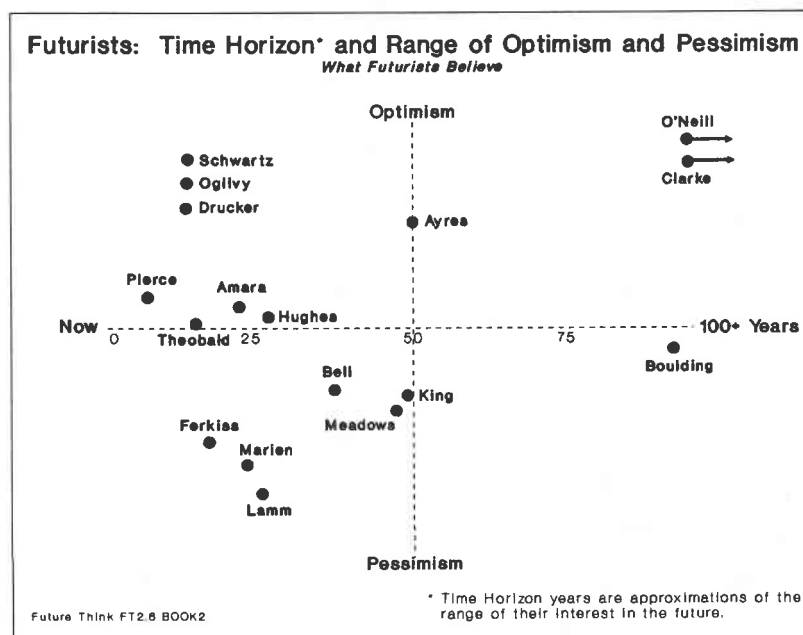


BOOK LOOK

What Futurists Believe

*Ten business subscribers to **The Futurist** magazine picked the 17 futurists profiled by this book for the relevance of their opinion to the business world. Among those chosen were Peter Drucker, Arthur C. Clarke, Richard D. Lamm and Daniel Bell. Each futurist's background, beliefs, and who has influenced him, is succinctly presented. Required reading. Terrific resource for reconsidering your company's assumptions about the future*

Authors: Joseph F. Coates
 Jennifer Jarratt
 Pages: 340 Exhibits: 29
 Date: 1989 Price: \$29.50
 World Future Society
 4916 St. Elmo Avenue
 Bethesda, MD 20814



ARTIFICIAL INTELLIGENCE

See SURVEYS.

COMPUTER INDUSTRY

Corporate Strategies for the U.S. Computer Industry - Mid-1989 Edition. Three-volume study contains detailed corporate profiles of 55 top computer and communications suppliers. Each company is profiled in five to twenty pages of strategic business, marketing and product information. Volumes include "Billion Dollar Club" companies, "Data Communications Equipment" companies and "Half-Billion Dollar" companies. Each volume is a self-contained report, and includes company profiles, and up-to-date industry analysis. Individual volumes available for \$595.00 with entire set priced at \$1,500.00. Further information available from Newton-Evans Research at 1-800-222-2856.

See SURVEYS.

CONSULTANTS/ANALYSTS

Database of over 850 influential consultants and analysts in computer, telecom, electronics and office products industries. Ideal for use by consultants relations departments in vendor or PR firms or by business information buyers who are looking for an expert on a specific subject. On IBM 5 1/4 or 3 1/2 diskettes in delimited ASCII or Paradox formats. Most entries include: name, company, address, phone, fax, subject expertise (up to 5), who their information is for (who they influence), and a recent publication (title, type and price). *Experts Database* includes 300-page *Experts Directory* with over 2,800 subject index entries. *Experts Database* — \$500. Subscription to monthly updates available for diskette version. *Experts Directory* — \$295. Future Think, Inc. 719/598-9000.

See MARKET RESEARCH FIRMS.

CONSULTING/MARKETING

Emphasizing consulting on Market Information Systems for technology products including: consulting, market intelligence, opportunity analysis, project management. For ideas and information contact: the ASK Group, Inc. Alfonso S. Killinger, 1398 SW 15th St., Boca Raton, FL 33486. (407) 392-7724.

FINANCIAL STUDIES

Available July 15 — *The Software Industry and the Electronics Systems Industry Financial Reviews*. Both include in-depth financial analysis on over 100 companies in their respective industries, making benchmarking your company's standing a snap. For more information, or to place your order call Sentry Publishing Company at: 508/366-2031 Regular price is \$689. Mention *Future Thinker* and receive 20% off.

