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John Sculley's invitation to attend an Apple-organized conference on the future of "multimedia" – computers, telecommunications, television and other entertainment media, and traditional news media – gave me a good opportunity to learn and to think about The Post's place in a fast-changing technological environment. This is a brief report on the conference and thoughts that occurred to me while attending.

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Alan Kay, sometimes described as the intellectual forefather of the personal computer, offered a cautionary analogy that seemed to apply to us. It involves the common frog. You can put a frog in a pot of water and slowly raise the temperature under the pot until it boils, but the frog will never jump. Its nervous system cannot detect slight changes in temperature.

The Post is not in a pot of water, and we're smarter than the average frog. But we do find ourselves swimming in an electronic sea where we could eventually be devoured -- or ignored as an unnecessary anachronism. Our goal, obviously, is to avoid getting boiled as the electronic revolution continues

I was taken aback by predictions at the conference about the next stage of the computer revolution. It was offered as an indisputable fact that the rate of technological advancement is actually increasing. Dave Nagel, the impressive head of Apple's Advanced Technology Group, predicted "the three billions" would be a reality by the end of this decade: relatively cheap personal computers with a billion bits of memory (60 million is common today), with microprocessors that can process a billion instructions per second (vs. about 50 million today) that can transmit data to other computers at a billion bits per second (vs. 15-20 million today). At that point the PC will be a virtual supercomputer, and the easy transmission and storage of large quantities of text, moving and still pictures, graphics, etc., will be a reality. Eight years from now.

I asked many purported wizards at the conference if they thought Nagel was being overoptimistic. None thought so. The machines he envisioned will have the power to become vastly more user-friendly than today's PC's. They will probably be able to take voice instructions, and read commands written by hand or an electronic notepad, or right on the screen. None of this is science fiction - - it's just around the corner.

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"Multimedia" or "new media" is a popular idea for one possible use of these powerful computers connected by a fiber optic network. (Fiber optics will effectively eliminate the existing "band width" limits on transmission of data through the air or by copper wire. A fiber network could carry two to three thousand times the stream of data that can be sent over the air in all the existing radio frequencies!) The prophets of "multimedia" foresee it in many forms. The first would be simple -- interactive pay-per-view movies that could decimate the movie rental business. More interesting are packages of text, photos and film that could be used to create customized news products at many different levels of sophistication. At the top end, such a product might contain the text (or spoken text) of a Post story on the big news of the day, accompanied by CNN's live footage and/or Post photographers' pictures, plus instantly available background on the story, its principal actors, earlier stories on the same subject, etc. All of this could be read on segments of a large, bright and easy-to-read screen (screens are also being improved at a great rate).

Of course the prophets also foresee a lot of advertising on this new medium, predicting that it will have great power because of its ability to give consumers exactly what they want -- all the ads for used 4-wheel-drive vehicles, or all the women's-wear stores having sales today, or all the theaters showing "Hook," etc.

And there are countless ideas for entertainment and games. One that struck my fancy would allow kids (of all ages) to put themselves into familiar movies, actually adding new characters, new dialogue, etc.

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It's quite easy to get swept up in these sugar-plum visions of a new media universe. I don't feel competent to judge the plausibility of all this, but there are obvious obstacles that will have to be overcome. The fiber network has to get built, for example. (At the conference a number of gurus predicted that cable

systems might build it first --and thus undo the telephone companies. Time-Warner -- in Queens -- and Viacom -- in California -- are building pilot projects.) The machines do have to become a lot more "transparent" than current PC's -- as one participant put it, they have to become as easy to use as microwave ovens or ATM's. This will require dramatic progress in the development of software, which is far harder to predict than the all-but-inevitable explosion of hardware capability.

One of the brightest people at the conference, Ed Horowitz of Viacom, observed that building the highway will be the easy part. It will be much more challenging to create the stuff to put on the highway that will appeal to consumers. The look and feel of new products will be terribly important, Horowitz said. So will their value in everyday life, either as entertainers or educators and informers.

