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QUICKTIME HAS GONE GOLDEN MASTER and will be distribued to all Associates and Partners in December.

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APPLE ANNOUNCED its directions in collaborative computing at NetWorld last month. Apple's Open Collaboration Environment (O.C.E.) is an enhancement to System 7 that provides a standard set of tools, routines, and APIs.

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NINETY DEVELOPERS were involved in Apple's product intro efforts in the past couple of months. The next intro in which we'll involve developers will be the QuickTime rollout early next year.

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DEVELOPER ESSENTIALS was the most frequently accessed folder in the DTSfolder on AppleLink during a recent one-week period.

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EVANGELISM IS SEEKING cool applications that show off the capabilities of System 7. If you've got an application you'd like Apple to know about, send a Link to COOL.APP.

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***

A PIRACY HOTLINE has been instituted by the Business Software Alliance. The BSAhas also recently stepped up its antipiracy efforts in Italy.

(See News folder)
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WHAT'S NEW ON THE CD? Macintosh Developer Notes, testing tools, sample code, electronic versions of *Apple Direct* and *develop,* and more. . .

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***

GET TECHNICAL HELP from other developers by joining a developer association or SIG. We list 16 developer groups—large and small, general and specialized, local and worldwide in scope.

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***

DEV. U. TRAINING is now available from four third-party providers around the U.S.—EDS, the University of Maryland, Cornell University, and the Univerity of Oregon's Portland Center.

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***

MACAPP V. 2.0.1, in various bundles, tops the list of products released by APDAin the last few weeks.

(See News folder)
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TOG SAYS lose the power-user and design for real people. Your test sites should include people who don't want to test your product, who will be willing to be at site only if you make it otherwise worth their while.

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BUSINESS & MARKETING

COMPARING YOURSELF to a competitor in your advertising may seem like a good idea, but there are several caveats to keep in mind.

(See Business/Marketing folder)
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WORDPERFECT shares tips on running a customer support organization.

(See Business/Marketing folder)
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A NEW DISTRIBUTION guide has been released by the SPA. Called the *U.S. Software Channel Marketing Guide,* Book I, it analyzes current U.S. distribution.

(See Business/Marketing folder)
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GETNEXTEVENT lists events from December through early April .

(See Business/Marketing folder)
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INGRAM BENCHMARKS indicate that the new Macintosh Quadra systems are the fastest CPUs on the block.

(See Business/Marketing folder)
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IT SHIPPED now breaks out participating companies by country—this month, for instance, you'll see two Canadian developers on the It Shipped list.

(See Business/Marketing folder)
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New Data on Piracy

According to a survey by *Macworld* magazine of 373 of its readers, software piracy may not be as widespread as some reports claim. The survey, which took place last summer, found that a high proportion of *Macworld* readers are using legitimate copies of software and don't pirate applications to try them out before purchasing them.

Additionally, the readers tend to think that piracy laws should be strictly enforced and that it's not acceptable to copy software for a friend.

The readers in the survey came from a broad spectrum of company sizes, with about a third in small companies (with fewer than 10 employees), another third in large companies (more than 1,000 employees), and the remaining third in companies with 10 to 1,000 employees.

Almost half of those surveyed (46.5 percent) said that they used five to ten software packages (excluding public-domain products) on a regular basis, at least once a week. The average number of packages regularly used by *Macworld*'s readers was 5.7.

The majority said that their most frequent method of obtaining software was to buy it themselves or that their organizations purchased it for them (Table 1).

Close to half the respondents (45.7 percent) said that their organization has an official policy on piracy. When the people in this group were asked how often their company's policy was followed, 42.6 percent said "always" and another 27.2 percent said "often."

In addition, when the entire base of respondents was asked its response to the statement "Software laws should be strictly enforced," about half said they agreed or strongly agreed.

When asked their opinion about the statement "It's fine to make copies of software products for friends," more than 70 percent said they disagreed or strongly disagreed. And more than 50 percent gave the same disagree/ strongly disagree response to the statement "I usually copy software to try a program before I purchase."

At the very least, the research indicates an enlightened attitude toward piracy among *Macworld*'s readers. If you'd like a copy of the complete study, contact Gary Rocchio, vice president of research, *Macworld* magazine, via fax at (415) 442-0766.

	At work	At home
Personally purchased software	29.1%	60.0%
Organization purchases software	59.2	6.5
Copy software used at work/home	1.5	10.8
Obtain a copy from someone else	1.8	6.2
Obtain software from BBS	0.3	1.8
Other	0.6	1.2
Do not use software at work/home	7.5	13.5

Table 1: Where **Macworld** *readers obtain software*

QuickTime Goes Final

A mere six months after distributing an alpha version of QuickTime at the Worldwide Developers Conference, Apple has completed the final QuickTime 1.0 release. The INIT is available on line on AppleLink (path—Developer Support: Developer Services: Developer Technical Support: QuickTime). And next month, a QuickTime Development Kit will become available through APDA.

In addition, QuickTime 1.0 will be mailed to all Apple Associates and Partners in December.

In order to distribute QuickTime in your product, you must obtain a license to do so. In the U.S. or Apple's Pacific region, contact Apple's Software Licensing department on AppleLink (SW.LICENSE) or at (408) 974-4667. In Europe, contact your local Developer Services organization.

If you've got a QuickTime application you'd like Apple to know about, be sure to send us a Link at COOL.APP.

Notebooks: Now What?

by Brian Mellea and Ken Landau

The Apple perspective

By now, you've undoubtedly read many articles and heard much discussion about the new Macintosh PowerBooks and their prospects for success. The corollary, of course, is how successful you'll be if you choose to pursue the notebook market along with Apple. To better assess that, we'd like to give you Apple's view of the overall portable market, the types of buyers we expect to see for the PowerBooks, and some of the potential opportunities for developers.

As well-received as the PowerBooks have been on their own merits, it's important to point out that their unique position in the market is also tied to two other important Apple technologies: System 7 and the Open Collaboration Environment. O.C.E., which was announced last month at Networld (see news article on page 2 of this issue), is a system-software extension designed to let developers create collaborative applications that go beyond electronic mail.

In the hands of forward-thinking developers, System 7 and O.C.E. will allow PowerBook users to connect with remote network services and communicate with others anywhere, anytime, and regardless of their location—at home, at the office, in the classroom, or on the move.

The Portable Market

The portable market is where the action is. Dataquest and IDC have forecast dramatic growth in portables. Figure 1 shows the portable market growing at an average of about 30 percent per year worldwide between 1990 and 1995. Meanwhile, desktop unit volume growth will hover between 3- and 7-percent growth per year. Significant opportunities exist for portable-computing applications: Looking at Figure 2, you'll see that IDC expects that the worldwide unit shipments of portables will exceed 5 million units in 1992. Keep in mind that this graph shows not installed base but units shipped in a given year.
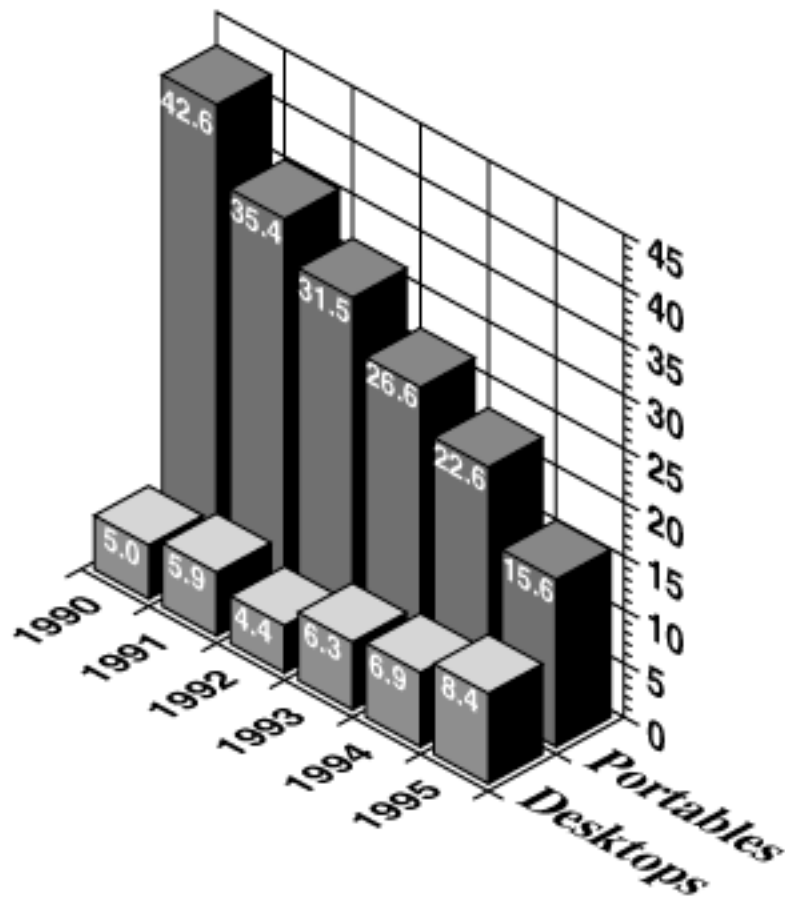
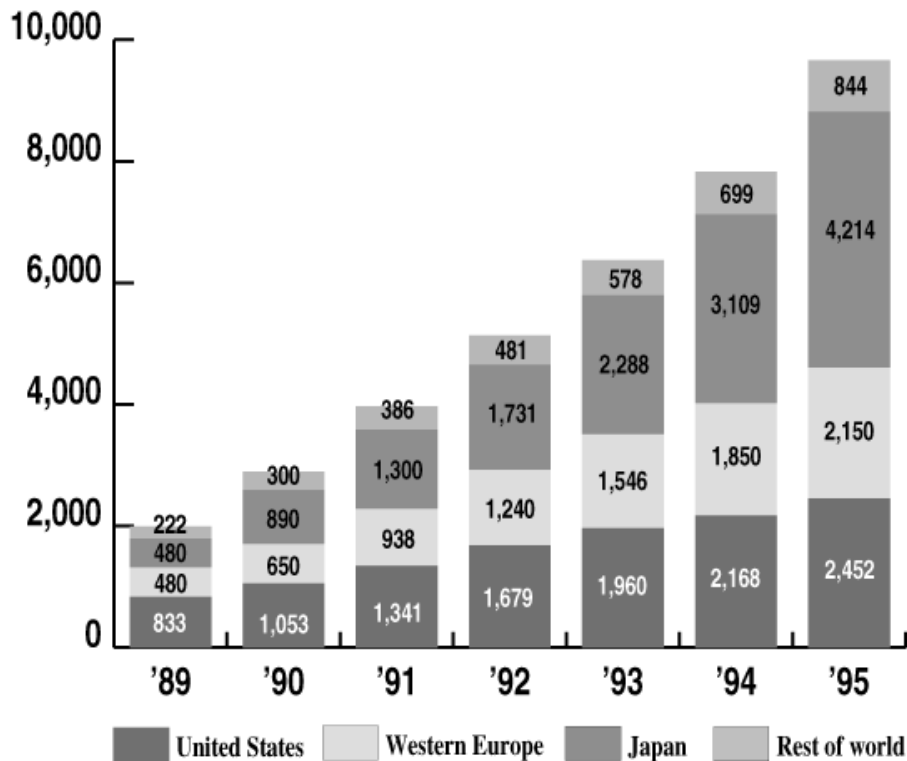**Figure 1:** *Portable vs. desktop annual growth rate*

Figure 2: *Worldwide portable unit shipments (in thousands)*

According to IDC, there are some important geographic differences to consider in looking at these numbers. Western Europe is just moving out of the stage that America was in about five years ago, when portable buyers were mainly early adopters and sophisticated mobile professionals—now we're seeing mainstream users in Europe buying portables.

Western Europe also has a smaller installed base of computers than the U.S. and so will be a fertile ground for portable sales; we believe that many new users will be choosing a portable as their first and primary computer. In Japan, portables currently comprise about 44 percent of the installed base and some analysts are predicting that the portable installed base will soon exceed the desktop installed base.

In nondisclosure briefings, customers, developers, and resellers have all been very enthusiastic about Apple's PowerBooks. Most importantly, they have all told us that they see sales going beyond current Macintosh owners to new computer users. This suggests a good start on Apple's long-term goal of having its notebook market share meet and exceed the share we hold in the desktop market, which is currently about 15 percent in the U.S., according to several market analysts.

The Time Is Now. The major factor for the acceptance of the portable is simply a matter of convenience. The "I can take it anywhere" mentality is evident in the success of such products as the Sony Walkman, the hand-held phone, the Sharp Wizard/Casio Boss, and the Sony Palmcorder.