MARKET RESEARCH FIRMS

New *Companies Directory* profiles 230 market research and consulting firms that publish business information in the computer, telecom, electronics and office products industries. Subject Index has over 2,800 entries. Most profiles include: company name, address, phone, fax, company's profile statement, subjects tracked (up to 20), who their information is for (who they influence), types of information products (e.g., report), example leading information product (title, type and price), and references to *Future Thinker* reviews or profiles. 300-page directory — \$195. Also available on diskette — \$300 (includes print directory). Subscription to monthly updates of diskette version available. Future Think, Inc. 719/598-9000.

MICROPROCESSORS

The Second Annual Microprocessor Forum features the industry's leading microprocessor and system designers speaking about the state-of-the-art in microprocessors and workstations. September 21-22 at the Fairmont Hotel, San Jose, CA. Sponsored by Microprocessor Report, 550 California Avenue, Suite 320, Palo Alto, CA 94306; 415/494-2677.

SURVEYS

Survey reports available on 96 topics in areas of artificial intelligence, sensors, computers, electronic products, robotics, advanced manufacturing, materials, biotechnology, optoelectronics, and energy. \$200 each. Catalog available. Future Technology Surveys, Inc., 123 W. Washington Street, Madison, GA 30650. FAX: (404) 342-9642.

VENTURING, CORPORATE

Corporate Venturing News. Free sample issue! Keep pace with the latest trends and opportunities in corporate ventures...learn which competitors are making moves and what technologies they're after...find out why some alliances succeed and others fail...discover where the most profitable corporate development opportunities may exist for you. Published by Venture Economics, Inc. Call Robert Greene at 617/449-2100.

LIST YOUR BUSINESS INFORMATION PRODUCTS IN CLASSIFIEDS

— Includes all information products and services e.g., reports, newsletters, services, seminars, consulting, etc. Ads are placed under 20-character subject (you suggest, we decide, no charge) with other ads. \$2/word, \$50 minimum per ad. 20% discount for same ad running three months. Free listing of event (e.g. conference or trade show) in *Conference Calendar Classifieds* for each event listed in *Business Information Classifieds*. Fax ad text, choice of subject by 1st of month of issue. A word is anything between spaces except when sentences are unusually punctuated, e.g., unusual hyphens and words joined by "...". In such unusual cases the two words and the separating punctuation count as two words. One letter words e.g., 'a' do not count.

References in ads such as "See MICROPROCESSORS" refer to more information about the conference in *Business Information Classifieds* which precede these *Conferences Calendar Classifieds*.

AUGUST 1989

Software FuturesTM: An Executive Forum. Aug. 14-15. Boston, MA. Digital Consulting, Inc. — 508/470-3880.

Financial Services Conference. Santa Clara, CA. Aug. 22-23. Dataquest — 408/437-8245.

SEPTEMBER 1989

PCs vs. Workstations in the 1990s. Sept. 6. Santa Clara, CA. International Data Corporation — 508/935-4258.

Technical Computing and Applications Conference. Santa Clara, CA. Sept. 11-13. Dataquest — 408/437-8245.

European Copying and Duplicating Conference. Cannes, France. Sept. 18-19. Dataquest — 408/437-8245.

8th Annual Gartner Group Scenario Conference (West). San Francisco, CA. Sept. 18-20. Gartner Group — 203/967-6855.

Western European Printer Conference. Cannes, France. Sept. 20-22. Dataquest — 408/437-8245.

The Second Annual Microprocessor Forum. San Jose, CA. Sept. 21-22. Microprocessor Report — 415/494-2677. See MICROPROCESSORS.

Taiwan Conference. Taipei, Taiwan. Sept. 25-26. Dataquest — 408/437-8245.

Distributed Processing Conference. Santa Clara, CA. Sept. 26-28. Dataquest — 408/437-8245.

SIA/Dataquest Joint Conference. Santa Clara, CA. Sept. 27. Dataquest — 408/437-8245.

OCTOBER 1989

Forecasting Future Technology Advances. Austin, TX. Oct. 1-6. Technology Futures — 800/832-3887.

Innovation By Design. Orlando, FL. Austin, TX. Oct. 1-6. Technology Futures — 800/832-3887.

8th Annual Gartner Group Scenario Conference (East). Orlando, FL. Oct. 2-4. Gartner Group — 203/967-6855.

