



Apple's philosophy, from the original Macintosh in 1984 to the iPad

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Abstract

His personality was reflected in the products he created. Just as the core of Apple's philosophy, from the original Macintosh in 1984 to the iPad a generation later, was the end-to-end integration of hardware and software, so too was it the case with Steve Jobs: His passions, perfectionism, demons, desires, artistry, devilry, and obsession for control were integrally connected to his approach to business and the products that resulted.

The unified field theory that ties together Jobs' personality and products begins with his most salient trait: his intensity. His silences could be as searing as his rants; he had taught himself to stare without blinking. Sometimes this intensity was charming, in a geeky way, such as when he was explaining the profundity of Bob Dylan's music or why whatever product he was unveiling at that moment was the most amazing thing that Apple had ever made. At other times it could be terrifying, such as when he was fulminating about Google or Microsoft ripping off Apple.

This intensity encouraged a binary view of the world. Colleagues referred to the hero/shithead dichotomy. You were either one or the other, sometimes on the same day. The same was true of products, ideas, even food: Something was either "the best thing ever," or it was shitty, brain dead, inedible. As a result, any perceived flaw could set off a rant. The finish on a piece of metal, the curve of the head of a screw, the shade of blue on a box, the intuitiveness of a navigation screen—he would declare them to "completely suck" until that moment when he suddenly pronounced them "absolutely perfect." He thought of himself as an artist, which he was, and he indulged in the temperament of one.

His quest for perfection led to his compulsion for Apple to have end-to-end control of every product that it made. He got hives, or worse, when contemplating great Apple software running on another company's crappy hardware, and he likewise was allergic to the thought of unapproved apps or content polluting the perfection of an Apple device. This ability to integrate hardware and software and content into one unified system enabled him to impose simplicity. The astronomer Johannes Kepler declared that "nature loves simplicity and unity." So did Steve Jobs.

This instinct for integrated systems put him squarely on one side of the most fundamental divide in the digital world: open versus closed. The hacker ethos handed down from the Homebrew Computer Club favored the open approach, in which there was little centralized control and people

were free to modify hardware and software, share code, write to open standards, shun proprietary systems, and have content and apps that were compatible with a variety of devices and operating systems. The young Wozniak was in that camp: The Apple II he designed was easily opened and sported plenty of slots and ports that people could jack into as they pleased. With the Macintosh Jobs became a founding father of the other camp. The Macintosh would be like an appliance, with the hardware and software tightly woven together and closed to modifications. The hacker ethos would be sacrificed in order to create a seamless and simple user experience.

This led Jobs to decree that the Macintosh operating system would not be available for any other company's hardware. Microsoft pursued the opposite strategy, allowing its Windows operating system to be promiscuously licensed. That did not produce the most elegant computers, but it did lead to Microsoft's dominating the world of operating systems. After Apple's market share shrank to less than 5%, Microsoft's approach was declared the winner in the personal computer realm.

In the longer run, however, there proved to be some advantages to Jobs's model. Even with a small market share, Apple was able to maintain a huge profit margin while other computer makers were commoditized. In 2010, for example, Apple had just 7% of the revenue in the personal computer market, but it grabbed 35% of the operating profit.

More significantly, in the early 2000s Jobs' insistence on end-to-end integration gave Apple an advantage in developing a digital hub strategy, which allowed your desktop computer to link seamlessly with a variety of portable devices. The iPod, for example, was part of a closed and tightly integrated system. To use it, you had to use Apple's iTunes software and download content from its iTunes Store. The result was that the iPod, like the iPhone and iPad that followed, was an elegant delight in contrast to the kludgy rival products that did not offer a seamless end-to-end experience.

The strategy worked. In May 2000 Apple's market value was one-twentieth that of Microsoft. In May 2010 Apple surpassed Microsoft as the world's most valuable technology company, and by September 2011 it was worth 70% more than Microsoft. In the first quarter of 2011 the market for Windows PCs shrank by 1%, while the market for Macs grew 28%.

