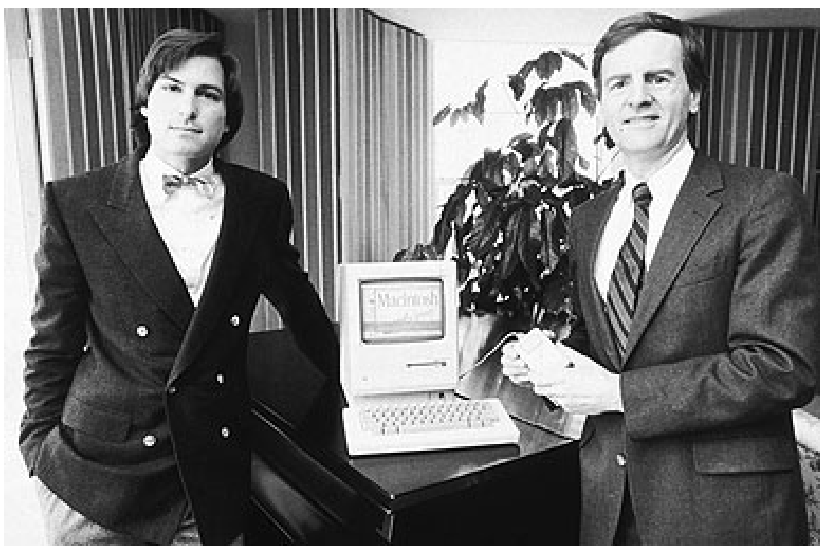
The Birth of the Mac: Rolling Stone's 1984 Feature on Steve Jobs and his Whiz Kids

When Apple's Macintosh took on IBM, 'the Darth Vader of the digital world'

By Steven Levy[1] October 6, 2011



Steve Jobs, Chairman of Apple Computers, and John Sculley, Apple's president pose with the new Macintosh personal computer in New York. Marilyn K. Yee/New York Times Co./Getty Images

This the future of computing.

Here in Silicon Valley, there is a room ringed with nondescript cubicles. Each contains a small, beige box not much bigger than two shoe boxes stood on end, a box that emanates a whitish glow of a nine-inch video display. The box is a computer called Macintosh, and the people who sit in the carpeted commons in the center of the room are some of its designers. They call themselves pirates. On the wall is a skull-and-bones pirate flag; one of the skeleton's eyes has been replaced by the rainbow-colored Apple Computer logo.

They are ten weary computer wizards. Average age: well under thirty. Standard dress: blue jeans and T-shirt. Standard look in the eyes: crazed by fatigue. One of the wizards, blond-haired, twenty-two-year-old Randy Wigginton, has been riding the fluctuations in the word-processing program he's been writing for Apple Computer's messianic new machine for over two years. Now that it is two weeks from his absolutely, positively final deadline, his face has the dull pallor of a torture victim. His tormentors are two cheerful software hackers, dressed in shorts and hiking boots, who, at this intolerably late date, are blithely revamping the part of the computer operating system called "the Finder."

Despite the looming deadline, things are upbeat. For many of the wizards, the bulk of the work is done. Burrell Smith, designer of the digital guts of the new computer, is already working on his next Apple project. Two key wizards who masterminded the "ROM" – the program on a chip that contains much of the magic within the computer – are here, but now they're assisting with software debugging. The industrial designer who originally drafted the computer's simple profile is checking out the first run of casings from Apple's completely automated $20 million factory.

But the Finder, the part of the computer that greets the user and finds files, is not yet done. And if it doesn't get done, the programs won't work right, Macintosh will be seen as a dud, and Apple Computer – the one corporate nexus of vision and capitalism, the dream company of the Eighties – could turn into a nightmare for the billion-dollar firm's employees and investors. Worse, the personal-computer industry would then be dominated – lock, stock and microprocessor – by IBM, the Darth Vader of the digital world.

This is the showdown at the Silicon Corral, and Apple has only one bullet left in its chamber against IBM's well-funded arsenal. That bullet is Macintosh. Steve Jobs, the twenty-eight-year-old multimillionaire chairman of Apple's board of directors, has staked his reputation (and the value of his approximately 7 million Apple shares) on the machine. He describes the situation: "It's kind of like watching the gladiator going into the arena and saying, 'Here it is.' It's really perceived as Apple's do or die. And it goes even deeper... If we don't do this, nobody can stop IBM."