The shortcomings of screen, CPU, battery, storage, and keyboard technology made the idea of spending a great deal of time with a portable unrealistic just a few years ago. But today's platforms are now adequately strong in each area. Screen clarity has made the biggest leap. Fuzzy, low-contrast displays have been replaced by second- and third-generation super-twist LCDs and active-matrix screens. Today's users can focus their attention on their application, because technology has caught up with the form factor.

Because of the convenience, Apple believes that individual and corporate customers who want to maximize their spending dollars will prefer a computer that can be productive at home and during travel, as well as in the office.

THE NOTEBOOK CUSTOMER

To better understand the portable/notebook purchaser, Apple really put into action the first of its four guiding principles —customer input at the start of every product-development effort (see the "Apple's Four R&D Principles" sidebar). We began by asking, "What do our customers want?" and greatly expanded our customer research to find out. That research has enabled us to characterize potential portable buyers as either Primary or Second Computer users (see figure 3).
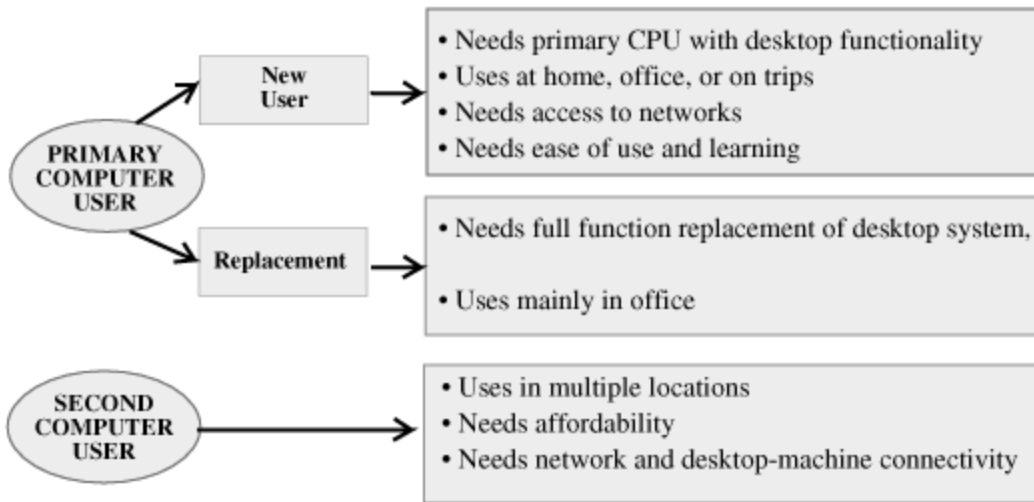

Figure 3: *Apple's view of the portable market*

The Primary Computer group consists mainly of people buying a computer for the first time—and that computer, of course, is their main system. They have selected a portable/notebook for its convenience and portability but also want the functionality they could get in a desktop computer. They want to communicate with office network services in a variety of ways, whether from within the office or from home.

Many buyers who are entering the personal-computer market now have waited for the technology to mature and become affordable. This suggests that they have a certain set of expectations about the third-party products they will buy too. As one user said recently, "I bought a notebook because it's easy to use and convenient. Why shouldn't my applications be the same way?"

And where do these users actually use their computers? Despite the image of working on airline tray tables, most Primary Computer users work on their notebooks in one or two regular locations. (Just for fun, the next time you fly, calculate the percentage of people working on a computer. You'll be surprised!).

You've probably heard about mobile professionals—people who uses their computer mainly in transit. They use their machines wherever they are—at a customer site, in the field, in the branch office, and at home. However, we have found that mobile professionals represent only a subset of the entire market for notebook computers. It *is* an important segment, though, and developers need to view it as a large, specialized market with unique needs (see below) different from those of users working mainly at a desk.

Besides first-time buyers, there's another type of user who falls into the Primary Computer category: people seeking to replace a desktop machine. They are ready to upgrade from an older system, or they may already have two machines—a desktop and a portable—and want to consolidate. Like all customers, they want to keep the functionality they have, yet at the same time, they'd like the benefits of portability. They use their notebooks mostly at the office, sometimes at home, and occasionally on the road.

The Second Time Around. The Second Computer buyer has a desktop machine and wants a portable for more flexibility. For instance, we envision that many users who have desktop machine will

also tote a portable home to finish their work. This is not to say that Second Computer users are not traveling; it's common for them to take the portable from their desk or office pool for field work or business trips, but the system is generally used at another location and not while in transit or on the road.

Second Computer users are most often running productivity applications, using files resident on their desktop machine. It would be especially useful for their applications to help them track versions of documents so they can stay organized.

APPLE'S CONTRIBUTION

With the PowerBooks, Apple adds critical functionality while competitors stress price and feature sets alone. Apple approaches the notebook market with a set of hardware and software technologies to provide you with the building blocks to create solutions. Our work in system software and hardware over the past two years—System 7, O.C.E., AppleTalk Remote Access and the PowerBooks—has been aimed at creating the development environment you see in Figure 4. The result, we believe, will allow people to use our notebooks "anywhere," "anytime," and with "all the power."
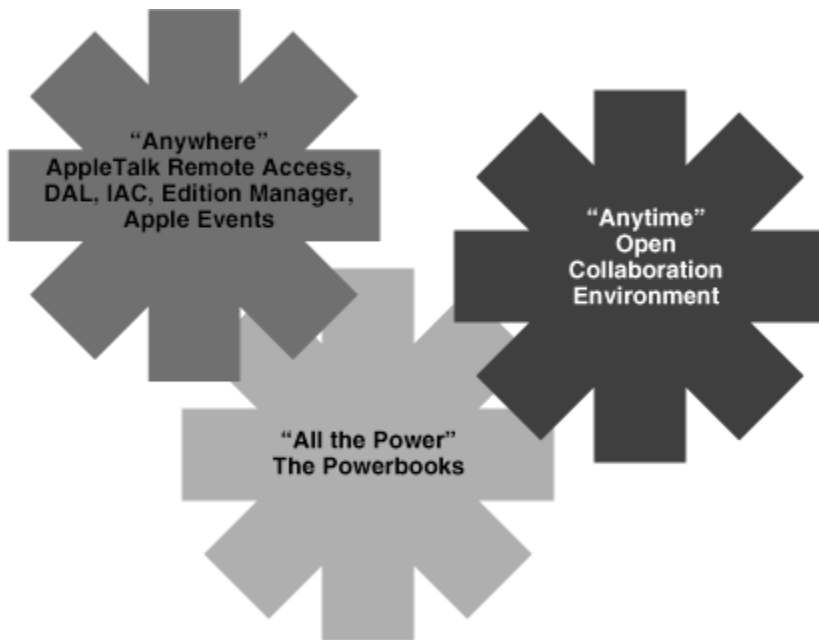

Figure 4: The three technologies that comprise Apple's notebook strategy.

From anywhere, PowerBook users can connect to the office via AppleTalk Remote Access, no matter where they might be. Users can be on the network as if they were in the office. Once there, System 7's features— IAC, Apple events, DAL, and Edition Manager—enable them to access resources anywhere on the network.

And if your application supports O.C.E., its users will be able to prepare documents and correspondence at any time and later forward them, once they're connected to the mail service or the network.

With the power and capabilities of the PowerBooks, you can design products assuming that many of Apple's portable users will have CPU performance equivalent to that of a IIcx or IIci. Wherever they are, they have the hardware capabilities to employ advanced system-software features.

Current and Future PowerBooks. In fiscal 1992, Apple sees Second Computer buyers as the predominant purchasers of PowerBooks. Our customer research has shown us that many computer users

still view notebooks as Second machines. They also want all the functionality they have in their desktop systems to also be in the notebook.

Most of the PowerBook 170s (the "high performance" PowerBooks) and the PowerBook 140s (the "mainstream" PowerBooks) will sell as Second Computers, as will nearly all the PowerBook 100s (the "most affordable" PowerBooks).

Some PowerBook 170s and 140s will also sell to Primary Computer buyers, particularly new users considering a PC who are strongly attracted to the portability, ease of use, and connectivity of a PowerBook. We think that replacement buyers will comprise the smallest part of the market.

As Michael Spindler, said in a recent speech: "...In laptops and notebooks, you need range. So we are really trying to catch up with the wave and go beyond that in the next couple of years to offer a whole suite of notebooks."

In calendar 1991, Apple became competitive in the notebook marketplace with the PowerBooks and created the foundation of a product-line family. In 1992, Apple will offer a complete suite that leads the industry. And this suite will be closely tailored to the particular needs of Primary Computer user—new buyers as well as those replacing desktop computers—and Second Computer users. Screen performance will improve, RAM and hard-disk space will grow, and performance will rise. In fact, the features that should decline—price and weight—will.

DEVELOPER OPPORTUNITIES

We see several attractive markets opening up for developers. However, we'll all be learning about the marketplace as customers use the PowerBooks. Some of the highest-demand portable applications can be defined in general terms today, but countless others will of course emerge over time:

• *Personal Productivity.* This area includes applications such as personal calendaring, "to do"-list management, and address books that help individuals get organized. There's a great opportunity here, because of the unit projections shown in Figure 2 and because nearly every notebook owner will want such applications. Many applications exist today but need to adopt a "mobile mentality." For example, calendaring packages could be tied to "to do" packages to help customers meet deadlines.

Apple has made that "mentality" much easier to implement with Apple events, AppleTalk Remote Access and the Open Collaboration Environment.

• *Collaborative Computing.* This category consists of applications that facilitate interpersonal work. For example, one member of a team preparing a major sales proposal is on the road gathering data for it. At his hotel, he receives an update of a group document, enters his new data, edits what the team has prepared, and forwards it on. Other applications in this category include group calendaring, group scheduling, electronic mail, and group information management (forums for reading and posting information).

Demand for such products will rise dramatically as more and more people are on the go with a Macintosh. However, current applications were generally built assuming a local-area network.

If you are creating the next generation of these applications, you should not assume real-time remote connectivity. Users will work anywhere, anytime. The PowerBooks and O.C.E. make it easier for developers to create these applications.

• *Field-Force Automation.* In the early '60s, corporate financial departments saw the first real returns on computer investments: At that time, a 25-to-30-percent return was not uncommon. Studies show that nothing has approached these figures until recent efforts at field-force automation. Such efforts have yielded productivity increases of 25-35 percent.

Currently about 430,000 real-estate agents, 425,000 insurance sales workers, 200,000 financial-services sales workers, and 207,000 sales-support personnel are on the road in the U.S., and their numbers will increase 20 percent by the end of the decade.

Field-force-automation packages must focus on enabling sales representatives to get the most-timely information to the point of sale, providing the greatest customer satisfaction, supplying personal productivity tools in an "untethered" environment, and delivering a clear means of communication from the field.

Companies looking to provide technology to their field force will first make sure it is easy to use. If it gets in the way of a sale, it's a failure.

Good salespeople want to sell (that is, make $$$), not become expert computer users. The packages they're looking for include wide-area E-mail, proposal generators, lead tracking, order configuration, competitive/reference information, order entry, multiuser calendar/project management, client databases, mail-merge, order entry/tracking, electronic forms, presentations, training materials, and so on.

• *Communication.* Notebook users will want to access network services, increasing the demand for high-speed internal data and/or fax modems. Other users can look to their software to free them from extensive real-time connectivity. Using O.C.E.-savvy applications, they can prepare documents ahead of time, connect, upload those documents, and download received documents.

While we see most users choosing high-speed data modems, the cellular modem provides one of the most exciting potential technologies associated with notebook computing. With a U.S. cellular-telephone installed base of 4 to 5 million, industry analysts suggest that cellular technology is ripe for widespread commercialization.

Hardware vendors are needed to make cellular-telephone adapters for voice and data connectivity. Cellular modems with higher data rates and better reliability will enable true data communication. Software and hardware for special mobile radio systems such as ARDIS could provide instant E-mail services to users—radio-system providers need software to allow Macintosh systems to access their networks. Infrared and radio-based wireless networks offer the promise of high-speed, short-range networks for portable users.

• *Data Acquisition.* Scientists and engineers now have a very powerful platform to take into the field for data acquisition and analysis. Social scientists can enter their notes into a PowerBook and annotate them with voice clips from an interviewee. A group of graduate students can instrument a hang glider with stress, strain, airflow, and temperature sensors and have a PowerBook capture the data while the glider is in flight. In general, there will be a greater demand among scientists and engineers for products that help them take advantage of the mobility that notebooks provide.

•*Education.* Teachers can increase their productivity with notebooks. For example, a teacher can take a loaner PowerBook home, enter grades, and complete the next day's assignment. District teachers such as speech therapists and psychologists who travel among schools need calendar, student-profile, and mail packages. They can "carry" student files, immediately add their meeting comments, and continue to the next appointment or use programs at home.

