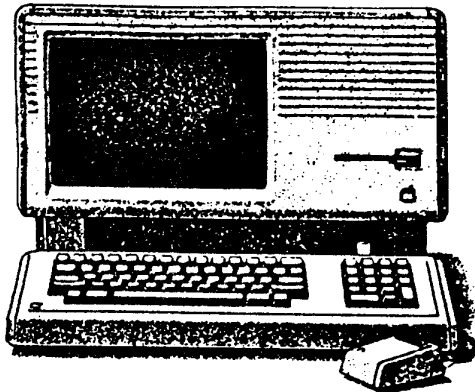


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Apple Lisa Information



FILE NAME
Lisa: Vision from Couch at Apple

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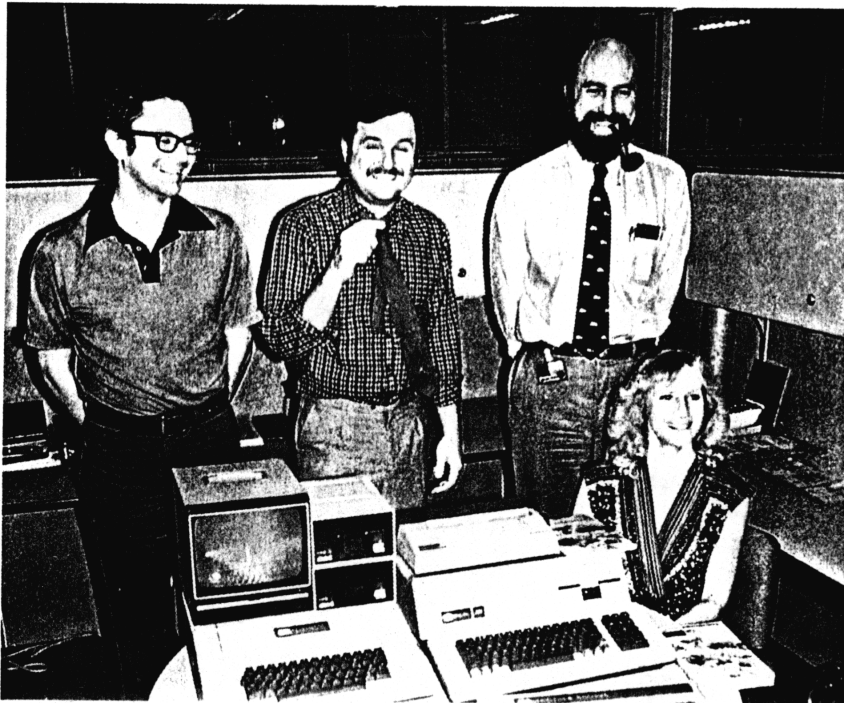
COMMENTS
John Couch info

David T. Craig
736 Edgewater, Wichita, Kansas 67230
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Lisa





Lisa: A Vision from the Couch at Apple. Now it's a fact of computer history, but back in 1980 it was yet a vague glimmer in the collective unconscious of a handful of software developers at Apple. Foremost among them was John Couch, then vice president of software and the subject of *Softalk's* first Exec feature. At that time, Couch had been at Apple only six months, having been won over from a seven-year stint spent in software development at Hewlett-Packard. It was Apple's dedication to a shared point of view on the future of software that attracted him, in addition to its commitment to develop new hardware in liaison with his software lab, ensuring system compatibility and optimization.

An engaging personality whose excitement about what interests him is contagious, John Couch brought to Apple not only his expertise but also a sensitivity to people's needs and a willingness to learn from people's experiences such lessons as he could actively apply toward designing software environments, destined to set an industry standard. Couch learned one such lesson early on through his father, who at that time was managing a health spa and enlisted his son's programming ability to put the business on a micro.

Through this experience he came to recognize the limitations of traditional programming, no matter how powerful or versatile the language used. A new concept began to germinate in his mind, which he was later to term *datagramming*. The essential idea here is that the only thing the user should have to do is enter the data to be operated on, specify for the computer the operations to be performed, and then let the computer itself do the programming. Datagramming entails giving non-

programmers access to conceptual tools for manipulating data that had been available previously only to programmers.

In September of 1981, one year after *Softalk's* Exec article, John Couch came a step closer to forging his datagramming concepts into reality when he became vice president and general manager of Apple's office systems division, the position he holds today. In this capacity he took the reins of a project that brought many datagramming concepts to fruition in what we now know as the Lisa.

