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## Apple Reveals 'Lisa': Its \$50 Million Gamble

By William D. Marbach | 8/25/11 at 2:18 PM

Like a magician readying his best trick, Steve Jobs waited for the houselights to dim and the crowd to quiet down. A spotlight focused on a table where a bulky shape lay hidden beneath a buff-colored cloth. "The personal computer was created by a hardware revolution of the 1970s," Jobs, the 27-year-old multimillionaire chairman and cofounder of Apple Computer, told 1,200 Apple stockholders gathered last week in Cupertino, Calif. "The next dramatic change will come from a software revolution . . . which Apple is introducing here today." On cue, the cloth was lifted -- revealing Lisa, a new \$10,000 computer and a \$50 million gamble for Apple.

Apple's long-awaited Lisa computer, in development more than three years, will be the first of a powerful new generation of personal computers -- machines that will make computing accessible to even the greenest novices with only hours of preparation. Lisa draws on an ancient principle: that a picture is worth a thousand words -- in this case, that pictorial images on the screen are easier to learn and use than mind-numbing strings of computer commands. To make the machine attractive to even the most computer-illiterate users, Apple built a unique combination of powerful hardware and sophisticated software. "Lisa is a revolutionary idea and a revolutionary product," says Los Altos, Calif., computer consultant Jean Yates.

While Lisa is unquestionably a remarkable technological achievement, it also represents a huge risk for Apple. With its \$9,995 price tag, Lisa must do battle in what has become a ferociously competitive market in personal computers. Since IBM introduced its Personal Computer in August 1981, Apple's share of the market has declined from 29 percent to just 24 percent, while IBM holds 19 percent. And IBM is conceding nothing to Apple: last week the computer giant announced that it would begin selling the PC model overseas, and IBM is also reported to be readying several new entries for the personal-computer market. Moreover, Apple faces assault from a different direction -- independent software companies. In November, VisiCorp, which markets the phenomenally successful VisiCalc electronic spreadsheet program, unveiled a new software package dubbed VisiOn incorporating many of the same "friendly" features used by Lisa. When it reaches the

stores late this summer, VisiOn will sell at a much lower price than Lisa -- and will be adapted to many existing machines, including IBM's PC.

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The software revolution heralded by Lisa and VisiOn is largely an outgrowth of brilliant computer research done at Xerox Corp.'s Palo Alto Research Center (PARC) in the 1970s. Instead of working toward yet more cold and faceless screens, PARC engineers pioneered ways of making computers easy to use. The group created a software programming system called Smalltalk that used a hand-guided "mouse" to bypass some keyboard functions, and added high-resolution "bit mapped" graphics. Xerox itself was slow to bring these innovations to market; in 1981 the Xerox 8010 Star "executive work station," an outgrowth of the Smalltalk project, made its debut, but the cost was high (a minimum of \$16,000) and performance was limited. The Star has not sold well, but the ideas it embodies have. "Whether or not the Star has been a success -- and no matter what happens to Xerox as a company," says Dan Bricklin, chairman of Software Arts and inventor of VisiCalc, "their research at PARC is a national resource."

Trade-off: In 1979, when Apple set out to top the stunning success of its Apple II model by building a more powerful computer, Steve Jobs and software engineer John Couch took a tour of Xerox's PARC. They brought back the ideas they needed -- and hired the Xerox engineer who had given them the tour; eventually more than 15 Xerox engineers joined Apple's Lisa project. Lisa was designed to use one of the most powerful microprocessors on the market today, the Motorola 68000, and after Motorola brings out the 68020 chip later this year, Lisa could become a full "32 bit" computer more powerful than many minicomputers. Computer designers who want to make their machines very easy to use, however, make a trade-off: graphics-oriented software like Lisa and VisiOn requires vast amounts of computer memory and fast processors -- and makes the systems more costly. Lisa uses 2 million characters of memory for its own operations; Apple II, by contrast, is limited to about 49,000.