Students can take a notebook on field activities and carry it with them around the classroom. More than ever, they can use applications that support field and classroom data-collection activities. As you can see, there are many exciting opportunities in this market. Demand will depend on the schools' ability to afford the machines. We'll give you updates in the future on schools buying PowerBooks.

• *Current Applications and the Second Computer Buyer.* Most PowerBook users will be Second Computer buyers. They will want to use their current applications on their notebook. It's important to consider the portability of your current applications. We provide some ideas for adapting your existing products in the "Notebook Do's and Don'ts" sidebar. Other things to consider are: Will users of your products want a smaller version for use on the road or at another location? Does your application allow two copies—one for their desktop and one for their notebook?

Step back, and think about the Second Computer buyer using your application away from the office. The answers to these questions are business decisions involving significant trade-offs between cost, customer satisfaction, and channel management that each developer will have to make for him- or herself.

A MAJOR COMMITMENT

Apple is committed to dramatically increasing its overall market share in the industry, and the greatest opportunity to achieve this goal is with notebooks. John Sculley and Michael Spindler are dedicated to making Apple the #1 notebook vendor. Toward that end, Apple has devoted substantial R&D resources exclusively to this market and Apple's sales geographies (USA, Pacific, and Europe) are each committed to delivering the Apple notebook message.

Apple's Evangelism department is also dedicated to making notebooks successful, and over the year, we'll keep you posted through *Apple Direct* about how the PowerBooks are being used by customers, how the notebook market is doing, and how to take advantage of the O.C.E.

Evangelism sees notebook users encountering new kinds of human-interface issues as well as exhibiting new kinds of usage patterns. With Evangelism's own Bruce Tognazzini, we'll be asking human-interface experts and key developers to use the notebooks. We will generalize their experiences into a set of design guidelines and recommendations for system-software interface changes we'll share with all developers via workshops, *Apple Direct* articles, and/or Tech Notes.We'll also be looking for ways to connect you more closely with Apple's efforts to market and sell our notebooks. Helping developers be successful is one of the Apple Developer Group's key 1992 goals.

We're also always on the lookout for products that show Apple technology off to its best advantage for possible use in promotional activities. If you have a product you'd like to bring to our attention, send us a Link at the AppleLink address COOL.APP. Be sure to note in the message header if you're telling us about a notebook application, because COOL.APPis also the place to inform Evangelism about your QuickTime and System 7 applications. Specifying the type of application helps us more quickly route the message to the appropriate Evangelist.

Don't pass up the opportunity to get into the Apple notebook market. As with desktop publishing in 1987, portable computing is on the eve of a revolution.
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Brian Mellea is an Apple CPU Evangelist, and Ken Landau is a Project Leader in Apple's Integration Sales Group, Sales Automation Platform.

Apple's Four R&D Principles

When Apple CEO John Sculley introduced the new PowerBook line at Comdex last month (along with the Macintosh Quadra and the Classic II systems), he also discussed Apple's R&D philosophy. Below is an excerpt from his Comdex speech in which he describes Apple's four principles for research and development:

"...Since taking over Apple's product development efforts 18 months ago—and devoting an enormous amount of my attention to our market share strategy—four principles have become the driving force behind the products we introduced last October and those which we'll be introducing today.

"The first of these is to *include customer input* at the start of every product development effort. This begins by asking, "What do our customers want?" We've heard our customers say that ease of use is important, but not at the expense of functionality or performance. In addition, we've learned that a non-disruptive computing path is key, and that new products must be designed and manufactured at even faster rates.

"The second guiding principle is *faster time to market.* In the past, the product development cycle was 24 to 36 months; today, we've reduced that to 9 to 12 months; in the future, we'll bring new products and follow-on technologies to market with increasing speed.

"Our third R & D principle is to *drive innovation at the lowest possible price point.* Traditionally, innovative technologies have surfaced first at the high end, and gradually filtered down into lower cost products. Our goal is to bring the latest technologies directly into the mainstream.

"Finally, the fourth principle is to *focus on miniaturization and mobility.* Perhaps this is one of the more visible features of the products you'll be seeing today, and I think they reflect our interest in making personal computing technology that people can take with them anywhere.

"Taken as a whole, the focus of our technology strategy is to create products that encompass all of these principles. We craft them in such a way that optimizes the computing experience—and allows organizations to take full advantage of the investment they've already made and gives them a growth path

for the future. Giving individuals and organizations powerful technology that's easy to use is one of the ways that we can achieve our goal of becoming a bigger player in the industry...Apple is dedicated to the notion of fitting in—as well as standing out—in every organization..."

Notebook Do's and Don'ts

Given the pioneering nature of notebook development opportunities, there are some important things to consider when developing PowerBook applications:

 • **Field test.** Conduct as much user research and prototype testing as possible when designing your products. User testing is important in designing any product, but it is especially important here, because PowerBook users will have new and different usage patterns from desktop users. And be sure to run that testing in the home, at the vacation house, and on the road—where they'll really use your product.

 • **Be energy-wise.** Minimize how often your product accesses the hard disk. One application we saw accesses the hard disk to finish drawing its menus. Think about the display also—the display is the largest consumer of notebook power. Can your user turn down the brightness and contrast and still use your application?

 • **Remember the monitor.** Build your interface for a black-and-white, 1-bit, 640-x-400-pixel environment. Your application should also be "monitor aware," so that if users "dock" to a large monitor at the office and then use their notebook on the road, the windows will be viewable.

 • **Make it bulletproof.** Imagine that your users are at home late at night, preparing for the next morning with a million distractions at hand. Make it easy for them to recover from errors. Offer auto-save as an option. Users of portables don't carry manuals, and the person in the next cube is in a different time zone. Use Balloon Help, and provide other creative help facilities.

 • **Build an intuitive interface**. If there was ever a market that demanded that developers stick closely to the Apple human-interface guidelines, this is it! One application we saw said, "Hit any key to start." We watched the user look down at the keyboard and try to find the "any" key. Late adopters and casual users need a common experience across applications.

 • **Minimize required keystrokes**. As much as possible, have your program automatically capitalize, format telephone numbers, provide "hot keys," offer defaults, and so forth. Mobile professionals don't want to be typists and shouldn't have to be.

 • **Keep your file and application size down.** Space is at a premium. Small physical size and tight budgets translate into smaller-capacity hard drives and less RAM.

 • **Speed it up.** When someone's accessing data in front of a customer, a few seconds feels like ten minutes; in front of a group or classroom, it feels like an hour.

 • **Support voice annotation.** Imagine the impact of a welfare applicant's comments annotating an aid proposal prepared by a field social worker, or a student's real-time observations on a field trip.

 • **Avoid small type.** Our screens provide full backlighting, but users may want to reduce the brightness to lengthen battery life—they can do so only if they can see your interface.

 • **Don't use tiny buttons.** They can be hard to hit with a trackball, especially when the user is bouncing in a jeep chasing after gazelles in Zimbabwe.

 • **Think about sharing.** No, not AppleShare but the application implications of several people sharing the same notebook. Companies will buy notebooks for loan-pool use. What can you do to help users manage and protect their files?

Apple/IBM Deal's First Product

NB Card Due in Dec.

Last month the terms of the Apple/IBM technology alliance were finalized, and we promised to bring you updates as it continues to evolve. As you'll recall, the alliance covers five development areas: enterprise networking, UNIX, RISC, multimedia, and object-based systems.

We believe that this alliance will bring about significant opportunities for Apple developers, today and through the rest of the decade. Where you'll first see results of the alliance is in the area of enterprise networking.

To recap the terms of the alliance, Apple and IBM agreed to cross-license technologies and develop a range of new products to enable better integration of Macintosh and IBM platforms within large enterprise systems. This strategy allows Apple to strengthen its position in multivendor environments by giving us a stronger offering for our large customers, consistent with our business strategy of aggressive market-share growth. Customers will be able to network Macintosh and IBM computers more smoothly than ever.

For Apple developers, this can ultimately mean larger markets for your current products and new opportunities for innovative workgroup applications. As Apple sells more Macs, you have the opportunity to sell more software and/or hardware.

At announcement, the enterprise-networking agreement highlighted five specific areas:

• AppleTalk services for OS/2 will allow Macintosh, OS/2, and DOS-based personal computers to share files, query corporate databases, and access a broad range of communications services through a common OS/2 server.

To help achieve this, Apple is licensing to IBM the source code for AppleTalk protocols.

• To ensure interoperability between its current and future environments, Apple has licensed IBM's Token Ring technology for use in the new Token Ring 4/16 NB Card.

• Macintosh will participate more fully in SNA, IBM's blueprint for exchanging information across large enterprise networks. One of the key developments will provide Macintosh users with full access to Advanced-Peer-to-Peer Networking (APPN) directory and routing services.

• Network-management integration will enable customers to manage networks including Macintosh computers by using IBM's LAN Network Manager or, centrally, through NetView, IBM's network-management product.

• Macintosh computers and IBM's AS/400 systems will communicate more effectively for improved access to AS/400 data and application resources. Enhancements for the Macintosh will include terminal services as well as the more advanced client/server functions of the AS/400. Apple will also implement its Data Access Language (DAL) server for the AS/400.

On October 15, at the NetWorld trade show in Dallas, Apple announced the first product coming out of the Apple/IBM alliance—a new 4/16 megabit-per-second Token-Ring network adapter for the Macintosh. The new Token Ring 4/16 NB Card incorporates IBM's Token Ring technology. Token Ring is an IEEE standard for communication among personal computers, midrange computers, and mainframes in a local-area network.

The new Token Ring 4/16 NB Card is a bus-master card for Macintosh NuBus computers that complies with the IEEE 802.5 standards for Token Ring networks. The new card is software-compatible with its predecessor, the 4-megabit-per-second TokenTalk NB Card, which it replaces. This compatibility allows customers to upgrade the performance of their Token Ring network connection without sac-rificing their software investment. The new card comes with Apple's TokenTalk software and will be available in December in the U.S. from Apple authorized resellers. The suggested U.S. retail price is $999.

Stay tuned to the pages of *Apple Direct* and to the Apple/IBM Alliance folder on AppleLink (path—Developer Support: Developer Services:Headlines for Developers: Apple/IBM Alliance) for ongoing news.We'd also like to encourage all developers to join the Apple/IBM Alliance Discussion on the Developer Talk bulletin board. The discussion is going strong, and as always, we're very interested in what you have to say... (path—Developer Support: Developer Talk: Apple/ IBM Alliance Discussion).

Apple Announces O.C.E. at NetWorld

Besides announcing the first of its Apple/IBM-alliance products at NetWorld in Dallas last month, Apple also made clear at the conference its commitment to collaborative computing for all Macintosh personal-computer users by announcing an important enhancement to System 7, the Open Collaboration Environment (O.C.E.)

O.C.E. is an architecture that furthers user interaction and collaboration through personal computers. With it, users will have access to products and services that let them interact more closely with other people, regardless of location—at home, at the office, in the classroom, or on the move.

O.C.E. gives developers a standard but extensible set of tools, routines, and APIs that provide uniform directory, security, and public-key-based digital signatures, all of which extend and complement the IAC capability of System 7. You can use these services to create a new generation of collaborative applications that will go far beyond electronic mail.

As an open-system architecture, O.C.E. provides the ability to integrate existing and emerging alternative message transports, directory services, electronic mail, and emerging standards such as X.400.

Interfaces include the Open Messaging Interface (OMI) for mail and messaging services, which was developed jointly with Lotus Development Corp. to enhance the portability of mail-enabled applications to other computer platforms.

"Providing system-software services aimed at overcoming barriers to collaboration such as physical separation, nonsimultaneous availability, and data compatibility has been an important driving force behind our development work," says Gursharan Sidhu, Apple's technical director for Collaborative Systems Development. "For more than two years, we have actively involved a broad spectrum of third-party developers in the design validation of the system and look forward to their continued participation and innovative new products as we roll out these services."

Apple has already disclosed its system to key developers and will be announcing product details in early 1992. *Apple Direct* will report on them as they become available.

