



APPLE

THE SECRET ORIGIN STORY OF THE IPHONE

An exclusive excerpt from [The One Device](#)

By [Brian Merchant](#) | Jun 13, 2017, 10:00am EDT

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This month marks 10 years since Apple launched the first iPhone, a device that would fundamentally transform how we interact with technology, culture, and each other. Ahead of that anniversary, Motherboard editor Brian Merchant embarked on an investigation to uncover the iPhone's untold origin. [The One Device: The secret history of the iPhone](#), out on June 20th, traces that journey from Kenyan mines to Chinese factories all the way to One Infinite Loop. The following excerpt has been lightly condensed and edited.

If you worked at Apple in the mid-2000s, you might have noticed a strange phenomenon afoot: people were disappearing.

It happened slowly at first. One day there'd be an empty chair where a star engineer used to sit. A key member of the team, gone. Nobody could tell you exactly where they went.

“I had been hearing rumblings about, well, it was unclear what was being built, but it was clear that a lot of the best engineers from the best teams had been slurped over to this mysterious team,” says Evan Doll, who was then a software engineer at Apple.

Here's what was happening to those star engineers. First, a couple of managers had shown up in their office unannounced and closed the door behind them. Managers like Henri Lamiroux, a director of software engineering, and Richard Williamson, a director of software.

One such star engineer was Andre Boule. He'd been at the company only a few months.

“Henri and I walked into his office,” Williamson recalls, “and we said, ‘Andre, you don't really know us, but we've heard a lot about you, and we know you're a brilliant engineer, and we want you to come work with us on a project we can't tell you about. And we want you to do it now. Today.’ ”

Boule was incredulous, then suspicious. “Andre said, ‘Can I have some time to think about it?’ ” Williamson says. “And we said, ‘No.’ ” They wouldn't, and couldn't, give him any more details. Still, by the end of the day, Boule had signed on. “We did that again and again across the company,” Williamson says. Some engineers who liked their jobs just fine said no, and they stayed in Cupertino. Those who said yes, like Boule, went to work on the iPhone.

And their lives would never be the same — at least, not for the next two and a half years. Not only would they be working overtime to hammer together the most influential piece of consumer technology of their generation, but they'd be doing little else. Their personal lives would disappear, and they wouldn't be able to talk about what they were working on. Steve Jobs “didn't want anyone to leak it if they left the company,” says Tony Fadell, one of the top Apple executives who helped build the iPhone. “He didn't want anyone to say anything. He just didn't want — he

was just naturally paranoid.”

More on The One Device

Hear Nilay Patel interview Brian Merchant about the reporting behind The One Device on a special episode of the Vergecast.

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Jobs told Scott Forstall, who would become the head of the iPhone software division, that even he couldn't breathe a word about the phone to anyone, inside Apple or out, who wasn't on the team. “He didn't want, for secrecy reasons, for me to hire anyone outside of Apple to work on the user interface,” Forstall said. “But he told me I could move anyone in the company into this team.” So he dispatched managers like Henri and Richard to find the best candidates. And he made sure potential recruits knew the stakes upfront. “We're starting a new project,” he told them. “It's so secret, I can't even tell you what that new project is. I cannot tell you who you will work for. What I can tell you is if you choose to accept this role, you're going to work harder than you ever have in your entire life. You're going to have to give up nights and weekends probably for a couple years as we make this product.”

And “amazingly,” as Forstall put it, some of the top talent at the company signed on. “Honestly, everyone there was brilliant,” Williamson tells me. That team — veteran designers, rising programmers, managers who'd worked with Jobs for years, engineers who'd never met him — would end up becoming one of the great, unheralded creative forces of the twenty-first century.

One of Apple's greatest strengths is that it makes its technology look and feel easy to use. There was nothing easy about making the iPhone, though its inventors say the process was often exhilarating.

“THE IPHONE IS THE REASON I'M DIVORCED.”

Forstall's prediction to the iPhone team would be borne out.

“The iPhone is the reason I’m divorced,” Andy Grignon, a senior iPhone engineer, tells me. I heard that sentiment more than once throughout my dozens of interviews with the iPhone’s key architects and engineers. “Yeah, the iPhone ruined more than a few marriages,” says another.

“It was really intense, probably professionally one of the worst times of my life,” Grignon says. “Because you created a pressure cooker of a bunch of really smart people with an impossible deadline, an impossible mission, and then you hear that the future of the entire company is resting on it. So it was just like this soup of misery,” Grignon says. “There wasn’t really time to kick your feet back on the desk and say, ‘This is going to be really fucking awesome one day.’ It was like, ‘Holy fuck, we’re fucked.’ Every time you turned around there was some just imminent demise of the program just lurking around the corner.”

MAKING THE IPHONE

The iPhone began as a Steve Jobs–approved project at Apple around the end of 2004. But its DNA began coiling long before that.

“I think a lot of people look at the form factor and they think it’s not just like any other computer, but it is — it’s just like any other computer,” Williamson says. “In fact, it’s *more* complex, in terms of software, than many other computers. The operating system on this is as sophisticated as the operating system on any modern computer. But it is an evolution of the operating system we’ve been developing over the last thirty years.”

Alternative iPhone prototype.

Like many mass-adopted, highly profitable technologies, the iPhone has a number of competing origin stories. There were as many as five different phone or phone-related projects — from tiny research endeavors to full-blown corporate partnerships — bubbling up at Apple by the middle of the 2000s. But if there’s anything I’ve learned in my efforts to pull the iPhone apart, literally and figuratively, it’s that there are rarely concrete beginnings to any particular products or technologies — they evolve from varying previous ideas and concepts and

inventions and are prodded and iterated into newness by restless minds and profit motives. Even when the company's executives were under oath in a federal trial, they couldn't name just one starting place.

