Inside this issue

THE MACWORLD Technology and Issues Conference offers information about developing products for Europe.

Q&AS HAVE BEEN transformed into Q&A Tech Notes and integrated with other Technical Notes.

NEW INSIDE MACINTOSH books, new Q & As, and new software tools are among the highlights of this month's Developer CD, *A ROM With a View.*

WE WANT YOUR OPINIONS! This month's Editor's Note asks you to help design the "new" *Apple Direct.*

APPLE JAPAN becomes a separate geographic region, and Apple joins with a Singapore research institute to develop technologies for Asia.

IT SHIPPED! **LISTS** new and updated third-party products that shipped in August 1992.

APDA'S "HOT PRODUCTS" for this month are new site licenses for Apple development tools.

WHAT DOES THE invention of the army knife have to do with elegant software design? Read this month's Human Interface column.

BUSINESS & MARKETING

A MERCHANDISING consultant offers ten guidelines to help you design effective product packaging in this month's Marketing Feature.

(see)

TAKING A SINGLE product into multiple markets—a software developer describes the challenges and rewards of cross marketing.

(see)

MARKET RESEARCH QUARTERLY

THE MARKET FOR productivity software—word processing, spreadsheet, database, and integrated "works" packages— will double by 1996, according to International Data Corporation. You can read their segment-by-segment breakdown of this important market in this quarter's MRQ.

(see)

Apple International Developer Resources

Apple provides a great many resources for international developers. If you're developing for markets other than the United States, these resources can help you plan, design, and market your products. Most are print-based; many are available electronically on AppleLink or the Developer CD Series.

  We'll publish this list quarterly with updates about both Apple and non-Apple resources. If you can recommend books, periodicals, product guides, on-line services, courses, or other international development resources, send an AppleLink message to APPLE.DIRECT.

  Apple Direct has published a range of articles about the technical and marketing aspects of developing for international markets. See Table 1 on page 9 for a list of *Apple Direct* international articles, from most recent to oldest. Electronic copies of the articles can be found on *A ROM With a View,* the September issue of the Developer CD Series, and on AppleLink (path— Developer Support:Developer Services: Periodicals:Apple Direct:International Articles).

GENERAL RESOURCES

Localization Guidelines. *The Guide to Macintosh Software Localization* presents Apple's official guidelines for modifying a product for sale in more than 50 markets, telling you how to give an application the most appropriate look and feel for each market. The 330-page book, published by Addison-Wesley, is available through your local bookseller or through APDA (order #R0422LL/B). (For APDA ordering information, see Now Available From Apple.)

Worldwide Market Opportunity Guides. These electronic guides provide information about the personal computing market, Apple contacts, and distribution and localization within the countries, as well as lists of main third-party distributors, localization companies, user groups, trade shows, major magazines and publications, and other helpful information.

  Apple publishes guides for Australia, Belgium, the Far East, France, Germany, Italy, Japan, the Netherlands, Norway, Spain, Sweden, Switzerland, and the U.K.

The guides are located on the Developer CD and on AppleLink (path—Developer Support:Developer Services:Marketing Information & Services:Market Information:Worldwide Market Opportunities).

Other Helpful Information. A brochure called *Macintosh Development* gives developers interested in the Macintosh platform information about business opportunities, new technologies, and developer support. The business opportunities section provides basic information about the installed base and sales of software applications for the Macintosh. New technologies pages tell developers about recent and upcoming technical advances, such as QuickTime, WorldScript, Apple events, and our participation with IBM on RISC technology. The support section lists resources, programs, and tools Apple offers developers to help make them be successful. Developers can obtain a copy from the Developer Support Center, Apple Computer, Inc., 20525 Mariani Avenue, MS 75-3T, Cupertino, CA 95014, USA; Phone: (408) 974-4897.

Apple also provides a bulletin board on AppleLink called "Selling Into Europe" (path—Developer Support: Selling Into Europe), which, among other things, lists distributors and localization companies and provides international developers an opportunity to post pertinent information.

Developers with specific questions for Apple can find the right person to call by consulting the list of International Distribution & Developer Services Contacts, which contains Apple's development and distribution contacts in each local geographical market. The list was published in the August 1992 *Apple Direct*, and it is also posted on AppleLink (path—Developer Support: Developer Services:Apple Information Resources:Whom Should I Contact atApple?:International Contacts).

GEOGRAPHICAL RESOURCES

Apple's local offices in the various geographical markets offer area-specific publications and other resources. The following is a partial list.

Australia. To help developers enter the Australian market, Apple Australia publishes *A Guide to Successful Distribution in Australia.* This detailed report focuses on the Australian market, providing hardware and software market statistics, distribution channel options, pricing structures, gray marketing

information, and more. It may be obtained by contacting the third-party marketing manager at Apple Computer Australia Pty. Ltd., 16 Rodborough Road, Frenchs Forest, NSW 2086, Australia; Phone: 61-2-452-8000; FAX: 61-2-452-8160; AppleLink: AUST3PP.

Belgium. A distribution guide called *Apple, Belgium, and You* is available from Apple Belgium.

   To help promote products to resellers, Apple Belgium, also publishes the *Apple Macintosh Product Guide,* a catalog of all third-party Macintosh software, hardware, and communications products available in Belgium. The guide is part of an Apple Belgium electronic publication called *The Source,* which is available on AppleLink in the Belgium bulletin board (path—Europe: Belgium:Products:Source Item Tracer:The S.I.T.) and is updated daily. It is also included on a quarterly CD produced by Apple Belgium.

   To obtain these resources, contact S.A. Apple Computer N.V., Rue Colonel Bourgstraat 103, 1040 Brussels, Belgium; Phone: 32-2-741 22 11; FAX: 32-2-735 76 19; AppleLink:MERGAERTS.B.

Far East. *Macintosh Solutions for the Far East Markets* is a new marketing guide that describes products created by Far East developers. In addition, the *Far East Market Guidebook* provides information about 13 countries in the Far East as well as distributor lists, information on the Apple Singapore factory, and Asian economic data. First published in January 1991, it is being revised for rerelease this November. To obtain either publication, contact Apple Computer International Ltd., 14/F Exchange; Square Tower 3, Central, Hong Kong; Phone: 852-844-2400; FAX: 852-910-0073; AppleLink: YANG. MEI (for *Macintosh Solutions*), PAM.BEEZLEY (for *Far East Market Guidebook*).

France. Apple France publishes its own developer magazine called *Lettre des Développeurs Apple* (in short, *LDA*). Written in French, the bimonthly is divided into three sections:

  • "Développement," which includes source code, debugging information, and new books in French.

  • "Technology," which describes new technologies available for the Macintosh, from Apple and others, such as O.C.E, ISDN, and RISC.

• "Services," which includes news from APDA and listings of developer programs, events, and courses.

LDA is available by subscription from APDA France, 36, Rue des Etats Généraux, 78000 Versailles, France; Phone: (33) 1 39-02-33-44; AppleLink: APDA. TECH.

To help promote third-party products to resellers, twice a year Apple France produces a catalog and CD-ROM that describe all third-party products. The catalog and CD are used by more than 90 percent of Apple resellers in France. Apple France also produces Macintosh guides for such vertical markets as CAD/CAM, DTP, education, scientific, and management and accounting, as well as a networking and communications guide. To obtain these, contact Apple Computer SARL, 12 avenue d'Océanie, Z.A. de Courtaboeuf, 91956 Les Ulis Cedex, France; Phone: 33-1-69 86 34 00; FAX: 33-1-69 28 74 32; AppleLink: GARNIER.J.

Germany. *Market Opportunities in Germany* includes information about markets and distribution. It also lists major German trade shows, Macintosh and other personal computer publications, distributors, and market research resources.

To help promote developer products to resellers, Apple Germany's Third-Party Services group produces a software and hardware catalog of approximately 1500 products. It provides product descriptions as well as required system configurations, language (for software), and the names of the developer and distributor. The printed issue is available through every Apple dealer in Germany as well as in German bookstores and kiosks. (The catalog also comes on a CD-ROM disc, which is available only through Apple dealers in Germany.)

These resources (except for the CD) may be obtained from Apple Computer GmbH, Gutenberg Str. 1, 8045 Ismaning, West Germany; Phone: 0049-89-99 640-0; FAX: 49-89-99 64 01 80; AppleLink: GER.3RDPARTY.

Italy. *A Guide to Italy for Macintosh Developers,* published by the Apple Italy Third-Party Marketing group, includes information about markets, distribution, and working with Apple Italy. It also lists major Italian trade shows, Macintosh and other personal computer publications, distributors, and market research resources.

Third-party Marketing also publishes a HyperCard-based catalog of Macintosh-compatible products distributed in Italy. This catalog provides an excellent way for customers to learn about your Macintosh solutions. It is revised twice a year and sent to all Italian Apple resellers.

These publications are available through Apple Computer S.p.A., Via Milano 150, 20093 Cologno Monzese, Milano, Italy; Phone: 39-2-273 26 1; FAX: 39-2-273 26 555; AppleLink: VERGANI.R.

Japan. *Localization for Japan,* published in 1992, describes in detail the changes necessary to make a Macintosh application work in Japanese. It's available from APDA for $20.

A Guide to Japan for Macintosh Developers is an introductory booklet full of basic facts about development for the Macintosh in Japanese, products currently available, contacts at Apple and major Japanese distributors, and sources for more information. It may be obtained from Apple Pacific, Apple Computer, Inc., 20525 Mariani Ave., MS 36-3P, Cupertino, CA, 95014, USA; Phone: (408) 974-2745; AppleLink: TSUNEKAWA1 or Apple Computer Japan, 1-14-1 Sendagay, Shibuya-ku, Tokyo, Japan; Phone: 81-3-5411-8500; FAX: 81-3-5411-8777; AppleLink: SPRAGUE1.

An electronic version is available on AppleLink (path—Developer Support:Developer Services:Marketing Information and Services:Market Information:Worldwide Market Opportunities:Japan Market Opportunities).

Soft Landing in Japan Version 2.0, sponsored by Apple Japan and published by American Electronics Association in 1992, is a 163-page book describing the details of setting up a software company in Japan, including actual costs, contact names, legal requirements, staffing information, and much more. It's available for $95 ($65 for Apple Associates or Partners) from American Electronics Association, 5201 Great America Parkway, Santa Clara, CA 950511, USA; Phone (800) 873-1177 or (408) 987-4200. (Apple Japan and Apple Pacific also keeps copies on hand. Contact them first for availability).

Apple Japan provides numerous other publications for Japanese developers, including a monthly mailing (available with a CD several times each year), an Apple Japan icon on Applelink available to those registered in Japan (path—Developer Support:Developer Services:Marketing Information and Services:Market Information:World-wide Market Opportunities:Japan Market

Opportunities), and Japanese translations of most developer information (such as *Inside Macintosh*).

Nordic Region (Sweden, Denmark, Norway, and Finland). Apple Nordic has created a variety of publications to help developers and distributors support, localize, promote, and sell their products.

To keep dealers and customers up-to-date on new Apple and third-party products, Apple Sweden regularly publishes a CD-ROM that includes third-party software demonstrations. The group also publishes information for its partners, which contains dealer lists, price lists, and information on new system software releases. It also contains ideas for increasing sales as well as information about trade shows, sales campaigns, and special events.

The publications are available through Apple Computer AB, Box 31, S-16493 Kista, Stockholm, Sweden; Phone: 46-8-703 3000; FAX: 46-8-703 3001; AppleLink: LANDERSTEN1.

Spain. Apple Spain produces a catalog of third-party products that is used by more than 90 percent of Apple resellers in Spain. To obtain it, write Apple Computer Espana S.A., Paseo de la Castellana 95, Piso 26, 28046 Madrid, Spain; Phone: 34-1-597 47 50; FAX: 34-1-556 95 54; AppleLink: MISTOU.

Switzerland. To support developers, distributors, and dealers in the Swiss market, Apple distributes a catalog that lists more than 500 third-party products. It's available in both French and German. Updated twice a year the catalog provides product descriptions, the names of each product's developer and distributor, and addresses and telephone numbers for some 80 distributors. It can be obtained by contacting Apple Computer Division, Industrade AG, Hertistrasse 31, CH-8304 Wallisellen, Switzerland; Phone: 41-1-832-81 11; FAX: 41-1-830-63 06; AppleLink: IT0006.

United Kingdom. *MacINDEX* lists over 2000 developers, dealers, consultants, applications, and other Macintosh development and distribution services in the UK. It is divided into three sections:
   • "A-Z Services," a comprehensive listing of who's who and who provides what kind of service, including dealers, developers, output bureaus, and consultants.

• "A-Z Solutions," a breakdown of consultants by area of expertise, (for example creative, design, networking, and so on).

• "Database Directory," a listing of ready-made database software solutions produced for specific markets (for example, accounting, business management, market research, and public relations).

MacINDEX is officially supported by Apple UK, although it's produced by a third party. Over time, it will evolve into a combined products and services directory. To obtain it, contact *MacINDEX,* 11-12 Acton Hill Mews, 310-328 Uxbridge Road, London W3 9BR, UK; Phone: 44 81 752 0752; AppleLink: TPD.

Apple UK produces its own newsletter called *The Edge,* which provides information about Apple products and services for developers, distributors, and other third parties. It's available to the entire Macintosh community in the UK with the intention of providing customers with information direct from Apple UK. To obtain it, write Editor, *The Edge,* 1/1 Harbour Yard, Chelsea Harbour, London SW10 0XD ENGLAND. ◆

Table 1:
***Apple Direct* International Articles**

August 1992:	"International Success Stories," pp. 9, 12-16
		"Apple International Distribution & Developer
	Services Contacts," p. 13

May 1992:	"World-Ready System 7," p. 6
		"The Global Macintosh Installed Base," pp. 13-15

April 1992:	"Japan Macworld Highlights Opportunities," pp.
		1, 3
		"Apple/DEC European Distribution Agreement,"
		pp. 1-2

Multimedia Made Easier with Photo- CD

When Apple releases the next version of QuickTime, Macintosh computers will be able to read and manipulate color photographs taken with conventional cameras far more easily than before.

According to an agreement announced in August by Apple and Kodak, the Macintosh will soon be able to directly access images produced by Kodak's Photo-CD technology. Photo-CD will, for the first time, give Macintosh users access to high-quality photographic images without having to use a scanner.

Macintosh developers won't have to alter their software to take advantage of the new technology: the next release of QuickTime will include a codec (compressor/decompressor) that gives the Macintosh direct access to Photo-CD images. Through QuickTime, Photo-CD images will be accessible as PICT files. Any QuickTime-aware application will be able to use these images as it would other digitized images, reading and manipulating them and adding them to demos, brochures, and slide and other multimedia presentations. Users will also be able to view Photo-CD images with a special application that will be part of the QuickTime release.

The technology combination will make the Macintosh even more attractive and easier to use as a multimedia platform. With Photo-CD, Apple hopes to boost Macintosh hardware and software sales to high-end users, such as professionals in desktop publishing. It will also renew opportunities for those in catalog production, insurance, medicine, real estate and other professions to use the Macintosh for combining text, photography, and other media.

While Photo-CD on the Macintosh won't require great changes from multimedia developers, it does offer a challenge: In the words of Eric Zarakov of Apple's Advanced Technology Group, who played a key role in bringing Photo-CD to the Macintosh, "We want to make photographs as easy to use as text.

"Apple is looking for developers of digital imaging and multimedia applications to help people do complex tasks more easily," Zarakov continued. "We've seen some complex and specialized solutions to such problems as image processing, and in some ways our increasingly powerful computers almost invite complexity. The challenge for developers now will be to use that power to introduce greater simplicity for graphics and multimedia users. Photo-CD will make digitized photographs accessible on a very large scale, opening up many new opportunities for Apple and our developers."

With Photo-CD, standard pictures generated with either negative or slide film are digitally stored on a CD-ROM for viewing with a Kodak Photo-CD (or compatible) player or on a computer with a CD-ROM drive and appropriate software. Just as they do to process film into prints and slides, customers can take exposed film to Kodak dealers for processing into Photo-CD images.

As part of the announcement, Kodak said it will use Macintosh computers in its retail imaging workstations, where picture-takers can create their own Photo-CD portfolios, that is electronic picture stories with sound, graphics, and interactive branching for home entertainment, education, and business presentations.

In addition, Apple announced it will purchase Kodak's new color electrophotographic printer technology for inclusion in future systems, although specifics of how Apple will use that technology won't be unveiled for some time.

Summing up the Apple-Kodak agreement, Apple CEO John Sculley said, "Photo-CD will have a major impact on the computer industry as it turns the promise of desktop color photo imaging from a wish to a reality." And that reality will happen first and, thanks to QuickTime, most easily on a Macintosh.