AppleLink Usage in the DTS Folder
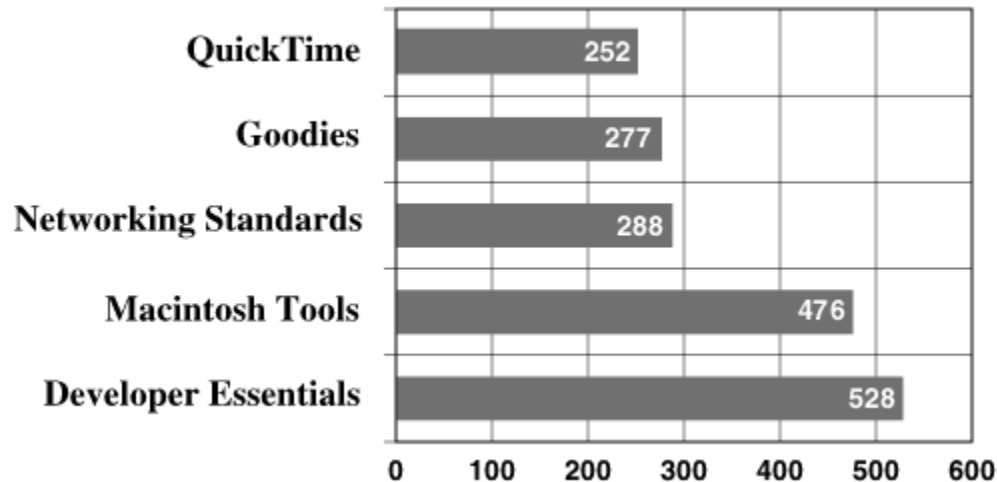
On average, the Developer Technical Support (DTS) folder on AppleLink's Developer Services bulletin board (DSBB) is accessed more than 1,500 times per week. Available to AppleLink users worldwide, the DSBB is a great self-support resource. The table above indicates the most-accessed subfolders within the DTS folder for a one-week period in September 1991. The AppleLink path for the DTS folder is Developer Support: Developer Services: Developer Technical Support. (The QuickTime folder is currently available to only U.S. and Canadian Associates and Partners, international developers, and Apple employees.)

Source: AppleLink Usage Statistics—September 1991

Developers Involved in New Product Intros

In its "Octoberfest" rollout of its 12 new products, Apple involved 90 third-party developers in its product intro co-marketing activities—including the *Apple Intro News* newspaper, press-briefing demos, and demonstrations at the product intros themselves. The list below shows developers whose products were featured in the introductions of the OneScanner, the PowerBook line, the Macintosh Quadra systems, the Classic II, and/or supporting software products. Apple plans to continue to involve as many developers as possible in its future product-introduction activities.

The next product introduction we'll be working on will be the QuickTime introduction early next year. If you have a QuickTime product you'd like Apple to know about, send an AppleLink message to COOL.APP. Be sure to indicate in the message header that your message is about QuickTime since Apple uses this Link address for other types of communications as well.

Abacus Concepts
Acius, Inc.
Adobe Systems, Inc.
Aldus Corporation
Alias Research
Articulate Systems
Ashlar
Aura Systems
Automated Printing Tech.
Bananafish Software
Beagle Bros
CD Technologies
CE Software
Chancery Software
Claris Corporation
Computer Care
Concentrix Technology Inc.
Contact Software
Dantz Development Corp
Data Description, Inc.
Dayna Communications
Daystar Digital
Digital F/X
E-Machines
ElectricImage
Endpoint
Envisio
Farallon
Fractal Design Corp
Frame Technology
GCC
GeoQuery Corp.
Global Village Communication, Inc.
Great Plains Software
Hewlett Packard
Imagine That, Inc.
Insignia Solutions
International Business Software

Intuit
Island Institute
Kensington
Liberty System
Lifetime Memory
Lind Electronics
Lotus Development Corp.

MacroMind
MacShack Enterprises/PowerCore
MECA
Microcom
MicroNet
Microsoft
Microtech
National Instruments
Newer Technologies
Optical Access
Oracle
Pastel Development Corp.
Pillar
Portfolio Systems, Inc.
PowerUp!
Quark Inc
Radius
Ragtime USA
RasterOps
Ray Dream
Reality Tech.
Shiva
Sigma Designs
Soft Solutions
Softsync/BLOC
Softview/Chipsoft
Software Ventures
Sonic Systems
Specular International
Spyglass
Storm Technologies
SuperMac
Symantec
Symmetry Corporation
T/Maker Company
Team Building Technologies
The Voyager Company
Timeslips Corp.
Traveling Software
Ventura Software Inc.
Virtus Corporation
Vital Images
Warner New Media/Time Warner
Wings for Learning
Wolfram Research

BSA Hotline, Lawsuit

The Business Software Alliance (BSA), a European antipiracy organization, recently announced a hotline service that concerned individuals can call to report instances of software piracy. Since starting the hotline service in May, it has received more than 300 calls. The hotline number is 39-2-5501-0413.

BSA also announced that its members have filed a lawsuit against Fiera di Milano Data in Milan, Italy, for the unauthorized use of software copies and recently reached an out-of-court settlement in a similar lawsuit against Montedison SpA.

In addition, Autodesk, a member of BSA, has petitioned the court in Naples to permanently enjoin Di.Erre Editoria Futura snc. from duplicating Autodesk's AutoSketch program and selling it under the name SuperCard 3.

These activities together represent a stepped-up effort by the BSA to stop software piracy in Italy. The organization expects to take additional measures before the end of the year.

The BSA focuses on piracy by not only end users but also computer dealers. Its members are Aldus, Ashton-Tate, Autodesk, Digital Research, Lotus Development, Microsoft, Novell, and WordPerfect.

You can reach the BSA at its U.K. office, at 071-491-1974. The U.S. office is in Washington, D.C., at (202) 737-7060.

Developer CD Nov. Highlights

Each month this column will be your guide to the latest Developer Series CD, telling you what's new and notable from month to month. To quickly access everything listed below, see the "What's New on This CD" folder (located at Dev.CD Vol. X:Start Here/Read CD License 1st:What's new on this CD?).

Here you'll find aliases to every new and updated package on the CD, including all those listed below. The November CD—*On a Clear Day You Can CD Forever*—includes the following highlights:

New Macintosh Developer Notes. Are you looking to tailor your product for one of Apple's newly announced CPUs? The Macintosh Developer Notes provide you with descriptions of hardware and software features; information about how they compare with those of existing CPUs; and expansion-card-design information on the Macintosh Classic II, Macintosh PowerBook 100, Macintosh PowerBook 140/170, and Macintosh Quadras 700/900.

Testing Tools. This CD features three new testing tools. Xap Handles allows you to fill disposed memory with bus-error numbers to detect the reuse of deallocated memory. Leaks dcmd helps detect memory leaks, and finally, the famous Mr. Bus Error has just been updated to EvenBetterBusError to help you catch those renegade NIL references.

develop **magazine**. The latest issue of *develop* is in the Periodicals folder. The November *develop* includes the following articles:

   • *Curves Ahead: Working with Curves in QuickDraw,* which is all about quadratic Bézier curves on the Macintosh, including using the curves from TrueType fonts.
   • *Validating Date and Time Entry in MacApp,* which describes a new MacApp class that provides robust and flexible entry validation.
   • *Macintosh Debugging: A Weird Journey into the Belly of the Beast,* which presents some very useful debugging techniques that every Macintosh developer needs to know about.
   • *Macintosh Hybrid Applications for A/UX* , an introduction to writing Macintosh applications meant to run under A/UX, explaining the basics and pointing out some potential gotchas.
   • *Print Hints From Luke & Zz: CopyMask, CopyDeepMask, and LaserWriter Driver 7.0,* which ponders the timeless question, How do you print graphics that use CopyMask and CopyDeepMask with LaserWriter driver 7.0?
   • *Be Our Guest: GWorlds and NuBus Memory,* which offers some tips on how to take advantage of NuBus memory for off-screen graphics.
   • Plus the usual Macintosh and Apple II Q&A.

Sample Code. We have two new tools for MacTCP 1.1 users. The MacTCP 1.1 Developer Tools provides you with source code and excellent example tools. MacTCP 1.1 DTS Header Changes provides improvements in the shipping header files. Also take a look at the November Snippets for a folder full of handy new code samples.

Electronic *Apple Direct.* The month's CD features a folder containing the contents of the October issue of *Apple Direct.* If you've routed last month's issue to someone else or want to print out an individual article to pass along, here's where to get access to the information that appeared last month. *Apple Direct* will continue to be archived on the CD each month.

Marketing Info. Take a look at the Marketing folder, where you'll find an archive of articles from past issues of *Apple Direct* that covers topics such as business, general marketing, international marketing, and market research.

The folder also contains international market guides, a list of international Apple contacts, new-product data sheets, and more.

More Updates. Among our updates, you'll find the Macintosh Graphics Primer, designed to initiate you into the fine art of Macintosh graphics. Also see the new version of Installer v32. This version no longer requires a System Folder on the installation-disk set. It provides sample scripts for users with MPW 3.2 and an updated MPW ScriptCheck tool as well as development guides.

And finally, be sure to take a look at the new Developer University stack for the October '91–March '92 list of classes.

Tell Evangelism About Your System 7 Application

To date, more than three quarters of a million copies of System 7 are in use by end users. And that number will continue to grow as System 7 rolls into the boxes of all new CPUs shipped by Apple.

Now that System 7 has shipped around the world, the focus turns to applications that take unique advantage of System 7 features. Customers and the press are clamoring to find out more about System 7-savvy applications that implement such things as publish-and-subscribe, Apple events, Balloon Help, the data-access manager, the sound manager, and other System 7 features.

Apple Evangelism is always looking for exciting applications that push the current envelope of user functionality so that we can give exposure to those applications that highlight the strengths of the Macintosh. Numerous opportunities also exist in Apple USA, Apple Pacific, and Apple Europe for developers who have gone the extra mile to add new System 7 functionality in ways that attract users. But we need to know about them!

Evangelism is currently trying to locate new and/or revised applications that take unique advantage of System 7 functionality. We are specifically looking for applications that will be ready to ship within the next few months.

To assist you in communicating your System 7 plans to Apple for possible inclusion in some of our promotional activities, an AppleLink account called COOL.APP has been created. Links sent to COOL.APP are reviewed by Evangelism and are held in strict confidence—you can rest assured that your proprietary product plans will not be communicated outside of Apple until after your product ships.

We ask those who want to take advantage of COOL .APP to fill out a form that requests specific information about your product and how it uses System 7. You can obtain the form on AppleLink (path—Developer Support: Headlines for Developers: Tell Us About Your Cool App). Just copy the form, paste it into a new Link, fill it out, and Link it back to us at COOL.APP. Although we can't promise inclusion in promotional activities at this point, the information you provide us will significantly raise your chances for participation. We encourage everyone who is adding System 7 functionality to their application to tell us about their plans.

Debug w/ DTS

At the upcoming Macworld Expo in January in San Francisco, the now-traditional DTS-debugging lab, where you can show your code to a live-and-in-person DTS engineer, will be available. Watch for more details in *Apple Direct* and on AppleLink.

Join the (Developer) Club

By Suzanne Dills

Share tips with other developers

New to Macintosh programming? Just ran into a coding problem in the middle of a hot project? Curious about new Apple development technologies? Fixed a bug and want to tell the world? Looking for other Apple developers? Well—join the club!

Now there are several developer organizations, ranging from global, multibenefit associations to local user-group programming special interest groups (SIGs) that offer resources to help with your Apple programming projects.

By joining, you'll receive valuable information through presentations and vendor demonstrations, volunteer hot lines, on-line bulletin-board discussions, technical tips-and-techniques sessions, newsletters, and contact with other developers.

As exciting new technologies and development opportunities emerge on the Macintosh, new development questions get raised. Interest and membership in these groups are steadily growing as developers discover a great resource for answers.

According to Eric Berdahl, president of ChiMoof, a developer group in the Chicago area, "Our presentations generally provide good heady stuff for the professional Macintosh software engineer of all levels of experience. It is not uncommon for members to bring in their stickiest technical problems and to get help from the group."

Bill Anderson, General Manager of the MacApp Developers Association (MADA), concurs, "Getting them the answers, or pointing them in the right direction, is one of the reasons this association is considered to be an important resource by so many developers."

Broad-Based Benefits. The support you get from a developer association or SIG can bring other benefits too. "We have found consulting jobs for programmers in our group. We have put programmers in contact with employers looking for Mac programmers," says Eric Shapiro, leader of the MacTechnics Programming SIG.

"We subcontract jobs to each other. We answer each others' questions concerning programming, contracts, copyright law, user-interface design, and so on. We borrow each other's hardware so we don't have to all purchase a full complement of equipment—scanners, digitizer cards, etc."

To keep the resources flowing, groups are always on the lookout for new members who both need and can offer answers to technical questions. And members don't need to be experts—they should just be willing to share.

Andrew Johnston, chairman of the Seattle dBUG Software Development SIG, observes, "Many developers are concerned that they may not know the toolbox manager well enough to make a presentation. We try to defuse this by asking them to volunteer for a section that they just recently were working on so it is fresh in their minds.

"Also, we encourage others in the audience to speak up if they are more familiar with a given toolbox call. We work hard at keeping the sessions informal, informative, and—above all—nonthreatening. After all, we are all in this together!"

All groups agree that one of the best benefits of developer organizations is that they offer members a place to meet and form working relationships with other developers. More than one project or partnership has resulted from meeting in these forums. Remember the networking power of the Homebrew Computer Club.

So join a club—or two. The following list features organizations that are focused on a specific Mac development product or environment as well as on SIGs that are part of a user group or larger computer association. Apple provides this list as an information resource only and does not endorse any of these groups.

