



**Originally Published in *Apple Viewpoints*
Apple News and Perspectives for the Developer Community
Published twice monthly by Apple Developer Services**

January 15, 1990
© 1990 Apple Computer, Inc.

“Informating” Your Products: A Competitive Advantage for the ‘90s

Scott Mize, Multimedia Content Evangelist

Until recently, personal computers have been used primarily to reduce costs, increase productivity, and investigate multiple scenarios, such as running “what if” simulations. It’s no surprise that the applications that drove early personal computer sales were the ones that simply stored, formatted, or performed computations on data.

However, the evolution of information technology is radically changing this picture. Advances in processor speed, storage capacity, connectivity, information filtering, the user interface, and many other areas are precipitating the evolution of the personal computer into a robust information machine. The French must have been thinking ahead when they coined the word “informatique” as a synonym for our “computer science.” As these computing machines begin to evolve into multimedia information machines, people will increasingly use them to illustrate, illuminate, persuade, demonstrate, inform, tech, engage, and entertain.

Personal computing will evolve from being primarily tool-driven to being more *content*-driven. To maintain a competitive edge, developers should understand this trend and formulate an ongoing strategy for adapting to – indeed creating – the new information environment. This might involve recasting your business and rethinking what really constitutes your product.

Information as a strategic tool

Using information strategically usually means becoming better at collecting, organizing, analyzing, and disseminating information within an organization. Those are important tasks, because almost everything we do in business can be enhanced with appropriately used information technology. However, there is a domain that this definition does not address. Many competitive opportunities lie in “informating” products (I know it’s not in the dictionary – yet). Informating means enhancing any product or service with a rich information (content) component. Just as automation was the backbone of the industrial age, information (note the new meaning) is the backbone of the knowledge age.

Almost any product can be enhanced by incorporating some type of content. The “information machine” technologies are *generically enabling* – they can be used to add value and create new capabilities in virtually any area. Effectively informating your products may well be a critical success factor for the ‘90s, especially for businesses that are already information technology-based.

Any information product – a favorite TV show, the newspaper, the daily stock quotes, a customer mailing list – consists of three intertwined elements: content, process, and format. Content – the basic data that makes up the product – includes text, numbers, graphics, images, animation, video, and so on. Process is the method by which the data is modified, enhanced, and delivered to the user. Format is the final physical or electronic form in which the user receives the product.

Your customers are no doubt using several information products, each having all three elements. Understanding these products, their different elements, what factors influence them, how they each are changing, and what your customers would *like* to have is an important starting point for understanding how you can add value by informating your product.

From here to there

Currently, most content finds its way into an application through the back door, so to speak. Often, it is entered manually. Information products typically must produce files that can be read by the application. Content is also sold in pre-written application-compatible file formats.

Although this method is useful, we could achieve much more by integrating the content directly into the application. I envision an addition to the menu bar of most applications: Information. It would let users directly incorporate content (databases, templates, clip art, drawing cells) from a source (CD, server, live data feed) into a document. It may also provide an effective way to browse the data source, letting the user quickly grab the desired content. System 7.0 has several features that will make this task easier. An ideal time to consider adding such features to your products is when you make the move to the new system.

There are several steps developers can take now to enter this new era. Read on!

Create application environments

Application environments are collections of applications and supporting information on a compact disc. The Microsoft Office CD is the first product in this new genre. Using HyperCard as the front end to integrate and navigate the various components, the CD includes Microsoft's four premier Macintosh applications and a wide variety of clip art and templates from several vendors. It also contains animated product overviews, demonstrations, and tutorials. To top it off, all the necessary manuals are supplied with search and retrieval software.

Application environments change the very definition of "product." The product is not just the application itself, but also the support tools, demonstrations, tutorials, help, manuals, and other information – all working together in an integrated environment. Having it all on CD also creates huge distribution advantages. The cost of producing CD-based products is lower than that of traditional methods, as are shipping and handling costs. Need to update the entire suite? Just issue another CD.

Smaller companies that offer only one or two applications can jointly produce a CD with other companies that have complementary products. Because protection schemes are available that allow selective unlocking of the applications on the disc, each company would have flexibility in how it offers its product.

This is one of the most straightforward ways to begin informing your products. Once you've made the leap, you will probably have several hundred megabytes of space left on the CD waiting to be filled with the value-enhancing content. Not surprisingly, to your customer you'll begin to look a lot more like a content provider.

Forge alliances with content providers

Forging alliances with companies that have content that enhances your products will allow you to differentiate yourself from the competition and improve your products' value to the user. Think broadly about what type of content, process, and format combinations would be a hit for your customers. There are many ways to get information into your product: CD, on-line connections (perhaps fiber optic), satellite, FM sideband, LANs, WANs, and so on. Evaluate every option to find that hidden opportunity.

Content providers are highly diverse, ranging from one-person shops to multi-billion-dollar behemoths. Although it is difficult to generalize about these companies, one thing can be said about some of the larger ones: They are not cut from the same cloth as is the personal computer industry. They often have long histories and are huge, global, diversified, conservative, resource rich, platform

agnostic, and resistant to “getting into” the software business. Establishing a sustainable relationship with these companies is likely to require a thorough appreciation of their very different culture and view of the world.

Press Apple for leadership

Your input influences Apple. We want to build products that lay the foundations for your masterpieces. Help us understand what you need in our platforms.

A variety of issues must be addressed to make the transition to information machines and products successful. We need to raise customer awareness of the possibilities. Marketing and sales gurus will need to understand how to sell highly informed products. The current distribution channels must evolve to handle these new products effectively. Technical standards must be established to make product development and integration easier. Your input in these areas will help Apple make choices that benefit all of us.

Expect the unexpected – and enjoy

The change in information technology is accelerating. Developers must watch for technologic, economic, and political forces that transform the paradigm of their current business environment. Many things will shape the ‘90s, including multimedia in the basic platform, optical storage, fiber optic communications in business and home, the continuing emergence of Japan and Europe as technological leaders, consumer electronics as I/O devices, and ever more intelligent software. The question is not one of “if” but rather of “when.”

At first glance these challenges might appear confusing, overwhelming, and even insurmountable. Despite that, I think we’re going to have a lot of fun and make history in this decade.

Scott Mize

Many thanks to John Doerr, Jeremy Goldberg, Anthony Oettinger, Tyler Peppel, and the Harvard Program on Information Resources Policy for their contributions to the ideas expressed in this article.