Sculley continued, "This partnership is just the beginning of an effort with Kodak to define the future use of digital photographic quality images on computers." He'll describe how the agreement fits into Apple's strategy during his keynote address September 22 at the Seybold Conference in San Francisco.

In the meantime, if you need specific information about using Photo-CD with the Macintosh, call the Kodak Information Center toll-free at (800) 242-2424, extension 53. ◆

AppleLink Libraries Give Answers to Common Tech Questions

You turn on your OneScanner and start up your Macintosh Quadra to work on the manual for your new product, but the scanner doesn't seem to work. After more than enough fiddling and searching through the user manuals, you call Apple's Developer Support Center (DSC) to see if they know of any "gotchas" and you get the tip you need: a particular OneScanner ROM and Macintosh Quadra combination requires that the scanner be turned on after system startup. How'd the DSC know that? Chances are the information came from AppleLink's Tech Info Library.

AppleLink provides two technical libraries, Dev Tech Answers and Tech Info Library, both of which can help you find answers to your technical questions before you contact the DSC.

Dev Tech Answers, in the Developer Support folder, might be an old friend of yours by now. For developing products that work with the Macintosh, Apple II, and other Apple products, it contains technical resources like developer manuals and updates, code samples, bug workarounds, change histories, and worldwide development tips.

The Tech Info Library, in the Apple Support/Training folder, provides user-level technical information, such as product specifications, user manual updates, compatibility news, undocumented product features, and even a "Third Party Company Directory."

How do you know which library to use when? It's not always obvious, but here's an example: To find out why the screen saver you use on your desktop Macintosh might harm your PowerBook LCD screen, primarily a user-level problem, you'd use the Tech Info Library. To find out about the Macintosh Toolbox routine that controls the PowerBook backlight, you'd check the development-specific Dev Tech Answers library.

Both AppleLink libraries let you search by typing a query string, such as Sound Manager and Changes (see illustration). The Tech Info Library's Help screen has tips for combining words, phrases, operators, and wildcard characters to retrieve information efficiently from both libraries. Each library has a Library Index button as well for accessing the library folder hierarchy directly. If you browse either library with this button, you'll find folders in each with identical or similar titles, such as "Multimedia," and "Datacomm, Networking, and Connectivity."

The similar folder titles and overlapping content of the two libraries can make the user/developer demarcation fuzzy in places. RAM specs, for example, might be needed for expanding your system as a user or for developing a third-party expansion card product. Also, if the DSC receives a number of calls from developers asking the same user-level technical question, it might post the user-level information in Dev Tech Answers temporarily to help other developers avoid the same snag. So, if you don't find what you need in one library, give the other a try. A bridge between the two libraries is on the far horizon; meanwhile, keep both libraries
in mind—Dev Tech Answers (path—Developer Support:Dev Tech Answers) and Tech Info Library (path—Apple Support/ Training:Tech Info Library)—as problem-solving resources.◆

Performa Delivers to Consumer Market

New Macintosh Family Targets Audience of 7 Million

By Gregg Williams,
Apple Direct *Staff*

On September 14, 1992, Apple fundamentally changed the way it does business, and it did so in a very interesting place—the New York City Public Library. There, Apple introduced a new family of Macintosh computers, the Apple Macintosh Performa 200, 400, 600, and 600 CD. Apple designed the new line to provide a complete computing solution for first-time buyers in the home—specifically, families with school-age children.

Customer convenience is the name of this game, and the Apple Macintosh Performa delivers it. Each of these computers is a fully functional Macintosh, but the Performa package includes the computer itself, enhanced system software, bundled application software, and one year of toll-free phone support and free *in-home* service (a first for Apple). Not only that, but Performa delivers all these things in one box, at one price—*and* at the same stores where many people shop regularly.

Apple expects the Macintosh Performa to be very attractive to an audience of at least 7 million U.S. households with children; we believe that they are waiting for just the right computer before they make their first personal computer purchase. This article will cover what the Performa computers are, what Apple is doing differently with them, and what opportunities exist for developers like you.

Why Consumer? Why Now? Apple is doing a lot of fundamentally new things in creating and marketing the Performa family of Macintosh computers. Why are we doing this? What do we expect to accomplish—and why should you care?

Apple created the Macintosh Performa family for one basic reason: to make sure that this large, influential group of new customers buys Macintosh and recommends it to others. This is important to you because such new users enlarge the installed base of Macintosh computers *and* create new markets for the products you design that meet their needs.

We believe that, despite the current recession in the United States, there is a market of 7 million U.S. households that can afford and—if the product meets their needs—*want* to buy their first personal computer. This 7 million figure is the number of U.S. households who don't own a personal computer and who have one or more children under the age of 18. We studied these people, asked them what they want, and designed the Performa as the solution that meets their needs.

These people will find the Performa in the stores that they often visit—nearly 2000 retail outlets. These outlets include general-merchandise stores like Sears, consumer electronics stores like Silo, and office-product superstores like Office Max and Office Depot. Later, Apple will add to the list of retailers that will carry the Macintosh Performa family of computers.

Cracking the Consumer Market. "What do consumers *want?*" Whoever answers this question meaningfully will make a lot of money. Of course, this is not the first time the question has been asked, and, in the past, no one—including Apple—has offered a compelling solution.

Why should this time be any different? Call it a hunch (though one backed by hundreds of thousands of dollars spent for *plenty* of research), but Apple believes that the American public (and, somewhat later, the international market) is ready for computers that are promoted, distributed, and sold the same way that color televisions or videocassette recorders are. (The Macintosh is not an unlikely candidate for such retail channels—after all, the Macintosh is, arguably, easier to use than most VCRs.)

Why are computers ready for the retail market? In a word, it's because computers have been demystified enough to become ordinary. Many people use them at work and at school. Computer magazines grace most magazine racks and public libraries. And, as the ultimate proof of personal computers' new status, please note that with many people—especially white-collar males—the subject of Computers is an acceptable and even a safe topic of casual conversation.

We believe that the new customers described above will respond to a computer that meets certain needs:

• *They want a packaged, all-in-one solution*. Their lives are complicated enough—but they'll flock to something that makes their lives simpler and helps them to manage the details.

• *They demand good value for the money.* These people are spending their own money, and they won't part with it until they're sure that they're getting their money's worth.

• *They want a solution that will have practical benefits for them and their children.* These benefits can take many forms. For the adults, the benefits include the ability to work at home, to work at a secondary business out of their home, or to do general or career-oriented learning. For the children, the benefits include the ability to do schoolwork (especially if they use Macintosh computers at school) and to increase their ability to think conceptually, learn, and explore by interacting with "sensory-rich" applications. (It's probable that, back in the 1960s, these people would have bought encyclopedias for their children.)

• *They want a "safety net" under them.* Though they're sophisticated consumers, this is their first computer purchase. They won't let themselves get stranded with a complicated computer and no one to help. Because of this, the Performa package includes phone support and in-home service (see below) meant to reassure the first-time buyer.

INSIDE THE PERFORMA PACKAGE

Table 1 (see below) summarizes the features of the Macintosh Performa 200, 400, 600, and 600 CD computers. A careful examination of this table and the photograph on this page may lead you to conclude that a Performa 200 is "just" a Macintosh Classic II and a Performa 400 is "just" a Macintosh LC II.

Technically speaking, you're right—but the word "just" here is, well, *unjust.* The Performa family is more than "just" hardware. It is an enhanced package of hardware and software that optimizes the computer itself for a specific audience—an audience who wouldn't otherwise be buying one. We don't see Performa sales as cannibalizing the sales of other Macintosh channels—we see them as *additional* sales.

Not Just Another Pretty Macintosh. Several elements of the Performa family of Macintosh computers distinguish them from the rest of the Macintosh product line:

• *"Hard-" bundled third-party application software.* No, that's not a misprint— Performas *do* come with third-party software already installed on the hard disk, and we're doing it because that's what customers want. Each Performa

computer includes a "works" program—that is, an all-in-one program that includes a word processor, spreadsheet, database, communications package, and charting and drawing programs. *All* the Performa's software (both third-party applications and system software) is "hard" bundled—that is, preinstalled on the hard disk and ready for immediate use.

Hold on to your hats for this one: The "works" program included with a Performa varies with the retail channel used (that is, different stores are selling the Performa with "works" programs from different vendors). Currently, the "works" programs that are bundled with the Macintosh Performa 200, 400, 600, and 600 CD include ClarisWorks and Symantec GreatWorks; future Performa bundles will include "works" programs from other vendors. Macintosh Performas may also include software products like Intuit's Quicken 3.0 (a personal finance program), Teleware's M.Y.O.B. (business software), and T/Maker ClickArt, depending on the retailers and their customers' needs.

• *System software that makes the Macintosh human interface easier for first-time users.* We ran extensive focus groups with first-time computer users to find out what parts of the Macintosh user interface they found confusing. We then made several small but important enhancements to the Performa system software, naming the result "System 7.xP". (See the section just below for more details.) Performas also come with Apple's At Ease (a simplified user interface) and hard-disk backup and restore software.

• *Macintosh Performas are ready to use, right out of the box.* It doesn't get any easier than this: Turn the Performa on and, not only does it start up, it starts up in color with an upscale color desktop pattern (all at once, everybody—*oooh!*). By clicking a very large, labeled button (in what's called the Launcher window), the user can instantly launch the "works" program already installed on the Performa's hard disk (see Figure 1 below). Let's see Windows match *that* for "making it easier."

• *One-year of free direct support from Apple.* If you were surprised by Apple's decision to bundle third-party software with the Performa, perhaps you'd better sit down for this one. Macintosh Performa owners get two kinds of support, direct from Apple, for one year: phone support through a free 800 telephone number and free in-home hardware repair. That's right—if the Performa owner has any problems, he or she can call Apple's 800 number for immediate help. If it turns out that the computer itself isn't working correctly, Apple will send a repair person to the home or office where the Performa is being used. (Apple

will contract the repair service out to a third party.) This is certainly a first for Apple, and it'll be interesting to see how customers react to it.

System 7.0.1P and 7.1P. One "Apple value" that is largely responsible for our success is: *Learn from the user.* System 7.0.1P (for the Performa 200 and 400) and System 7.1P (for the Performa 600 and 600 CD) exist largely because of that rule, and we feel that it is key to our success with the consumer market. (To simplify the text that follows, I'll refer to these two versions of system software as "System 7.xP.")

Some new users are confused by a desktop that shows multiple windows that can represent either documents, hard-disk subdirectories, or other content. System 7.xP includes a program called the Launcher, which shows a window with large icons for the major programs that come packaged with the Macintosh Performa. When the user takes the Performa computer out of its box and turns it on, he will see a screen something like the one in Figure 1 on page 6. Each of the major applications present on the hard disk has a large button that includes both the application's name and icon. By clicking one of these buttons once (*not* double-clicking), the user can get from the Finder to the application he or she wants to use.

Another source of confusion occurs when the user accidentally clicks the desktop and one or more Finder windows obscure whatever document the user was working on. The solution System 7.xP offers to this problem is both simple and effective: It doesn't show the Finder "underneath" whatever document windows are open (see Figure 2 below). With System 7.xP, the user can still switch to another application by clicking in one of its open windows, but the only way to get to the Finder is to explicitly choose it from the Applications menu (at the right-most edge of the menu bar).

Some beginning users misplace document files because they don't understand that the files are saved in whatever folder is current when they click the Save button in the dialog box. System 7.xP simplifies the user interface with two changes. First, it adds a special folder called Documents; the folder appears on the Finder desktop in the upper right corner. Second, when the user saves a file, the dialog box defaults to the Documents folder; this means that, unless the user explicitly changes it, he or she will save the file in the Documents folder.

Other Bundled Software. Macintosh Performa computers come with several other useful pieces of software. At Ease is an add-on product from Apple that lets multiple users access selected programs on a Macintosh, while restricting their ability to change the computer itself. For more details, see "At Ease Makes Sharing a Macintosh Easier," in the August 1992 issue of *Apple Direct*. At Ease is present on each Performa's hard disk, but it is inactive; the owner must turn it on via a control panel program before it can be used.

The Performa hard disk also contains Apple Backup, a simple program for backing up the hard disk to floppy disks. If for some reason the hard disk becomes corrupted, the user can launch the Apple Restore program from a startup floppy disk that Apple provides in the box with the Performa.

DEVELOPER OPPORTUNITIES

Apple is pursuing multiple strategies to ensure that *all* Apple developers are financially successful. This means making sure that users know about and have access to the wide range of Macintosh software—including yours. Here are some of the ways that we are planning to do this with the Macintosh Performa family:

• *Software listings and catalogs:* We plan to facilitate the creation of comprehensive software listings and catalogs and see to it that they are available to users. However we do this (we're still working on the details), we want to make sure that *your* products get listed there.

• *Coupon programs:* Sometime in the future, the Performa package will include discount coupons for various third-party products. These coupons will give Performa owners a chance to customize their system to meet their specific needs.

• *In-store demo programs and screen shots:* We will work with developers, distributors, and retail channels to ensure that stores selling the Performa can also show the customer what kinds of software are available.

• *Evangelizing on-line support:* We will be encouraging and helping developers to start customer support forums on on-line information services like AppleLink, America Online, and CompuServe. In the case of AppleLink, qualifying vendors can get their startup and maintenance fees waived; see "New AppleLink Program: Free Bulletin Boards," on page 1 of the June 1992 *Apple Direct*.

• *Co-advertising:* Apple will contract with selected companies to promote Apple Macintosh Performa computers and the company's products jointly.

• *"Soft" bundles to retailers:* The Apple sales force will work with developers and major retailers to create various retail promotions. For example, a retailer may decide to offer a Performa computer along with a "soft" bundle of one or more popular applications. (A "soft" bundle adds off-the-shelf software, still in its own box. In contrast, a "hard" bundle means that the software is pre-installed on the computer's hard disk.)

• *"Hard" bundles included with Macintosh Performa computers:* Only a few pieces of software will be bundled with Performa computers, and there are two reasons for this. First, we want to include the right kind of software to make the Performa useful the moment it is unpacked. Second, we want to match the DOS and Windows competition; many vendors supply "works" or similar software with their entry-level systems.

If your software is not chosen, you have one consolation: The company supplying the bundled software is not getting rich off it. To ensure that the Performa package is priced as competitively as possible, the company must supply its software to Apple at the lowest possible price.

Also, you should know that Apple doesn't mean for the bundled software to fulfill *all* the user's needs—we're planning on you to do that for us. We're bundling basic software with the Macintosh Performa to make sure that the user has a good experience with a just-out-of-the-box Performa computer.

New/Enhanced Product Opportunities. Every time Macintosh computers reach a new audience, you have the opportunity to enhance existing products and create entirely new products. Remember also that you probably can't afford to *not* update your existing product; if your competitors do (which they will) and you don't, you will lose customers to them.

Where do you start thinking about these customers and their needs? First, think of the group's demographics. The people that Apple is targeting are prosperous enough to own a personal computer (though they currently don't have one) and have at least one child in school (high school or lower). They want a computer for four things: to help improve their child's critical learning skills, to encourage their child's continued learning through entertaining educational programs, to help the parent do work at home (both office-related and work unrelated to the parent's main job), and to speed and simplify

household tasks like record keeping, home finance, and correspondence. These people are also interested in using the computer for entertainment, especially entertainment that brings the family together. They are busy and want software that simplifies their lives and gives them more time for other pursuits.

IN A LARGER CONTEXT

(Suggested Retail) Priceless. If we've learned anything from the past few years of the computer industry, it's that "sacred cows" are an endangered species—in other words, that no tradition or rule of thumb is so fundamental that it cannot be changed.

One such tradition is SRPs—*suggested retail prices.* We've always had suggested retail prices; in fact, before the days of below-retail "street" prices, that's *all* we had. But for various reasons—software bundling, the economics of different retail channels, perhaps even the phase of the moon—Performa computers have *no retail prices*. All we can do is to give you an approximate price range: the first four Macintosh Performa packages are expected to sell within the price range of $1,250 to $2,250. The decision is ultimately up to the retailer. (This price range does not include external monitor, if any, and printer.)

Peripheral Issues. Though the Macintosh Performa package delivers everything users need to get started in one box, they will still need two more items: a video monitor (for every Performa except the 200) and a printer (usually). Because of this, Apple will be selling two printers (the StyleWriter and the Personal LaserWriter LS) and two displays, all of them through the same channels that sell the Performa itself.

The two video displays are named the Performa Display and Performa Display Plus. Both are 14-inch, 640 x 480 pixel, shadow-mask color monitors. They will sell for around $350 and $450, respectively. The Performa Display has a 0.39 mm dot pitch (a measure of image clarity). The Performa Display Plus has a 0.29 mm dot pitch (and therefore a clearer image); it also meets the requirements of SWEDAC MPR-2, which is the most stringent international guideline for magnetic field emissions.