Electronic Imaging '89 East. Boston, MA. Oct. 2-5. BIS CAP International — 617/891-1550.

Information Systems Conference. Tokyo, Japan. Oct. 2-6. Dataquest — 408/437-8245.

Preparing for 1992: Marketing Telecommunications Products & Services in Europe. New York, NY. Oct. 15-17. BIS CAP International — 617/891-1550.

Semiconductor Conference. Monterey, CA. Oct. 16-18. Dataquest — 408/437-8245.

European Computer Industry Trends. Oct. 24. Boston, MA. INTECO Corporation — 203/866-4400.

Applications Connectivity & Business Systems Integration. Oct. 25. Boston, MA. INTECO Corporation — 203/866-4400.

Enterprise Network Strategies Conference. Phoenix, AZ. Oct. 30-31. Gartner Group — 203/967-6855.

NOVEMBER 1989

6th Annual Local Area Communications Conference. Phoenix, AZ. Nov. 1-3. Gartner Group — 203/967-6855.

Asian Semiconductor and Electronics Technology Conference. Beijing, China. Nov. 2-3. Dataquest — 408/437-8245.

European Telecommunications Conference. Paris, France. Nov. 8-10. Dataquest — 408/437-8245.

DECEMBER 1989

European Personal Computer Conference. Athens, Greece. Dec. 6-8. Dataquest — 408/437-8245.

U.S. Computer Industry Trends. Dec. 14. Palo Alto, CA. INTECO Corporation — 203/866-4400.

JANUARY 1990

FEBRUARY 1990

MARCH 1990

APRIL 1990

MAY 1990

LIST YOUR EVENT (e.g., conference, seminar, exhibition, teleconference, broadcast or trade show) IN *CONFERENCE CALENDAR CLASSIFIEDS*. — Each listing is \$20/month per event. A single event listing in *Conference Calendar Classifieds* running 5 consecutive months is \$90. For each event listed in *Business Information Classifieds*, one free *Conference Calendar Classifieds* listing is provided with reference to detailed ad. Each listing includes title (limit 7 words), 1 inclusive date, 1 city & state or country, 1 company, 1 telephone and reference to *Business Information Classifieds* subject (if detailed ad is listed in *Business Information Classifieds*). Ads are placed under month the event is to be held in order by beginning date and then alphabetically by title. Fax ad text by 1st of month of issue.

ADVERTISER INDEX

August 7, 1989

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 Microprocessor Report
 Technology Futures

Future Thinker Experts' Edition

IBM Desktop Software	Inside Front Cover
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Thanks!

*For more about these firms see
Companies, our directory of
business information publishers —
new one just out with 2,800 subject
index entries*

172 Participating Business Information Publishing Companies

Of the 230 information technology industry business information publishing companies that we have contacted, 172 have agreed to participate in *Future Thinker* reviews. We will publish the complete list of 172 in an upcoming issue. New this month are:

★ Advanced Television Publishing Portland, OR	503/239-7232
★ DMR Group, Inc. USA New York, NY	212/949-6655
★ Database Research Group, Inc. Boston, MA	617/227-2583
★ Fredonia Group, Inc., The Cleveland, OH	216/921-6800
★ Green Street Lab, The San Francisco, CA	415/391-9400
★ IntelliQuest Austin, TX	512/320-8585
★ Kessler Marketing Intelligence Newport, RI	401/849-6771
★ Lewis Research Corporation Sunnyvale, CA	408/730-5829
★ Management Information Corporation Cherry Hill, NJ	609/428-1020
★ Performance Computing Chicago, IL	312/549-8325
★ Pyramid Research, Inc. Cambridge, MA	617/868-4725
★ Strategic Intelligence Systems, Inc. New York, NY	212/725-4550
★ Telecom Publishing Group Alexandria, VA	703/683-4100
★ Teleos Resources Somerset, NJ	201/271-1121