PROFESSIONAL DEVELOPER ASSOCIATIONS

MacApp Developers Association. MADA promotes the use of object-oriented programming on the Macintosh and is of special interest to customers who are developing with MacApp. Membership is open to all development customers worldwide.

Benefits include the bimonthly MacApp technical journal, *FrameWorks;* technical-support forums on AppleLink and America Online; an annual international conference; meetings at industry events; and discounted software products.

Contact: MacApp Developers Association, P.O. Box 23, Everett, WA 98206; (206)252-6946. AppleLink: MADA.

SPLAsh. The Symantec Programming Languages Association is an independent user group dedicated to supporting users of Symantec's THINK language products around the world.

Membership is open to any development customer and includes a subscription to *THINKin' CaP,* a quarterly newsletter containing source-code tips; new class libraries; insights on the THINK class library; human-interface dialogue; and disks containing source code, utility programs, and patches. SPLAsh members are notified about special events and mini-conferences and receive electronic support on America Online.

Contact: SPLAsh Resources, 1678 Shattuck Ave., #302, Berkeley, CA 94709; (415) 527-0122. AppleLink: SPLASH.

Software Entrepreneur's Forum—Macintosh SIG. The SEF is a professional association for those who conceive, write, finance, and market computer software. Membership is open to all individuals and companies interested in these areas. Benefits include the Forum's SIGs, the SEF newsletter, and a listing in and a copy of the *SEF Directory of Members.*

The Macintosh SIG meets regularly to discuss Macintosh development issues, problems, and opportunities and features a variety of speakers, including many from Apple Computer. All meetings are held in the San Francisco Bay area. Contact: SEF, P.O. Box 61031, Palo Alto, CA 94306; (415) 854-7219.

MacIS. MacIS is a nonprofit organization of information-system professionals with a commitment to the Macintosh. MacIS provides a forum for member communication through conferences, a newsletter, and an AppleLink bulletin board.

It also provides Apple Computer with feedback on products, marketing, service, and support. Membership is limited to IS executives in organizations that have at least 100 Macintosh computers.

Contact: MacIS, 1111 E. Wacker Drive, Suite 600, Chicago, IL 60601; (312) 644-6610

Developer Council. This self-help group is open to any Apple UK developer. Membership benefits include a bi-monthly newsletter, technical information meetings, and bulletin board discussion areas.

Contact: Paul Smith, Telephone: Henley (0491) 574295; AppleLink: PGSMITH; Internet: DevCouncil@nan.co.uk.

Austrian Macintosh & Developer Association. AMDA distributes user and developer information through a newsletter and meetings. It has about 300 members, 100 of whom are developers. Contact: Klaus Matzka, Austrian Macintosh and Developer Association, Ungargasse 59, A-1030 Vienna, Austria. AppleLink: AMDA.

USER GROUPS

Apple HyperCard User Group. AHUG promotes the distribution of HyperCard information and also acts as an informal channel for communication by and to the HyperCard Development Team. Windoid, the AHUG stack newsletter, is available through AppleLink, user groups and their BBS services, and other on-line services. Monthly meetings are held on the Apple campus in Cupertino, with videotapes of meetings provided by the Apple User Group Connection for distribution to user groups worldwide.

   Contact: Apple HyperCard User Group, Apple Computer, Inc., 20525 Mariani Ave., MS 27-AHUG, Cupertino, CA 95014; (408) 974-1707. AppleLink: UG.AHUG.

Macintosh Scientific and Technical Users Association. The goal of MacSciTech is to provide members with a forum for the timely exchange of practical information on the use of Macintosh computers in a variety of scientific and engineering applications. Membership is open to any interested party, and a developer SIG is being formed.

   The group provides public-domain software, application-specific solutions, meetings at industry events, and technical education to its members.

   Contact: MacSciTech, 49 Midgley Lane, Worcester, MA 01604; (508) 755-5242. AppleLink: CONS.LAB.MFG; America Online: SciTechMac; Internet: scitech@ra.nrl.navy.mil.

PROGRAMMING SPECIAL INTEREST GROUPS (SIGs)

Several Apple user groups have Programming SIGs that offer assistance for developers. Some of the major user groups that offer this service are listed below. They offer member benefits such as meetings, hot lines, BBS services, and newsletters.

   To find other user groups with programming SIGs located in the U.S., call (800) 538-9696, extension 500.

   To locate developer groups within other countries, contact your local APDA or Apple developer support program.

   •*Apple Corps of Dallas Programming SIG,* 10919 Cromwell Drive, Dallas, TX 75299; (214) 357-9185. AppleLink: UG0040.

   •*Berkeley Mac User Group Programming SIG,* 1442A Walnut Street #62, Berkeley, CA 94709; (415) 849-9114. Apple-Link: UG0001. (Open to international membership.)

   •*Boston Computer Society Mac User Group Programming SIG,* 48 Grove Street, Somerville, MA 02144; (617) 625-7080. AppleLink: UG0037. (Open to international membership.)

   •*ChiMoof,* Eric Berdahl, Amoco Technology Company, 150 W. Warrenville Road MC F-2, Naperville, IL 60566; (708)420-3820. AppleLink: BERDAHL.

   •*Los Angeles Macintosh Group Programming SIG,* 12021 Wilshire Blvd., Suite 349, Los Angeles, CA 90025; (213) 278-5264. AppleLink: UG0007.

   •*MacTechnics—Ann Arbor Computer User Group,* Box 4069, Ann Arbor, MI 48106-4069; (313) 482-0501. AppleLink: UG0025.

   •*Seattle Macintosh Downtown Business Users Group (dBUG),* P.O. Box 3463, Seattle, WA 98114-3436; (206) 624-9329. AppleLink: UG0048.

   •*Washington Apple Pi Ltd.,* 7910 Woodmont Avenue, Suite 910, Bethesda, MA 20814; (301) 654-8060. AppleLink: UG0026.

Suzanne Dills is the APDA Marketing Programs Manager. If you have a favorite developer association or SIG that doesn't appear in this list, contact her via AppleLink at DILLS.S..

Dev. U. 3rd-Party Training

Apple's Developer University has recently authorized four third-party training organizations to offer instruction in select Dev. U. classes. Beginning this fall, this "extension program" makes it more convenient and cost-effective for developers around the country to receive the same excellence of technical training that has been provided by Dev. U. for the last three years.

The authorized third-party providers are EDS, Cornell University, University of Maryland, and University of Oregon's Portland Center.

The university sites offer classes through their extension and computer-education programs to students and faculty, other universities, and the general public. EDS will be offering training to in-house and corporate developers as well as to the general developer public.

These new sites add geographical diversity while maintaining the professional teaching materials and methods that have been the hallmark of Developer University education. The third-party instructors have strong programming backgrounds and have been trained by Developer University. The course materials utilize the latest educational technology and have been structured by Apple specifically for delivery by the third parties. The training sites are authorized to deliver training at their own facilities and to provide on-site training.

In the initial offering, two courses are available through the third-party trainers. They are Macintosh User-Centered Design and Macintosh Programming Fundamentals. A third course on object-oriented programming will be added later in the year, and more courses are being prepared by Apple for third-party delivery in the future.

You can obtain registration, schedule, and price information for classes by contacting the third-party providers directly at the following locations:

• EDS, 5228 Tennyson Parkway, Plano, TX 75024; (214) 403-5261.

• Cornell University, Cornell Information Technologies, 220 CCC Garden Avenue, Ithaca, NY 14853; (607) 255-4983 (contact Lyn Derr, Training Registrar).

• University of Maryland, Computer Science Center, College Park, MD 20742-2411; (301) 405-2956.

• University of Oregon, Portland Center, 720 S.W. Second Avenue, Portland, OR 97204; (503) 725-3055.

For additional information on other Developer University classes, contact the Developer University Registrar at (408) 974-6215 or send a Link to DEVUNIV.

Now available from Apple

The following list shows which APDA products have become available to developers within the last several weeks. To get a full listing of all APDA products, check the current *APDA Tools Catalog*. For new product announcements and the most up-to-date price lists, check AppleLink (path—Developer Support: Developer Services: Apple Information Resources: APDA—Tools for Developers).

If you're interested in the latest version numbers of all Apple system-software products, check "Latest Rev" in the Information Resources folder on the current Developer CD. Latest Rev will also tell you where to obtain these system-software products. In addition, the "Developer CD Highlights" section on page 3 of this issue tells you which new system-software releases appear on the current CD.

Apple Products

AppleCD SC Developer's Guide, **Second Edition,** $25.00 (A7G0023/B)
Apple ISDN Tools Kit, $35.00 (R0146LL/A)
BalloonWriter v. 1.0.1, $30.00 (R0103LL/A)
DAL Server for VAX/VMS* (9-track tape), $5,000.00 (B0576LL/A)
DAL Server for VAX/VMS* (TK-50), $5,000.00 (B0577LL/A)
MacApp v. 2.0.1 Bundle, $275.00 (M7022/E)†
MacApp v. 2.0.1 Bundle (without Introduction), $250.00 (M0805LL/B)†
MacApp v. 2.0.1 Update on CD-ROM Bundle, $80.00 (M0742LL/C)†
MacApp v. 2.0.1 Update on Disks Bundle, $120.00 (M0025LL/F)†
MacApp v. 2.0 Cookbook, $35.00 (M0299LL/E)†
Macintosh Classic II, Macintosh PowerBook Family and Macintosh Quadra Family Developer Notes, $25.00 (R0143LL/A)
Planning and Managing AppleTalk Networks , $18.95 (T0471LL/A)
Programmer's Guide to Apple Scanners, $25.00 (R0138LL/A)
Telephone Manager Developers Kit, $75.00 (R0145LL/A)

*All customers who purchased DAL Server for VAX/VMS v.1.2 will receive an automatic upgrade to v.1.3 at no additional charge.

† All customers who purchased MacApp v. 2.0 from APDA will receive an automatic upgrade to v. 2.0.1 at no additional charge. Customers who have purchased E.T.O. have already received MacApp v. 2.0.1.

Third-Party Products

C++ Primer Second Edition, $32.25 (T0362LL/B)
CommsTalk for HyperCard, $245.00 (T0458LL/A)
DeeMaker for DeeManager, $295.00 (T0468LL/A)
Learn C on the Macintosh , $34.95 (T0469LL/A)
Programming the LaserWriter, $24.95 (T0480LL/A)
Programming with AppleTalk, $24.95 (T0475LL/A)
System 7 Revealed , $22.95 (T0470LL/A)
The A/UX 2.0 Handbook , $26.95 (T0476LL/A)
The Annotated C++ Reference Manual , $41.95 (T0482LL/A)
The C++ Programming Language 2nd Edition, $34.50 (T0191LL/B)
Extending the Macintosh Toolbox , $24.95 (T0472LL/A)
THINK Reference v.1.0, $72.00 (T0467LL/A)

APDA TOP TEN SELLERS*

    1. E.T.O.
    2. DAL v. 1.3 Servers
    3.MPW v. 3.2 Bundles
    4.Macintosh Programming Fundamentals
    (self-paced training)
    5. MacTCP v. 1.1
    6. Macintosh Common Lisp v. 2.0B1
    7. MPW v. 3.2 Development Environment
    8. MPW C++ v. 3.1
    9. MPW v. 3.2 Update Bundles
    10. *Inside Macintosh,* Vol. I - VI + X-Ref

*as of 10/18/91

To place an APDA order from the U.S., contact APDA at (800) 282-2732. APDA's number in Canada is (800) 637-0029. And for those who'd like to call the U.S. APDA office from outside the U.S., the number is (408) 562-3910. Additionally, if you're outside the U.S., you may prefer to work with your local APDA contact. For a list of non-U.S. APDA contacts, refer to the "International APDA Programs" page in the most recent *APDA Tools Catalog.*

Empowering the User, Not the Program

By Tog Tognazzini

My wife, the Doctor, recently switched handling the data for a medical-research project she's doing from a popular power-user spreadsheet application to pencil, paper, and calculator. She is now more productive. Yes, the math is slower, but she is no longer spending 95 percent of her time trying to figure out what power-user feature she needs to get the spreadsheet to stop suddenly filling entire columns with number signs or how to "trick" her spreadsheet into building a graph with the important data on the x axis instead of in the legend. Is she alone in having these problems? No. They have become so endemic that *BusinessWeek*'s cover story for April 29, 1991, was entitled "I Can't Work This ?#!! # Thing!"

What is going wrong here? Somewhere along the line, many technology designers have lost track of the real goal: empowering our users. Whether it's for VCRs, computers, or clock radios, designers are adding every button, switch, and other power-user feature they can, in the mistaken belief that the true power of technology is to be measured in the number of specifications and controls rather than in their impact on people's lives.