"There were many things that led to the development of the iPhone at Apple," Phil Schiller, senior vice president of worldwide marketing, said in 2012. "First, Apple had been known for years for being the creator of the Mac, the computer, and it was great, but it had small market share," he said. "And then we had a big hit called the iPod. It was the iPod hardware and the iTunes software. And this really changed everybody's view of Apple, both inside and outside the company. And people started asking, Well, if you can have a big hit with the iPod, what else can you do? And people were suggesting every idea, make a camera, make a car, crazy stuff."

And make a phone, of course.

OPEN THE POD BAY DOORS

When Steve Jobs returned to take the helm of a flailing Apple in 1997, he garnered acclaim and earned a slim profit by slashing product lines and getting the Mac business back on track. But Apple didn't reemerge as a major cultural and economic force until it released the iPod, which would mark its first profitable entry into consumer electronics and become a blueprint and a springboard for the iPhone in the process.

"There would be no iPhone without the iPod," says Tony Fadell, who helped build both of them. Fadell, sometimes dubbed "the Podfather" by the media, was a driving force in creating Apple's first bona fide hit device in years, and he'd oversee hardware development for the iPhone. As such, there are few better people to explain the bridge between the two hit devices. We met at Brasserie Thaumieux, a swank eatery in Paris's gilded seventh arrondissement, where he was living at the time.

HE'S BEEN CALLED "TONY BALONEY," AND ONE FORMER APPLE EXEC ADVISED ME "NOT TO BELIEVE A SINGLE WORD TONY FADELL SAYS."

Fadell is a looming figure in modern Silicon Valley lore, and he's divisive in the annals of Apple. Brian Huppi and Joshua Strickon, key members of Apple's input engineering team, who'd prototyped the earliest drafts of the iPhone, praise him for his audacious, get-it-done management style ("Don't take longer than a year to ship a product" is one of his credos) and for being one of the few people strong enough of will to stand up to Steve Jobs. Others chafe at the credit he takes for his role in bringing the iPod and iPhone to market; he's been called "Tony Baloney," and one former Apple exec advised me "not to believe a single word Tony Fadell says." After he left Apple in 2008, he co-founded Nest, a company that crafted smart home gadgets, like learning thermostats, which was later acquired by Google for \$3.2 billion.

Right on time, Fadell strode in; shaved head save for some stubble, icy blue eyes, snug sweater. He was once renowned for his cyberpunk style, his rebellious streak, and a fiery temper that was often compared to Jobs's. Fadell is still undeniably intense, but here, speaking easy French to the waitstaff, he was smack in the overlap of a Venn diagram showing Mannered Parisian Elite and Brash Tech Titan.

The genesis of the iPhone, was — well, let's get started with — was iPod dominance," Fadell says. "It was fifty percent of Apple's revenue." But when iPods initially shipped in 2001, hardly anyone noticed them. "It took two years," Fadell says. "It was only made for the Mac. It was less than one percent market share in the U.S. They like to say 'low single digits.'" Consumers needed iTunes software to load and manage the songs and playlists, and that software ran only on Macs.

"Over my dead body are you gonna ship iTunes on a PC," Steve Jobs told Fadell, he says, when Fadell pushed the idea of offering iTunes on Windows. Nonetheless, Fadell had a team secretly building out the software to make iTunes compatible with Windows. "It took two years of failing numbers before Steve finally woke up. Then we started to take off, then the music store was able to be a success." That success put iPods in the hands of hundreds of millions of people— more than had ever owned Macs. Moreover, the iPod was hip in a fashionably mainstream way

that lent a patina of cool to Apple as a whole. Fadell rose in the executive ranks and oversaw the new product division.

Launched in 2001, a hit by 2003, the iPod was deemed vulnerable as early as 2004. The mobile phone was seen as a threat because it could play MP3s. “So if you could only carry one device, which one would you have to choose?” Fadell says. “And that’s why the Motorola Rokr happened.”

ROKRING OUT

In 2004, Motorola was manufacturing one of the most popular phones on the market, the ultrathin Razr flip phone. Its new CEO, Ed Zander, was friendly with Jobs, who liked the Razr’s design, and the two set about exploring how Apple and Motorola might collaborate. (In 2003, Apple execs had considered buying Motorola outright but decided it’d be too expensive.) Thus the “iTunes phone” was born. Apple and Motorola partnered with the wireless carrier Cingular, and the Rokr was announced that summer.

Publicly, Jobs had been resistant to the idea of Apple making a phone. “The problem with a phone,” Steve Jobs said in 2005, “is that we’re not very good going through orifices to get to the end users.” By *orifices*, he meant carriers like Verizon and AT&T, which had final say over which phones could access their networks. “Carriers now have gained the upper hand in terms of the power of the relationship with the handset manufacturers,” he continued. “So the handset manufacturers are really getting these big thick books from the carriers telling them here’s what your phone’s going to be. We’re not good at that.”

JOBS "WASN'T CONVINCED THAT SMARTPHONES WERE GOING TO BE FOR ANYONE BUT THE 'POCKET PROTECTOR CROWD.'"

Privately, Jobs had other reservations. One former Apple executive who had daily meetings with Jobs told me that the carrier issue wasn’t his biggest hang-up. He was concerned with a lack of focus in the company, and he “wasn’t convinced that smartphones were going to be for anyone but the ‘pocket protector crowd,’ as we used to call them.”