Since these printers and monitors aren't part of the Macintosh Performa package, they aren't covered by the Performa one-year in-home repair service.

However, all Apple products come with a one-year warranty, and a customer can take a monitor or printer in for repair at any authorized Apple service center. (I hope—and this is my opinion, not Apple's—that customer feedback will encourage Apple to make in-home monitor and printer repair part of the Macintosh Performa package.)

The Performa Future. The Performa family of Macintosh computers promises to be a great step forward for Apple. We think that the Performa will cause the Macintosh installed base to grow dramatically. This will give Apple its "foot in the door" of one segment of the consumer market—a segment that could someday grow larger than today's installed base of Macintosh computers sold through computer stores. Of course, a significantly larger installed Macintosh base also means a larger market for your products.

Keep in mind that we aren't selling "crippled" Macintosh computers. Every Performa computers can potentially run any piece of Macintosh software—and run it better than some out-of-the-box Macintosh models. (All Macintosh Performas, like most other Macintoshes today, come with at least 4 megabytes of memory (see table 1 below). This is a far more realistic amount of memory than the 2 megabytes that Apple used to ship with previous Macintosh configurations.)

Also keep in mind that we aren't cannibalizing current Macintosh sales. The Macintosh Performa family is designed to attract people who wouldn't otherwise be buying a computer. This means that Performa sales will make the installed Macintosh base *grow.*

The future looks bright for the Macintosh Performa—and selling even more Macs to even more people sounds like a good idea
to me! ◆

* *

Finally—The Multimedia Macintosh

Customer convenience is also the name of the game with CD-ROM drives. Although Apple has sold external CD-ROM drives for several years now,

nothing will increase the installed base of CD-ROMs in Macintosh systems more than a Macintosh with the CD-ROM built into the computer itself.

Enter the Macintosh Performa 600 CD, the first Macintosh model with an internal CD-ROM drive. And not just any drive either: The Performa 600 CD includes the AppleCD 300i CD-ROM drive, which is also the most capable CD-ROM drive that Apple has offered.

The AppleCD 300i CD-ROM drive has an average access time of 290 ms (down from 380 ms on the AppleCD 150). The AppleCD 300i drive is an improvement over existing drives in another way for the many people interested in Kodak's Photo CD technology. (See page 1 for more on Photo CD).

The AppleCD 300i drive can read multiple-session Kodak Photo CDs (that is, CD-ROM discs that contain the images from multiple rolls of photographic film, all on the same disc). Almost all CD-ROM drives today can read only the first "session" of a Photo CD disc, so the AppleCD 300i CD-ROM drive (and an SCSI-based external drive that will be available in several months) will make Kodak's Photo CD technology even more useful than it is today. ◆

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Figure 1: The Launcher in System 7.0.1P and System 7.1P. The Launcher offers a simple way for Performa users to launch applications with one mouse click.

Figure 2: Layer hiding in System 7.0.1P and System 7.1P. In this example, ClarisWorks and TeachText documents are both visible, but there is no sign of the Finder. (Notice that there are no Trash or disk icons on the desktop).
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Table 1:
The Macintosh Performa Family

Macintosh Performa 200

Processor	16MHz 68030
Memory	4 MB (expandable to 10)
Hard disk	80 MB

Floppy disk	SuperDrive (1.44MB)
Display	Built-in 512 x 342
Ports	SCSI, 2 serial (provides LocalTalk network support), sound in, sound out, ADB, floppy disk
Int'l expansion	None
Keyboard	Apple Keyboard II
Software	System 7.0.1P, Launcher, At Ease, hard-disk Backup and Restore programs, integrated works application
Support	One-year of both in-house repair and toll-free phone support

Macintosh Performa 400

Processor	Same as 200
Memory	Same as 200
Hard disk	Same as 200
Floppy disk	Same as 200
Display	Supports Performa displays (640 x 480, 256 colors)
Ports	SCSI, 2 serial (provides LocalTalk network support), sound in, sound out, ADB
Int'l expansion	1 processor-direct slot (PDS)
Keyboard	Apple Keyboard II
Software	System 7.0.1P, Launcher, At Ease, hard-disk Backup and Restore programs, integrated works application, and other software
Support	Same as 200

Macintosh Performa 600

Processor	32MHz 68030
Memory	4 MB (expandable to 68)
Hard disk	160 MB
Floppy disk	Same as 200

Display	Same as 400	
Ports	SCSI, 2 serial (provides LocalTalk	
	network support), sound in, sound out,	
2 ADB		
Int'l expansion	3 NuBus slots, 1 accelerator slot	
Keyboard	Apple Extended Keyboard II	
Software	System 7.0.1P, Launcher, At Ease, hard-	
disk Backup and Restore programs,		
	integrated works application	
Support	Same as 200	

Macintosh Performa 600 CD

Processor	Same as 600
Memory	5 MB (expandable to 68)
Hard disk	Same as 600
Floppy disk	Same as 200
Display	Supports Performa displays
	(640 x 480, 32,768 colors)
Ports	Same as 600
Int'l expansion	Same as 600
Keyboard	Same as 600
Software	Same as 600
Support	Same as 200

Developers Speak Out About WWDC

In the July *Apple Direct,* we reported key Apple employees' evaluations of how Apple performed at the 1992 World-
wide Developers Conference (WWDC). This month we present the flip side of the coin: the feedback developers provided Apple about the WWDC experience. We read each and every survey developers filled out at the conference; the main purpose of this article is to let you know that we heard you and that the Apple Developer Events group is addressing your concerns and opinions as they put together next year's conference.

It Was a Success. Overall the conference was rated a huge success. Attendance was up 25 percent over the previous year. Of the developers that completed the four-page WWDC survey, nearly 80 percent said that they planned to attend next year, more than 80 percent said the conference met their top priority in attending, and 86 percent said they would recommend the conference to others.

  One developer summed it up: "The conference is like the Macintosh—we have lots of things to say about it, but it's still the best!"

Developer Mecca. The vast majority of developers attending WWDC had a great time and felt it was worthwhile; nearly 90 percent agreed or strongly agreed that the conference was worth their time. WWDC remains a Mecca, a place developers travel to bolster their knowledge of Apple technology and renew their innovative spirit. It's a week when strong doses of Apple fun, enthusiasm, and the synergy generated by having over 3000 top colleagues in one place help to charge up developers for another year of putting out great products. Said one developer, "I like to see every year I have attended that the 'spirit of Apple' has not really changed...." Added another, "There were several excellent meetings and moments that helped keep me excited."

  Developers' top priorities for attending WWDC are receiving technical and directional information from Apple engineers and executives, interacting with other developers, and being infused with Apple "spirit." (See Table 1 below.)

Technology. Clearly the top priority for attending the conference was to gain information about Apple's technologies and directions. Attendees also made it clear that they come to hear strategic and technical information directly from the

Apple experts—the engineers and executives. In fact, 90 percent said so. Developers were highly satisfied with Apple's efforts to meet these needs: 84 percent agreed or strongly agreed that their first priority was met, and 87 percent agreed or strongly agreed that their second priority was met.

Developers said the WWDC helped put everything in perspective by showing them how technologies and directions interrelate and by providing critical technical information, including the capabilities and timing of new technologies and code calls. This information allows developers to begin integrating technologies into their product plans; it also helps reduce uncertainty and supports resource commitment decisions. Developers were, however, disappointed that they did not receive prerelease software for any of the technologies they saw this year. (More on that issue below.)

Developers surveyed believed on the whole that the conference enhanced their ability to adopt Apple technologies; 82 percent agreed or strongly agreed that the conference impacts technology adoption. The same percentage agreed that WWDC strengthened their commitment to Macintosh development. Developers said both these factors are critical to their success.

Regarding the technologies featured at this year's WWDC, 68 percent said they would use or recommend that their organization's use scripting. Another 59 and 55 percent , respectively, said the same of O.C.E. and the new imaging architecture, while 49 percent would use or recommend QuickTime.

Synergy. Another important reason developers attend the conference is to make technical contacts with other developers and with Apple employees. Attendees found the interaction with other developers at this year's conference to be valuable; more than 70 percent of them rated the importance of networking with peers as important or very important. The WWDC provides one of the only forums where Apple developers can come together and share technical information. This can take the form of technology sharing agreements or getting perspective from other developers about the new technologies.

Spirit. Traditionally, WWDC increases developers' commitment to developing for Apple because the conference is fun, and this year was no different from any other. Although the entertainment value is not the most important aspect of the conference, receiving a shot of Apple "inspiration" is the fifth highest reason

developers attend. One developer summed it up: "It's like having a one-week pass to DisneyWorld."

HOW TO MAKE IT BETTER

Apple also received criticism from developers at the conference. This part of the feedback will be given utmost consideration.

No WWDC CD. Apple did not distribute software at the 1992 WWDC, a decision that received a range of vocal reactions. Some were understanding (saying they "didn't want to waste their time with software that wasn't ready yet"); others felt that they were being left out of the loop ("Let me be the one to decide if I want to play with it or not"). Although this feedback came in the form of comments rather than numerical data, it seemed that most developers would have preferred to have software to evaluate, regardless of how complete it was.

What can Apple do about this? To begin with, two factors limit Apple's ability to promise to release software at a particular WWDC: first, the WWDC is currently held only once a year, with dates set years ahead of time, and second, the code implementing technology advancements is not always sufficiently complete to support developer coding and press exposure at the time of the conference. As a result, whether or not to provide prerelease software at WWDC will continue to be one of the toughest calls management will have to make.

Says Scott Schnell, director of Apple's Evangelism and Developer Events groups, "Our goal is to broadly distribute prerelease software as soon as developers can bet their business on it. When we seeded System 7 for the first time at the developers conference a few years ago, we got a lot of of feedback that it just wasn't ready and was not a good use of developers' time. We're glad to have so much pointed feedback from developers this year. It will help us refine our ongoing strategy and be a major factor influencing our decision-making for next year's conference."

Technical Content. A small number of developers found the content of some sessions too marketing oriented and not technical enough. Most felt that the level of technical content was appropriate: 77 percent agreed or strongly agreed that the technical content of the sessions was at an appropriate level,

and 97 percent rated the sessions as good or excellent (and nobody—*0 percent*—gave the sessions a rating of poor).

Was the content of the sessions at an appropriate level?

A vocal minority, however, expressed concern about the amount of "marketing spin" in some of the sessions. Objections centered around Apple trying to sell the technologies. Said one developer: "I do not need to be preached to about how great a technology is. I want to know what it does, what its limitations are, and when I can have it."

The main suggestion was to keep sessions as technically focused as possible, a suggestion that will receive a great deal of attention between now and next May. As one developer said: "The marketing spin in technical sessions drags out the session, which causes me to lose attention, and I could miss something important." Added another, "the deeper, the denser, the better."Conference managers are committed to looking for ways to keep the technical content high. In the future, Apple will also provide clearer descriptions of the sessions in advance to make the session selection process easier.

Marketing Sessions. For next year, Apple will look carefully at the kind and the quality of marketing information that's presented, because satisfaction with this year's marketing session content was low: only 19 percent agreed or strongly agreed that the content of those sessions was appropriate. The greatest complaint was that the sessions were too general: "I would have preferred to have seen fewer marketing track sessions that are business courses I could take in school and more sessions catering to Mac marketing."

Developers said the marketing sessions should be in-depth explorations of issues surrounding new technologies and Apple directions, for example, the implications of PDAs in the consumer market.

Developers had some of their strongest criticism for the market data presented at WWDC. For example, "Presenting one-year-old market data was a joke. If you are not going to share real information, don't pretend to." Many were not happy with Apple presenting others numbers instead of their own. Developers want current Apple market data . . . from Apple.

Format and Mother's Day. Apple received resounding support for the current format of WWDC. Developers told us they want to continue attending a single, worldwide conference rather than a number of regional conferences.

The centralized conference is important from a competitive standpoint to ensure that developers all receive the same information at the same time. As one said, "If Apple is saying anything, anywhere, I have to be there because my competitors are there."

Developers feel that the single, comprehensive format allows developers to understand how the technologies and directions interrelate. On the practical side, they feel a single conference is more cost effective than two shorter trips close to home.

The notable exception was that developers complained loudly about the event starting the day after Mother's Day. Apple recognizes the problem and is trying to move the conference away from Mother's Day. While Apple is locked into the dates of May 10-14 at the San Jose Convention Center for 1993, we are working to change the conference dates in future years.

Chairs and Food. A lot of people commented that the chairs were uncomfortable, and are discussing this with the San Jose Convention Center. The food got mixed reviews. Some people really liked it, others not at all. A particularly memorable negative remark was "the food sucked rhino." We are also absolutely committed to offering vegetarian alternatives as well as to keeping the quality as high as possible.

WHO WAS THERE

This year, 3,217 people from 1,614 companies attended the conference, up from 2,556 people and 1,339 companies in 1991. Seventy percent said they were commercial developers, 17 percent in-house developers, and 12 percent consultants, the same mix as last year. Geographic representation was also the same as last year: U.S. and Canadian developers were by far the majority, comprising 86 percent of those attending; 9 percent came from Europe and 5 percent from the Pacific.

Developers' Markets and Products. Developers attending this year said their principal markets were about the same as those attending in 1991, yet the kinds of software this year's attendees are developing differed a great deal from last year's. Developers' principal markets broke down as follows:

- Business   62%
- Engineering and Science   29%
- Higher Education   27%
- Government   26%
- Consumer/Entertainment   19%
- K-12 Education   14%
- Other   10%

The only difference from last year was that in 1991, government drew a higher percentage than higher education.

Like last year, more developers were working on networking and telecommunications software than any other kind of product, but the ranking of other product types changed significantly. Table 2 shows the percentage of developers working on each kind of software this year; the numbers in parentheses are the ranking of the same product last year and the percentage of developers at last year's WWDC working on that kind of product.

The hardware products developers worked on weren't measured in 1991. This year, the top hardware product type was plug-in boards, which 8 percent of attendees said they were working on, followed by network devices (7 percent), printers (6 percent), modems (5 percent), scanners (5 percent), storage devices (4 percent), CD-ROM drives (3 percent), keyboard/input devices (3 percent), video input (3 percent), and other (10 percent).

TELL US MORE

The main purpose of this article is to let you know that Apple is attentive to your concerns and will do everything possible to make next year's conference even better. (And if you didn't attend the conference, maybe you'll want to attend next year.) If you want to reinforce the feedback we've already received, or if you want to add another viewpoint, we want to hear from you. Send your comments by AppleLink to Lia Lorenzano at LORENZANO1. ◆

(This article is based in part on data collected by Graham Marketing Group, who for two years has been commissioned by Apple to measure the effectiveness of the WWDC.)

Table 1:
Top Priorities for Attending
(percent of respondents ranking as #1 or #2 priority)

To hear Apple engineers talk about product technology:	75%
To hear Apple's technology directions from Apple executives:	52%
To make technical contacts with other developers:	23%
To make technical contacts with Apple employees:	20%
To get their yearly dose of inspiration from Apple:	17%
To get marketing information:	6%
To make marketing contacts:	4%
To find a distributor, partner or publisher for their product:	1%

Table 2:
Percentage of Developers
Working on Kinds of Software Products

Product	1992 %	1991 rank and %
1.Network'g & Communication	36%	(1, 33%)
2.Education	29%	(10, 15%)
3.Business Productivity	26%	(2, 29%)
4.Multimedia/Video	23%	(6, 20%)
5.Database	19%	(4, 22%)
6.Consumer/Entertainment	17%	(12, 10%)
7.Utilities	17%	(3, 23%)
8.System Software	15%	(7, 18%)
9.Tools/Languages	15%	(9, 16%)
10.Scientific/Engineering	14%	(11, 13%)
11.Graphics/Modeling	12%	(5, 21%)
12.Desktop Publishing	12%	(12, 10%)
13.Vertical Markets	11%	(12, 10%)
14.Group Productivity	11%	(na)
15.CAD/CAM/CASE	6%	(12, 10%)
16.Reference	4%	(na)

17.Other   15%   (0%)

T&I Conference Offers Information For European Developers

If you're looking for information on developing Macintosh products for Europe, you'll want to consider attending Macworld's Technology & Issues (T&I) Conference on December 3 and 4, 1992, in Vienna, Austria.

The annual conference, held primarily for European developers and large purchasers of personal computer products, provides both a technical and a marketing track. Technical sessions, delivered by engineers, are intended to provide Worldwide Developer Conference-like detail on new Apple technologies. This year, T&I attendees can hear sessions on World Ready System 7, one-byte and two-byte system software, PowerPC, Taligent, Kalida, QuickTime, O.C.E., and the future of Macintosh graphics.