DAVID T. CRAIG

And boy, did it happen fast—it took less than three years to turn a dream into a marketable reality. Couch recalls that at first it didn't seem like there would ever be a light at the end of the tunnel. Then when it did appear, it turned out to be an onrushing train. Couch's management style, characterized in 1980 as "management by walking around," became, by 1983, management by running around. He half-jokingly confides that Apple has considered ordering running suits for everyone in his division. Now this doesn't imply any compromise of his person-to-person orientation. John Couch is just encountering more people than ever since Lisa became the new computer in town. He feels that the finished product turned out better than Apple had ever imagined it would.

With Lisa, Couch believes Apple has set another industry standard, providing users with a culmination of the benefits of the company's \$25-million development investment and all that's been learned along the way. He believes the Lisa technology will have a stimulating effect on the market as Apple's peers respond in some way to the healthy competition, and that dealers will benefit with more business as they learn to tap a sector of buyers that is now becoming ripe. With *Toolkit* and *Clascal*, the software used to do object-based programming on the Lisa, users will expand the boundaries of what has become the norm in applications software friendliness, and John Couch's vision of datagramming, which he also calls programming by example, will come to be shared by all.

A postscript: Couch's close involvement with micros has served as an inspiration to his dad, who has closed his health spa and now reigns over Computer Kingdom, a computer dealership in Riverside, California. What else would you expect from a guy whose son is the Apple of his eye? ■

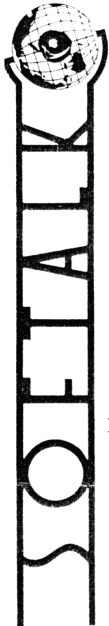


Upper left: The Apple Software Lab's exec team is pictured, circa 1980. From left to right: Bruce Daniels, John Couch, Jack MacDonald, and Susan Wells. Above: John Couch in 1983 A.L. (anno Lisa), taking it all *cum grano siliconis*.

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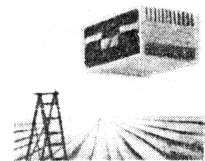
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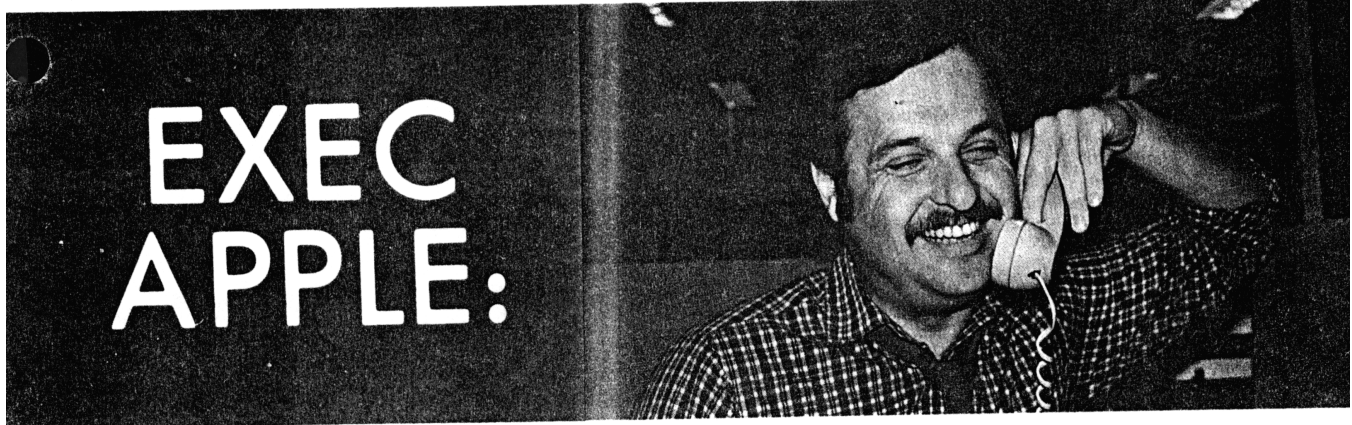


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EXEC APPLE:

John Couch's Software Vision

BY ALLAN TOMMERVIK

If John Couch's vision of the software future comes to fruition, *datagramming* will replace *programming* as the operative word for microcomputers in the current decade.

Any conversation with John Couch about microcomputers centers on vision—on what will be, not what is. But unlike Mohammed, Moses, and Crazy Horse, who went to the mountain to get their visions, John Couch has his. And rather than the mountain, he's gone to the gulch.