Partnering with Motorola was an easy way to try to neutralize a threat to the iPod. Motorola would make the handset; Apple would do the iTunes software. “It was, How can we make it a very small experience, so they still had to buy an iPod? Give them a taste of iTunes and basically turn it into an iPod Shuffle so that they’ll want to upgrade to an iPod. That was the initial strategy,” Fadell says. “It was, ‘Let’s not cannibalize the iPod because it’s going so well.’ ”

As soon as the collaboration was made public, Apple’s voracious rumor mill started churning. With an iTunes phone on the horizon, blogs began feeding the anticipation for a transformative mobile device that had been growing for some time already.

Inside Apple, however, expectations for the Rokr could not have been lower. “We all knew how bad it was,” Fadell says. “They’re slow, they can’t get things to change, they’re going to limit the songs.” Fadell laughs aloud when discussing the Rokr today. “All of these things were coming together to make sure it was really a shitty experience.”

But there may have been another reason that Apple’s executives were tolerating the Rokr’s unfurling shittiness. “Steve was gathering information during those meetings” with Motorola and Cingular, Richard Williamson says. He was trying to figure out how he might pursue a deal that would let Apple retain control over the design of its phone. He considered having Apple buy its own bandwidth and become its own mobile virtual network operator, or MVNO. Apple approached Verizon, but the two companies were unable to ink a deal; telecoms still wanted too much control over how a handset was designed. An executive at Cingular, meanwhile, began to cobble together an alternative deal Jobs might actually embrace: *Give Cingular exclusivity, and we’ll give you complete freedom over the device.*

FIX WHAT YOU HATE

From Steve Jobs to Jony Ive to Tony Fadell to Apple’s engineers, designers, and managers, there’s one part of the iPhone mythology that everyone tends to agree on: Before the iPhone, everyone at Apple thought cell phones “sucked.” They were “terrible.” Just “pieces of junk.” We’ve

already seen how Jobs felt about phones that dropped calls.

“Apple is best when it’s fixing the things that people hate,” Greg Christie, who was head of Apple’s Human Interface Group at the time, tells me. Before the iPod, nobody could figure out how to use a digital music player; as Napster boomed, people took to carting around skip-happy portable CD players loaded with burned albums. And before the Apple II, computers were mostly considered too complex and unwieldy for the layperson.

“For at least a year before starting on what would become the iPhone project, even internally at Apple, we were grumbling about how all of these phones out there were all terrible,” says Nitin Ganatra, who managed Apple’s email team before working on the iPhone. It was water-cooler talk. But it reflected a growing sense inside the company that since Apple had successfully fixed — transformed, then dominated — one major product category, it could do the same with another.

“At the time,” Ganatra says, “it was like, ‘Oh my God, we need to go in and clean up this market too — why isn’t Apple making a phone?’ ”

CALLING ALL PODS

 Andy Grignon was restless. The versatile engineer had been at Apple for a few years, working in different departments on various projects. He’s a gleefully imposing figure—shaved-head bald, cheerful, and built like a friendly bear. He had a hand in everything from creating the software that powered the iPod to working on the software for a videoconferencing program and iChat. He’d become friends with rising star Tony Fadell when they’d built the iSight camera together.

After wrapping up another major project — writing the Mac feature Dashboard, which Grignon affectionately calls “his baby” (it’s the widget-filled screen with the calculator and the calendar and so on) — he was looking for something fresh to do. “Fadell reached out and said, ‘Do you want to come join iPod? We’ve got some really cool shit. I’ve got this other project I really want to do but we need some time before we can convince Steve to do it, and I think you’d be great for it.’”

Grignon is boisterous and hardworking. He’s also got a mouth like a Silicon Valley

sailor. “So I left,” Grignon says, “to work on this mystery thing. So we just kind of spun our wheels on some wireless speakers and shit like that, but then the project started to materialize. Of course what Fadell was talking about was the phone.” Fadell knew Jobs was beginning to come around to the idea, and he wanted to be prepared. “We had this idea: Wouldn’t it be great to put WiFi in an iPod?” Grignon says. Throughout 2004, Fadell, Grignon, and the rest of the team worked on a number of early efforts to fuse iPod and internet communicator.

IT WAS ALSO THE FIRST TIME STEVE JOBS HAD SEEN THE INTERNET RUNNING ON AN IPOD. "AND HE WAS LIKE, 'THIS IS BULLSHIT.'"

“That was one of the very first prototypes I showed Steve. We gutted an iPod, we had hardware add in a WiFi part, so it was a big plastic piece of junk, and we modified the software.” There were click-wheel iPods that could clumsily surf the web as early as 2004. “You would click the wheel, you would scroll the web page, and if there was a link on the page, it would highlight it, and you could click on it and you could jump in,” Grignon says. “That was the very first time where we started experimenting with radios in the form factor.”

It was also the first time Steve Jobs had seen the internet running on an iPod. “And he was like, ‘This is bullshit.’ He called it right away... ‘I don’t want this. I know it works, I got it, great, thanks, but this is a shitty experience,’ ” Grignon says.

Meanwhile, Grignon says, “The exec team was trying to convince Steve that building a phone was a great idea for Apple. He didn’t really see the path to success.”

One of those trying to do the convincing was Mike Bell. A veteran of Apple, where he’d worked for fifteen years, and of Motorola’s wireless division, Bell was positive that computers, music players, and cell phones were heading toward an inevitable convergence point. For months, he lobbied Jobs to do a phone, as did Steve Sakoman, a vice president who had worked on the ill-fated Newton.