The marketing sessions provide an overview of Apple's European markets and specific forums on market conditions and opportunities in France, Germany, the United Kingdom, Benelux, Switzerland, Italy, and Spain.

Among the speakers at T&I are Sören Olsson, president of Apple Computer Europe, Henri Aebischer, director of R&D, Product Marketing, Apple Computer Europe, and Guerrino De Luca, vice president adn general manager, Business Markets, Apple Computer Europe.

Last year, about 100 people, most of them from Europe, attended T&I. To register for this year's conference, or for more information, contact Sandy Butler, Macworld Communications, Inc., 501 2d Street, Suite 500, San Francisco, CA, 94107, USA; Phone: (415) 267-1749; Fax: (415) 442-0766; AppleLink: BUTLER.S. The conference registration fee is US $695. ◆

Changes to Q&As

Developers regularly tell Apple that they'd like easier access to technical information such as Q&As, Snippets, Sample Code, and Technical Notes. We aim to please, so here's what's happened with Q&As as the result of your feedback.

Q&As—questions developers ask the Developer Support Center along with the DSC's answers—are no longer a separate resource on the Developer CD series and in AppleLink's Dev Tech Answers library.

To make it easier to find the information easier to find, Q&A content has been transformed into Q&A Technical Notes and integrated with other Technical Notes into categories following the organization of New Inside Macintosh. Each Q&A Tech Note contains information relating to New Inside Macintosh chapters, such as "Serial Port Q&As" and "QuickTime Movie Toolbox Q&As." Since they are part of the Tech Note package, Q&As will have the same indexing and distribution as other Tech Notes.

New Q&As are marked with a sidebar in the left margin of the Q&A Tech Note, and a list of new Q&As (called "What's New") is included with each monthly release. The DSC will continue to check Q&A Tech Notes periodically to be sure content is up to date. Each Q&A Tech Note lists the dates the Q&A was written and last reviewed.

Q&A Tech Notes are available on the monthly Developer CD and on AppleLink as Microsoft Word and text files. By the end of 1992, all Tech Notes will be formatted for use with the new Apple Doc Viewer, which replaces HyperCard as a faster electronic document browsing and search tool. Let us know how these changes work for you by sending your comments via AppleLink to DEVFEEDBACK.◆

CD Highlights

Welcome to *A ROM with a View,* the September 1992 issue of the Developer CD Series. Before I describe its new contents, I thought I'd let you know about a few new developments to expect on the CD in coming months.

First, by the end of the year, Sample Code will be added to the Technical Note collection, enabling you to search just one area for Tech Notes, Q & As, and Sample Code, which until recently were all separate. As you'll see below, Q & As have just been integrated into our Tech Notes.

Also, the final version 1.0 of Apple Doc Viewer will soon be released to the Apple developer community. Apple Doc Viewer v. 1.0 (final) will include bug fixes, an enhanced human interface, and improved memory usage. The major new features include dynamic text reformatting in Text View, a personal style sheet in Text View, Get Info about documents in the catalog, and Even/Odd page printing.

Here are some of the new reference materials and tools you'll find on this month's disc.

***New Inside Macintosh* books!:** This month's issue features the promised *New Inside Macintosh* books: *Files, Memory,* and *Processes.* These are in Apple Doc Viewer format for easy reading.

Files describes the parts of the Macintosh Operating System that allow you to manage files and other objects in the file system. It shows in detail how your application can handle the commands typically found in the file menu. It also provides a complete technical reference for the File Manager, the Standard File Package, the Alias Manager, the Disk Initialization Manager and other file-related services provided by the system software.

Memory describes the parts of the Macintosh Operating System that allow you to directly allocate, release, or otherwise manipulate memory. It shows in detail how your application can manage the memory partition and perform other memory-related operations. It also provides a complete technical reference for the Memory Manager, the Virtual Memory Manager, and other memory-related utilities.

Processes describes the parts of the Macintosh Operating System that allow you to manage processes and tasks. It shows in detail how your application can manage processes and tasks. It also provides a complete technical reference for the Process Manager, the Notification Manager, the Time manager, the

Deferred Task Manager, and other task-related services provided by system software.

September Q & As: This month, Q & As appear for the first time completely integrated by subject into Tech Notes thanks to the diligent efforts of Rilla Reynolds. Some of the new Q & As featured this month are "Reading audio data off an aud-io CD," "Installing a Macintosh driver at INIT time," "SetWUTime documentation fix," "PowerBook FAX Modem and header line," and "New Macintosh Serial Driver Status and Control Calls." A list of all new Q & As can be found in the What's New on this CD? folder at the top level of *A ROM with a View.*

NuBus™ Tools: Several new and updated NuBus tools are available on this disc. The Slots application allows you to view a card's configuration ROM either as it appears over NuBus or as the Slot Manager sees it. In addition, Slots allows the user to issue Slot Manager calls directly, by filling out a parameter block. NuBus Tester is a library (with source) to detect errors in handling declaration ROMs in 32-bit space. ROMBuild/ Download provides tools to build, post-process, and download declaration ROMs. Slot Look is a sample application with source code showing common Slot Manager calls.

  The Declaration ROMs package includes example declaration ROM sources as well as exploded declaration ROM views of specific Apple products.

AETracker 3.0: This INIT/Control Panel allows you to monitor and collect a record of all AppleEvent Manager activity on your Macintosh computer. It allows you to track down bugs and problem code quickly; with it you can see the exact sequence of calls an application is making and the data given to and the results returned from the call. Version 3.0 has many enhancements, including more speed, an external programmatic interface, and MacsBug symbol recording.

Debugging Tools: Three new debugging tools are included on this month's disc. The first, Blat, is a dcmd that uses the MMU in order to catch references to memory locations 0 through 255. That is, it will stop any program from reading or writing to the memory that starts at zero and is 256 bytes long. This portion of memory is reserved for Motorola and is used as the exception vectors for the CPU. DisposeResource is a debugging utility made to catch a common

programming error: passing a resource handle to _DisposeHandle. DoubleTrouble, on the other hand, detects the error of freeing a handle that has already been freed.

Sharon Flowers
Developer CD-ROM Product Manager

Editor's Note

Dear readers:

I need your help.

I want your opinions about *Apple Direct*. We'll be redesigning it soon, and I'd like to hear what you think: what you like, what you don't like, what you'd change if you could. But before you go to the trouble of writing, I'd like to be a little more specific about how you can help.

First off, I formed a hypothesis about communicating with developers while editing programmer documentation with Apple's Networking and Communications Publications. It's basically the "no fluff" rule, carried a bit further: that, whether you're on the development side or the business side, you prefer direct, honest, no-frills information. You care more about timeliness and accuracy than you do appearance and nicety of language. You prefer "beta"-stage information ASAP to "final"-formatted and perfected information later on because your businesses depend on moving fast, on keeping even with if not just ahead of Apple's maneuvers.

Brought to *Apple Direct*, this hypothesis implies a truly "direct" periodical: it needs to be right up to the minute and full of hard, useful information in short, punchy stories that give you a full dose of technology; organized so readers can go right to the information that's pertinent to them; "chock-a-block" in appearance, with lots of text and occasional relevant illustrations but not too many "design frills."

We've tried to carry this approach to *Apple Direct*. In answer to feedback we've heard from developers, we intend to take it several steps further when it's redesigned. We'd like to go back to an 8 1/2 X 11, standard newsletter size, one that's easier to read, copy, and store for future reference. We'd like to organize it into discreet sections so readers know where they are whenever they turn the page. We'd like to make it easier to produce so we can bring you the latest-breaking information.

We'd like to increase the technical information provided every month but also cover how new products and developments fit Apple strategy and tell you about the marketing side of the coin: what the markets are for Apple (and your) products and how they can best be reached. We'd also like to make it into a truly global publication, so it's potentially as useful to developers doing business in Tokyo as it is to those in New York or Paris.

Apple Direct has always been published "for decision-makers at development companies" (see the masthead on the back page). We'd like to make even better on that promise by making every word and illustration work to help you make decisions that improve your business.

So what do we need from you? Your feedback about our ideas for the future of *Apple Direct* as well as some other information, specifically:

* What's your position in your firm? Engineering? Marketing? Both? Neither?

* What computer business publications do you read other than *Apple Direct*?

* Is *Apple Direct* more or less important to your business than those other publications? Why?

* What do you learn from *Apple Direct* that you can't find elsewhere?

* Do you read *Apple Direct* for technology? Market data? Strategic information? News? Marketing "how-to" tips?

* What would you like *Apple Direct* to do that it doesn't do already?

* Can I call you to follow up? If so, give me your phone number and expect to hear from me. Even if you don't have time to write, send me your phone number and I'll ask you these same questions over the phone.

I realize it's a lot to ask busy developers to reply to something as open-ended as this. I'm hoping that *Apple Direct* is important enough for you to provide us with good, honest answers on AppleLink. All responses we get to this informal "survey" will be crucial data to consider as we create the "new" *Apple Direct*.

Thanks in advance for your opinions, and I'll look forward to hearing from you. Send your comments on AppleLink to APPLE.DIRECT or by mail to me at Apple Computer, Inc., 20525 Mariani Ave, MS 75-2B, Cupertino, CA 95014.

Remember, now's your chance to help us make *Apple Direct* into the publication you really need.

Paul Dreyfus

News From the Pacific

Last month Apple announced a change to the Apple Pacific organization and a joint technology development agreement with a Singapore research institute.

In acknowledgment of Japan's increasing significance in the global market, Apple Japan will be broken out of Apple Pacific, Apple's fastest growing region Japan becomes Apple's fourth separate geographic sales region, along with Pacific, Europe, and USA. Apple Pacific will continue to provide marketing, sales, and support operations for the Far East, Canada, Australia, and Latin America.

In another development, Apple will join forces with an affiliate of the National University of Singapore to develop technologies specifically for Asian markets. Singapore's Institute of Systems Science will work with Apple on a variety of technologies, including telecommunications and handwriting and speech recognition with a particular emphasis on Asian languages. ◆

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 call 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 by AppleLink to IT.SHIPPED.

   The following products shipped in August 1992.

Publisher	Product (Version)
Abbate Video Consultants	VideoToolkit (1.2.2)
Alysis Software Corporation	More Disk Space (1.1)
Amadeus Enterprise	GestaltLook! (1.0)
ARSoftware	Real Answer (1.0)
AXiON	The AXiON Switch (Rev G)
Brigent, Inc.	BootBug (1.5)
Capilano Computing Systems, Ltd.	MacABEL (4.1)
Clinical Information Systems Inc.	AcuBase (2.0.5)
CommsTalk HQ	CommsTalk for HyperCard (2.1)
Computer Care	BookView Imperial (1.0)
Dantz Development Corporation	DiskFit Pro (1.1)
Electronic Learning Systems	Menu Master Mac (1.0.0)
ElJay Division of Cedarapids Inc.	CompuCrush (4.0)
Foundation Solutions, Inc.	EHelp (3.0)
GeneSystems Computer Software	Plasmid ARTIST (1.2)
Graphisoft	ArchiCAD (4.1)
ISIS International	System 7 Pack (3.2)
Magna	Empower I (4.0.8)
	Empower II (4.0.8)

	Empower Remote (4.0.8)
Mainstay	MarkUp (2.0)
Midnight Software	DupLocator (1.0)
n Dimensions Software House	DeeMaker for DeeManager (1.1)
Paradigm Infosystems, Inc.	SearchPlus (1.0)
pbm software	Square One (1.0)
Prescience Corporation	Expressionist (3.0)
Qdea	Update! (1.0.1)
Silicon Beach Software, Inc.	Aldus Personal Press (2.0)
SoftWriters, Inc.	Disk•Go (1.02)
Spectrum HoloByte	Super Tetris (1.0)
Spectrum Software	Micro-Cap IV (1.00)
Synex	MacEnvelope Professional (1.0)
Te Corporation	macClaimChek (1.01)
TeleTypesetting Company	Digital Gourmet (1.3)
TIMESLIPS Corporation	LapTrack For the Mac (1.0)
VALIS Group, The	VG Shaders + VG Looks for RenderMan Compatible products
	Volume 1 - Product Design
	Volume 2 - Architectural Interior Design
	Volume 3 - Architectural Exterior Design
	Volume 4 - Illustration: Spectral/Splotch
	Volume 5 - Illustration: Mondo/Hide
	VALIS Toolkit for editing shaders and RIB
Vineyard Software, Inc.	FreePan (1.0)
WE	Human Envelopes (1.07)

APDA Hot Product
September '92

**New Site Licenses for Apple development tools
(including E.T.O., Essentials•Tools•Objects).
Tools for your workgroup at great savings.**

You can ensure that all programmers in your workgroup have convenient access to the Macintosh development tools they need by acquiring site licenses to copy and internally use some of Apple's key programming products. Limited territory, unlimited territory, and unlimited worldwide site licenses are available for MPW, MPW Development Environment, MPW C++, MacApp, and Macintosh Common Lisp software - and now E.T.O., (Essentials•Tools•Objects). Customers in need of large numbers of copies should contact Software Licensing for help in determining which site license is appropriate for their need. Significant discounts are available for educational institutions.

- New limited territory licenses now allow as few as 10 copies or less to be made — buy closer to the actual quantity you need and save money!
- Special E.T.O. and C++ site licensing, now available — protect your workgroup at double the savings!
- Additional documentation kits are also available — convenience for site licensees!

Contact Apple Software Licensing to request specific product and pricing information. Call (408) 974-4667 or send an AppleLink to: SW.LICENSE.

Now Available From Apple

The following list shows APDA products that 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).

Apple Products
Books
New Inside Macintosh: *Files*
R0356LL/A
$29.95

New Inside Macintosh: *Processes*
R0355LL/A
$22.95
New Inside Macintosh: *Memory*
R0357LL/A
$24.95

APDA Top-Ten Sellers

1. E.T.O. Starter Kit
2. DAL v. 1.3.5 Servers.
3. MPW C v. 3.2 bundle
4. MacTCP v. 1.1 License
5. E.T.O. Subscription/Renewal
6. QuickTime Developer's Kit v. 1.0
7. Macintosh Programming Fundamentals v.1.0.1
8. APDA Technical Information Mailing
9. *Inside Macintosh Vols. I-VI* + X-Reference
10. MCL v. 2.0

Ordering Information

To place an APDA order from within the U.S., contact ApDA at (800) 282-2732; in Canada, call (800) 637-0029. For those who need to call the U.S. APDA office from abroad, the number is (408) 562-3910. You can also reach us via AppleLink; the address is APDA. If your're outsided the U.S., you may prefer to work with you local APDA contact. For a list of non-U.S. APDA contacts, see the "International APDA Programs" page in the *APDA Tools Catalog.*

In Search of Elegance:
Developing for the Mass Market

By Peter Bickford

Once upon a time, the dagger was a really useful tool. Aside from adding an air of distinction and authority to its owner, it could carve a steak, whittle wood, and open recalcitrant bags, bundles, and the occasional tax collector. Eventually, the growing popularity of blue jeans forced a change in the dagger's design, because the scabbard did not fit nicely into a pants pocket, and *everyone* knows that belts simply *mustn't* be worn with jeans.

So the dagger was folded in half, and became the pocket knife. It still whittled wood and opened packages, and its diminished ability to oppose tax collectors wasn't so important anymore, as the IRS had long since switched most everyone over to mandatory witholding.

Some time later, an Alpine country's army nearly starved to death on a long campaign. In a bold flanking move, the enemy had managed to separate the wagon with the can openers from the rest of the force, leaving the beleaguered soldiers with no way to open their cans of bratwurst. Luckily, one ingenious soldier had thought to attach a can opener to his pocket knife, and the army was saved. Variations of the soldier's pocket knife/opener became standard equipment, and proved so appealing that their use spread to the civilian population as well.

People being what they are, they soon added other useful tools to their modified army pocket knives: cork screws to open their wine; bottle openers to open their beer; and little screwdrivers to fix the thing that kept rattling on their car. Life was good, and the modified army knives sold like hotcakes.

Finally, a young army knife maker (let's call him, Bill) decided to add a few more features to his new line of army knives, including toothpicks, minisaws, and a complete set of torque wrenches. How else, he reckoned, was he to stay competitive? Bill's customers marveled at the new creations when they saw them at the store. "Sure, these cost a bit more than the other army knives," thought his customers, "But they have so many more features than the other knives on the market!" Customers snatched up the entire stock of the new product line the very first day.