The Macintosh computer was a counterforce to this mad race when it first appeared. In fact, it made technology so accessible, so simple, that people at first assumed that the machine was weak and underpowered. It was only after people began to see what they could accomplish with it that they recognized what a powerful beast it really was. But now, as our programs, operating systems, and computers continue to grow in power, our users have begun to feel less powerful and less in control. This is partly because the tasks have become more complex, but something else is leading to the increased difficulty of using our machines, something we need to address.

THE MYTH OF THE POWER USER

Many of us have stopped designing for anything resembling our real user population, in favor of designing for people remarkably like us. Yes, we learned years ago that we should not design software for ourselves. Instead, we were to seek out typical users from our target population. Many of us soon found, though, that dealing with a large number of typical users was a real bother, so we gradually zeroed in on a handful of people with whom we got along well, who would really play with our new software and give us the very best feedback. In other words, people just like us.

I came across one developer a year ago who had, as his sole target user, a guy so much like him that they could have been twin brothers. He'd designed his entire system around what this guy liked and didn't like. His software had more controls on it than the Space Shuttle. Worse, no one on the entire planet other than him and his user could make the application work.

Based on the demographics of programmers, designers, and product managers, it is of little surprise that our new target audience now too often consists of bipedal testosterone-based life forms between the ages of 18 and 39.

Yes, I said testosterone-based life forms. At the risk of offending certain politically-correct parties, there does appear to be a difference, however minor, between boys and girls. The overwhelming majority of power users I've come across are definitely male.

There are female power users, of course. I must have met four or five of them myself. And before everyone goes nuclear, let me explain what I mean by power user: A "power user" is a person driven by hormones to want complete and utter control of every function of his or her computer, even if having such control seriously degrades efficiency and productivity.

Tim Allen's character on "Home Improvement," the new ABC Tuesday-night comedy series, is the prototypic power user. He's the only guy in the neighborhood with a 120-horsepower lawn mower that will do 0 to 60 in less than seven seconds. It's not much use on his suburban lawn, but it makes a really neat noise when you start it up.

I know several guys at Apple who have so many weird public-domain extensions in their System Folder that virtually none of their applications run properly. Accomplishing the least task is like walking through a mine field. So what? As far as they're concerned, it merely increases the challenge! They wouldn't think of parting with any of their extensions. They even have the temerity to claim that the extensions make them more efficient.

My experience has been that most women do not "play around" with their machines. Rather, they see their machines as serious productivity tools, there for the express purpose of helping them accomplish their task. Women, in general, want to do their work, not "play computer."

A lot of men don't want to "play computer" either. Far from it. But the power users do, and they, right now, are having a grossly disproportionate effect on the direction of design. Our computers are becoming unapproachable to children, women, older men, and males between the ages of 18 and 39 who are not particularly enamored of machinery. In other words, we are beginning to design systems that will alienate the majority our current users as well as virtually all the "hold-outs" who have failed, thus far, to embrace our wondrous revolution.

DESIGNING FOR PRODUCTIVITY, NOT POWER

I went shopping for a battery-operated drill this month, eventually choosing between two models. One I will label a wimp drill: Tim Allen's character wouldn't touch it with a ten-foot pole. The other was a true power-user dream:

I wanted to buy a portable drill because I wanted to avoid having to drag around extension cords to use my existing power drills. (A battery-operated drill is a poor choice for a first drill.) Therefore, I was looking for

- Power
- Portability
- Accessibility
- Functionality
- Availability

The power-user drill had 40-percent more power than the wimp one. An important difference? Not really. My plug-in drills sport more than five times the power of the most powerful battery-operated drill. Thirty percent more may be an impressive claim on the side of a box; it makes little difference in practice.

Both drills offered portability, but the wimp drill was significantly lighter and better balanced, enabling a person to carry other tools at the same time with greater comfort.

The lowly wimp drill won hands down when it came to accessibility: The charger base screwed to the wall and the drill was simply to be dropped into it, whole, always there to be found when needed. The power-user drill, its battery, and its charger were all permanently loose and could be conveniently scattered all over the house.

The power-user drill had two superior areas of functionality: First of all, it had variable speed, a handy feature particularly when trying to start screws. Having a clutch helps but doesn't solve the problem. I'm pretty good at starting screws, so using the two-speed wimp drill wouldn't be as much of a problem for me as for a new user. This is the same paradox that the Macintosh Classic finally addressed: The most-casual computer users need the most-sophisticated computer and software. The $666 Apple I of 1976 was a fun toy for hackers but useless for the average user. It took a $1,000 Macintosh to finally put a usable tool into the hands of "common folk."

The power-user drill's second advantage was its ability to have one battery pack charging while the other one was installed in the drill and being used. All that would mean to me would be that I would have to

remove the battery every time I wanted to charge it. I would drag out my corded drill, were I to be doing so much drilling as to kill a battery pack.

Both drills charged their batteries fully in one hour. (The fact that the power-user drill's charger weighed more than twice as much didn't seem reflected in its capabilities, even if it made it seem more impressive.) But the lower-priced model also had a trickle charger to keep the battery ready to go over time, meaning that this drill would be available to me at all times. With the power-user drill, the battery I charged three weeks ago would likely be dead by the time I needed it. For all practical purposes, a battery-driven drill not used every day and lacking a trickle-charger requires at least one hour to drill a hole.

"Yes, but it's supposed to be used every day. It's a power-user drill!"

Stripping off supposed non-essentials because a power tool or software is to be used professionally doesn't cut it. Carpenters get sick. They go on vacation. They don't want to have to stand around for an hour charging their drill when they return. CAD-package users and word-processor users also go on vacation. They don't want to have to spend their first three days back trying to rememorize 1,400 esoteric commands that have taken the place of a well-designed visible interface.

Attention to detail could be found in every aspect of the smaller drill. Its clutch was a ring that wrapped around the front of the motor housing, like the focus ring on a camera, labeled so either left- or right-handed people could read it and then move it easily with a quick twist of the wrist. The clutch on the power-user drill was a small knob buried underneath the drill, requiring users to stop work, turn the drill upside down, and hurt their fingers trying to clack the knob into a new position (this for the convenience of the mechanical engineer who designed it, not the users who would work with it).

I ended up buying the wimp drill, because the members of this drill's design team were thinking about me and how this drill would fit into my life when they built it. I knew it would be there—available, accessible, ready to go with no fuss—and that I would be comfortable and efficient when using it.

That's what I want in software. I don't want heavy, clunky, half-thought-out "features" screwed into the side of lumbering software with all the grace of a badly hot-rodded car.

Let's get back to designing simple, functional, elegant software. And I don't mean weak and ineffectual either. Take a look at the new Vellum 3D. A snap to learn and easy to use, and it leaves a whole bunch of power-user packages in the dust.

We need to return to designing for our real users. We males in particular need to seek out people who are not just like us. We need to try ideas out on women, older and younger people, handicapped people, and, most importantly, people who are not power users.

Having design sites and beta sites is a great idea, but your sites should include people who really don't want to be sites, people who will be willing to be a site only if you put in more effort and offer more goodies. Otherwise you will be selecting solely for power users, because no one else in their right mind will play around with buggy software for free.

Wimp 3/8" Model

• Compact in size.

• "Regular" power.

• Two speeds.
• Single, built-in battery pack.

- Small charger.
- One-hour charge time.
- Built-in trickle charge.
- Five-position clutch.
- Reversible
- Wall-mount charge stand.
- 2 lb., 6 oz.
- $84.95

Power-User 3/8" Model

- Big, with popular assault-rifle styling.
- 40-percent extra power for those tough jobs.
- Infinitely variable speed.
- External battery pack: Use one while a second one is charging.
- Large, heavy charger.
- One-hour charge time.
- Who needs it—we're powerful!
- Five-position clutch.
- Reversible.
- Table-top charge stand.
- 4 lb., 6 oz.
- $159.95

GetNextEvent

The " " indicates the trade shows/events at which Apple Computer, Inc., is scheduled to exhibit as of press time. This list may be incomplete. If you have information about a show you want listed here, write to Apple Direct Event Calendar, 20525 Mariani Avenue, Mail Stop 75-2B, Cupertino, CA 95014. For further information, check the Events folder on AppleLink (path: Developer Support: Developer Services: AppleInformation Resources: Developer Events).

December 3 through 6
Cause '91, Anaheim, CA
Contact: Debbie Smith
(303) 449-4430

December 9 through 11
Dexpo West '91,
Anaheim, CA
Contact: Miller Freeman Expositions (617) 232-3976

January 12 through 15
Macworld Expo,
San Francisco, CA
Contact: Mitch Hall & Assoc.
(617) 361-8000

January 17 through 19
NAMM-Nat'l Assn. of Music Merchants,
Anaheim, CA;
Contact: NAMM
(619) 438-8001
January 22 through 24
Uniforum,
San Francisco, CA
Contact: PEMCO
(800) 323-5155

February 12 through 14
GTC Southwest,
Austin, TX
Contact: Yubi Wahlquist
(916) 452-4902

March 18 through 21
SPA, Seattle, WA
Contact: The Conference Dept. of SPA
(202) 452-1600

April 8 through 10
Macworld,
N. Y., New York
Contact: Mitch Hall & Assoc.
(617) 361-8000

April 13 through 16
SCOOP West
Contact: Suzanne Dinnerstein

(212) 274-0640

April 23 through 25
The Mac Show, Tampa, FL
Contact: Libby Barland
(215) 540-9111
Fax: (215) 628-0882

June 1 through 3
  European Software Conference
Cannes, France
Contact: The Conference Dept. of SPA
(202) 452-1600

September 30 through October 3
  SPA, Washington, D.C.
Contact: The Conference Dept. of SPA
(202) 452-1600

Comparison Advertising
What To Do Before You Start

by Dee Kiamy

"What we say about ourselves is self-digesting. What we say about others starts a battle..."

H. G. Lewis,*Catalog Age*, 4/90

In the almost-anything-goes domain of U.S. advertising, this quote couldn't be more true. Comparison advertising, which for two decades has been on the rise in other industries (hence the cola wars, the analgesic battles, the long-distance carrier confrontations, and so on) has spread to the computer trade.

In a world of seemingly similar user interfaces and operating systems (we all know that battleground), a plethora of personal productivity aids, and so on and so forth, the intense competition for customer attention has made this market seem ripe for some of the more extreme advertising tactics used in other markets.

Comparison advertising—in which one product is explicitly or implicitly pitted against another— has become more prevalent in the U.S. as society has become more accepting of the practice. However, as in most potentially inflammatory situations, there's a large chasm between can do and should do. The wisdom of "knocking copy," as it is known in Europe, is knowing when and how to wield this powerful weapon in the digital cold war.

The Federal Trade Commission defines comparison advertising as that which compares brands on attributes (or price) that are objectively measurable and which identifies other distinctive information about the products or companies.

Generally speaking, it takes several forms, such as ads that make direct comparisons with an identified and named competitor (my dog is bigger than Billy's dog); ads that make comparisons that imply who the competitor is (my dog is bigger than the brown dog belonging to a boy who lives down the street); those that compare the advertiser's product with a supposedly nonexistent brand, such as Brand X (my dog is bigger than Dog X); those that make comparisons with all competitors as a group (my dog is the best dog); and those that compare your product with a previous version of that product (my dog is bigger than he was before—and bites less).

Some kinds of comparisons are obvious (such as when you name or clearly characterize a competitor), but others are less so. Telltale signs of the less obvious kinds are the use of comparatives (*more, less, bigger, better, faster, easier, cheaper,* and the like) and superlatives (*most, least, biggest, best,* and so on).

The temptation to do this kind of advertising is seductive, and the desire is very natural—especially if you've hit on a product attribute that blows away the competition. In a fiercely competitive industry of many parity products and products that change quickly, the desire to point a finger at the other guy and tell why yours is better than his—via comparison—can be overwhelming. It can also seem to be the most effective way to hammer your message home to buyers.

WHAT THE EXPERTS SAY

But is comparison advertising effective? The "experts" are torn. For example, in the October/ November issue of the *Journal of Advertising Research,* researchers explored the possibilities that comparison advertising has a positive impact on the competitive environment; that it results in better products, lower prices, and a more educated consumer; and that it is a strong positioning tool.

The other side of the coin is that it could confuse and mislead consumers, give free advertising to competitors' brands, create legal headaches, take unfair advantage of the competition, and change public opinion about advertising and business as a whole.

There is little empirical evidence that shows that this kind of advertising is superior to other tactics. It does, however, seem to be more effective in certain situations than in others.

Some research has shown that a well-executed campaign may be effective if you are trying to establish a new brand against entrenched rivals or if you're competing against lots of similar products in a hot market.

Even in such situations, be aware that it's just as easy to create an ineffective comparison ad as it is to create an ineffective noncomparison one. So, merely electing to do this kind of advertising isn't enough; you have to do it right and do it well.