“We were spending all this time putting iPod features in Motorola phones,” Bell says. “That just seemed ass-backwards to me. If we just took the iPod user experience and some of the other stuff we were working on, we could own the

market.” It was getting harder to argue with that logic. The latest batches of MP3 phones were looking increasingly like iPod competitors, and new alternatives for dealing with the carriers were emerging. Meanwhile, Bell had seen Jony Ive’s latest iPod designs.

On November 7, 2004, Bell sent Jobs a late-night email. “Steve, I know you don’t want to do a phone,” he wrote, “but here’s why we should do it: Jony Ive has some really cool designs for future iPods that no one has seen. We ought to take one of those, put some Apple software around it, and make a phone out of ourselves instead of putting our stuff on other people’s phones.”

Jobs called him right away. They argued for hours, pushing back and forth. Bell detailed his convergence theory — no doubt mentioning the fact that the mobile phone market was exploding worldwide — and Jobs picked it apart. Finally, he relented.

“Okay, I think we should go do it,” he said.

“So Steve and I and Jony and Sakoman had lunch three or four days later and kicked off the iPhone project.”

REVIVING THE APPLE TABLET



At 2 Infinite Loop, an older touchscreen-tablet research project was still chugging along. Bas Ording, Imran Chaudhri, and company were still exploring the contours of a basic touch-focused user interface.

One day, Bas Ording got a call from Steve. He said, “We’re gonna do a phone.”

Years ago, a handful of input engineers and key designers had prototyped multitouch-focused interaction demos, followed by the Q79 tablet project — an experimental early stab at an iPad-like device. But a tangle of obstacles, not least of which was that it was too expensive, shut it down. (“You’ve got to give me something I can sell,” he told Imran.) But with a smaller screen and scaled-down system, Q79 might work as a phone.

“It’s gonna have a small screen, it’s gonna be just a touchscreen, there’s not gonna

be any buttons, and everything has to work on that,” Jobs told Ording. He asked the UI wiz to make a demo of scrolling through a virtual address book with multitouch. “I was super-excited,” Ording says. “I thought, *Yeah, it seems kind of impossible, but it would be fun to just try it.*” He sat down, “moused off” a phone-size section of his Mac’s screen, and used it to model the iPhone surface. He and a scant few other designers had spent years experimenting with touch-based user interfaces — and those years in the touchscreen wilderness were paying off.

“WHEN I SAW THE RUBBER BAND, INERTIAL SCROLLING, AND A FEW OF THE OTHER THINGS, I THOUGHT, ‘MY GOD, WE CAN BUILD A PHONE OUT OF THIS.’ ”

“We already had some other demos, a web page, for example — it was just a picture you could scroll with momentum,” Ording says. “That’s sort of how it started.” The famous effect where your screen bounces when you hit the top or bottom of a page was born because Ording couldn’t tell when he’d hit the top of a page. “I thought my program wasn’t running because I tried to scroll and nothing would happen,” he says, and then he’d realize he was scrolling in the wrong direction. “So that’s when I started to think, *How can I make it so you can see or feel that you’re at the end?* Right? Instead of feeling dead, like it’s not responding.”

These small details, which we now take for granted, were the product of exhaustive tinkering, of proof-of-concept experimenting. Like inertial scrolling, the wonky-sounding but now-universal effect that makes scrolling down your contact list feel satisfyingly tactile; the names fly by in a burst after you swipe down, then slow to a tick-tock as if bound by real-world physics

“I had to try all kinds of things and figure out some math,” Ording says. “Not all of it was complicated, but you have to get to the right combinations, and that’s the tricky thing. ” Eventually, Ording got it to feel natural.

“He called me back a few weeks later, and he had inertial scrolling working,” Jobs said. “And when I saw the rubber band, inertial scrolling, and a few of the other things, I thought, ‘My God, we can build a phone out of this.’ ”

Scott Forstall walked into Greg Christie's office near the end of 2004 and gave him the news too: Jobs wanted to do a phone. He'd been waiting about a decade to hear those words.

Christie is intense and brusque; his stocky build and sharp eyes feel loaded with kinetic energy. He joined Apple in the 1990s, when the company was in a downward spiral, just to work on the Newton— then one of the most promising mobile devices on the market. Then, he'd even tried to push Apple to do a Newton phone. "I'm sure I proposed it a dozen times," Christie says. "The internet was popping too— this is going to be a big deal: mobile, internet, phone."

Now, his Human Interface team — his knobs-and-dials crew — was about to embark on its most radical challenge yet. Its members gathered on the second floor of 2 Infinite Loop, right above the old user-testing lab, and set to work expanding the features, functionality, and look of the old ENRI tablet project. The handful of designers and engineers set up shop in a drab office replete with stained carpet, old furniture, a leaky bathroom next door, and little on the walls but a whiteboard and, for some reason, a poster of a chicken.

Jobs liked the room because it was secure, windowless, tucked away from straying eyes. The CEO was already imbuing the nascent iPhone project with top-to-bottom secrecy. "You know, the cleaning crews weren't allowed in here because there were these sliding whiteboards along the wall," Christie says. The team would sketch ideas on them, and the good ones stayed put. "We wouldn't erase them. They became part of the design conversation."

JOBS LIKED THE ROOM BECAUSE IT WAS SECURE, WINDOWLESS, TUCKED AWAY FROM STRAYING EYES

That conversation was about how to blend a touch-based UI with smartphone features.

Fortunately, they'd had a head start. There were the ENRI crew's multitouch demos, of course. But Imran Chaudhri had also led the design for Dashboard, which was full of widgets — weather, stocks, calculator, notes, calendar — that would be ideal for the phone. "The early idea for the phone was all about having

these widgets in your pocket,” Chaudhri says. So they ported them over.