Randy Wiggington, one of Jobs' wizards, is more succinct: "The whole company is on the line. It's put up or shut up."

pple made a $400,000 tv Commercial that ran during the Super Bowl. The ad, in washed-out gray tones, shows rows and rows of emaciated men with shaved heads, dressed in the faded pajamas of concentration camps. Inside a large auditorium, a Big Brother type on a projection screen drones on about the triumphs of the electronic age. This scene is intercut with flashes of a stunning young woman in red gym shorts, sprinting like an Olympian and holding a sledgehammer. She rushes into the auditorium, swings the rope attached to the sledgehammer and flings it toward the screen. Everything explodes in fiery light; the mouths of the stunned masses drop open in astonishment. There is transcendent, blazing chaos. Then the screen goes black, and these words appear:

On January 24, Apple Computer will introduce Macintosh. And you'll see why 1984 won't be like '1984.'

an a $2500 computer, weighing under twenty pounds and taking up no more desk space than a piece of paper, change the world? Improve your life? Foil Orwell's prophecies? Save Apple from the clutches of IBM?

For your answer, meet Macintosh. Put in a three-and-a-half-inch disc, plug in the keyboard and the "mouse" – the palm-sized device that moves a dark pointer around the screen – and flick on the machine. That act alone may dispel your doubts

If you have had any prior experience with personal computers, what you might expect to see is some sort of opaque code, called a "prompt," consisting of phosphorescent green or white letters on a murky background. What you see with Macintosh is the Finder. On a pleasant, light background (you can later change the background to any of a number of patterns, if you like), little pictures called "icons" appear, representing choices available to you. A word-processing program might be represented by a pen, while the program that lets you draw pictures might have a paintbrush icon. A file would represent stored documents – book reports, letters, legal briefs and so forth. To see a particular file, you'd move the mouse, which would, in turn, move the cursor to the file you wanted. You'd tap a button on the mouse twice, and the contents of the file would appear on the screen: dark on light, just like a piece of paper.

This seems simple, but most personal computers (including the IBM PC) can't do this.

"When you show Mac to an absolute novice," says Chris Espinosa, the twenty-two-year-old head of publications for the Mac team, "he assumes that's the way all computers work. That's our highest achievement. We've made almost every computer that's ever been made look completely absurd."

The clarity follows through. On the Macintosh, moving the mouse to certain points on the screen opens lists of options known as "pull-down menus." One menu, for instance, gives a list of type fonts. In less than a second, you can change all the characters in a file from standard typewriter print to gothic Old English. Or you can change the size of the type from eight to sixteen points. For the first time in history, typography will become a mass art.

And you are not limited to type. A young wizard named Bill Atkinson has written a program called MacPaint, which allows you to draw intricate pictures using the mouse. "Let me show you a bug" was his opening line to me, and within three seconds, he had called to the screen a stunningly detailed picture of an insect. Though Macintosh displays only black-and-white video, its "bit mapped" display (a "bit" in the computer controls 512 horizontal and 342 vertical dots on the screen) allows for gorgeously intricate pictures. Aided by all sorts of "whizzy" (a favorite adjective of the Mac team) features, even a graphic klutz can create fine drawings.

This creative extension is the secret of Macintosh: it was not only designed to be easy to learn for people who recoil at the thought of working a computer, but it's whizzy enough to delight its designers. "We are bringing computers to the people for the first time," says Macintosh Software Wizard (as it says on his card) Andy Hertzfeld. "We want the man on the street to get Mac and feel the incredible potential. Like when I got my first stereo."

Mitch Kapor is not the man on the street. He is the president of Lotus Development Corporation, a software company that has made its fortune by writing a best-selling program for the IBM PC. But the first time he saw Macintosh, he was charmed. "There's some magic," he says. "It's the first piece of hardware I've been excited about in years."

He sums it up this way: "The IBM PC is a machine you can respect. The Macintosh is a machine you can love."

ac's story gets to the soul of Apple, a volatile company attempting to maintain its initial idealism during a period of unprecedented growth. The machine's development was, in turns, traumatic, joyful, grueling, lunatic, rewarding and ultimately the major event in the lives of almost everyone involved.

In 1979, Macintosh was one of many small, low-priority projects at Apple; at the time, the firm was only beginning to emerge as a leader in the personal-computer industry – a result of the success of the Apple II computer, which Apple's founders, Steve Wozniak and Steve Jobs, developed in a garage.