So there's a time and place for comparison, as is true with most practices; done with tact and style, it may sometimes work in an editorial context or even in direct mail. But in the domain of advertising, where there is often no room for explanations or details, you should have especially good business reasons for choosing this tactic—not just for the tempting "easy out" it seems to provide, not just because your copywriter or agency couldn't provide an alternative or because it's the most obvious option or because you really are so much better than the other guy.

SEVERAL STEPS

To help you decide whether this course is in your best interest, here are some steps to take before you join the battle:

Examine the alternatives. Before you opt for this genre of advertising, you owe it to yourself to evaluate the alternatives. Of course, you're always looking for the best way to meet your business goals. So ask yourself again why you feel that comparison advertising is the best solution. Does the situation truly demand it, or is it a response to that seductive impulse? Why do you think it will work better than the many available alternatives?

What are those alternatives (such as doing image advertising, making noncomparison claims, or making your comparisons in another medium such as in editorial or direct mail)? Will it accomplish something you can't achieve by using some other cleverly devised communications method? What effects will it have on your readers as well as on your competitors?

Will you be giving free exposure to a competitor and, in doing so, possibly confuse readers (for instance, after they see the ad and are standing at the store shelf trying to remember which product claimed to be better)?

There are some less risky alternatives. But if you feel you must use this tactic, "softening" a comparison by not naming the other guy (and characterizing him as generally as possible) can entail fewer hazards. Also, you could draw comparisons between the product you offer now and a similar one you offered before ("We were great before, but now we're even more marvelous" or "new, improved"). You can also make a price claim against yourself ("We should be selling this for $XX, but we're offering it to you for less").

Get some top-notch legal advice. Even if you feel that comparison advertising might be superior to other types, it presents a greater risk. If you bring out the big guns, be prepared for the possibility of a dispute. This is much more likely with this kind of advertising than with most others.

Doing comparison advertising is like publicly throwing down the gauntlet; it is a clear invitation to the competition to minutely scrutinize the claims you are making about both your product and theirs. All it takes is one very expensive dispute (and most are) to gobble up the profits you hoped to gain from your advertising.

Under U.S. law, any company that "misrepresents the nature, characteristics, qualities, or geographical origin of his or her or another person's goods, services, or commercial activities" is a potential target. What this means in practice is that if you make a claim about another company's product or your own product, alone or in comparison, and it is misleading or false, you open yourself to a potential suit.

So when you opt to make a comparison, an alarm should sound when you are scouring the list of possible claims to make. Not that you would purposely tell lies about your product or a competitor's, but in the daily frenzy, it's surprisingly easy for study findings, for example, to get inadvertently skewed when being translated from statistics into advertising copy—that is, claims. In all cases, but particularly so when you are doing comparison advertising, take the extra time to assure that the data on which you are basing

your claims is solid, that the methods used to gather the data are likewise well grounded, and that the copy accurately reflects those findings.

Otherwise, the price tag can be high. If challenged, not only can your advertising be "pulled," but if the challengers win the suit they also have a chance to be awarded some of your profits (up to three times their damages).

Add that to legal fees, which can quickly mount—and to the possible negative press you may get—and it can be a devastating blow, especially to a smaller, less established up-and-coming developer. Even if you win, you've spent a lot of money, effort, and time. So you have to ask yourself, "Is it worth it?"

The best course, then, is to get professional advice that can help you understand what can safely be said and that can assist you in preparing your ads in a way that reduces your chances of being contested.

Examine the psychology of the situation. When you opt to do comparison advertising, you begin to involve the reader in your advertising in ways that other kinds of ads don't. Some readers are turned off (even repulsed) by comparisons, and even these days, some see it as being unethical. Period. This is especially true if your product or company is or is perceived to be a major player or a "big guy" in the market, and you appear to be "beating up" on a little guy.

Also, readers who see comparison ads for a variety of products, all in the same category, are forced to decide why you are making the claims and which ones are really true. This is especially true if the competition accepts the challenge and takes counter-measures—with a comparison campaign of its own. It can confuse and even frustrate customers, who may turn off altogether.

Confusing your customers is a distinct possibility (even if you're the only one on the battlefield). For instance, I once had a conversation with my nephew, a hardware designer and part-time actor. One day a few years ago, we were discussing some TV ads; I was trying to understand which ones he thought were good and why. One point in the discussion stopped me cold.

"Aunt Dee," he said, "I really think the Michael Jackson ad for Coke is cool." The ad was actually for Pepsi. "Oops...," said my nephew. Pepsi had spent a lot of money to leave him with an impression about Coke (which begs the question regarding the efficacy of using celebs as spokespeople, a discussion unto itself).

Scope out the international situation. Both social conscience and the laws that govern the practice of comparison advertising vary among countries.

If you're preparing a campaign for use outside your own country, make sure that comparisons are allowed there, and under what conditions. For example, not all countries allow other companies to use your trademark in their advertisements. And in the EC, only a handful of member states currently allow comparison advertising in any form.

Even if comparisons are permitted, solicit the advice of a knowledgeable professional in that country about whether the practice is socially acceptable. For instance, in Japan, where comparison advertising has been legal since 1987, doing it is a social faux pas that can smear your company image and kill your product. And in France, the tone of advertising is much different than in some other countries: The hard sell is virtually unknown in advertising there.

Test your ad. Since this kind of advertising is often more risky than other options, getting customer feedback up front, before you spend the megabucks to run the ad, is paramount. Ad testing can be a valuable opportunity to get a reading on its potential effectiveness and can be a barometer of customer acceptance of comparison tactics.

You don't have to spend a lot of time or money; focus groups can help reveal whether your audience might harbor some prejudice about this kind of advertising and can also point to whether your ad is potentially effective.

As you review research results, keep in mind what I mentioned before:

A badly executed comparative ad can be as ineffective as a poorly executed noncomparison one. So structure your analysis so that you'll be able to pinpoint what the weaknesses of the ad are and why.

THINK TWICE, THEN THINK AGAIN

Many veteran marketers continue to contend, with good reason, that a truly good product, well-targeted and well-marketed, should be able to stand on its own merits. In most cases, that's probably very true. But if at some point, you feel that the time and circumstances truly demand that you "knock copy," think twice, think again, and then if you must, enter the battle with your eyes wide open.

Dee Kiamy is a communications and marketing consultant in San Jose, California. She also edits a variety of columns and features for Apple Direct.

The Anatomy of Good Customer Support

by Marsha Terry,
WordPerfect Corporation

It's 7 A.M. Mountain time in the U.S. and the phones have started ringing. On the other end of the lines: a secretary in Des Moines, a student in New York, a lawyer in L.A., a professional writer in Atlanta. Each is looking for a solution to a perplexing word processing problem. Thus begins a typical day in the life of WordPerfect customer support, in which we handle an average of 16,500 calls that each last an average of eight minutes. During the course of the day, almost 800 operators staff the 33 toll-free numbers with 487 incoming lines.

Reaching this level of service certainly didn't happen overnight. It was an evolution that began when cofounders Bruce Bastian and Alan Ashton chose to support WordPerfect products—from the moment the corporation opened its doors in 1979. In the early days, they were the ones taking customer S.O.S. calls. However, they soon realized that the task was so big that the existing staff could either program or do support work. So they hired five or six operators, who, with only a manual and a little training, started answering the increasing number of calls. Networks hadn't yet been invented, so operators shared information by circulating memos. Eventually these memos became entire books that filled several filing cabinets—and then networks, E-mail, and a fast text-retrieval system came to the rescue.

When sales began to skyrocket, support operators were sometimes hired at the rate of 20 per week. Phone lines were added as quickly as possible after an extraordinary onslaught of calls literally began jamming the system of toll-free phone lines throughout the state of Utah!

THE SUPPORT MISSION

Support can do much more than simply assist customers. It can also sell products. I once overheard a conversation in a local computer store. A customer asked a sales rep's opinion about which word processor to purchase. The rep's advice: "With this product, you get a word processor. With WordPerfect, you get a word processor and an 800 number."

It's not hard to guess which product the customer purchased. When a customer faces the prospect of taking home a new product, high-quality toll-free support can be the mitigating factor. A satisfied customer spreads goodwill better than any magazine article or favorable review—and generates revenue for you.

If you create your support department with the correct philosophy, the sky is the limit. Successful customer support springs from a way of thinking, an attitude. Just creating a support function isn't enough; actually, that's the easier part. A support department is likely to have little impact on your company's success if it isn't built on a distinctive attitude about what customer support is supposed to do for you and your customers. So the foundation of a good support program is a well-defined goal or purpose that is meaningful to the company as a whole and that is well understood and articulated throughout your ranks. Once you understand, conceptually, what you want your support effort to accomplish, then you can plan an implementation strategy that puts your philosophy into practice.

Here's our mission statement:

"The purpose of support is to *satisfy* our customers and *improve* our products. We courteously and efficiently *teach* our customers how to use our programs effectively. We do not bluff answers, we act in a *friendly* manner to give accurate and timely solutions. We *follow through* with our customers by keeping our commitments."

Certain words stand out, and not by accident: satisfy, improve, teach, be friendly, and follow through. These few words sum it all up. They form the basis of our entire customer-support program.

SATISFACTION—BY THE CUSTOMER'S STANDARDS

How well you satisfy customers' needs is the measure of a good support program. It's not enough to just handle customers; to be successful in the long run, you must truly satisfy their needs—which goes way beyond just taking calls and disposing of them in some manner.

Many companies I've needed support from have lacked two important things: good troubleshooting techniques and a friendly attitude. Yes, they listened to my problem. But often that was where the communication ended. It seemed as if they automatically (too quickly) knew what was wrong and offered me a "quick fix." It was very clear that the operators were just checking off a list of questions to ask (no personal touch). If my questions made them stray from the list, they became lost and unable to answer my questions (lack of troubleshooting). To put it simply, I was not satisfied.

How can you tell when a customer is satisfied? There are a lot of ways to glean the information. During actual support calls, one way of assuring that the customer is satisfied is to restate the question before offering a solution.

This has several advantages. It saves the customer's and your time, because you discern what the customer is really asking. It also reduces phone time and makes the customer realize that you care enough to find out the true nature of the difficulty.

For example, three callers who ask, "How do I crop a graphic?" may really be asking three different questions. One customer may need to know how to size the graphic to fit a certain space, another may want to know how to "trim" one side of the graphic, and a third may just want to move the graphic to another location.

Restating the question narrows the possibilities and helps you define what the customer really needs. Take notes during the call, restate the key points covered, and verify that you answered all the questions.

Here are some key techniques we try to use during all calls to help assure satisfaction:

•*Listen*—Focus on the customer. The most important thing at this moment should be what your customer is saying.

•*Restate*—"So your problem/ question is...?" Wait for a response; if it isn't yes, listen some more and try again.

•*Gather information*—Ask appropriate questions. Get the information needed to solve the problem. Mull over all the factors that relate to the problem.

•*Troubleshoot*—Give exact instructions. Being vague or assuming that the customer knows the computer as well as you do can increase frustration levels for both of you.

•*Use resources well*—Know which are available and how to use them.

•*Make a decision*—Don't drag out the call. When progress stops, decide what to do. It is better to research the question and call the customer back than to bluff.

•*Close the call—Make sure the problem is solved.* Check your notes to make sure all the points have been covered. End with a smile in your voice.

Another thing we do to determine if callers are satisfied is to call them back sometime after the initial contact. Perhaps a week later, we call to ask some simple open-ended questions that give customers a chance to express themselves and whose answers are a good barometer of their satisfaction: "Were you satisfied with the service you received?" "Was your question answered?" We've gotten the most useful information by asking questions that require some thought on the customer's part.

Take notes. Reiterate what you think you've heard to verify it, and let the customers know that they are important to you. You can even finish by giving customers a tip or asking if they have any other questions. You took some of their valuable time; offer something in return.

SELF-IMPROVEMENT

Customer support is probably one of the best ways through which a company can gather information to help improve a product or how it is marketed.

Each customer has a reason for calling. The questions themselves are important, but the reasons they are asked can point to some excellent opportunities for self-improvement.

By determining the real reason for the question, you can discern important things such as whether the manual is clear about how to use a certain feature or if users have difficulties using a feature the way they thought it was designed to work.

If you track this information, then, in a sense, each customer has a direct voice to a programmer. And if your tracking methods are accurate, you can use the information to tailor your products to customers' needs. We use three tracking methods, each with a specific purpose. Every customer support team creates a *Common Call* list to record how many customers call with the same question.

If a question is popular enough, it can be placed on a *Hotlist,* an extension of the Common Call list that is used in more ways.

For example, programmers use it as a development tool, because it allows them to see exactly what users want and how many want it.