The original design for many of those icons was actually created in a single night, back during the development of Dashboard. “It was one of those fucking crazy Steve deadlines,” Imran says, “where he wanted to see a demo of everything.” So he and Freddy Anzures, a recent hire to the HI team, spent a long night coming up with the rectilinear design concepts for the widgets — which would, years later, become the designs for the iPhone icons. “It’s funny, the look of smartphone icons for a decade to come was hashed out in a few hours.”

And they had to establish the fundamentals; for instance, What should it look like when you fire up your phone? A grid of apps seems like the obvious way to organize a smartphone’s functions today — now that it’s like water, as Chaudhri says — but it wasn’t a foregone conclusion. “We tried some other stuff,” Ording says. “Like, maybe it’s a list of icons with the names after them.” But what came to be called Springboard emerged early on as the standard. “They were little Chiclets, basically,” Ording says. “Now, that’s Imran too, that was a great idea, and it looked really nice.”

Chaudhri had the Industrial Design team make a few wooden iPhone-like mock-ups so they could figure out the optimal size of the icons for a finger’s touch.

The multitouch demos were promising, and the style was coming together. But what the team lacked was cohesion — a united idea of what a touch-based phone would be.

“It was really just sketches,” Christie says. “Little fragments of ideas, like tapas. A little bit of this, a little of that. Could be part of Address Book, a slice of Safari.” Tapas wouldn’t sate Jobs, obviously; he wanted a full course. So he grew increasingly frustrated with the presentations.

“In January, in the New Year, he blows a gasket and tells us we’re not getting it,” Christie says. The fragments might have been impressive, but there was no narrative drawing the disparate parts together; it was a jumble of half-apps and ideas. There was no story.

“It was as if you delivered a story to your editor and it was a couple of sentences

from the introductory paragraph, a few from the body, and then something from the middle of the conclusion — but not the concluding statement.”

It simply wasn't enough. “Steve gave us an ultimatum,” Christie recalls. “He said, You have two weeks. It was February of 2005, and we kicked off this two-week death march.”

So Christie gathered the HI team to make the case that they should all march with him.

“IT WAS FEBRUARY OF 2005, AND WE KICKED OFF THIS TWO-WEEK DEATH MARCH.”

“Doing a phone is what I always wanted to do,” he said. “I think the rest of you want to do this also. But we've got two weeks for one last chance to do this. And I really want to do it.”

He wasn't kidding. For a decade, Christie had believed mobile computing was destined to converge with cell phones. This was his opportunity not only to prove he was right, but to drive the spark.

The small team was on board: Bas, Imran, Christie, three other designers — Stephen LeMay, Marcel van Os, and Freddy Anzures — and a project manager, Patrick Coffman. They worked around the clock to tie those fragments into a full-fledged narrative.

“We basically went to the mattresses,” Christie says. Each designer was given a fragment to realize — an app to flesh out — and the team spent two sleepless weeks perfecting the shape and feel of an inchoate iPhone. And at the end of the death march, something resembling the one device emerged from the exhausted fog of the HI floor.

“I have no doubt that if I could resurrect that demo and show it to you now, you would have no problem recognizing it as an iPhone,” Christie says. There was a home button — still software-based at this point — scrolling, and the multitouch media manipulations.

“We showed Steve the outline of the whole story. Showed him the home screen,

showed him how a call comes in, how to go to your Address Book, and ‘this is what Safari looks like,’ and it was a little click through. It wasn’t just some clever quotes, it told a story.”

And Steve Jobs did love a good story.

Alternative iPhone prototype.

“It was a smashing success,” Christie says. “He wanted to go through it a second time. Anyone who saw it thought it was great. It was great.”

It meant that the project was immediately deemed top secret. After the February demo, badge readers were installed on either end of the Human Interface group’s hallway, on the second floor of 2 Infinite Loop. “It was lockdown,” Christie says. “That’s what you say when there’s a prison riot, right? That was the phrase. Yeah, we’re on lockdown.”

It also meant they had a lot more work to do. If the touch interface research meetings were prologue, the tablet prototyping the beginning, then this was the second act of the iPhone, and there was much left to be written. But now that Jobs was invested in the narrative, he wanted to show it off, in high style, to the rest of the company. “We had this ‘big demo’ — that’s what we called it,” Ording says. Steve wanted to show the iPhone prototype at the Top 100 meeting inside Apple. “They have this meeting every once in a while with all the important people, saying what the direction of the company is,” Ording tells me. Jobs would invite the people he considered his top one hundred employees to a secret retreat, where they’d present and discuss upcoming products and strategies. For rising Applers, it was a make-or-break career opportunity. For Jobs, the presentations had to be as carefully calibrated as public-facing product launches.

“WHAT ARE THE APPS WE’RE GOING TO HAVE? WHAT SHOULD A CALENDAR IN YOUR HAND LOOK LIKE? EMAIL?”

“From then until May, it was another brutal haul, to, well... come up with connecting paragraphs,” Christie says. “Okay, what are the apps we’re going to

have? What should a calendar in your hand look like? Email? Every step on this journey was just making it more and more concrete and more real. Playing songs out of your iTunes. Media playback. iPhone software started as a design project in my hallway with my team.” Christie hacked the latest model of the iPod so the designers could get a feel for what the applications might look like on a device. The demo began to take shape. “You could tap on the mail app and see how that kind of works, and the web browser,” Ording says. “It wasn’t fully working, but enough that you could get the idea.”

Christie uses one word to describe how the team toiled around the clock, you might have noticed, above all others. It was “brutal, grueling work. I put people in hotel rooms because I didn’t want them driving home. People crashed at my house,” he says, but “it was exhilarating at the same time.”