But soon afterward, customers began reappearing at Bill's store demanding their money back. The customers laid on a chorus of complaints: "The new knife's so big now that it hurts when I store it in my pocket!" "The minisaw only cuts wood the size of a toothpick!" "I never use the torque wrenches, but they dangle and get in the way of using the rest of the features!", and finally, "It just seemed like it was easier to get things done with the old knife."

Bill was shocked that customers who had seemed so enthusiastic at first were now so unhappy. He refunded their money, and tried to understand what went wrong. "Perhaps," he thought, "knife customers are just old fashioned and can't deal with innovation…Yeah…That's the ticket…I'll switch markets… maybe…design computer software or something instead… yeah.…"

….And the rest, as they say, was history.

BACK TO THE FEATURE

Many people in the computer field tend to buy things because they have lots of Powerful Features™. As everyone knows, real power users don't worry about how a system looks or whether some assembly-language programming is required before using; give a product a feature list a mile long, and they'll suffer any abuse necessary to make it work.

However, the vast majority of the populace, including the 7 million people we all hope to reach with the new Macintosh Performa computers (see this month's feature article), doesn't buy things for features alone. They want the things they use to possess a sort of elegance about them which gives them direct access to the benefits. Elegance is an integrity, a wholeness to a product that makes it more than the sum of its features. It's what separates a dancer from someone going through the steps, and it's what separates great products from the also-rans. Elegant products don't do everything; but what they do, they do extremely well. What's more, they make it look easy.

We can't afford to let our products stagnate, but at the same time, we should realize that for every new button, each new menu command, and every additional preference setting, we've added just a little bit of complexity to our program. If we're not careful, the sum total of these little "enhancements" can slowly render the product unusable. Throughout all of our product's growth, we need to make sure that it maintains its fundamental elegance.

EVERYTHING TO ALL PEOPLE

It's hard to create a program that fulfills the most esoteric needs of page layout professionals while at the same time serving as a streamlined letter-writing program for students. A program that tries to be both things at once is bound to fail at one—or both—of them. Truly elegant products have identity; a sort of mission in life. Furthermore, the creators of elegant products have a good idea of the sort of person who will use them, and what the person will use them for. Instead of trying to be all things to all people, the makers of elegant products try to do a few things, for a known audience, extremely well.

  With the exception of games, it's very rare to find someone who buys software for the mere joy of using it. Users, especially in the consumer market, tend to buy software with a specific purpose in mind. Users may buy financial programs to balance their checkbooks or a personal information manager to keep track of birthdays. The main thing to remember is that they buy your software for what it does for them.

  As a developer, your job is to figure out what it is that the user wants to do, and make your program do that in the most simple and straightforward fashion possible. This isn't to say that your program can't meet the needs of more than one type of user, but it does mean that whatever the basic needs of your customers are, your program should meet those needs better than anything else the user can buy. If it doesn't, the customer will soon become the customer for your competitor's program.

FEATURE CREEP CAREFULLY

We're all familiar with feature creep. We developers tend to be tinkerers by nature; we delight in seeing how much capability we can build into our products and how far we can add to those abilities from revision to revision. We're encouraged in this by product reviews that make checklists of features to compare different products. The implication of these lists is that if product A has cross-indexed placement of infrared graphics, you'd better add it to your product B, or you're just not competitive. And while we're at it, you better add that algebraic expression formulator that the customer in Sandusky, Ohio, wrote in to request.

THE 80/20 SOLUTION

The 80/20 rule so well known to marketers tells a fundamental truth about product design for software products with mass consumer appeal: 80 percent of the market will use 20 percent of the product's features. Conversely, 80 percent of the features you work so hard to implement will only be used by 20 percent of all users.

By an incredibly complex mathematical analysis, it becomes clear that a product whose goal is to address the needs of 80 percent of the market will be more sucessful than the product which goes all out to placate the one in five users who needs integral waveform analysis in his or her word processing applications.

When you consider adding a feature to your product, make sure you keep the 80/20 rule in mind. For every new feature, ask yourself whether this feature benefits one out of every five users or four out of the five. Give your priority to the latter, and if you do decide to implement features that benefit the smaller group, do it only if you can assure yourself that it won't compromise the ease with which the majority of users can get their job done.

This last part is especially tricky. Sometimes innocuous feature additions have a way of demanding other, related features be added as well. This is the nasty phenomenon known as feature cascade, which has caused the deaths of dozens of successful applications (and probably drove more than a few developers to distraction).

For instance, if your simple word processor adds the ability for a user to paste in a graphic, you should be warned that it won't take long for users to demand that the graphic be able to be precisely placed on the page, with text and other graphic elements flowing smoothly around it. Similarly, if you add the ability for users to specify the font that a report appears in, don't be surprised when they next ask to be able to specify the size and style of both the report as a whole, as well as individual elements in it.

It may well be that the end result of these changes is a superior product with enhanced market appeal, or it could be that the result is a bloated collection of features that meets the needs of no one. As developers, we need to be like chess players—not only planning the current move, but also looking several moves ahead to see if we like where our move will take us.

DEALING WITH OFFERS YOU CAN'T REFUSE

One of the most important skills to have when you develop software for the mass market is the ability to say "no" to a feature request. This is also one of the hardest skills to master, as the person asking for the feature may be especially strident in their request and may try to elevate the most esoteric feature to a status of immediate and universal importance.

Worse is when the person asking for the obscure feature is a major customer, or even the same person responsible for bankrolling your project. In these cases, "just saying no" isn't really a viable option. If you fail to persuade such a person of the error of their ways, you need to adopt a strategy of damage control.

The first strategy is to try to implement their request in a way that doesn't impact the fundamental elegance of the rest of your program. Preference settings and option-commands are two popular—although not entirely perfect—ways of doing this.

The second strategy is to take a lesson from the army knife makers of today and diversify your product line. Today's army knife comes in a wide variety of models, each matching a different person's needs. So, while a fork and knife might be ridiculous and bulky attachments for most people's purposes, the knife-maker offers them on a special "campers knife" geared to just that audience. There are also special knives full of screwdrivers for tinkerers, or with scissors and household tools for home fixit types. Of course, the best-selling knives are still the more basic models, but by spinning off the different gadgets to other products, the army knife makers are able to satisfy different needs without compromising anyone's ease of use.

People in the computer field are used to living on the bleeding edge, putting up with ugly systems in the name of technology. Although it's hard to escape coming into contact with a computer at work, it's a telling sign that only 11 percent of U.S. households find enough value in them to put one in their home. If we want to appeal to the rest of the market, we need to concentrate not on building applications with lots of features, but on building solutions with lots of value. And we need to deliver that value, with a touch of elegance. ◆

We're please to announce that Peter Deignan recently married the wonderful Carolyn Bickford. To simplify his own interface, he's taken his wife's last name, making him Peter Bickford. Pete still runs Apple's IS&T Human Interface Lab.

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 that you want listed here, contact Developer Technical Communications, 20525 Mariani Avenue, Mail Stop 75-3B, Cupertino, CA 95014. For further information check the Events folder on AppleLink (path—3rd Party Connection:Events).

September 8 through 12
Orbit, Basel
Contact: Kathrin Mäder
Switzerland 1 832 81 11
Fax: Switzerland 1 830 63 06

September 13 through 17
IOUW - Int'l ORACLE Users Week Conference
San Francisco, CA
Contact: Oracle Corporation
(415) 506-7000

September 22 through 24
UNIX Expo
New York, NY
Contact: Bruno Blenheim, Inc.
(201) 346-1400

September 22 through 25
Seybold
San Francisco, CA
Contact: Seybold Seminars
(213) 457-5850

September 23 through 30
Bureau 92,
Brussels, Belgium
Contact: BKK

02 7627183
Fax: 02 7629434

September 29 through October 1
CAD CAM Show
De Hallen, Kortrijk,
Belgium
Contact: De Hallen
056 204000
Fax: 056 217930

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

October 19 through 21
National AEC Expo - Arch., Eng., Construction
San Francisco, CA
Contact: Expoconsul Int'l
(609) 987-9400

October 21 through 23
**Winworld, Zurich Window Exhibition
Contact: Kathrin Mäder
Switzerland 1 832 81 11
Fax: Switzerland 1 830 63 06

October 21 through 24
**League for Innovation
Orlando, Florida
Contact: Monica Sable
(408) 974-8554

October 28 through 31
**Educom
Baltimore, MD
Contact: Paula McClain
(408) 974-8502

November 8 through 11
**MacIS USA
New Orleans, LA
Contact: Jerry Starr
AppleLink: JERRY.STARR
(408) 974-3836

November 10 through 12
**Autofact
Detroit, MI
Contact: Society of Manufacturing Engineers
(313) 271-1500

November 13 through 15
**Networld
Dallas, TX
Contact: Bruno Blenheim, Inc.
(201) 346-1400

November 16 through 20
C++ World
Secaucus, NJ
Contact: G.G. Schafran
(212) 274-0640

November 16 through 20
**Comdex
Las Vegas, NV
Contact: Interface Group

(617) 449-6600

November 20 through 23
**NCSS - Nat'l Council of Social Studies
Detroit, MI
(202) 966-8740

December 1 through 4
**Cause
Dallas, TX
Contact: Cause
(303) 449-4430

December 8 through 10
**FCC - Federal Computer Conf.
Washington, D.C.
(301) 961-6575

The Ten Commandments of Product Packaging

How to Create Packages That Sell

by Signe Ostby,
Merrin Information Services

I'm sad to say that few developers treat product packaging as seriously as they do their advertising. Most companies deliberate for days, even weeks over advertising strategy and objectives. Few of us develop objectives for packaging, however, beyond those needed
to protect the product during
shipment.

This lack of attention can severely handicap a product that will be sold in shelf-oriented stores. The reason? Shelf-oriented stores—computer superstores, office product superstores, warehouse membership clubs, consumer electronic stores, and discount department stores—currently account for about one-third of all software and peripheral sales and 25 percent of all hardware sales, according to research conducted by Merrin Information Services.

And if industry analysts are on target, those figures could double during the next two years, as more software and hardware finds its way into these kinds of stores.

The increase in number of these kinds of stores will probably happen mainly at the expense of the traditional computer dealer. At current sales rates, one computer superstore does the same volume of business as at least 100 traditional computer dealers.

The tremendous growth of shelf-oriented computer stores is making packaging one of the single most important parts of your product marketing and communications plans. In fact, packaging is likely the make-or-break marketing element of your product in this selling environment.

We believe your package is as important as your company's advertising. There are four million shoppers—four million potential buyers—walking the aisles of shelf-oriented stores each month. What advertising media can deliver that kind of audience?

So how do you create a dynamo package? Read on.

SELL, SELL, SELL: THE PACKAGE'S MAIN PURPOSE

The package's primary purpose is to sell the product inside it. All other objectives are secondary. Thus, each element of the package design should be evaluated in the context of how it helps sell the product inside. Anything that compromises that purpose will limit sales. You can have a good- or even great-selling product without good packaging, but good packaging sells even more product.

To provide developers with guidelines for good package design, Merrin Information Services has formulated ten guidelines of product packaging based on extensive research in the packaged goods industry. These "commandments" of product packaging are not meant to be rigid, constraining rules that inhibit creativity. Rather, they are designed to help you evaluate your packaging needs, challenge your thinking, and channel your creative efforts.

THE FIRST COMMANDMENT

Thou shalt have a strong, prominent why-to-buy message. The "why-to-buy" message is your positioning statement boiled down to a *succinct, catchy, competitive,* and *compelling* phrase. While you may know this as the product "tag line," we prefer the term "why-to-buy" message because it more accurately describes its role on the package's front panel. Its job is to tell customers why they should buy your product. After all, if you don't tell a customer why he or she should buy your product, who will?

A *succinct* message is five to nine words long. A *catchy* one rolls off your lips like a good jingle; the words have a natural yet intriguing flow.

The *competitive* element of the message can be either implicit or explicit. An explicitly-competitive message more directly references the competition, for example, "works faster than brand X" or "no other product delivers faster performance." Implicitly-competitive messages state a reason to buy that implies that the competition doesn't work as well or in the same way. For example, the Kid Pix tag line (see below) implies that all other painting programs are not designed especially for children.

A *compelling* why-to-buy message addresses the customer's key need that your product fills and compels them to take action (buy your product) immediately.

Here are some examples of effective why-to-buy messages:

- *"The easiest way to improve your writing."* Grammatik by Reference Software.
- *"The paint program just for kids."* Kid Pix by Broderbund.
- *"The easiest way to fax. Period."* SatisFAXtion Board by Intel.

THE SECOND COMMANDMENT

Thou shalt be realistic about thy company's name and logo. Putting your company name on a package is important, especially if the name is well-recognized. However, it should never be the major element of the package design—unless it's the best reason for a customer to buy the product.

It's easy to communicate your company's identity without overpowering other design elements. A classic example from the consumer packaged-goods industry is Nabisco, which uses its red logo in the upper corner of all its products. The rest of the package is devoted to selling the product, not the company.

A caution: Do not use the package to make your logo or company name better-known. If your product becomes successful, people will begin to recognize your logo and company name. The reverse does not hold true.

Examples of packages that do a very good selling job without using an overpowering company name or logo are Symantec, Broderbund, and Claris software.

THE THIRD COMMANDMENT

Thou shalt not use thy product name foolishly. Some names help sell the product that's inside the package, and others don't. In general, if a product name is either extremely well known (such as 1-2-3) or is very descriptive (such as LaserWriter), then it can be the major package design element. If the name does not clearly convey product benefits or if you cannot change the product name to one that is more descriptive or sales-oriented, it should not be the major package design element.

THE FOURTH COMMANDMENT

Thou shalt use product information as a competitive tool. The purpose of the product information printed on the front and back panels of the

software package is to *sell,* not merely *inform.* Usually, there are only two or three functional benefits that make a customer decide to buy your product instead of a competitor's. To know what those are and to determine what related product information to use on your package, you must understand the target customer very well.

You must phrase the product information on the package in a way that directly and competitively addresses these issues. Don't merely state that your product performs a certain function or has a particular feature. Instead, sell the customer on why your product performs that function better than the competitor's product does. In other words, emphasize the product benefit, not the feature. (See Table 1 below for examples of feature- versus benefit-oriented package copy.)

On the other hand, don't overload customers with too much data. Make your key points, and then stop.

THE FIFTH COMMANDMENT

Thy package shall have high visual impact from ten feet away.
Customers cruising the aisles of shelf-oriented stores are usually three to four feet away from the shelves, and are scanning shelves up to ten feet ahead of them as they walk. They skim them quickly from top to bottom, until something makes them stop and look more closely.

Your package has about one second to catch a customer's eye, urge him or her to stop, and pick up your product. Therefore, it's crucial that your package be very easy to read.

Color. Color is critical in achieving high impact. The consumer packaged-goods industry has spent millions proving that day-glow red, orange, and yellow have the most shelf impact.

Next time you're at the grocery store, look down the laundry detergent or cereal aisles (the two most heavily-researched aisles in grocery stores) and note the effect and impact of these colors. The same holds true for any computer product package.

Placement of key design elements. For most software and peripheral products, the highest priority design elements (chosen from among the why-to-

buy message, product name, company name, graphics or visuals, and product information) should be on the lower half of the front panel.

The reason: In most superstores, it is extremely difficult to see the tops of packages that are placed on lower shelves, especially when stock is low and packages are not "shelved out," that is, placed on the forward edge of the shelf.

This rule is even more critical for software products, because some stores (Egghead, for example) overlap shelves. A shelf overlapping the one below obscures whatever is printed on the upper third of the package on the lower shelf.

Many developers put the product name on the top half of the package; a name in that location will be completely hidden by the shelf above it at stores that overlap shelves. In those cases, there is no way a customer can locate your product by name, except by peering at the small type on the store's shelf tags.

THE SIXTH COMMANDMENT

Design thy graphics to communicate. If an uninformed customer cannot immediately and easily understand what the product does simply by glancing at your package, you should scrap your design and start over. If you choose to make a graphic or other visual a major element on the package's front panel, make sure that it is easy for target customers to recognize or figure out, at a glance, what the visual element is or represents.

THE SEVENTH COMMANDMENT

Thy printing shall be readable. Customers won't read that which is not easy to read. Thus, your fonts must be instantly legible to a customer who is four to ten feet away from the package. In general, sans-serif fonts are easier to read from a distance. (That is why most freeway signs use an easy-to-read sans-serif font.)

This does not mean that your fonts need to be dull and uninteresting. Kid Pix is an excellent example of a package that uses creative sans serif fonts that are easy to read, and that uses bright printing on a light background.

Legibility is also increased by having the maximum amount of contrast between type color and background color. Consumer packaged-goods research has proven that, in general, dark or bright printing on a light

background, rather than the reverse, is the easiest to read quickly, especially when there is a lot of text. (There are, of course, case-by- case exceptions to this rule.)