In this case, the gulch is silicon gulch, and it's the Santa Clara Valley south of San Francisco. Specifically, Couch toils away at actualizing his vision as vice-president of software for Apple Computer in Cupertino, California.

The ABD and HP. Couch's education and wealth of software development experience leave him with few peers as a seer. He majored in computer sciences in the late 1960s at the University of California, Berkeley, when that was the only school in the country offering a major in that curriculum. He continued through his master of science degree and eighteen months of doctoral work before the pressures of supporting his family and the challenges of the industrial world lured him out of the university environment. He jocularly claims one of the most widely held of all degrees, the ABD—all but dissertation.

Prior to joining Apple, Couch spent seven years in the software development group at Hewlett-Packard. His initial assignment was assisting in building the FORTRAN and BASIC compilers for the HP-3000. At the time of his departure, he was in charge of all software development for that system and had been responsible for the architecture of and languages developed for the HP-300.

The Time Has Come. In its most fundamental form, datagramming entails entering the data to be operated on, setting specifications that will inform the computer of the operations to be performed, and then letting the computer do the programming (see page 24). Datagramming will allow the non-programmer the access to and ability to manipulate data that had been available previously only to programmers.

It's a concept whose time has come—Couch points to Personal Software's *VisiCalc* as the first software package to pioneer the field. The easiest way to come to grips with the concept is to understand what led Couch to the conclusion that this was the path of the future.

His thought processes stemmed from a general realization

that most computer systems have historically followed the same development path—which has yet to lead to anything other than a new system down the road—and from his experience in setting up a microcomputer for his father's health spa business while he was still at Hewlett-Packard.

Couch's view of historical computer system development is not radical or revisionist in the least. His differences with traditionalist views are not in what has happened, but in whether what has happened should continue to happen in a self-perpetuating cycle.

The Common Course. Traditionally, a new computer system has been generated by hardware engineers with little regard for software support; the completed prototype is turned over to the software department for them to do with what they will. Software developers either adapt an existing language or search for a new one that will match well the uses that are foreseen for the hardware.

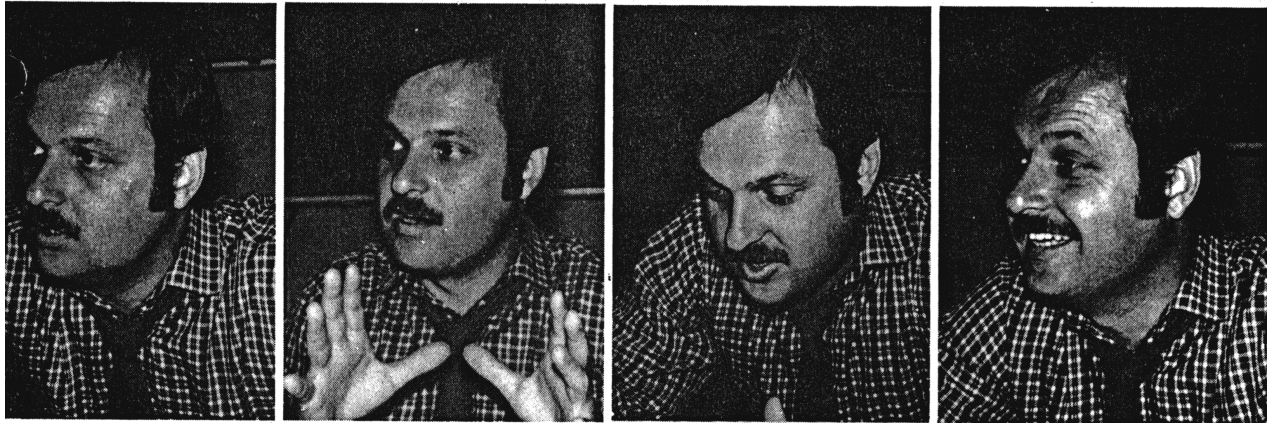
What happens, of course, is that as soon as the system—now complete with advanced hardware and appropriate software—hits the market, the users find the limitations annoying. User complaints growing out of such limitations have been promptly addressed by the software developers. But, rather than building tools for the nonprogrammer, they've just continued to make the programmer's tools more sophisticated. As Couch outlines the process:

"Their first solution is always to add syntax to the existing language to make it a more powerful tool for the programmer. But that's a limited avenue that eventually runs into the law of diminishing returns. At that point, a new, more powerful language is usually introduced to address still more programming problems."