Steve Jobs had been blown away by the results. And soon, so was everyone else. The presentation at Top 100 was another smash success.

THE BOD OF AN IPOD

When Fadell heard that a phone project was taking shape, he grabbed his own skunkworks prototype design of the iPod phone before he headed into an executive meeting.

“There was a meeting where they were talking about the formation of the phone project on the team,” Grignon says. “Tony had [it] in his back pocket, a team already working on the hardware and the schematics, all the design for it. And once they got the approval for it from Steve, Tony was like, ‘Oh, hold on, as a matter of fact’— *whoochaa!* Like he whipped it out, ‘Here’s this prototype that we’ve been thinking about,’ and it was basically a fully baked design.”

On paper, the logic looks impeccable: The iPod was Apple’s most successful product, phones were going to eat the iPod’s lunch, so why not an iPod phone? “Take the best of the iPod and put a phone in it,” Fadell says. “So you could do mobile communications and have your music with you, and we didn’t lose all the brand awareness we’d built into the iPod, the half a billion dollars we were spending getting that known around the world.” It was that simple.

Remember that while it was becoming clear inside Apple that they were going to pursue a phone, it wasn't clear at all what that phone should look or feel like. Or how it would work, on just about every level.

“Early 2005, around that time frame, Tony started saying there's talk about them doing a phone,” says David Tupman, who was in charge of iPod hardware at the time. “And I said, ‘I really want to do a phone. I'd like to lead that.’ He said, ‘No.’ ” Tupman laughs. “ ‘You can't do that.’ But they did a bunch of interviews, and I guess they couldn't find anybody, so I was like, ‘Hello, I'm still here!’ Tony was like, ‘Okay, you're it.’ ”

The iPod team wasn't privy to what had been unfolding in the HI group.

“We were gonna build what everyone thought we should build at the time: Let's bolt a phone onto an iPod,” says Andy Grignon. And that's exactly what they started to do.

WHAT'S IT GOING TO BE?



Richard Williamson found himself in Steve Jobs's office. He'd gone in to discuss precisely the kind of thing that nobody wanted to discuss with Steve Jobs — leaving Apple.

For years, he had been in charge of the team that developed the framework that powered Safari, called WebKit. Here's a fun fact about WebKit: Unlike most products developed and deployed by Apple, it's open-source. Here's another: Until 2013, Google's own Chrome browser was powered by WebKit too. It's big-deal software, in other words. And Williamson was, as *Forbes* put it, “what's commonly referred to as a ‘@#\$ rock star’ in Silicon Valley.” But he was getting burned out on upgrading the same platform.

“We had gone through three or four versions of WebKit, and I was thinking of moving to Google,” he says. “That's when Steve invited me.”

And Steve wasn't happy.

W

hen you think “successful computer engineer,” the stock photo that springs to mind is pretty much what Williamson looks like — bespectacled, unrepentantly geekish, brainy, wearing a button-down shirt. We met for an interview at a Palo Alto sushi joint that eschewed waiters in favor of automated service via table-mounted iPads. Seemed fitting.

Williamson is soft-spoken, with a light British accent. He seems affable but shy — there’s a slightly anxious undercurrent to his speech — and unmistakably sharp. He’s apt to rattle off ideas pulled from a deep knowledge of code, industry acumen, and the philosophy of technology, sometimes in the same breath.

Alternative iPhone prototype.

In the mid-‘80s, a friend convinced Williamson to start a company writing software for the Commodore Amiga, an early PC. “We wrote a program called Marauder, which was a program to make archival backups of copy-protected disks.” He laughs. “That’s kind of the diplomatic way of describing the program.” Basically, they created a tool that allowed users to pirate software. “So we had a little bit of a recurring revenue stream,” he says slyly.

In 1985, Steve Jobs’s post-Apple company, NeXT, was still a small operation, and hungry for good engineers. There, Williamson met with two NeXT officers and one Steve Jobs. He showed them the work that he’d done on the Amiga, and they hired him on the spot. The young programmer would go on to spend the next quarter of a century in Jobs’s— and the NeXT team’s— orbit, working on the software that would become integral to the iPhone.

“Don’t leave,” Jobs said, according to Williamson. “We’ve got a new project I think you might be interested in.”

“DON’T LEAVE,” JOBS SAID, ACCORDING TO WILLIAMSON. “WE’VE GOT A NEW PROJECT I THINK YOU MIGHT BE INTERESTED IN.”

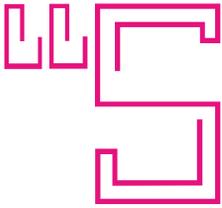
So Williamson asked to see it. “At this point, there was nobody on the project from a software perspective, it was all just kind of an idea in Steve’s mind.” It didn’t

seem like a convincing reason for Williamson to pass up an enticing new offer. “Google was interested in giving me some very interesting work too, so it was a very pivotal moment,” he says.

“So I said, ‘Well, the screen isn’t there, the display tech is kind of not really there.’ But Steve convinced me it was. That the path would be there.” Williamson pauses for a second. “It’s all true about Steve,” Williamson says with a quick smile. “I was with him since NeXT, and I’ve fallen under his glare many times.”

What would it be, then? Of course, Williamson would stay. “So I became an advocate at that point of building a device to browse the web.”

WHICH PHONE

 Steve wanted to do a phone, and he wanted to do it as fast as he could,” Williamson says. But which phone?