Future Think, Inc. — Call Us, Please

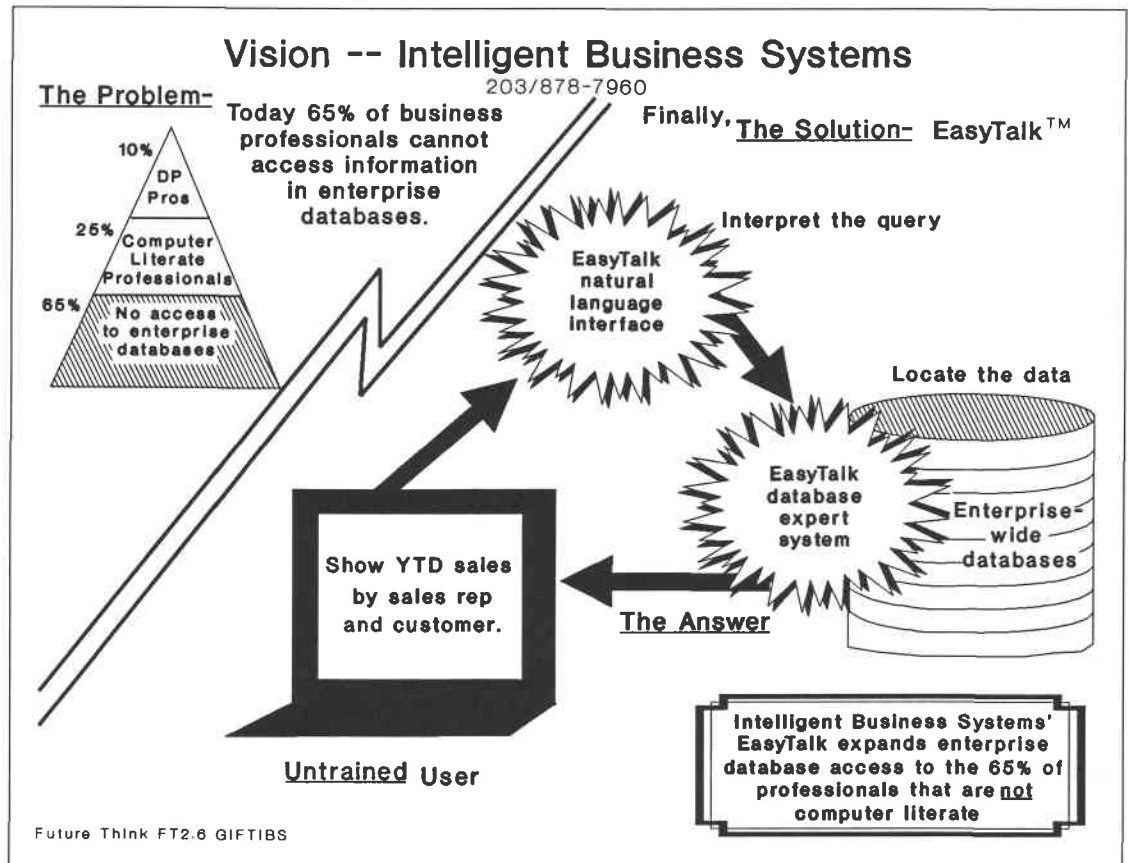
<i>Advertising information</i>	Judi Ray or Portia Isaacson
<i>Subscriptions</i>	Kathi Bobo
<i>To order anything</i>	Kathi Bobo or Judi Ray
<i>For consulting</i>	Portia Isaacson
<i>To submit material for a review</i>	Judi Ray or Portia Isaacson
<i>To be in directories</i>	Judi Ray
<i>To welcome Gail's baby</i>	Gail Zito

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Subscriptions (12 issues): U.S. and Canada - \$395/year Outside the U.S. and Canada - \$495/year (airmail)

Future Think, Inc. P.O. Box 49248, Colorado Springs, CO 80949, 719/598-9000

A Gift of Vision¹ -- Intelligent Business Systems, Inc.



"Portia, I want to tell you about a company that has developed a plain English interface for relational databases." . . . Sure. Had it not been Dr. George Schussel, I probably wouldn't even have taken the call. But George is not known for hallucinations or gullibility. He is known for nuts and bolts knowledge of software present and future, especially databases. So I listened. . .

. . . And I'm glad I did. Intelligent Business Systems has done exactly what he claimed. I've seen it! The technical secret is the two steps: 1) the natural language interface, then 2) the database expert system. EasyTalk™ is live today as front end to Oracle in customer installations (e.g., The Hartford).

Terrific technology, but only part of the reason Intelligent Business Systems will earn its right to be called IBS. Founded by Dr. Steven P. Schwartz, well-known expert systems and natural language researcher; well funded by (I wish I could tell you); and a management team *par excellence* (e.g., Frank Battaglia, CEO, an ex-NCR superstar who talks plain English about the necessity of focus in a start-up company, no matter how well funded).