The new language is then updated with additional syntax until a more powerful system is introduced to the marketplace, which is exactly where this historical overview started.

Couch is quick to point out that Apple Computer has, until now, taken this traditional path. "We've gone from Integer Basic to Applesoft floating point to Pascal, each in an effort to harness a more powerful language and provide better tools for the application programmer. But personal computers are for nonprogrammers as well as for application programmers, so now our development is going a different direction."

It Springs from a Spa. *Why* that different direction is best il-



illustrated by Couch's own initial experience with a microcomputer. Couch's father, managing a health spa, complained that the business was getting away from him—that he didn't have the right data to know how and why things were happening to the enterprise.

"The microcomputer will be to the eighties what the calculator was to the seventies."

Couch induced him to buy a microcomputer. With his father's data requirements in hand, Couch *filed* programmed the system to give Couch *per se* the data he needed. But it was never enough.

"Every time I'd go home, he'd ask if I couldn't just add this or that to the program to give him more insight into his business. It got to the point where I almost didn't want to go home, because going home entailed writing more programs for Dad's computer."

Through his dad, Couch began to realize the limitations of traditional programming, no matter how powerful or versatile the language.

"What my father needed was a computer environment where he could specify the parameters of what he needed, and the computer would then perform the programming functions to give him the data in the form he wanted."

From this experience, the concept of datagramming formed and grew.

Little Fish Spawned Quality. It's a bit of an overstatement to say that Couch's vision of a new software approach became an obsession, but the record does show that he soon thereafter jumped from big fish HP to the embryonic Apple company in pursuit of the concept.

"I took this datagramming concept to HP and made a proposal. They liked the idea, but they wanted to mount it on a one-hundred-fifty-thousand-dollar machine. My father could only afford a personal computer, and I felt that the most valuable application for the concept was in the personal computing area, serving people like him.

"The microcomputer will be to the eighties what the calculator was to the seventies. Every home, professional user, and most small businesses will have one. The small businessperson and the hobbyist, who can't afford custom software support, need datagramming to get custom results."

Apple Profit Center Profits Apple Users

Nobody's accused Apple of being just another company, and a look at how its executives have structured their software lab reveals a telling reason for its success in the microcomputer industry.

What John Couch, software development and publications topper, has as his domain is a separate profit center within the company. The implications of that structure are immense for the Apple owner. As Couch explains it:

"In the normal company, once a system gets on the market, sixty to seventy percent of the programmers' time is taken up with maintenance and improvement of the system, and very little is left for the development of new concepts and ideas. And if the software department attempts to expand or to give itself more research and development capability, managers of other departments are likely to question the wisdom of those expenditures in relation to what the investment could achieve in their departments.

"Furthermore, hardware development is usually done independent of the software lab. The harmonious interaction of the two labs to achieve the most comprehensive and functional system is missing."

Partners in Growth and Profit. "The first difference at Apple, of course, is that software development goes hand-in-hand

with the development of new hardware, and in most cases drives the hardware design.

"The second major difference is that I have the freedom and flexibility to structure research and development groups as long as I can justify it on the bottom line."

The fact that the software lab has expanded tenfold during Couch's eighteen months as vice-president testifies to the health of his bottom line.

Couch lays claim to the best software group in the Santa Clara Valley, no mean boast to those who know that the area is so rife with electronics firms of all pedigrees that it's affectionately known as silicon gulch.

Sparing himself the charge of hyperbole, Couch attributes that statement to an executive from a larger, noncompeting company.

There's little doubt that Apple's software lab is among the most comprehensive.

One programming group is active in research and development projects that are entirely hardware and product-line independent—seeking new programming fundamentals.

Another group functions as liaison with independent software vendors who support the Apple hardware. This group

GOTO 24

What in the World Is Datagramming?

John Couch believes the software revolution has yet to begin, although he concedes *VisiCalc* as a pioneering step in the right direction. He calls the revolutionary tool *datagramming*, and this is his explanation of the difference between it and programming:

"Traditionally, system software has been considered to comprise the tools for the application programmer, and the application software the solution to the programmer's problems. If you study an application program, you'll find at least four basic components: computation capability, data input and verification, data output (reports or graphics), and a set of data structures for storing and moving the data around within the application.

"Traditional procedure-oriented languages have tried to address each of these functions for the application programmer. Solving a user's problem via a procedure-oriented language is called *programming*.