The Mac was first conceived by a plump, bearded programmer and writer named Jef Raskin. Now forty, Raskin had been an employee from the day that Apple first incorporated, in 1977. He fit in well with the informal atmosphere; in his contract, there was a clause allowing him to attend rehearsals of the San Francisco Chamber Opera Company, which he conducted. Raskin had definite ideas about the next steps in computing, but as Apple grew, he saw few of his concepts implemented. The company was becoming drunk on its own success, as the vision of Wozniak and Jobs became overwhelmed by bureaucracy and an urge for respectability in the "real world" of business. As the Seventies ended, Apple's big project was the Apple III: a computer that, as Randy Wiggington later said, "was kind of like a baby conceived during a group orgy, and [later] everybody has this bad headache and there's this bastard child, and everyone says, 'It's not mine.'" Because of a belief that everyone who worked there was a genius and could therefore do anything, the Apple III was released before it worked properly, and it flopped dismally.

While Raskin saw some encouraging signs, he felt that Apple's move toward business-oriented machines, like the Lisa, was not the way to go. "If I wanted to build business computers, I'd join IBM," he told Apple's then-president, Mike Scott.

Instead, Scott gave him the go-ahead to work on Macintosh, named after Raskin's favorite apple. In a January 1980 memo, he explained what the machine should be: "The purpose of this design is to create a low-cost portable computer so useful that its owner misses it when it's not around – even if the owner isn't a computer freak…" The computer would sell for around $1000, and it would perform only a few functions: text editing, calculation and filing.

"Macintosh is not a computer in the usual sense of the word," Raskin wrote in another memo. "It is designed to be like a pocket calculator, in that you learn as you use it, and so you are doing useful work from the very first minute. It will become a nearly indispensable companion, like a Swiss army knife becomes to certain people."

Raskin had already brought some talent to Apple, including Bill Atkinson, who would write the "draw" routines for Lisa and Macintosh. But he needed a key person to do the digital design, the logical series of connections that, in effect, are a computer's heart.

One day, Atkinson went to Raskin's house with blond, twenty-three-year-old Burrell Smith, whose dream was to design a computer as neat as the Apple II. Smith repaired computers in Apple's service department. "Here's the guy who's going to design your computer for you," Atkinson said. For Smith, it was "the one chance in a lifetime to go through the cracks of the corporate culture... If I were at IBM, I might have gotten to be assistant service manager." But at Apple, miracles still were possible.

His test was to design a prototype of the machine that would supplant the Apple II as the state of the art. He did it during his 1979 Christmas vacation. A month later, he hooked up the "breadboard" – the logic board with the chips and the proper connections – to a monitor. Programmer Andy Herztfeld stayed up all night tackling this untested piece of hardware. The next day, Smith arrived to find a picture of Scrooge McDuck on the screen, playing a fiddle. Underneath was a caption: HI, BURRELL! Baby Macintosh's irreverent personality was already apparent.

The next year was not so easy. In the wake of the Apple III failure, there was a purge at Apple, after which president Mike Scott himself was ousted. At one point, the Macintosh project was terminated. Convinced of the project's importance, however, the team operated surreptitiously. "We'd lie low and sneak chips out of other labs," says Smith. "We knew there was something special about Mac – here was a machine that was going to change the world."

Apple revived the project, and early in 1981, Steve Jobs took a special interest in Macintosh. To Jef Raskin, Jobs' presence was an intrusion; he says that Jobs had originally opposed the project, but "after it was clear that it was the most interesting thing at Apple, Steve Jobs took it over." It did not happen without a struggle. At one point, Raskin wrote a scathing memo to Mike Scott and then-chairman of the board Mike Markkula:

Re: Working with Steve Jobs. The following examples show that Steve Jobs has not performed properly as my manager and that he has demonstrated or damaged other employees and some projects vital to the company. The recommended actions are to have me work for some other supervisor, to find another leader of the Macintosh project, and to assign Mr. Jobs to duties in keeping with his demonstrated abilities, where his problems will not adversely affect productivity and morale...

While Mr. Jobs' stated positions on management techniques are all quite noble and worthy, in practice, he is a dreadful manager. It is an unfortunate case of mouthing the right ideas, but *not believing in them or executing them when it comes time to do some things... [Apple should] see he gets management training before being allowed to manage other company projects that involve creative work.*

Raskin asked that the memo be kept confidential, but Jobs got a copy. Eventually, says Raskin, "he called me in and told me I was fired." For better or for worse, Macintosh was now the total obsession of Steve Jobs.

teve Jobs wears a navy-blue sweater and jeans when we go out for pizza one night to talk about Macintosh. He tells me that until recently, he has avoided close contact with the press, especially after a piece in *Time* magazine's "Machine of the Year" package last year. He felt *Time* both attacked him personally and criticized his management style. "I know what it's like to have your private life painted in the worst possible light in front of a lot of people," he says. "I've learned what it's like for everyone you meet after that to sort of have preconceptions about you... It's been a character-building experience."