1. This section of *Future Thinker* contains important ideas about the future from the industry's leading companies. Sometimes the drawings are based completely on material from the company whose vision is portrayed. More frequently the drawings and comments are my view of the company's vision. The company may not even agree with it. Occasionally I will slip in an idea about the future not related to a particular company. These drawings and comments are *Future Thinker's* small gift to market information publishers. Industry analysts may use them in any way they like with no credit or reference to *Future Thinker* required. They may use as is, modify, change, extract, trash or whatever. We will supply original art for use in publications. No charge. It's a small gift. Portia

HOT SPOT

The Future is Open

Interview with Nina Lytton

Open Systems Advisor

According to Nina Lytton, it's clear — users demand open and standard systems. Open systems are computing systems created from computers, software and peripherals from multiple vendors. Vendors participating in open systems must adhere to the appropriate interface standards to allow interconnection and interoperation

Nina's *Open Systems Advisor* newsletter explains how the computer industry in reinventing itself around open and standard systems. With rigorous, entertaining, unusually literate discussions of strategic business and strategic technical issues, Nina explains how we will all — end-users, computer vendors, software companies,, peripheral firms, distribution channels, and component suppliers — benefit, some more painfully than others

The issue is not whether there will be open systems and standards, it is how standards will be set. The business dynamics of setting standards differ by industry segment (e.g., the PC establishment and UNiPhiles¹ do things differently — and both worlds are in full tilt change mode)

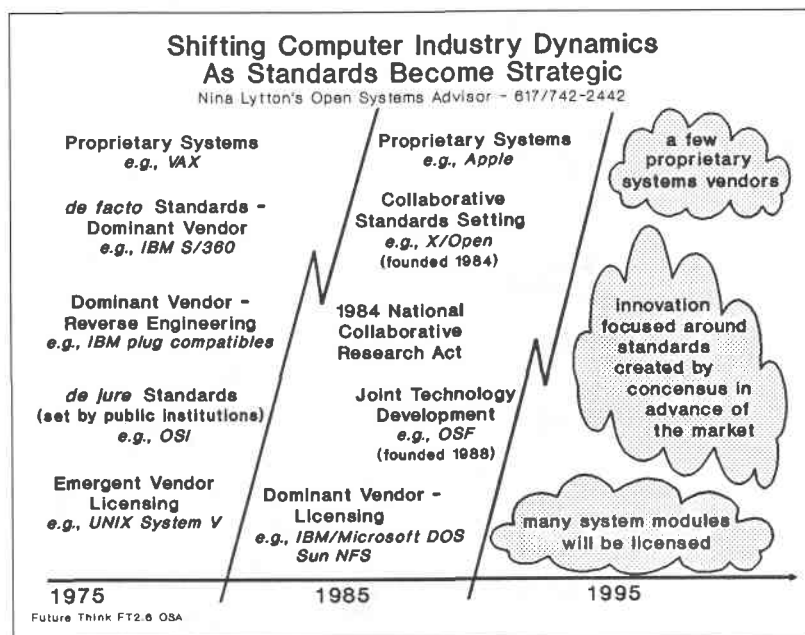
For: Computer and software vendors and Fortune 1000 computer users

Author: Nina Lytton

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Standards Are Becoming Strategic

According to Nina Lytton, only in emerging markets, or for very dominant vendors, are proprietary computer systems viable. Even if a few innovative proprietary systems are holding their own today (e.g., Apple Mac), it is clear that as innovation continues to swell around present and future open systems, proprietary systems will be left further and further behind.

The future is open. As more and more office workers use computers (as nearly 50% already do), they will not be willing to figure out where the brake is every time they sit down to drive a different computer. And that means there will be standards — user interfaces, operating systems, file formats, media, distribution formats, and I/O interfaces. Hardware innovation will not be constrained by software availability. And it's about time.