By then the battle had begun anew in the world of mobile devices. Google took the more open approach, and it made its Android operating system available for use by any maker of tablets or cell phones. By 2011 its share of the mobile market matched Apple's. The drawback of

Android's openness was the fragmentation that resulted. Various handset and tablet makers modified Android into dozens of variants and flavors, making it hard for apps to remain consistent or make full use of its features. There were merits to both approaches. Some people wanted the freedom to use more open systems and have more choices of hardware; others clearly preferred Apple's tight integration and control, which led to products that had simpler interfaces, longer battery life, greater user-friendliness, and easier handling of content. The downside of Jobs' approach was that his desire to delight the user led him to resist empowering the user. Among the most thoughtful proponents of an open environment is Jonathan Zittrain of Harvard. He begins his book *The Future of the Internet—And How to Stop it* with the scene of Jobs introducing the iPhone, and he warns of the consequences of replacing personal computers with “sterile appliances tethered to a network of control.” Even more fervent is Cory Doctorow, who wrote a manifesto called “Why I Won't Buy an iPad” for Boing Boing. “There's a lot of thoughtfulness and smarts that went into the design. But there's also a palpable contempt for the owner,” he wrote. “Buying an iPad for your kids isn't a means of jump-starting the realization that the world is yours to take apart and reassemble; it's a way of telling your offspring that even changing the batteries is something you have to leave to the professionals.”

For Jobs, belief in an integrated approach was a matter of righteousness. “We do these things not because we are control freaks,” he explained.

“We do them because we want to make great products, because we care about the user, and because we like to take responsibility for the entire experience rather than turn out the crap that other people make.” He also believed he was doing people a service: “They're busy doing whatever they do best, and they want us to do what we do best. Their lives are crowded; they have other things to do than think about how to integrate their computers and devices.”

This approach sometimes went against Apple's short-term business interests. But in a world filled with junky devices, inscrutable error messages, and annoying interfaces, it led to astonishing products marked by beguiling user experiences. Using an Apple product could be as sublime as walking in one of the Zen gardens of Kyoto those Jobs loved, and neither experience was created by worshipping at the altar of openness or by letting a thousand flowers bloom. Sometimes it's nice to be in the hands of a control freak. Jobs's intensity was also evident in his ability to focus. He would set priorities, aim his laser attention on them, and filter out distractions. If

something engaged him—the user interface for the original Macintosh, the design of the iPod and iPhone, getting music companies into the iTunes

Store—he was relentless. But if he did not want to deal with something—a legal annoyance, a business issue, his cancer diagnosis, a family tug— he would resolutely ignore it. That focus allowed him to say no. He got Apple back on track by cutting all except a few core products. He made devices simpler by eliminating buttons, software simpler by eliminating features, and interfaces simpler by eliminating options.

He attributed his ability to focus and his love of simplicity to his Zen training. It honed his appreciation for intuition, showed him how to filter out anything that was distracting or unnecessary, and nurtured in him an aesthetic based on minimalism.

Unfortunately his Zen training never quite produced in him a Zen-like calm or inner serenity, and that too is part of his legacy. He was often tightly coiled and impatient, traits he made no effort to hide. Most people have a regulator between their mind and mouth that modulates their brutish sentiments and spikiest impulses. Not Jobs. He made a point of being brutally honest. “My job is to say when something sucks rather than sugarcoat it,” he said. This made him charismatic and inspiring, yet also, to use the technical term, an asshole at times.

Andy Hertzfeld once told me, “The one question I'd truly love Steve to answer is, „Why are you sometimes so mean?“” Even his family members wondered whether he simply lacked the filter that restrains people from venting their wounding thoughts or willfully bypassed it. Jobs claimed it was the former. “This is who I am, and you can't expect me to be someone I'm not,” he replied when I asked him the question. But I think he actually could have controlled himself, if he had wanted. When he hurt people, it was not because he was lacking in emotional awareness. Quite the contrary: He could size people up, understand their inner thoughts, and know how to relate to them, cajole them, or hurt them at will.

The nasty edge to his personality was not necessary. It hindered him more than it helped him. But it did, at times, serve a purpose. Polite and velvety leaders, who take care to avoid bruising others, are generally not as effective at forcing change. Dozens of the colleagues whom Jobs most abused ended their litany of horror stories by saying that he got them to do things they never dreamed possible. And he created a corporation crammed with A players. The saga of Steve Jobs is the Silicon Valley creation myth writ large: launching a startup in his parents' garage and building it into the world's most

valuable company. He didn't invent many things outright, but he was a master at putting together ideas, art, and technology in ways that invented the future. He designed the Mac after appreciating the power of graphical interfaces in a way that Xerox was unable to do, and he created the iPod after grasping the joy of having a thousand songs in your pocket in a way that Sony, which had all the assets and heritage, never could accomplish.