There were two options: (a) take the beloved, widely recognizable iPod and hack it to double as a phone (that was the easier path technologically, and Jobs wasn’t envisioning the iPhone as a mobile computing device but as a souped-up phone), or (b) transmogrify a Mac into a tiny touch-tablet that made calls (which was an exciting idea but frayed with futuristic abstraction).

“After the big demo,” Ording says, “the engineers started to look into, What would it take to actually make this real? On the hardware side but also the software side,” Ording says. To say the engineers who first examined it were skeptical about its near-term viability would be an understatement. “They went, ‘Oh my God, this is—we don’t know, this is going to be a lot of work. We don’t even know how much work.’ ”

There was so much that needed to be done to translate the multitouch Mac mass into a product, and one with so many new, unproven technologies, that it was difficult even to put forward a roadmap, to conceive of all of its pieces coming together.

FOR THOSE ABOUT TO ROKR

Development had continued on the Rokr throughout 2005. “We all thought the Rokr was a joke,” Williamson says. The famously hands-on CEO didn’t see the finished Rokr until early September 2005, right before he was supposed to announce it to the world. And he was aghast. “He was like, ‘What else can we do, how can we fix it?’ He knew it was subpar but he didn’t know how bad it was going to be. When it finally got there, he didn’t even want to show it onstage because he was so embarrassed by it,” Fadell says.

During the demonstration, Jobs held the phone like an unwashed sock. At one point the Rokr failed to switch from making calls to playing music, leaving him visibly agitated. So, at about the same moment that Jobs was announcing “the world’s first mobile phone with iTunes” to the media, he was resolving to make it obsolete. He helped by lavishing praise on the new iPod Nano, clearly elevating it as the star of the show and reportedly leaving Motorola execs fuming.

ROKR'S SHEER SHITTINESS TOOK JOBS BY SURPRISE

“When he got offstage he was just like, ‘Ugh,’ really upset,” Fadell says. The Rokr was such a disaster that it landed on the cover of *Wired* with the headline “You Call This the Phone of the Future?” and it was soon being returned at a rate six times higher than the industry average. Its sheer shittiness took Jobs by surprise — and his anger helped motivate him to squeeze the trigger harder on an Apple-built phone. “It wasn’t when it failed. It was right after it launched,” Fadell says. “This is not gonna fly. I’m sick and tired of dealing with bozo handset guys,” Jobs told Fadell after the demo.

“That was the ultimate thing,” Fadell says. “It was, ‘Fuck this, we’re going to make our own phone.’ ”

Steve called a big meeting in the boardroom,” Ording says. “Everyone was there, Phil Schiller and Jony Ive and whoever.” He said, “Listen. We’re going to change plans... We’re going to do this iPod-based thing, make that into a phone because that’s a much more doable project. More predictable.” That was Fadell’s project. The touchscreen effort wasn’t abandoned,

but while the engineers worked on whipping it into shape, Jobs directed Ording, Chaudhri, and members of the UI team to design an interface for an iPod phone, a way to dial numbers, select contacts, and browse the web using that device's tried-and-true click wheel.

There were now two competing projects vying to become the iPhone — a “bake-off,” as some engineers put it. The two phone projects were split into tracks, code-named P1 and P2, respectively. Both were top secret. P1 was the iPod phone. P2 was the still-experimental hybrid of multitouch technology and Mac software.

If there's a ground zero for the political strife that would later come to engulf the project, it's likely here, in the decision to split the two teams — Fadell's iPod division, which was still charged with updating that product line in addition to prototyping the iPod phone, and Scott Forstall's Mac OS software vets — and drive them to compete. (The Human Interface designers, meanwhile, worked on both P1 and P2.)

Eventually, the executives overseeing the most important elements of the iPhone — software, hardware, and industrial design — would barely be able to tolerate sitting in the same room together. One would quit, others would be fired, and one would emerge solidly — and perhaps solely — as the new face of Apple's genius in the post-Jobs era. Meanwhile, the designers, engineers, and coders would work tirelessly, below the political fray, to turn the Ps into working devices in any way possible.

THE PURPLE PEOPLE LEADER

Every top secret project worth its salt in intrigue has a code name. The iPhone's was Purple.

“One of the buildings we have up in Cupertino, we locked it down,” said Scott Forstall, who had managed Mac OS X software and who would come to run the entire iPhone software program. “We started with one floor” — where Greg Christie's Human Interface team worked — “We locked the entire floor down. We put doors with badge readers, there were cameras, I think, to get to some of our labs, you had to badge in four times to get there.” He called it the Purple Dorm

because, “much like a dorm, people were there all the time.”

They “put up a sign that said ‘Fight Club’ because the first rule of Fight Club in the movie is that you don’t talk about Fight Club, and the first rule about the Purple Project is you do not talk about that outside of those doors,” Forstall said.

EVERY TOP SECRET PROJECT WORTH ITS SALT IN INTRIGUE HAS A CODE NAME. THE IPHONE'S WAS PURPLE.

Why Purple? Few seem to recall. One theory is it was named after a purple aardvark toy that Scott Herz — one of the first engineers to come to work on the iPhone — had as a mascot for Radar, the system that Apple engineers used to keep track of software bugs and glitches throughout the company. “All the bugs are tracked inside of Radar at Apple, and a lot of people have access to Radar,” says Richard Williamson. “So if you’re a curious engineer, you can go spelunking around the bug-tracking system and find out what people are working on. And if you’re working on a secret project, you have to think about how to cover your tracks there.”