THE EIGHTH COMMANDMENT

Thou shalt use every available surface to sell. You never know how a store will place your product on the shelf. It could be placed front panel out, side panel out, stacked on its back (and thus bottom panel out), or whatever. To make sure customers can see, at minimum, your name and why-to- buy message, these should be prominent design elements on all panels.

If you have done a good job establishing in-store merchandising programs, your products may be placed on an individual display. The most common of these are in-aisle displays. In most cases, products on an in-aisle display are simply stacked on the floor or are otherwise separated from the store's other products rather than being mixed with other software on shelves.

Unless the display is always stacked to chest or eye level (something you cannot control), the package surface that the customer sees most frequently is the top panel. If your selling message isn't there, you are wasting a sales opportunity.

THE NINTH COMMANDMENT

Thy packages shall be designed to fit on store shelves. This guideline seems so obvious, but it is frequently violated by attempts to be clever, distinctive, or just different. Most shelves in superstores are a standard height. Take this into consideration when designing your software package; an average to use is 10 inches. If your package is too tall for standard shelves, your product will be relegated to a less-visible location or stacked on the shelf in a less-than-optimal manner.

For example, if your product is taller than standard shelves, the stores will stock it on the bottom shelf or tip your product onto its back. This is the problem with one well-known graphics application. Inside the package is an 8 1/2" by 11" page, which makes the package taller than the normal shelf. Thus, in superstores the product is normally stacked on its back on the bottom shelf.

On the other hand, Broderbund, for example, has tried to minimize the effects of this problem by using very bright yellow-orange colors to improve the box's shelf impact in a substandard shelf location.

Unusual package shapes also run the risk of not working well in this channel, where products are often stacked on top of each other. For example, if your box is triangular you cannot stack another box on top of it, which limits the display height to one box—a very puny display with low impact.

Unusual shapes (a recent package that comes to mind is a painting application in a creative paint-can type package) can help a package stand out on the shelf, if the packaging is also functional. But your package must be able to stand on its own without support, and you must be able to stack another package on top of it without toppling the stack or obscuring the key selling messages. If you can achieve this using a creative package shape, go for it— but understand what you'll be up against in the store environment. (Some developers have provided stores with special shelf holders for their unusually-shaped packages, but this is a very expensive proposition, if the store will even use them.)

THE TENTH COMMANDMENT

Thou shalt view thy package on a store shelf before committing to a design. A package's ability to sell is relative to the environment it competes in. No package can be evaluated by itself, "out of context" in your or your art director's office. What appears to jump off the shelf of the white bookcase in your office can disappear on the store shelf. A red package could look dynamite in your conference room, but if your competitors also have red packages, yours will not stand out. Furthermore, lighting and shadows in stores can make some designs less noticeable than others.

There is no substitute for taking a package prototype to a store, placing it in a couple of shelf locations, standing at least ten feet away, and evaluating what you see. Make sure you do this during the design stage—before you have spent substantial money on package inventory.

WHERE TO START

How do you start the process of creating the ultimate package? Approach it as you would any other marketing communications strategy: with a plan. Before you begin a package-design project, make sure you develop a package-design brief that includes:

• Target customer description
• Product marketing objectives
• Key product features
• Most significant reasons for a customer to buy
• Why-to-buy message
• Description of the top three to five competitors
• Priorities for front-panel design (why-to-buy message, product name, company name, graphics or visuals, and product information).

I can't emphasize enough how important this plan is. It serves several purposes. The planning process itself forces you and those you work with to carefully think through, articulate, and agree on key marketing information—and how it relates to your package. The plan also serves as a communications vehicle between you and the designer; if well written, it provides clear, concrete direction that will increase the odds that the package design will meet your objectives. It also gives you some basic criteria with which to evaluate the various artistic solutions that will be offered to you.

If you already have a package, give it the ten commandments test. If it doesn't sell, sell, sell, consider going back to the drawing board. And if you're just starting to design the package, we hope these guidelines will help you create what will be, for your product, the ultimate package that sells. ◆

Signe Ostby is an advisor to Merrin Information Services, a Palo Alto, California company that offers full-day practical marketing seminars on improving in-store merchandising, increasing sales through better packaging, and other topics.

Table 1:

Samples of Feature- Versus Benefit-Oriented Copy

Product	Feature-Oriented	Benefit-Oriented
Calendar software	Wide variety of printing options	Prints all major appointment-book formats so you can take your schedule with you

Scanner	32 gray-scale	32 gray-scale for superior image quality
Monitor	640 x 400 bitmapped graphics	Screen is easy to read, also easy on the eyes
Disk compression	Disk caching	Disk caching for speedier software performance

Cracking Several Markets With a Single Product

How We Entered the Home and Education Markets

by Greg Baszucki, Knowledge Revolution

In the last two issues of *Apple Direct,* the marketing features have focused on opportunities for developers to cross market products—those originally intended for other markets—to education segments, and vice versa. I'd like to offer you the gist of Knowledge Revolution's experience in cracking several markets with a single product, and point out some of the challenges and rewards you might encounter.

YOU WANT TO CROSS-MARKET WHAT?!

The first consideration when trying to cross-market a product is whether you have an appropriate product. Each market has its own buyers who have specific product needs. To be successful, you must understand each market intimately, and know what customers are looking for in power, price, packaging, features, and purchase source. (For more information, see "How To Move Products Into New Markets" in the August 1992 issue of *Apple Direct.*)

Ergo, not all products are suited for cross marketing. However, several kinds of products—spreadsheets, databases, and word processors—have crossed market boundaries very successfully. There are several reasons for this, but most importantly these products are fundamental, flexible tools that users in a variety of situations need and can benefit from.

We decided that our product—Interactive Physics II (named Fun Physics in the consumer market)—would be well suited for a variety of markets because, like the products mentioned above, it is a fundamental, flexible physics tool. It allows users to simulate, on the computer, virtually any motion problem imaginable. That is, users can build objects (squares, rockets, cars, and so forth) on the screen, define motion parameters for each object (mass, elasticity, charge, velocity), set the environment (gravity, air resistance, electrostatics) for the experiment, and then "run" it, simulating how the objects would act in reality.

The application is flexible in the sense that it can be considered as a "spreadsheet for physics." Overall, spreadsheet applications are totally open-ended; that is, while they are programmed to use basic mathematics principles

and formulas, they also give the user a lot of leeway in determining how to use those capabilities to accomplish a specific task. For example, accountants can build the kinds of spreadsheets they need, while engineers or project managers can also use the same spreadsheet tool for their own purposes.

Likewise, Interactive Physics II is open-ended and flexible. Rather than forcing a user to run pre-determined physics "experiments," the application, which is programmed to simulate the basic laws of physics, allows users to author experiments according to their individual needs. This gives the application the broad functionality and appeal needed to sell it to a wider variety of customers.

The success of such "generic" tools in a variety of markets has also been due, in part, to developers' efforts to appropriately market those products for each segment. In many cases, they have renamed, repackaged, repriced, and sometimes altered the application's feature set or documentation to make it appealing to a different audience than was originally intended. (Later in this article, I'll discuss how Knowledge Revolution used this approach to cross-market our product to home buyers.)

The key for you: Not all products have the same widespread, generic appeal as a word processor or a spreadsheet, so you must look for the same type of "nugget" in your product.

Another important product consideration if you decide to cross markets is that it's much easier to scale down a more powerful application than to add power to one that is less sophisticated. For example, in the case of an already-powerful product originally intended for the higher education market, it is much easier to handicap the fundamental code for use in high schools (where less power and a lower price may be more appropriate) than to make it more powerful for a very specialized, vertical market.

If you first design your product with the most sophisticated, demanding user in mind, chances are that you will create a tool that offers a range of features and capabilities that will be attractive to the broadest possible audience. It's difficult (and in some cases, unwise) to be all things to all users. But if the basic tools are available in a product, it will be appealing to a broader variety of users.

For example, most people don't use the regression analysis capability of a spreadsheet; but because it's there the product is more full-featured and almost everyone—doctors, lawyers, health club owners—can find a use for the more general features of the application.

In our case, we examined the different market opportunities and developed what we felt would be a generic, yet powerful tool. We built the product with the most advanced user in mind, creating an application that offers a range of features and capabilities to fill the needs of a wide variety of customers. We subsequently produced scaled-down versions for customers in other markets who needed less power. This was much easier than trying to add power to a less-sophisticated application.

Mechanical Engineers: A Bonus Market. You may also find that your product appeals to those outside of the markets you've identified. When we first released the original version of Interactive Physics, we discovered a bonus market. Our product, originally intended for use in higher education, was also very appealing to mechanical engineers. They use the product for such tasks as visual animation, engineering simulation, and creating and testing prototypes on the computer before building the real-life prototypes.

During the next product rev, we made changes (which produced Interactive Physics II) that would better accommodate this group. We added more capabilities/tools to broaden the feature set to make the application more powerful and appealing to this market.

BREAKING INTO EDUCATION VIA TEXTBOOK PUBLISHERS

Once you have a product suitable for cross-marketing, you must find ways to get it into users' hands. In our case, we worked closely with university professors to get them to adopt the product for use in their classes; we worked with high schools as well. (For more information about how educators select and buy products, see the Marketing Feature, "How to Move Products Into New Markets," in the August 1992 issue of *Apple Direct.*)

However, establishing distribution channels in new markets can be costly and resource-consuming. But in education, there's a special opportunity that we took advantage of: working with textbook publishers.

Textbook publishers have well-established relationships with their education customers, and they are very knowledgeable about customer needs and buying habits. In the case of higher
education, most major publishers have more than 100 sales representatives.

They meet regularly with customers at universities and colleges and cultivate relationships with university bookstores.

Furthermore, in working with textbook publishers we have seen that they realize more than ever that the computer is coming of age in the classroom; they are working hard to understand the market potential. This is creating a tremendous opportunity for developers: If you work with publishers correctly, the potential rewards are well worth the effort: Capitalizing on a good relationship with textbook publishers can give you leverage and exposure, as well as extra income and the opportunity to create a market for more products.

When To Work With A Publisher. Not all software is suitable to be integrated into a textbook. Working in areas where your product is a natural fit— rather than a forced one—will lead to the most productive results and a bigger payback.

There are few hard and fast rules about when to work with a publisher, but there are a couple of guidelines that can help you decide if it's the right thing to do. For example, it's much easier to integrate products into the hard sciences (such as chemistry, physics, and biology) than into the soft sciences, such as physiology or psychology.

Also, one rule of thumb is useful across the board: The publishing industry is typically very slow to adopt major new changes; therefore, they want a standard. They want assurance that the software they are adopting will be around not for only one or two years, but for five or ten. Publishers need to see that your technology is being adopted as an industry standard, and this is often a very difficult criterion for a developer to meet.

Standardization offers publishers several benefits. Having a reliable, known technology available makes it easy for textbook publishers to get involved in the computer end of the business. They typically don't have to spend the effort developing a system of their own, and can instead create content quickly and easily by using existing software. Also, by creating this content their books will entice more buyers than books that don't have technology integrated into them.

Most major accounting textbooks, for example, use a standard set of applications integrated into the textbook. For instance, both Microsoft Excel and Lotus 1-2-3 are used extensively. Another example is Mathematica. When most people think of Mathematica, they envision a very broad mathematics system for use on the computer. One reason Wolfram Research has been successful in its

bid to work with a textbook publisher is the fact that Mathematica is recognized as a standard math program.

In our case, Interactive Physics II is a standard physics modelling tool. It also includes authoring tools that allow educators to create their own front-ends to physics problems. A textbook publisher could also use this standard tool to quickly build and model problems from their books on the computer—which immediately adds value to the book—and makes our product attractive to textbook publishers.

Lastly, you must also determine what constitutes the right fit between you and a publisher. This means understanding that there are two distinct major textbook markets—high school and higher education—and knowing how they differ regarding how they buy books and what solutions they need. (For more information about the solutions educators and publishers are seeking, see "Finding the Right Fit" on page 14.)

WAYS TO WORK WITH TEXTBOOK PUBLISHERS

There are several ways to work with textbook publishers, each requiring a different level of involvement and development effort on your part. Generally, there are five kinds of products you can produce: templates, authored (run-time) curriculum-based materials, developed systems, reduced-capability solutions, and student editions. In any case, it's very important to understand that no matter what route you choose, the key is to add value to the publisher's textbook—which creates the incentive for a publisher to work with you.

Templates. Creating templates is the easiest way to integrate your products into a textbook publisher's materials. You create a series of templates that will work with the instructional material in the textbook. For instance, in the case of spreadsheet applications and accounting texts, ready-made templates are packaged with the books. Students can bring their books home and immediately use the templates with a spreadsheet application.

The template concept can be used in other education disciplines, as long as the base software application is generic enough to handle most types of problems and uses. The key, again, is to be sure that your templates truly add value to the textbook; otherwise, there is no advantage for the publisher to work with you.

Authored Solutions. Another way to work with a textbook publisher is to offer a product that includes an authoring tool. This enables a textbook publisher to easily produce (author) its own, custom solutions using your technology. You may have to modify your existing product to include this, but often it can be done with a minimum of development time and effort using a core part of your technology. In our case, the core product was a tool-based motion simulation system.

Our agreement with the textbook publisher required that we include the necessary authoring tools to make live working-textbook problems, so we developed a run-time engine and controls. Thus, the teacher could create run-time files (problems, experiments, or student exercises), and students would not need the application to use those files. This freed the textbook publisher to do what it does best—create curriculum materials—while not worrying about the technology.

Developed Systems. The arrangements that require the most development effort are those in which the software developer provides an entire solution. For example, you might create an entire software-textbook system from scratch.

Getting textbook publishers to agree to this kind of arrangement is usually very difficult. They are wary because it is somewhat difficult for them to envision what the final product will look like, and they will not yet have developed a measure of confidence in how good your work will be. They'll want to be convinced and will first need to see something that you've already created—a piece of software, a prototype, sample code—before deciding to work with you. In some cases, they will pay for this up-front work on your part, but in others you may have to work on speculation.

Another publisher concern is that as computers change, they will have to apply additional resources to modify the software so that it will continue to work on new machines. In almost all cases, textbook publishers will not want to take that risk.

Reduced Capability Solutions. If your software has the potential to be used more broadly than with a specific textbook, creating a reduced-capability solution—that is, supplying a somewhat handicapped or modified but functional version of the program—may be right for you. We are integrating our software with all of Prentice Hall's college-level physics textbooks. However, we are

using a reduced instruction runtime version of our software. We handicapped the basic application in such a way that the student still benefits from the program, but enough functionality is available to make it more than a page-turning piece of software.

Student Editions. One of the best ways to work with textbook publishers is to create an edition of your product in the price range that a student can afford (under $100 being the ideal). It's important to offer students a lower-cost product to entice them to buy (rather than copy) the product.

Furthermore, you will sell more software to students if your version includes such things as a manual that is very useful for them, or if they can be convinced the product will help them to get a better grade. And if your software is already integrated into textbooks and is a generic tool, then the student version will probably do well because you will have created the market for it.

With student editions, textbook publishers can become an immediate channel for your product. If you can convince the publisher that students will buy the product and that it adds value to the kinds of textbooks the publisher offers, it will often offer to use its marketing resources to sell the product to students. Don't underestimate the potential of a publisher's sales force. It can definitely help you.

TACKLING A NEW MARKET: MOVING FROM CLASSROOMS TO LIVING ROOMS

Once we were established in the education channel by working first with teachers and then with textbook publishers, we saw an opportunity to expand our revenues by putting our product into the consumer market as a home education tool.

However, cracking the home market is tricky. Parents are searching for ways to give their kids an educational edge. And they seem to buy software that at the same time is easy to use, teaches something valuable, and is fun. (This kind of software has been dubbed "infotainment" or "edutainment.") So your product has to be several things at once—and this is not always easy.

Furthermore, your product competes with flashy products such as Nintendo games, which are naturally attractive to kids. So you must offer something special that both motivates parents to buy the product and attracts kids to use it.

Here's how we made the transition from the classroom to the living room. We did market research that told us children found our physics program extremely exciting. Also, we recognized an opportunity to capitalize on the emerging trend to better educate youngsters in the sciences.

But several key changes were needed to make the product more appealing and exciting to this new audience. We lowered the price from $249 to $99—a must for home users. And after attending a software retail packaging seminar we modified the packaging. (See this month's Marketing Feature, "The Ten Commandments of Product Packaging.")

More-legible fonts, bright colors, and more attractive graphics topped the list of changes made to catch the eye of the retail buyer. We also modified the user manual by adding such things as a section for kids about how to create "fun" experiments.