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I learned a lot at this conference about the techies' view of the world. Many of the computer types had never thought much about the points Horowitz raised. A lot of them seemed to regard the content of new media as a given, or something that could be pulled off a shelf and dealt with like a commodity. But there were some people at the conference who understood that content is actually an extremely challenging problem.

My small contribution to the meeting was to argue (with John Evans of News Corp., a glib and bright Englishman who says he first introduced personal classifieds as publisher of the Village Voice) that in fact, all successful news media offer a look, a feel, a personality. They are the products of talented reporters and, above all, editors who make informed choices for their readers and viewers. After this conference I am more convinced than ever that this is a key to our success. Our devoted customers like lots of things about The Post -- the advertisements as much as the news, the typeface as much as the box scores, the comics as much as the front page. Most important, they like the package much more than any of its elements. The same is true of Vanity Fair readers or 60 Minutes watchers. Successful media provide an experience, not just bits of information.

It is widely assumed among computer people that the public will love the idea of playing editor -- of organizing the information stream around personal needs and preferences to create individualized "newspapers." I talked this through with a number of them, and realized that I disagreed with their sense of human nature. Of course some people (like the computer hacks who already

do it) will be pleased to steer around the electronic universe in search of fun or satisfaction, but most of us are still like the members of the circle around the fire, listening to the elder tell the ancient stories of our tribe. Humans have always liked listening to (and watching, or reading) stories. That's why we tell stories in the paper, and why we tend to regard well-told stories as the best journalism. Even computer hacks like good stories, so they have made an idol of Douglas Adams, author of The Hitchhiker's Guide to the Universe (he was one of the more interesting people at the conference)

Confronted by the information glut of the modern world, I suspect even the computer-comfortable citizens of the 21st Century will still be eager to take advantage of reporters and editors who offer to sort through the glut intelligently and seek to make sense of it for them. Interestingly, when I asked a number of people at the conference what they'd like to be able to do in the electronic future, many spoke of finding all the extant journalism on subjects of interest to them. (CompuServe now offers a rather primitive grazing tool to permit this sort of thing.) No one volunteered that he/she was eager to have access to the full transcript of Congressional hearings and debates, or the full screenplays of new movies, or the list of every transaction on yesterday's NASDAQ. They all expressed a preference for processed information -- in other words, what we can provide.

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Over lunch I asked Sculley about a prediction made at the conference by Nicholas Negroponte of the MIT Media Lab that the TV sets of the year 2000 would not be Sonys or Zeniths, but Apples and IBMS -- in other words, that smart PC's would replace traditional television by incorporating its functions. Sure, that would be possible, Sculley said, but why bother? No one's making much profit building TV receivers. What he'd like to be doing in the year 2000 is providing "the software" -- the content that will run on the new machines. That's where the money will be, Sculley suggested.

John Evans of News Corp. crystallized the point in the last session of the conference. Speaking for the Murdoch empire, he told the computer people. "You want what we've got, including our profits." Evans saw no incentive to us as providers to hand over our products. Neither do I.

In fact the computer industry is in a pickle, as any reader of the business pages knows. The machines are becoming commodities; prices and profits are collapsing. Apple is banking on a new world

of personal devices that just might make its products ubiquitous (Newton is the first of these), but Sculley's candor over lunch suggested to me that he understands hardware is not enough.

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As usual in human affairs, there isn't a lot of order to what is happening around us. In its invitation to the conference, Apple wrote of a convergence of media and technologies that will eventually create a new telecommunications/infotech/entertaintech universe. Perhaps. But the bright CEO of Kaleida, the Apple-IBM joint venture to create software that will bridge the differences between all the major computer operating systems (Macintosh, MS-DOS, OS-2, etc.), put it more accurately. What we're experiencing is not so much a convergence, said Nat Goldhaber, as it is "collision of technologies." And it is likely to produce the full range of outcomes associated with collisions.

If we're riding dodge 'em cars, drawing conclusions is risky. I'll offer a few tentative ones:

The world is changing with amazing speed, and we need to pay close attention to what is happening. The growth of our own revenue for reuse of our material in databases (about \$2.06 million in 1991, compared to \$1.33 million in 1987) is one hint of future possibilities. The public response to Post-Haste is another clue.