When a customer's problem can't be solved by phone or can't be duplicated, we create a *Software Trouble Report* (STR). It is forwarded to a specialist who becomes responsible for solving the riddle.

Each specialist is assigned a specific feature or area of the application. By having specialists handle STRs, we reduce duplication of effort and can pinpoint exactly how many customers have a specific question. This may all seem a bit overwhelming, but remember —we created our department over a long period. We started with STRs, and added the Common Call list and Hotlist as the department grew.

TEACHING WITH
PERSPECTIVE

Teaching customers how to use your product is probably one of the best goals a quality support team can strive toward. However, doing this isn't as simple as it appears. Good technical support teaches the customer how to use your product *in the way the customer wants to use it,* not the way the manual dictates.

Most users don't have the time to hack away to get a program to work. The extra minute it may take you to understand how a customer wants to use a feature—and then using that perspective to teach the customer—is well worth it. (A convert can be a convert for life and will sing your praises to anyone who will listen.)

Our way of teaching customers entails nothing special; all we do is ask questions to find out how and why they use our product and then tailor our teaching methods accordingly.

PLEASE...
DON'T HANG UP!

Make the customer your friend. It doesn't take much effort, and a cheerful attitude goes a long way. The way an operator answers the phone—the attitude transmitted in the first response—can set the tone for the entire call and perhaps for that customer's entire relationship (or lack thereof) with your company. If you think your voice doesn't convey your attitude, just think about some of your own telephone habits. Have you listened to yourself lately? Do you sound like a programmed machine or like a friend? Do people wait for your beep so they can leave a message?

Make your personal greeting cheerful, and from the very beginning let the customer know you are "alive." When you talk to your friends, don't you call them by name? Give your name during your greeting, and get the customer's name sometime during the call—and use it. Most greetings last four seconds or less. What you say in those few seconds and how you say it can make or break your relationship with the caller.

Being friendly can start even before an operator answers the phone. How many times have you called a number only to hear, "All our operators are busy. Please stay on the line, and you will be helped in the order your call was received"? After a few minutes have passed with no human response, you start to wonder if they all went to lunch and forgot to tell anyone—or if you just are number one-thousand-and-one in the

queue. Maybe the hold music puts you to sleep. No matter; your time is being wasted. You are attached to this machine until someone answers or you hang up.

A little more than a year ago, we decided to make our phone system a little more friendly. We hired "hold jockeys." So instead of hearing the drone of canned music, callers who are put on hold hear live jockeys who play the latest music and give live reports about how long the current wait is to reach particular customer-service groups. They also tell you about any new products or programs and give you tips about how to prepare the questions you want to ask.

FOLLOW THROUGH

In addition to getting a customer's name, get a phone number so you can call back if you have more information. (I have hung up more than once and realized that I had forgotten to tell the customer something.) One day we were joking about doing support on a higher plane on which you would know and be able to solve customer problems before anyone phoned. Short of being able to do that, we rely on follow-through. By calling customers back, we are in essence on the line with them before they have a question.

Because operators keep track of their calls, they choose which customers to call back. Team leaders also call customers back at random to gather information for improving our service. Remember, a callback is valid only if you ask, "Can I help you with anything now?" This is another way to add personalized service to your support.

OUR MAGIC
NUMBER IS 22

To put these pieces together into a working whole, you must have the right kind of people answering the phones (see the sidebar "The Making of a Good Support Operator"). The structure of your support organization is also paramount. Our organization has changed over the years to meet our growing needs. Currently, the department is divided into teams, each with a team leader and up to 22 operators. Each team answers 11 incoming toll-free lines, so only half the team is answering phones at one time. The others can be studying, attending training classes, or calling customers back.

Why 22? There are 22 working days in an average month. With a 22-member group, a team leader can meet with one operator each day. We also conduct weekly team meetings to discuss topics that concern the entire group. Because the groups are small, team leaders know their teams well and can give each member individualized attention. The same personalized service you give your customers is important to offer your operators, too.

I urge you not to try to create a customer support department like this overnight. It takes time and a lot of effort. We started with toll-free lines, but there are other choices; a 900-number service line or other toll-line is better than no support at all.

Start small. Install only enough phone lines to track customer interest. Use any new technology available. For example, automated fax machines can give customers answers to commonly asked questions. Phone systems can track each call and indicate what your peak times are. Then as you uncover customer needs, adjust as necessary.

LIVING COLOR

Supporting your products can be a very colorful experience. We all have heard of the customer who couldn't find the "Any" key on the keyboard. And how about the customer who wanted to know if her cat could possibly have created the new file that had "magically" appeared on her hard disk?

One of my first support calls was from a customer who wanted to know where the paper came out of the computer; he didn't know he had to buy a printer. The 1-800-Mac-Help line (our first Mac customer-support line) was the most exciting of all. Before the phone number was assigned to WordPerfect, it had belonged to

a personal-crisis help line. Needless to say, we changed the number after receiving a few desperate phone calls having nothing to do with computers! But overall, my favorite calls are from customers who apologize for calling. My response to them is, "I wouldn't have a job if you hadn't."

Marsha Terry is the Macintosh Customer Support team leader for WordPerfect Corporation in Orem, Utah.

The Making of a Good Support Operator

Over the years, WordPerfect has found that standard hiring practices don't always work well when hiring a support operator. Not everyone can do phone support well. It's a special talent. Support operators don't deal face-to-face with customers; they must talk through a wire without the advantage of using body language, gestures, or facial expressions to help convey their meanings. All they have are their voices and vocal mannerisms.

Even some of the best teachers and sales representatives would flounder in such circumstances. And a degree in computer science doesn't automatically make someone a qualified support operator.

Some candidates may well be the most intelligent people who have ever crossed your doorstep, but without the ability to communicate information over the phone in a way that is meaningful to callers, they will be completely useless in a support department.

Those who have never given technical support over the phone may have a hard time understanding this. But think of it this way: Imagine putting a novice user in front of a computer and helping him create a fully formatted ten-page document. But here's the catch: You have to give instructions from the next room.

To help gauge whether a job applicant has this special skill (it probably won't be evident on a résumé), during the interview process we often have the candidate "take a call." We give the applicant a few pages of basic support information and then simulate a customer call. The reaction to the call and the mannerisms portrayed during the conversation give us some good indicators of what an operator's behavior might be in a real situation. We listen not only to the words spoken but also to the tone, phrasing, and logic used during the call.

After candidates have passed the initial interview, we test them in an eight-hour lab for basic DOS, Macintosh and WordPerfect knowledge. If it goes well, the job may be offered.

A new hire first becomes a trainee. We give trainees three weeks of special training covering phone etiquette, phone skills, specific product information, and where to look for answers. They begin listening to calls with a "model" on the first day of training. The phone model is an experienced support operator who has the skills we would like all operators to have. The first few times in the model system, new operators only listen to calls, but by the end of the first week, they begin to trade off every other call with the phone model.

The model is never the same; a trainee works with many during the training period, because we like new operators to experience different working styles to help them develop their own. The trainers continually assess the abilities of each trainee and eventually send them to teams.

SPA Releases Channel Guide

The Software Publishers Association (SPA) recently released its *U.S. Software Channel Marketing Guide,* Book I, which covers current distribution trends and channel-development options, and analyzes each segment of the U.S. software-distribution system.

Book II, which will be released in 1992, will cover such topics as channel selection, contract negotiations, channel conflict, the cost of channel marketing, and success stories. Books I and II are available together in a single package at $495 for SPA members and $995 for nonmembers.

The guide is written by The Ambit Group, a San Francisco-based marketing and channel-development company. For more information, contact the SPA in the U.S. at (202) 452-1600; fax (202) 223-8756; or in Paris La Défense at 33-1-4692-2703.
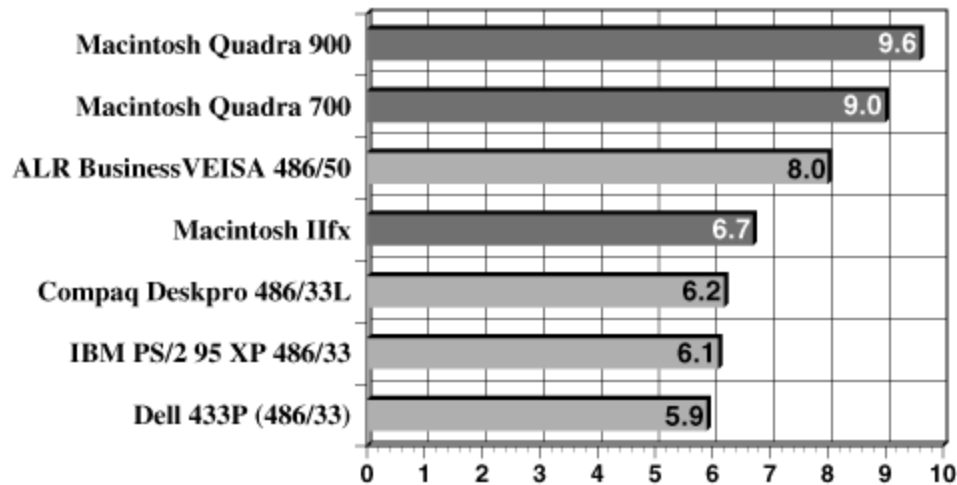
It Shipped

Through the "It Shipped" program, you can announce new and revised third-party products in *Apple Direct.* It Shipped listings are also made available on the 3rd Party Connection AppleLink bulletin board. You can obtain an It Shipped application by downloading it from the AppleLink network. (AppleLink path—Developer Support: Developer Services:Apple Information Resources: Developer Program Information: It Shipped! Program). Or, contact Todd Luchette at (408) 974-1241 (voice) or (408) 974-3770 (fax). Once you've completed the application, send it to Engineering Support, Apple Computer, Inc., 20525 Mariani Ave., M/S 42-ES, Cupertino, CA 95014; Attn: It Shipped Program. Or send it via AppleLink to IT.SHIPPED.

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Product	Publisher (Version)
U.S.A.	
ag group, the	EtherPeek (1.4)
	Net Watchman (1.1)
BananaFish Software	ThoughtPattern (1.2)
Cheshire Group	PinPointXT (1.0)
Coconut Info	Macinvoice (1.01)
Database Associates	Ordertrak (2.0)
E.E.S. Companies, Inc.	Alpha Page (1.0)
	Merchant's Edge (1.0)
Excel Software	MacAnalyst/Combo, MacAnalyst/Expert (3.1)
	MacDesigner (3.2)
GrizzlyWare	Best Foot Forward (1.0)
Lind Electronic Design Co.	Automobile Power Adapter (APA-SW)
MentorPlus Software, Inc.	FliteStar (1.0)
Meyer Software	On The Air (1.0)
nVIEW Corporation	Specta Plus (n/a)
Reata Software, Inc.	HeapQC (1.0)
Saner Software Inc.	ShrinkRapt (2.0)
Shulman Software Co.	VirusBlockade II (2.0)
	VirusDetective (5.0)
Slippery Disk	Student's Dreamtools (2.0)
	Writer's Dreamtools (2.0)
Teknosys Inc.	Help! (1.0.0)
Toyogo, Inc,	NEMESIS Deluxe Toolkit (5.0)
	NEMESIS Go Junior (5.0)
	NEMESIS Go Master (5.0)
Canada	
Caravelle Networks Corp.	Mac-to-Mac NetWORKS (1.0)
Image Club Graphics, Inc.	Digit-Art Volume 21 "Fabulous Fifties" (n/a); Digit-Art Volume 22 "Business Cartoons" (n/a);
	DigitArt Volume 23 "Border & Ornaments" (n/a); newFaces
	Summer 1991 FontPak (n/a); TrueType Starter Pak One & Two

Macintosh Quadras First in Ingram Tests

System	Rating
Macintosh Quadra 900	9.6
Macintosh Quadra 700	9.0
ALR BusinessVEISA 486/50	8.0
Macintosh IIfx	6.7
Compaq Deskpro 486/33L	6.2
IBM PS/2 95 XP 486/33	6.1
Dell 433P (486/33)	5.9

Ingram Laboratories recently benchmark-tested a variety of personal computers from Apple, IBM, Compaq, and leading clone vendors. The new Macintosh Quadra systems outperformed all the other systems Ingram tested, including a system based on the Intel 486 running at 50 MHz. The benchmark tests were designed to simulate typical usage (such as opening files, scrolling, and printing) with the following Macintosh and Windows 3.0 applications: Word, Excel, PageMaker, PowerPoint, WingZ, Persuasion, and Illustrator. Ingram measured the amount of time required to execute each test and then calculated the overall speed of each machine as a multiple of the slowest machine tested (in this case, the IBM PS/1). The chart above shows Ingram's ratings of the seven fastest systems tested. We'll publish a full copy of the Ingram report on the December Developer CD.

Source: Ingram Laboratories, 1991

APPLE DIRECT

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