Some leaders push innovations by being good at the big picture. Others do so by mastering details. Jobs did both, relentlessly. As a result he launched a series of products over three decades that transformed whole industries:

- The Apple II, which took Wozniak's circuit board and turned it into the first personal computer that was not just for hobbyists.
- The Macintosh, which begat the home computer revolution and popularized graphical user interfaces.
- *Toy Story* and other Pixar blockbusters, which opened up the miracle of digital imagination.
- Apple stores, which reinvented the role of a store in defining a brand.
- The iPod, which changed the way we consume music.
- The iTunes Store, which saved the music industry.
- The iPhone, which turned mobile phones into music, photography, video, email, and web devices.
- The App Store, which spawned a new content-creation industry.
- The iPad, which launched tablet computing and offered a platform for digital newspapers, magazines, books, and videos.
- iCloud, which demoted the computer from its central role in managing our content and let all of our devices sync seamlessly.
- And Apple itself, which Jobs considered his greatest creation, a place where imagination was nurtured, applied, and executed in ways so creative that it became the most valuable company on earth.

Was he smart? No, not exceptionally. Instead, he was a genius. His imaginative leaps were instinctive, unexpected, and at times magical. He was, indeed, an example of what the mathematician Mark Kac called a magician genius, someone whose insights come out of the blue and require intuition more than mere mental processing power. Like a pathfinder, he could absorb information, sniff the winds, and sense what lay ahead.

Steve Jobs thus became the greatest business executive of our era, the one most certain to be remembered a century from now. History will place him in the pantheon right next to Edison and Ford. More than anyone else of his time, he made products that were completely innovative, combining the power of poetry and processors. With a ferocity that could make working with him as unsettling as it was inspiring, he also built the

world's most creative company. And he was able to infuse into its DNA the design sensibilities, perfectionism, and imagination that make it likely to be, even decades from now, the company that thrives best at the intersection of artistry and technology.

And One More Thing . . .

Biographers are supposed to have the last word. But this is a biography of Steve Jobs. Even though he did not impose his legendary desire for control on this project, I suspect that I would not be conveying the right feel for him—the way he asserted himself in any situation—if I just shuffled him onto history's stage without letting him have some last words.

Over the course of our conversations, there were many times when he reflected on what he hoped his legacy would be. Here are those thoughts, in his own words:

My passion has been to build an enduring company where people were motivated to make great products. Everything else was secondary.

Sure, it was great to make a profit, because that was what allowed you to make great products. But the products, not the profits, were the motivation. Sculley flipped these priorities to where the goal was to make money. It's a subtle difference, but it ends up meaning everything: the people you hire, who gets promoted, what you discuss in meetings. Some people say, "Give the customers what they want." But that's not my approach. Our job is to figure out what they're going to want before they do. I think Henry Ford once said, "If I'd asked customers what they wanted, they would have told me, „A faster horse!“ People don't know what they want until you show it to them. That's why I never rely on market research. Our task is to read things that are not yet on the page.

Edwin Land of Polaroid talked about the intersection of the humanities and science. I like that intersection. There's something magical about that place. There are a lot of people innovating, and that's not the main distinction of my career. The reason Apple resonates with people is that there's a deep current of humanity in our innovation. I think great artists and great engineers are similar, in that they both have a desire to express themselves. In fact some of the best people working on the original Mac were poets and musicians on the side. In the seventies computers became a way for people to express their creativity. Great artists like Leonardo da Vinci and Michelangelo were also great at science. Michelangelo knew a lot about how to quarry stone, not just how to be a sculptor.

People pay us to integrate things for them, because they don't have the time to think about this stuff 24/7. If you have an extreme passion for

producing great products, it pushes you to be integrated, to connect your hardware and your software and content management. You want to break new ground, so you have to do it yourself. If you want to allow your products to be open to other hardware or software, you have to give up some of your vision.

At different times in the past, there were companies that exemplified Silicon Valley. It was Hewlett-Packard for a long time. Then, in the semiconductor era, it was Fairchild and Intel. I think that it was Apple for a while, and then that faded. And then today, I think it's Apple and Google—and a little more so Apple. I think Apple has stood the test of time. It's been around for a while, but it's still at the cutting edge of what's going on. It's easy to throw stones at Microsoft. They've clearly fallen from their dominance. They've become mostly irrelevant. And yet I appreciate what they did and how hard it was. They were very good at the business side of things. They were never as ambitious product-wise as they should have been. Bill likes to portray himself as a man of the product, but he's really not. He's a business person. Winning business was more important than making great products. He ended up the wealthiest guy around, and if that was his goal, then he achieved it. But it's never been my goal, and I wonder, in the end, if it was his goal. I admire him for the company he built—it's impressive—and I enjoyed working with him. He's bright and actually has a good sense of humor. But Microsoft never had the humanities and liberal arts in its DNA. Even when they saw the Mac, they couldn't copy it well. They totally didn't get it.