The trials of celebrity are something you must learn to live with when you are the twenty-eight-year-old chairman of one of the world's biggest computer companies. When Apple's stock fell from a high of sixty dollars a share to around twenty, Jobs' 7 million shares were suddenly worth a quarter of a *billion* dollars less. Jobs still qualified as one of *Forbes* magazine's 400 richest people in America. Such wealth and success can make you a controversial figure in the gossip-ridden Silicon Valley.

He is a man with something to prove. Everyone recognizes Jobs' contribution to the Apple II – he is generally given credit for the brilliant idea to put a computer in a friendly looking plastic casing, and he was the one who saw that it would take experienced professionals to sell the computer to the public. In 1976 and 1977, as a bearded, semiexperienced engineer who'd recently returned from a monastery in India, he recruited that very kind of talent, and the result was the unprecedented success of the Apple II. Yet Apple's success is generally attributed to the genius of Jobs' partner, Steve Wozniak. Woz's openheartedness and technical wizardry are legend in the Silicon Valley – in sharp contrast to Jobs' darker reputation.

Jobs' response has been a near-total identification with the Macintosh project. "This is his crowning achievement," says Randy Wigginton. "I think he felt he hadn't contributed enough to the company in comparison to the money he made. He wanted to say, 'I can do it right.' If this comes off, he's earned his money."

Steve Jobs puts it differently. "I have more money than I can ever give away in my lifetime. And I'm not doing this for my ego. There are other things I can think of doing. I could go fishing, or go to Italy, or race motorcycles, but that's not going to result in what I really want."

What does Steve Jobs want? "To make Apple a great $10 billion company. Apple has the opportunity to set a new example of how great an American corporation can be, sort of an intersection between science and aesthetics. Something happens to companies when they get to be a few million dollars – their souls go away. And that's the biggest thing I'll be measured on: Were we able to grow a $10 billion company that didn't lose its soul?"

To Jobs, Macintosh will show how to achieve that task. As he speaks about it, his hawklike features intensify, and he punctuates his speech with weighty pauses, accented by sagacious nods. "Mac stands for what we are as a company – taking technology that's out of reach of the people and making it really great. That's what we did with the Apple II, and that's what we're going to do again with Mac. Computers and society are out on a first date in this decade, and for some crazy reason, we're in the right place at the right time to make that romance blossom."

According to Jobs, Raskin's original Macintosh was "all wrong," so he rebuilt the project in the image of the Great New American Corporation he dreamed of. Very small, in contrast to the IBM-style "human wave" of larger, more bureaucratic groups. In a sense, he wanted the same kind of closeness that the company had in the Apple II days. The first people he brought on were early Apple employees, including Steve Wozniak (who was soon forced to drop out after being injured in a plane crash). Jobs kept the best of Raskin's Mac team. All believed passionately in the project. "It felt like the garage again," says Chris Espinosa.

It was Jobs who insisted that the machine have "Lisa technology," using the powerful Motorola 68000 microprocessor and such Lisa characteristics as the mouse, pull-down menus, onscreen windows and other features that assured the Mac would be, as he put it, "insanely great" – the mostadvanced technology for the cheapest price.

Working for Steve Jobs is not the easiest task in the world. "*Tact* is a word you don't use to describe him," says Espinosa. "Steve will just walk up to your desk, look at what you're doing and say, 'That's shit.'" He tends to interpret events in a light that confirms his own view of things – what some call Jobs' "reality distortion field." He will get obsessed with something, set people to work on it and suddenly drop the idea – like the "Cuisinart version" of Mac. "Steve went to Macy's for four hours and liked the shape of Cuisinarts, so we had a two-week exercise in making the computer look real boxy," says Macintosh industrial designer Jerry Mannock.

Alas, Jobs' prediction in early 1981 that the machine would be ready in a year proved wildly optimistic. The machine was always in flux; Burrell Smith had to completely redesign it three times. To the Mac team, which was working at a breakneck pace, each extension was a huge frustration.

Jobs admits that he can be tough on his team. "Sometimes it's necessary to consciously do that," he says. "My best contribution to the group is not settling for anything but really good stuff. We must have remade the machine ten times. Each time it got better and better and better."