When all was said and done, Fun Physics emerged. We changed the name to make it more enticing and less technical sounding for the home user. However, to capitalize on our already established reputation, we kept the association with the original name: Fun Physics—the Original Interactive Physics.

Thus, with relatively little investment we were able to capitalize on our original development investment and expand the market for our product—and our revenues. ◆

Greg Baszucki is the vice president of marketing for Knowledge Revolution, an education and home software developer located in San Francisco, California.

**Finding the Right Fit

Determining whether you can find a fit between your company and a textbook publisher depends on understanding that the two major textbook markets, high school and higher education, are very different in many ways, including how they buy books and the kinds of materials they need for their classes.

How They Buy Books. In most colleges, each professor chooses the textbook for the classes he or she teaches. Some books for larger-sized introductory classes, such as Physics or Biology 101, are chosen by committee, but more often than not the instructor chooses the book.

On the other hand, in the high school market some states adopt a number of textbooks and software applications to use throughout the state; each teacher selects two or three books and software from among this "chosen list." Typically the decision about which books to use is committee- or district-based, and often the individual teacher has no say about which textbook will be used.

One of the biggest differences between high school and higher education markets, though, is how students buy books. The college market turns over every four years or so, and during that time students are responsible for purchasing their own books. In high schools, the school purchases the book and "loans" it to students for use during the school year. The school sometimes uses the same books for many years.

In higher education, students must purchase their own books. Therefore, based on our experience I think the biggest developer opportunity when it comes to integrating software into textbooks is higher education: When students purchase books, the sales potential is higher.

What Solutions They Need. The kinds of products needed by each market are also quite different. High schools favor the complete-system approach. These teachers tend to prefer a solution in which everything is ready-made for them—a turnkey solution in which textbooks or textbook-software solutions include ready-made problems sets for students. On the other hand, colleges prefer a tool-based approach, in which you offer them tools that allow them to create their own problem sets, experiments, and so forth.

However, there are indications that the high school market is moving towards a tool-based approach also. As high schools are becoming more informed about software purchasing, they increasingly seem to want complete but open-ended systems that allow them to at least create some of their own instructional aids. No two teachers teach alike, so why should software limit how they do it? ◆

Being Productive on a Macintosh

Trends and Issues in the Macintosh Software Market

By Joan-Carol Brigham and Wendy Weinstein, International Data Corporation, IDC

[Editor's note: Research for this, the second installment of Market Research Quarterly, was completed before the announcement of the Performa line of Macintosh computers. A future issue of MRQ will focus on the consumer computing market.]

The IDC user audits, which target business users, show that the majority of Macintosh computers are used daily for basic applications that assist the user's productivity — word processing, spreadsheets, database management. The markets for so-called *productivity software*, which IDC reviews each year, are thus
critical targets for Macintosh developers.

In this issue of Market Research Quarterly, we examine the productivity software market and point at major factors that will affect worldwide sales in the next five years. These factors include Macintosh hardware sales, distribution channels, product marketing strategies, and the status of software piracy. Apple's five-year strategy and the acceptance of System 7 will also have a major impact on the evolution of these markets, which are so important in complementing the success of the Macintosh.

THE WORLDWIDE PRODUCTIVITY MARKET

IDC divides the Macintosh productivity software market into four key areas:
- word processing
- spreadsheets
- databases, which are further segmented into flat-file and relational databases
- integrated software, bundled programs that include many or all of the above functions, and may also include communications,   graphics, or paint applications

Worldwide Macintosh productivity software sales have leapt in recent years, with revenues climbing from $189.9 million to $266.8 million between 1990 and 1991 and shipments jumping from 915,600 units to 1,370,300 units for the same period. This represents an increase in Macintosh productivity software revenues of 40.5 percent in a single year and in unit shipments of 49.7 percent between 1990 and 1991.

Closer review of the market (see Figure 1) shows that in 1991 word-processing software was the dominant category, with a share of 38.6 percent of productivity software. Database software was the second-highest selling segment during 1991, with 30.5 percent of the market, while spreadsheets held a solid third, with 19.2 percent of the market. The smallest segment of the Macintosh productivity software market is integrated software, which represents only 11.7 percent of the total.

It is important to note that while 1991 shipments appear remarkable, this is only in comparison to the lackluster sales of 1990, an effect that directly paralleled Macintosh CPU sales. As Apple continues to bring less technically advanced and less expensive Macintosh computers to market on a more frequent basis, software sales should remain strong. New and improved models brought to market more frequently will keep the potential user base more interested and result in continued improvement in both hardware and software sales. IDC projects productivity software sales to double between 1991 and 1996, reaching unit shipments of 2,694,300.

By 1996, IDC does not see any major changes in the order of the different segments of the productivity software markets, although share distributions will change. In the long term, IDC is projecting that the word-processing segment will continue to grow, reaching shipments of 1,216,700, a full 45.2 percent of the total productivity market. At the same time, database packages will drop to 23.7 percent, while spreadsheets will show a slight increase, moving up to 20.1 percent. Integrated software will continue to trail, with a share of 11.1 percent (see Figure 2). Each of these segments will be described more completely in the next section.

PRODUCTIVITY MARKET COMPONENTS

Word Processing Software. This is the largest and most mature segment of the Macintosh software market with close to a 50 percent "penetration rate" on

all Macintosh computers in 1990. That is, the buyers of nearly half of all Macintosh computers purchased by 1990 also purchased word-processing software. The total installed base of word-processing software will more than double by 1996 to 6.63 million units; its penetration rate, however, will recede against the higher volume of Macintosh CPU sales. By 1996, word processing will decline to 33.8 percent penetration of the installed base of Macintosh CPUs (see Figure 3).

The word-processing software penetration rate will decrease because of increases in sales of multiuser licenses and unauthorized software copying. IDC includes multiuser license sales in its single-unit sales figures, which means that unit sales figures will not reflect an increase in users from multiuser license sales.

Similarly, some users feel that it is acceptable to copy software onto a second computer which may be a notebook or a computer purchased for home use. Whether or not this is considered piracy, the duplication of software packages on the office and home machine by users, rather than their purchasing additional copies, has a direct, tangible impact on the bottom line of software vendors. Despite the fact that multiuse license sales and unauthorized software copying result in more users, this increase will not be reflected in sales figures.

Between 1991 and 1996, revenues will continue to grow, almost doubling but not keeping pace with unit shipments. The slowdown in revenues will occur because of intense competition, alternative pricing schemes including competitive upgrades, aggressive discounting in corporate accounts, and bundled packaging, all of which will result in lower prices.

The word-processing market is currently dominated by Microsoft, with Microsoft Word accounting for over half of the unit shipments and revenues in the word-processing market segment. However, Macintosh users show less brand loyalty to their word processing packages than the typical PC user.

Studies reveal that Microsoft Word users are not so devoted that they won't consider another package. This provides a high potential for all major vendors to make substantial inroads into Microsoft's market share. Word processors from companies such as WordPerfect and Claris are selling well, apparently because they offer alternative features and functions that are attractive to different corporate users needs.

Spreadsheet Software. The spreadsheet market is the second most mature productivity software market. IDC expects that this market will grow at a slower rate (of 15.5 percent) than the word-processing market. As is evident from Figure 4, the penetration rate will decline, dropping from close to 30 percent in 1990 to 16.3 percent by 1996.

This market, like the word-processing market, will be affected by the sales of multiuser licenses and copying of software for home use. According to IDC user research, close to 65 percent of the average business user's computer-use time is spent using word processing and spreadsheet software. These high-demand market segments are ripe for moving to multiuser licensing schemes.

As corporations move further toward regular use of networks and servers, licensing will become an even more attractive alternative. As a result, unit sales will not fully reflect the number of users; and the penetration rate will decline.

Overall demand for spreadsheet software will be steady for the next few years, although by 1995 sales will begin to level off. Aggressive hardware sales and expectations for new offerings for the Macintosh from companies such as Lotus will affect the competitiveness of the marketplace, especially as competing vendors also broaden the features and functionality of existing packages.

More powerful machines and more powerful software will enable Macintosh users to perform more complex tasks, bringing a whole new set of demands to developers and hence a whole new suite of competitive features. The more powerful spreadsheet packages will also increase acceptance of the Macintosh as a viable business machine either as an alternative or a complementary choice to the firmly entrenched DOS- and Windows-based personal computers in the corporate environment. Today, cross-platform compatibility has already become a key competitive feature for applications.

The anticipated release of the Macintosh version of Lotus 1-2-3 created a lull in the market as users (especially those users in mixed Macintosh/DOS/Windows environments) waited to see what it would offer. The lull had little effect on the dominance of Microsoft Excel, which had a 1991 Macintosh spreadsheet
market share of 70.4 percent. Although Microsoft Excel appears well entrenched, it may be vulnerable; the strong contender, Lotus 1-2-3/Mac, has done very well in its first months of shipping, gaining 7.6 percent of the market. Lotus is offering a strong spreadsheet feature set, has built strong distribution

channels, and will certainly benefit from the high degree of name recognition of 1-2-3 in the DOS and growing Windows market.

Revenue growth in this market will keep pace with shipments, although at lower overall rates. IDC expects that spreadsheet revenues will grow at 13.4 percent overall between 1991 and 1996. Market revenues will be pressured by falling prices in the short term, caused by increased focus on competitive upgrades similar to what is anticipated in the word- processing market. The spreadsheet market will also be affected by the increase in sales of integrated software packages, although mostly in the low end of the market.

With the introduction of the Performa line of Macintosh computers (see this month's feature) and other efforts to sell low-cost models, Apple is reaching many first-time users and business users equipping their homes with less expensive computers. These systems will tend to have less memory and smaller hard drives.

Users will therefore tend to look for software products that give them the most bang for their buck, a need that integrated packages are designed to fill. Also, the home market is less inclined to purchase powerful spreadsheet packages for simple budgeting; consumers will find many of the low-end, low-priced spreadsheet and integrated software packages to be adequate for their purposes.

Database software. The database market actually consists of two separate components: "flat-file programs" that handle a single database and "relational" programs able to handle, extrapolate, and search between multiple, separate databases. Overall, market currents show a very low penetration rate, estimated by IDC at around 11 percent of all Macintosh CPUs in 1991 (see Figure 5). This is significantly lower than the approximately 30 percent penetration rate of database packages in the DOS market. The Macintosh database software penetration rate generally lags that of the DOS/Windows market because fewer database packages for the Macintosh have been available for a shorter period of time than those for DOS/ Windows.

The Macintosh database software market is, however, beginning to show signs of growth. IDC estimates that closer to 65 percent of all Macintosh computers are used for some type of database function, although the vehicle is likely to be some other application product, such as a spreadsheet program or targeted database packages like sales- prospect tracking programs.

Database packages are more likely to be secondary purchases, bought by more seasoned users. As the market matures and users' initial application needs are met, they will begin to turn to the more sophisticated functionality and capabilities of a database package. Additionally, market growth will be aided by improved user interfaces and the availability of packages that are increasingly easy to use.

The improvement of database application shipments for the Macintosh may also be influenced by:

• Macintosh ease of networking, especially when compared to   the DOS/Windows environment

• Dramatic price drops on low- end machines, making it easier   for users to employ them as intelligent terminals

• The availability of a broad spectrum of viable database   software options

Flat-file and relational database packages differ in the way they are priced, marketed, packaged, and distributed. For example, flat-file databases are more apt to be sold as single-user packages, although they are increasingly being sold for multiple users. Additionally, the price-per-user for flat-file packages is well below that of relational databases. Relational databases, on the other hand, have greater functionality and tend to be sold as multiuser packages priced in the thousands of dollars.

Although IDC expects the overall Macintosh database software market to grow at 8.9 percent between 1991 and 1996, revenues will climb by 17 percent for the same period. The broad spectrum of pricing, especially as relational database products increase their presence in the Macintosh database market, contributes heavily to this trend. Shipments will reach 638,600 copies by 1996, up from 417,700 in 1991.

The flat-file market, which IDC anticipates will drop from 268,800 units in 1991 to 246,700 in 1996, is dominated by Claris with FileMaker Pro, which captured a resounding 95.2 percent share of the flat-file market in 1991. The flat-file market will decrease its 64.3 percent share of the total Macintosh database market to 38.6 percent by 1996. The difference will come from shipments of relational database packages, which will grow from 148,900 units in 1991 to 391,900 in 1996, bringing its share of the market to 61.4 percent (see Figure 6). The dominant vendor in the relational database market is Acius at 37.5 percent of the market with 4D and FileForce .

Integrated Software. Although these packages hold many potential benefits for the end user, IDC does not expect that integrated software will gain in market share.

Historically, integrated packages have found it hard to compete with fully functional word processing, database, spreadsheet, and communication packages. Integrated packages have found success in smal, niche markets such as small or home business. In fact, by 1996, their share of the productivity market will have decreased slightly to 11.1 percent, although total sales will have more than doubled by 1996. (The forecasts in this section were made before the release of the Performa Macintosh line.)

Integrated software also has the lowest penetration rate (7.5 percent) of any of the Macintosh productivity software packages. Although the market is experiencing renewed interest as the direct result of the increased availability of inexpensive low-end Macintosh systems, IDC expects the penetration rate of this market to remain low, only reaching 8.3 percent by 1996. Unit shipments will climb from 160,700 units in 1991 to 298,000 units in 1996, a healthy growth rate, but one that will still result in a small installed base of this type of software. Revenues will experience similar growth, climbing 11.7 percent for the same period (see Figure 7).

The single most critical element driving sales in this market will be sales of low-end systems. The limited memory and low-cost packaging will drive more users to consider integrated packages, which offer good functionality while requiring less memory. As a result, integrated software will begin to place competitive pressure on the low end of the word-processing and spreadsheet markets.

New entrants to the market will also spur sales. Currently, Microsoft holds 74.7 percent of the market, a drop of 21.8 percent from 1990. Increased sales by Claris with Claris Works and Symantec with Greatworks have begun eroding Microsoft's share based on the strength of their offerings.

AND IN THE END

The IDC user audits show that word processing and spreadsheet packages continue to be the two key applications for most users. Other packages, such as databases, continue to play more of a supporting role. As evidenced by the

market performance and supported by user audit data, market growth in the Macintosh productivity market, will most likely come from customers adding capabilities or from increasing hardware sales.