"Datagramming is solving a problem without using a procedure-oriented language. Instead, datagramming employs a set of interactive tools that are specification-oriented, thereby allowing the nonprogrammer to specify his data input, the appropriate verification checks, his output, the form it should take, and the calculation on this data."

Couch believes that traditional procedure-oriented languages will continue to flourish for the large programming industry, but that the real market for the personal computer industry is the nonprogrammer. To reach this market, specification-oriented software is a must, and the eighties will breed a whole new phenomenon: datagrammers.

Apple Profit Center Profits Apple Users

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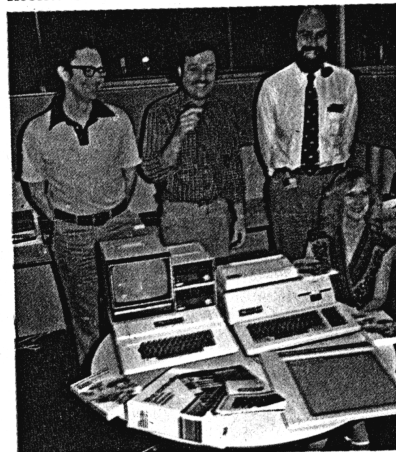
provides utilities, information, licensing agreements, and protection techniques to the outside software houses.

Self-Documenting Disks. Couch's publications group has already set new standards in the industry and intends to maintain its leadership position with a bold plan that will change the thrust of program documentation.

"Past documentation has always been passive, but we're shooting for interactive manuals," explains Couch. Interactive manuals allow the user to participate actively in the learning process by requiring the user to respond. They are interactive teaching programs supplied on a disk, programmed to provide necessary reference information for experienced users and more detailed introductory material for beginners.

Planned for marketing next year, the interactive manual is a concept that will stave off many of the frustrations felt by users who must wade through multipaged manuals before loading a program, when all they really want to know is the aging of their accounts payable.

But the main thrust of the group is new software development. Couch's new software products will emphasize "the in-



The Apple Software Lab's exec team: Bruce Daniels, manager of systems software for advanced systems; John Couch, vice-president; Jack MacDonald, manager of systems software for the Apple II and ///, and Susan Wells, Couch's executive assistant.

Softalk photo

tegration of tools. The user should be able to carry his data from one of our programs to the next, so he gets maximum use."

Programs tentatively scheduled for release yet this year for the Apple II and Apple II Plus are *Appleplot*, *Fortran*, and *Pilot*, a *Dow-Jones News and Quotes* reporter, a *Symbolic Debugger*, *Apple Music Theory*, and *Education II and III*. For the Apple /// will arrive expanded versions of *Business Basic*, *Fortran*, *Pascal*, *VisiCalc ///*, and a mailing list.

As exciting as these programs are, expectations are even higher down the road. Couch expects the next year to be the most fruitful and exciting the software lab has experienced.

Pascal Programs for All. Apple has made the commitment to using Pascal as its fundamental programming language of the future. For those who might suspect this to be just an underhanded means of selling prior Apple owners an extra language card, Couch is quick to explain, "We've developed a Pascal run-time program that permits most of our software programmed in Pascal to run on earlier Apples without the Pascal card. I would like to make that utility available to software vendors for inclusion with their Pascal applications."

In March 1979, Apple's executive staff pinpointed software as the weakness in the company and set Couch on the path to rectify that problem. A 4000 percent boost in sales reflects his success, but the implementation of the datagramming concept during the next year will represent the culmination of Couch's early efforts.

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JOHN COUCH INFO

DECEMBER 2000

DoubleTwist Management Team

John Couch
Chief Executive Officer

Mr. Couch joined the company in September, 1997, bringing 30 years of management experience in strategic planning, product development, and computer science to DoubleTwist. Prior to joining the company, he was an Executive-in-Residence for the Mayfield Fund. During his tenure he provided strategic planning, management, and technology counsel to high-tech companies. Before joining Mayfield, Mr. Couch served with Apple Computers where he held a series of positions from Director of New Products, to Vice President of Software and Publications, leading up to Vice President and General Manager of Personal Office Systems Division where he pioneered Apple's initial "GUI" computer. As one of Apple's original five Vice Presidents John's tenure coincided with Apple's growth from 7 million to 1 billion in sales. Initially recruited by Hewlett - Packard in 1972, Mr. Couch quickly rose to Section Manager in Hewlett-Packard's General Systems Division. Mr. Couch holds both a B.S. in Computer Science and a M.S. in Electrical Engineering and Computer Science from the University of California at Berkeley.

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