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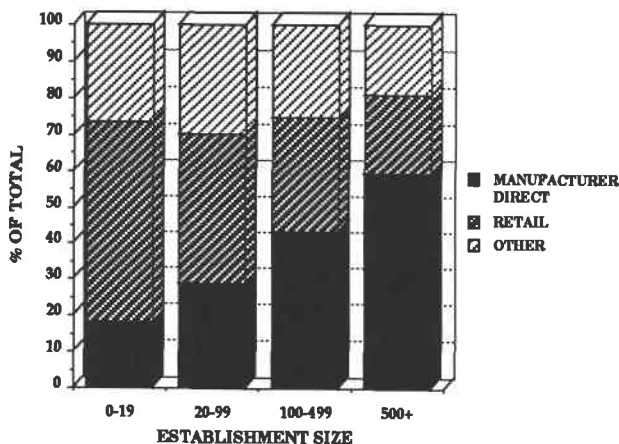
1. Nina's new word "UNiPhiles" refers to camp followers of AT&T and the Open Software Foundation.

DO YOU KNOW:

- The ratio of PCs to deskworker by industry and by establishment size within industry groups?
- Which midrange computer vendors have the lowest brand loyalty; which have the highest?
- Which industries are planning to switch long-distance carriers?
- What types of businesses have the highest concentration of facsimile machines?

What you don't know can hurt you!

1987 U.S. PC Shipments - Distribution Channel
By Establishment Size



Source: COMTEC



COMTEC is a comprehensive demand-side model of the U.S. business market for **Computers, Office Equipment, and Telecommunications Service and Equipment.**

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Advance Program

Perspective

The State of the Microprocessor Industry
Michael Slater, Microprocessor Report

Keynote 1: The Next Decade of RISC
John Hennessy, Stanford University / MIPS

New Microprocessors — RISCs for Workstations

The i860
Sai-Wai Fu, Intel

SPARC-H: A High-Performance CMOS SPARC Implementation
Le Quach, Fujitsu Advanced Products Division

An ECL SPARC Chip Set
Jim Peterson, Bipolar Integrated Technology

A Custom SPARC Processor
Mike Schumacher, Solbourne Computer

A Multiprocessor Cache for SPARC
Roger Ross, Ross Technology

Panel: The Future of RISC

New Microprocessors — Revenge of the CISCs

The 68040
Dave Mothersole, Motorola

The 486
John Crawford, Intel

Outdoing the 486
Dave Stiles, Nexgen

The VM8600 Family: Application Specific Integrated Processors
Masatoshi Shima, V.M. Technology

Panel: The Future of CISC Processors

Debate: RISC vs. CISC for the Mainstream Workstation Market

Roger Ross (Ross Technology) vs. Morris Jones
(Chips & Technologies)

Benchmarking and Performance Measurement

An Overview of Common Benchmarks
Reinhold Weicker, Siemens AG

Evaluating RISC and CISC Processor Performance
Bud Funk, Unisys

Panel: Fair Benchmarking
Reinhold Weicker (Siemens), Bud Funk (Unisys),
Jim Geers (AIM Technology), John Mashey (MIPS),
Dave Ditzel (Sun), Dave Mothersole (Motorola)

Keynote 2

RISC — An Exercise in Degrees of Freedom
Andy Heller, Kleiner, Perkins, Caufield & Byers

System Designer Perspectives — Workstations

The SPARCstation 1
Andy Bechtolsheim, Sun Microsystems

The DECstation 3100
Mike Nielsen, DEC

A Multiprocessor Graphics Workstation Architecture
Forest Baskett, Silicon Graphics

The XD88 Series Graphics Workstations
John Theus, Tektronix

The AViiON workstation
Robert Cousins, Data General

A Chip Set for a MIPS-based Micro Channel System
Skip Smoot, Bull Micral of America

Panel: Trends in Workstation Design

RISCs for Embedded Control

A Superscalar Implementation of the 80960
Steve McGeady, Intel

The Next Generation of the 29000 Family
Bob Perlman, AMD

A MIPS Processor for Embedded Control
John Mick, IDT

An Acorn-based Microcontroller
Ron Cates, VLSI Technology

RISC Processors as ASIC Cores
Gene Hill, LSI Logic

Expanding the Microcontroller Range

The 68332: A 68020-Based Microcontroller
John Vaglica, Motorola

The 96002 Floating-Point DSP
Garth Hillman, Motorola

The 34020 Graphics System Processor
Karl Gutttag, Texas Instruments

Embedded Control Designer Perspectives

Evaluating processors for laser printer controllers
David Wurmfeld, Phoenix Technologies

High-Performance Networking Interfaces
Steve Holmgren, CMC

Panel: Selecting an Architecture for Embedded Control

Register now to reserve your place. Last year's *Forum* was completely sold out several weeks in advance.

Don't miss this singular event!

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