I have my own theory about why decline happens at companies like IBM or Microsoft. The company does a great job, innovates and becomes a monopoly or close to it in some field, and then the quality of the product becomes less important. The company starts valuing the great salesmen, because they're the ones who can move the needle on revenues, not the product engineers and designers. So the salespeople end up running the company. John Akers at IBM was a smart, eloquent, fantastic salesperson, but he didn't know anything about product. The same thing happened at Xerox. When the sales guys run the company, the product guys don't matter so much, and a lot of them just turn off. It happened at Apple when Scullery came in, which was my fault, and it happened when Ballmer took over at Microsoft. Apple was lucky and it rebounded, but I don't think anything will change at Microsoft as long as Ballmer is running it.

I hate it when people call themselves “entrepreneurs” when what they're really trying to do is launch a startup and then sell or go public, so they can cash in and move on. They're unwilling to do the work it takes to build a real company, which is the hardest work in business. That's how you really make a contribution and add to the legacy of those who went before. You build a company that will still stand for something a generation or two from now. That's what Walt Disney did, and Hewlett and Packard, and the people who built Intel. They created a company to last, not just to make money. That's what I want Apple to be.

I don't think I run roughshod over people, but if something sucks, I tell people to their face. It's my job to be honest. I know what I'm talking about, and I usually turn out to be right. That's the culture I tried to create. We are brutally honest with each other, and anyone can tell me they think I am full of shit and I can tell them the same. And we've had some rip-roaring arguments, where we are yelling at each other, and it's some of the best times I've ever had. I feel totally comfortable saying “Ron, that store looks like shit” in front of everyone else. Or I might say “God, we really fucked up the engineering on this” in front of the person that's responsible. That's the ante for being in the room: You've got to be able to be super honest. Maybe there's a better way, a gentlemen's club where we all wear ties and speak in this Brahmin language and velvet codeword's, But I don't know that way, because I am middle class from California.

I was hard on people sometimes, probably harder than I needed to be. I remember the time when Reed was six years old, coming home, and I had just fired somebody that day, and I imagined what it was like for that person to tell his family and his young son that he had lost his job. It was hard. But somebody's got to do it. I figured that it was always my job to make sure that the team was excellent, and if I didn't do it, nobody was going to do it.

You always have to keep pushing to innovate. Dylan could have sung protest songs forever and probably made a lot of money, but he didn't.

He had to move on, and when he did, by going electric in 1965, he alienated a lot of people. His 1966 Europe tour was his greatest. He would come on and do a set of acoustic guitar, and the audiences loved him. Then he brought out what became The Band, and they would all do an electric set, and the audience sometimes booed. There was one point where he was about to sing “Like a Rolling Stone” and someone from the audience yells “Judas!” And Dylan then says, “Play it fucking loud!” And they did. The Beatles were the same way. They kept evolving,

moving, refining their art. That's what I've always tried to do—keep moving. Otherwise, as Dylan says, if you're not busy being born, you're busy dying.

What drove me? I think most creative people want to express appreciation for being able to take advantage of the work that's been done by others before us. I didn't invent the language or mathematics I use. I make little of my own food, none of my own clothes. Everything I do depends on other members of our species and the shoulders that we stand on. And a lot of us want to contribute something back to our species and to add something to the flow. It's about trying to express something in the only way that most of us know how—because we can't write Bob Dylan songs or Tom Stoppard plays. We try to use the talents we do have to express our deep feelings, to show our appreciation of all the contributions that came before us, and to add something to that flow. That's what has driven me.

Coda

One sunny afternoon, when he wasn't feeling well, Jobs sat in the garden behind his house and reflected on death. He talked about his experiences in India almost four decades earlier, his study of Buddhism, and his views on reincarnation and spiritual transcendence. “I’m about fifty-fifty on believing in God,” he said. “For most of my life, I’ve felt that there must be more to our existence than meets the eye.”

He admitted that, as he faced death, he might be overestimating the odds out of a desire to believe in an afterlife. “I like to think that something survives after you die,” he said. “It's strange to think that you accumulate all this experience, and maybe a little wisdom, and it just goes away. So I really want to believe that something survives, that maybe your consciousness endures.”

He fell silent for a very long time. “But on the other hand, perhaps it’s like an on-off switch,” he said. “*Click!* And you’re gone.”

Then he paused again and smiled slightly. “Maybe that's why I never liked to put on-off switches on Apple devices.”

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