Just as important, the Mac team itself wanted more than anything to make a machine that would change the world. Jobs encouraged them to see themselves as outlaws, fighting not only IBM, but the other, more bureaucratic divisions of Apple. At one of several "retreats" Jobs took the group on, he told them that "it's better to be pirates than to join the navy." Every member of the Mac team signed his or her name on a mold that was used to stamp out the casings for the computer. Buyers will not see it, but inside each Macintosh are the autographs of every person who contributed to the project. All of this built up the "Macintosh spirit" that allowed them to surpass themselves in effort, creativity and stamina. Compare this to IBM, which refuses to publicly divulge the names of its design team to the public.

Bill Gates, chairman of Microsoft, one of the most important software companies in the country, has been observing the Macintosh program since 1981. "People concentrate on finding Jobs' flaws," he says, "but there's no way this group could have done any of this stuff without Jobs. They really have worked miracles." In fact, Gates thinks Jobs could slow down a bit. "He never turns it off," Gates says. "He's always pushing."

Jobs has a reason. "I don't want to sound arrogant," Jobs says, "but I know this thing is going to be the next great milestone in this industry. Every bone in my body says it's going to be great, and people are going to realize that and buy it."

pple's goal is to establish Macintosh as the logical successor to the IBM PC and to its own Apple II. The company's internal Macintosh-marketing plan, a document loaded with military terms like "attack on launch" and "preemptive Lisa Technology," puts it on the line by saying that "failing to establish Macintosh as the third standard product could significantly decelerate Apple's growth curve." What Apple is up against is what is commonly called the "FUD principle": the Fear, Uncertainty and Doubt people have about computers that makes them want to go with the tried-and-true company, IBM, even in the face of a technologically superior product like the Macintosh. Steve Jobs says that "the first hundred days are the key thing," and during that time, Apple plans an advertising blitz that will, says the marketing plan, "make the introduction of Macintosh the biggest event in the history of personal computing." Over $20 million in Macintosh television ads is budgeted for this year.

Another essential is the recruitment of outside companies to write software for Macintosh. Each computer with a new kind of operating system requires new software, and of the prime indicators of any computer's success is the quality and quantity of third-party software for it: that's what made IBM's PC so popular. Macintosh must do the same.

Mike Boich, whose Apple business card reads SOFTWARE EVANGELIST, has "seeded" nearly 100 third-party companies with Macintoshes before launch. Significantly, the software companies that have broken ground writing programs for the IBM PC are enthusiastically supporting Macintosh. Bill Gates of Microsoft says that half his company's 1984 revenues – perhaps $50 million – will come from selling Macintosh programs. The Mac, he says, "allows us to write software that is significantly easier to use. What it delivers for its cost is really great. If this machine can't make it, I don't know what can."

Still, there's the danger that the machine might not work as promised in the crucial first few months. That's what killed the Apple III. Almost every new computer has its share of bugs, but in its zeal to keep making the machine insanely great, the Mac team did not allow time for extensive user testing of the finished version, especially in the case of the Finder. Six weeks before launch, Bill Gates called the situation "ridiculous," but still thought that Apple's wizardry would save the day, as did the overworked Mac team: "It'll be ready," Bill Atkinson said definitively.

As deadline approached, though, there were some dark nights of the soul. "I'm really terrified," says Randy Wigginton, whose "MacWrite" word-processing program, along with Atkinson's "MacPaint," will be given free to those who buy Macs in the first hundred days. "If I had my way, the program wouldn't go out for six months. Sometimes at night, I wake up in a cold sweat, thinking of the thousands of people using it... If one college student, at three in the morning, loses his paper, it's my fault."

The worst possible nightmare, though, begins with everything going off without a hitch. Apple announces Macintosh at its January 24th stockholders meeting. The already completed computer-magazine cover stories appear with their inevitable accolades. The commercials run. The dealers put the Macs on display, underneath the special Macintosh posters supplied by Apple. The software packages begin to appear. Over fifty colleges start using the massive numbers of Macs they have already ordered ... And knowledge workers still persist in thinking of IBM's less sophisticated offerings when they pick a computer. *That's* a nightmare.

"When we started this project, IBM didn't have a machine. But we looked very carefully at their PC when they released it," says Chris Espinosa. "At first, it was embarrassing how bad their machine was. Then we were horrified [at its success]. We hope Macintosh will show people what the IBM was – a half-assed, hackneyed attempt at the old technology." If the world takes the trouble to turn on the Macintosh and looks at what it sees, there will now be two major personal computer companies in this country. And one of them will be a company with soul.

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