The extra horsepower and huge memory do pay off; while it takes days to learn how to use most personal computers and their key software programs, it takes only a few hours to learn most of Lisa's tricks. Instead of typing a sequence of commands on the computer keyboard; the user merely points to tiny "icons" or commands on the screen by sliding the "mouse" (a plastic control box the size of a cigarette pack) on the desktop beside the computer. As the mouse rolls, an arrow called a cursor moves across the screen. To erase

obsolete information, for example, the user moves the mouse to point first at whatever is to be thrown away, and then at an icon in the shape of a tiny trash can; at the press of a button on the mouse, the information vanishes. Apple took pains to create the illusion of an electronic desktop on the screen: memos, charts, clipboards, file folders and other paraphernalia can be shuffled around on the screen just as on the surface of a desk.

Options: More important, Lisa follows a trend started at PARC -- the software is "integrated," which means that the user can move data from one program to another without having to reprogram the computer. For instance, calculations can be lifted from the spreadsheet, turned into a pie chart or bar graph, then popped into a memo -- all with a few quick skating motions of the mouse. Lisa will be sold with six applications tools: a word-processing program, a "LisaCalc" spreadsheet, a graphics program, a data-management system, a scheduling tool for managing complex projects and "LisaDraw" a unique program that allows the user to draw standard shapes -- circles, squares and the like -- or even draw freestyle.

Apple designed Lisa as a free-standing personal computer, but it also can be hooked up to other Lisas and some larger minicomputers. And Apple plans to introduce equipment that will allow Lisa to talk -- at high speed -- to IBM mainframe computers, an important consideration in the office market Apple wants to capture.

With Lisa, Apple is following the same strategy that helped account for the phenomenal success of the Apple II and played a key role in the explosive growth of the personal-computer market: the company is encouraging independent software companies to develop software applications for the new machine. Apple will offer an optional operating system (the "traffic cop" inside the machine that controls its functions) for Lisa, which means that much of the software designed for many minicomputers will be able to run on Lisa.

How will Lisa fare in the marketplace? "I think it's terrific -- there's no question that it is far-reaching software technology," says analyst Adam Cuhney of Salomon Brothers. "The only thing that has people concerned is the price." Some businessmen profess not to worry; in fact, they plan to substitute the powerful Lisas for minicomputers costing five times as much. Still, after the disastrous introduction of the Apple III two years ago -- 14,000 had to be recalled for retooling -- the company is taking no chances. Hundreds of Lisas are being shipped out to test sites around the country, and for months Apple has been offering sneak previews to major corporate customers.

Features: While Lisa itself does not have to be a best seller, Apple has staked the company on "Lisa technology." Later this year Apple is expected to introduce another new personal computer, the MacIntosh. It is said to incorporate some features used on Lisa (including the Motorola microprocessor) and sell for a much lower price -- probably around \$2,000. Jobs personally heads the MacIntosh development team, and there is some question whether marketing MacIntosh will bring it into competition with Lisa. (In the intricate world of Apple corporate politics, former president Michael Scott reportedly refused to let chairman Jobs run the Lisa team because he was too inexperienced; Jobs went off to start work on MacIntosh -- and Scott eventually left the company.)


Until Lisa, MacIntosh and other new machines begin paying off, Apple will rely on the venerable Apple II for most of its revenues; last week the company introduced an enhanced version of the machine that brought Apple from a garage-shop company to a \$583 million firm in only six years. But today the Apple II is under fierce attack from all sides. The most formidable competitor, IBM, is readying a powerful new 16-bit machine, code named "Peanut," that may sell for less than \$1,000, below the 8-bit Apple II's price. IBM is also reportedly developing an executive work station ("Popcorn") that may take Lisa head-on. The magicians who head Apple sound confident -- even though the stakes are higher than ever. But win or lose, the age of "friendly" computing has begun.

*Richard Sandza in Cupertino, William J. Cook and Frank Gibney Jr. in New York*

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