As Apple continues to build its share in the personal computer market, this will create opportunities for Apple software developers in the basic productivity arena. Additionally, as the company increases its presence in the corporate environment, users may be more inclined to purchase a second machine for use at home, thus increasing hardware sales and, in turn, potentially expanding software sales as well. ◆
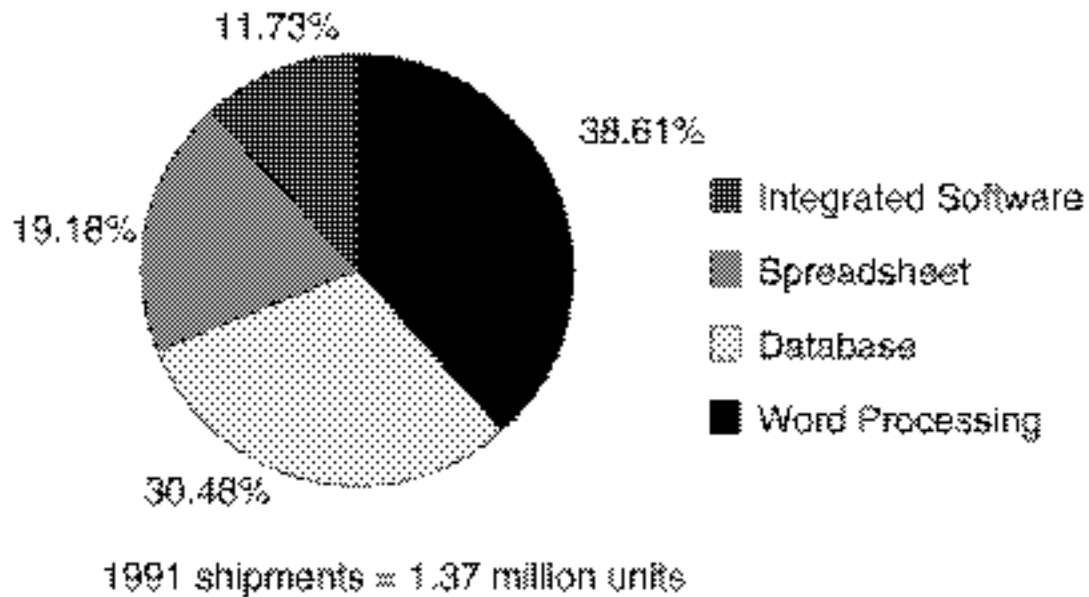
Figure 1: 1991 Worldwide Macintosh Productivity Software Market
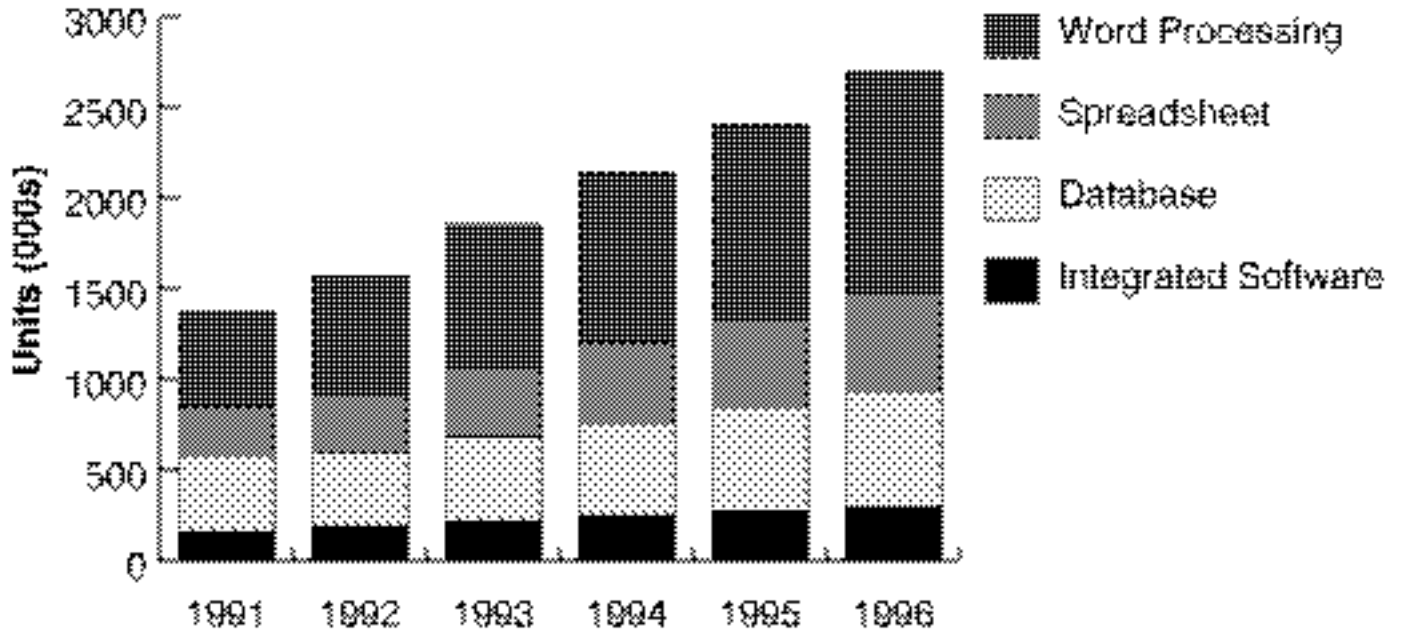
Figure 2: Worldwide Macintosh Productivity Software Forecast, Unit Shipments by Segment, 1991-1996
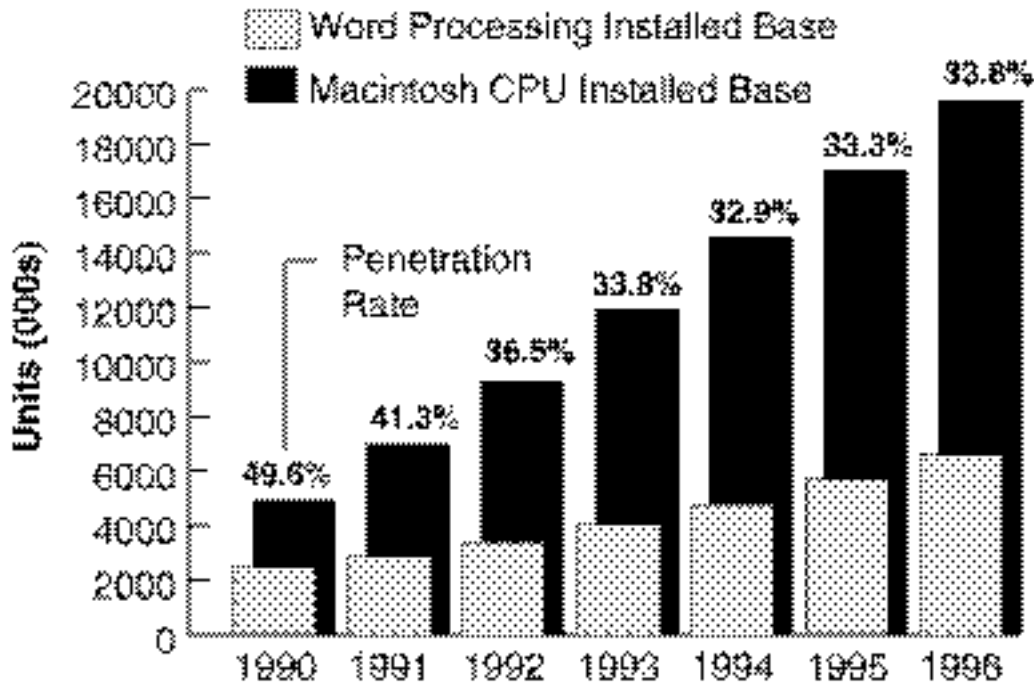
Figure 3: Worldwide Penetration Rate of Word-Processing Software Into Macintosh CPU Installed Base, 1991-1996
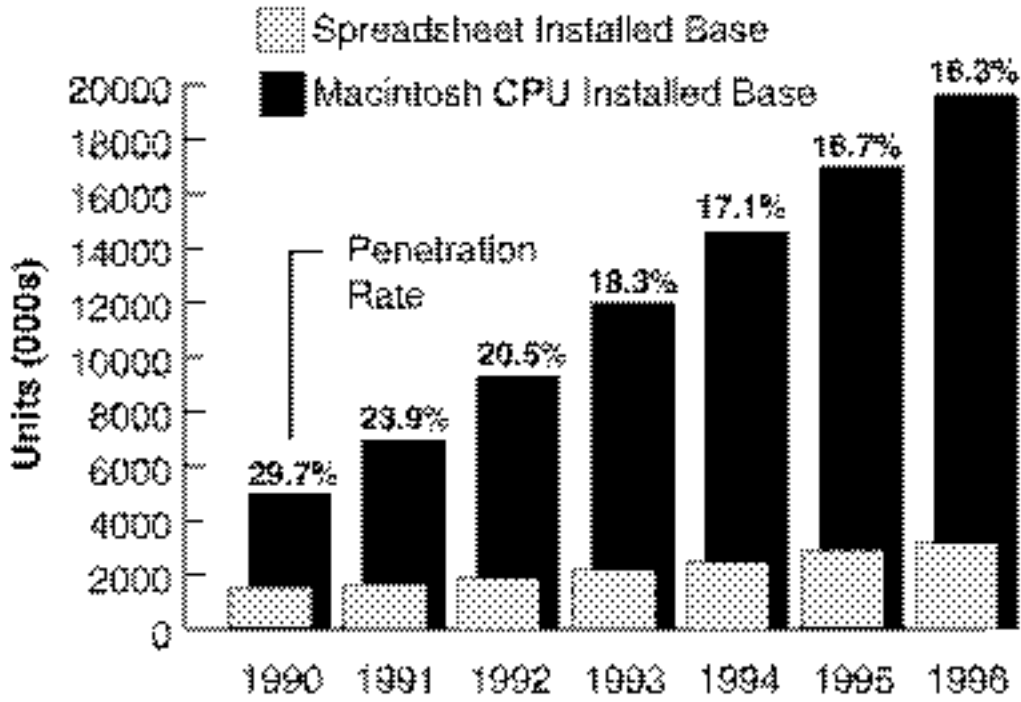
Figure 4: Penetration Rate of Spreadsheet Software Into Worldwide Macintosh CPU Installed Base, 1991-1996
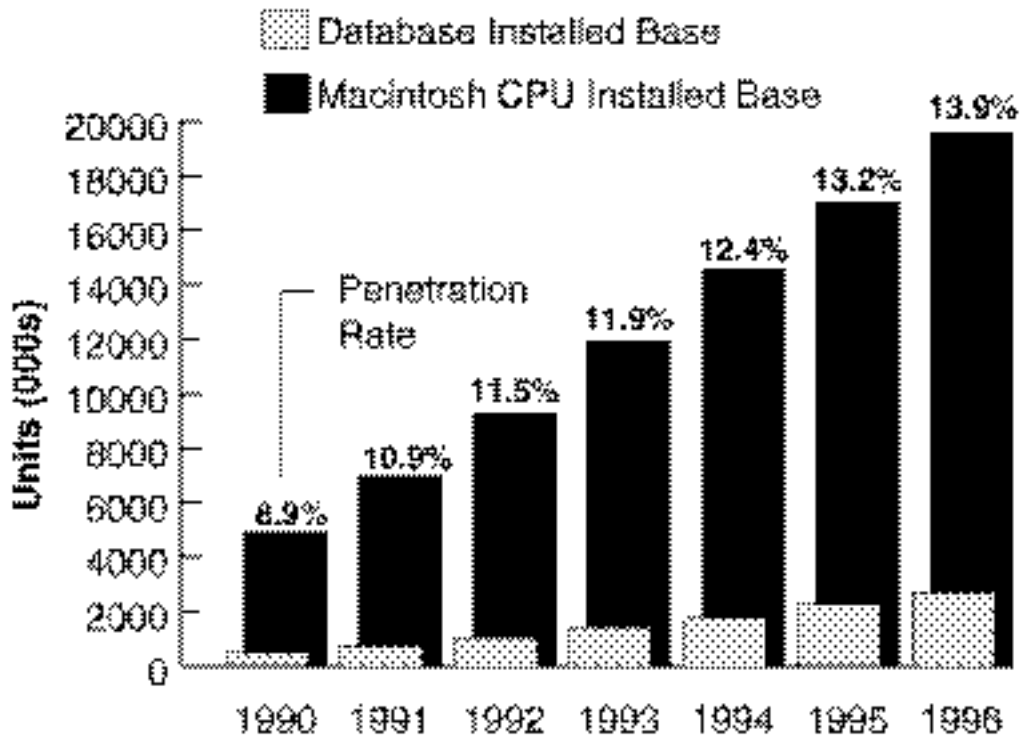
Figure 5: Penetration Rate of Database Software Into Worldwide Macintosh CPU Installed Base, 1991-1996
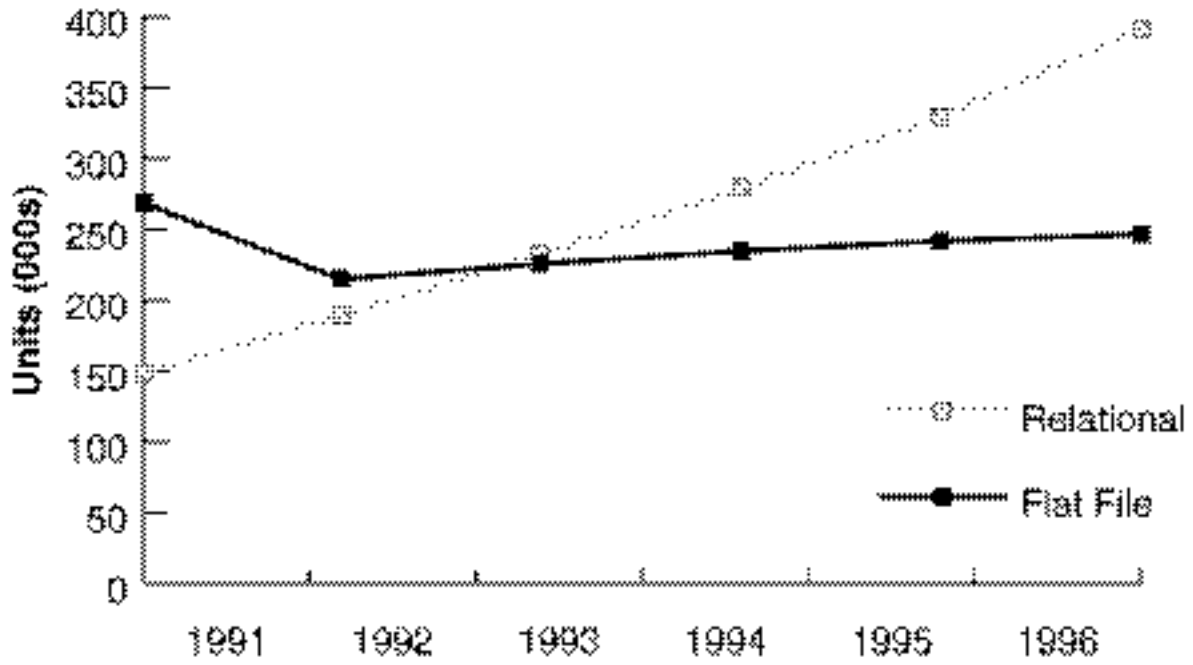
Figure 6: Worldwide Database Unit Shipment Forecast, 1991-1996, by Subcategory
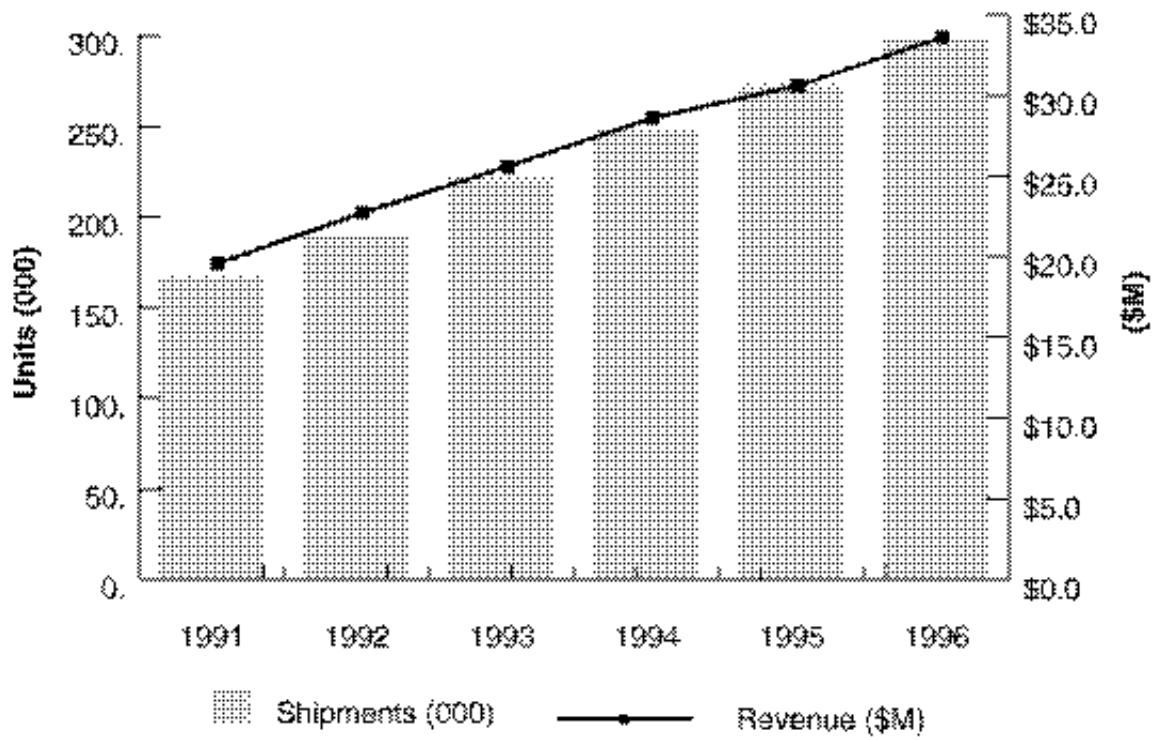
Figure 7: Worldwide Integrated Software Market Forecast, 1991-1996

Apple Direct

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EDITOR:
Paul Dreyfus (AppleLink: DREYFUS.P)

TECHNICAL WRITER/EDITOR:
Gregg Williams (GREGGW)

BUSINESS & MARKETING EDITOR:
Dee Kiamy (KIAMY)

PRODUCTION EDITOR:
Lisa Ferdinandsen (LISAFERD)

CONTRIBUTORS:
Juan Bettaglio, Cindi Cain, Suzanne Dills, Sharon Flowers, Monica Meffert, Stacy Moore, Rilla Reynolds, Lisa Rose, Jessa Vartanian, Liz Westover, Diane Wilcox, Ana Wilczynski

MANAGER, DSSC:
David A. Krathwohl

CONTENT GROUP MANAGER:
Greg Joswiak

PUBLICATIONS AREA MANAGER:
Harley G. Lesser (H.Lesser)

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