No one in our business has yet launched a really impressive or successful electronic product, but someone surely will. I'd bet it will happen rather soon. The Post ought to be in the forefront of this -- not for the adventure, but for important defensive purposes. We'll only defeat electronic competitors by playing their game better than they can play it. And we can.

I was amazed how often the subject of electronic classifieds and electronic Yellow Pages was raised with me at this conference. Smart people are convinced that both make enormous sense. Computer tools allow customers to quickly sort out what they want from either medium much more efficiently than readers can now. For example, would someone looking for a reliable car for a kid going to college prefer our current listings, or a list of all small cars with less than 60,000 miles selling for \$5-7000? I suspect the latter would be the choice. Would a Yellow pages user headed to Georgetown on a shopping trip like a list of all the antique silver dealers in Georgetown instead of what is now available in The Book? Sure.

I'd urge that we launch two R&D projects right now, secure in the

knowledge that both will ultimately be useful and desirable, and that waiting for others to push us into action is a mug's game. Both could be done with consultants and our own talent.

1) Design the electronic classifieds now. Figure out how to capture and organize the digital computer information that we already create for each day's classifieds into a user-friendly data bank. Explore software alternatives. Figure out how this could be launched. Make sure all would-be competitors know what we're doing. But reserve the right to postpone implementation until a moment when we're confident we'll make more money (or deter a competitor) by launching the electronic product.

As part of the same effort, explore the feasibility of a Post electronic Yellow Pages for the Washington Area. Why not seek to become the dominant provider of electronic advertising and information in our region?

2) Design the world's first electronic newspaper. So far, services like Nexis can provide only individual articles. We could organize the entire paper electronically with a series of "front pages" and other devices that would guide readers the way our traditional cues do -- headlines, captions, story placement, etc. And we could explore the feasibility of incorporating ads in the electronic paper.

Many at the conference talked about the way we tend to use new media first to replicate the products produced by old media -- so early TV consisted of visible radio shows, for example. With this in mind, our electronic Post should be thought of not as a newspaper on a screen, but (perhaps) as a computer game converted to a serious purpose. In other words, it should be a computer product.

Again, because the raw material -- stories, and now graphics and photos, too -- is already digitized, by far the most expensive aspect of creating an electronic newspaper is taken care of, gratis. What we need now is an easy-to-use architecture that would allow one or two people each night to convert what we've already done into an electronic product.

Conceivably we could come up with a software product that we could sell to others. We could also use this concept to move into lucrative territory now occupied by Nexis and others. Why should people who want to retrieve Post material pay Nexis to do so? Why not pay us instead -- or in addition? If we can produce a more efficient way to sort through Post material than Nexis offers, we could draw off at least some Nexis clients.

I am not here dreaming of (or worrying about) a world in which computers have displaced the printed word, and us too. I could find no one at this conference who would predict the demise of the newspaper. No one. All saw an important place for us. (George Gilder, an interesting participant, actually gave me an excited presentation on how we can use the next stages of the technological revolution to strengthen our position as one of a very few providers of really serious news and opinion in the world. "You can drive the TV networks out of the news business," Gilder promised.)

But if newspapers are not about to become extinct, I came away convinced that inevitably, more and more people will want to use their computers to consume our products. As the number of such people grows, so do our business opportunities. Imagine a world in which we could sell a Boswell column to, say, 1.5 million baseball fanatics for a nickel per column. That's \$75,000 in new revenue! We could sell an entire electronic Post for several times the newsstand price without using an ounce of ink or a roll of newsprint -- all gravy at the bottom line. Sure, not much gravy right away. But 10 years out? It would be relatively cheap to get ready now.

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Change is coming. In the last several years, electronic encyclopedias have outsold printed ones by about 4-to-1. Electronic atlases have done even better. The use of computers to transmit information of all kinds is growing at a frantic pace. Computer networks are exploding. Today 12 billion messages are being sent across computer networks every month, according to Dave Nagel of Apple.

There's a big and important role for The Washington Post in this new world.