Scott Forstall, born in 1969, had been downloading Apple into his brain his entire life. By junior high, his precocious math and science skills landed him in an advanced-placement course with access to an Apple IIe computer. He learned to code, and to code well. Forstall didn’t fit the classic computer-geek mold, though. He was a debate team champ and a performer in high-school musicals; he played the lead in *Sweeney Todd*, that hammy demon barber. Forstall graduated from Stanford in 1992 with a master’s in computer science and landed a job at NeXT.

Alternative iPhone prototype.

After releasing an overpriced computer aimed at the higher education market, NeXT flailed as a hardware company, but it survived by licensing its powerful NeXTSTEP operating system. In 1996, Apple bought NeXT and brought Jobs back into the fold, and the decision was made to use NeXTSTEP to overhaul the Mac’s aging operating system. It became the foundation on which Macs— and iPhones — still run today. At Jobs-led Apple, Forstall rose through the ranks. He mimicked

his idol's management style and distinctive taste. *BusinessWeek* called him “the Sorcerer's Apprentice.”

One of his former colleagues praised him as a smart, savvy leader but said he went overboard on the Jobs-worship: “He was generally great, but sometimes it was like, just be yourself.” Forstall emerged as the leader of the effort to adapt Mac software to a touchscreen phone. Though some found his ego and naked ambition distasteful — he was “very much in need of adulation,” according to one peer, and called “a starfucker” by another — few dispute the caliber of his intellect and work ethic. “I don't know what other people have said about Scott,” Henri Lamiroux says, “but he was a pleasure to work with.”

Forstall led many of the top engineers he'd worked with since his NeXT days — Henri Lamiroux and Richard Williamson among them — into the P2 project. Williamson jokingly called the crew “the NeXT mafia.” True to the name, they would at times behave in a manner befitting a close-knit, secretive (and highly efficient) organization.

P1 THING AFTER ANOTHER

Tony Fadell was Forstall's chief competition.

“From a politics perspective, Tony wanted to own the entire experience,” Grignon says. “The software, the hardware... once people started to see the importance of this project to Apple, everyone wanted to get their fingers in it. And that's when the epic fight between Fadell and Forstall began.”

Having worked with Forstall on Dashboard, Grignon was in a unique position to interface with both groups. “From our perspective, Forstall and his crew, we always viewed them as the underdogs. Like they were trying to wedge their way in,” Grignon says. “We had complete confidence that our stack was going to happen because this is Tony's project, and Tony's responsible for millions upon millions of iPod sales.”

So, the pod team worked to produce a new pod-phone cut from the mold of Apple's ubiquitous music player. Their idea was to produce an iPod that would have two distinct modes: the music player and a phone. “We prototyped a new

way,” Grignon says of the early device. “It was this interesting material... it still had this touch sensitive click wheel, right, and the Play/Pause/Next/Previous buttons in blue backlighting. And when you put it into phone mode through the UI, all that light kind of faded out and faded back in as orange. Like, zero to nine in the click wheel in an old rotary phone, you know, ABCDEGF around the edges.” When the device was in musicplaying mode, blue backlighting would show iPod controls around the touch wheel. The screen would still be filled with iPod-style text and lists, and if you toggled it to phone mode, it’d glow orange and display numbers like the dial of a rotary phone.

“We put a radio inside, effectively an iPod Mini with a speaker and headphones, still using the touch-wheel interface,” Tupman says.

From an Apple patent application filed in 2006 for a rotary phone-style dial within an iPod.

“And when you texted, it dialed — and it worked!” Grignon says. “So we built a couple hundred of them.”

The problem was that they were difficult to use as phones. “After we made the first iteration of the software, it was clear that this was going nowhere,” Fadell says.

“Because of the wheel interface. It was never gonna work because you don’t want a rotary dial on the phone.”

The design team tried mightily to hack together a solution.

“I came up with some ideas for the predictive typing,” Bas Ording says. There would be an alphabet laid out at the bottom of the screen, and users would use the wheel to select letters. “And then you can just, like, *click-click-click-click* — ‘Hello, how are you.’ So I just built an actual thing that can learn as you type — it would build up a database of words that follow each other.” But the process was still too tedious.

“It was just obvious that we were overloading the click wheel with too much,” Grignon says. “And texting and phone numbers — it was a fucking mess.”

“We tried everything,” Fadell says. “And nothing came out to make it work. Steve kept pushing and pushing, and we were like, ‘Steve.’ He’s pushing the rock up a hill. Let’s put it this way: I think he knew, I could tell in his eyes that he knew; he just wanted it to work,” he says. “He just kept beating this dead horse.”

“I GUESS STEVE MUST HAVE WOKEN UP ONE DAY LIKE, ‘THIS IS NOT AS EXCITING AS THE TOUCH STUFF.’ ”

“C’mon, there’s gotta be a way,” Jobs would tell Fadell. “He didn’t just want to give up. So he pushed until there was nothing there,” Fadell says.

They even filed for a patent for the ill-fated device, and in the bowels of Cupertino, there were offices and labs littered with dozens of working iPod phones. “We actually made phone calls,” Grignon says.

The first calls from an Apple phone were not, it turns out, made on the sleek touchscreen interface of the future but on a steampunk rotary dial. “We came very close,” Ording says. “It was, like, we could have finished it and made a product out of it... But then I guess Steve must have woken up one day like, ‘This is not as exciting as the touch stuff.’ ”

“For us on the hardware team, it was great experience,” David Tupman says. “We got to build RF radio boards, it forced us to select suppliers, it pushed us to get everything in place.” In fact, elements of the iPod phone wound up migrating into the final iPhone; it was like a version 0.1, Tupman says. For instance: “The radio system that was in that iPod phone was the one that shipped in the actual iPhone.”

HANDS OFF

The first time Fadell saw P2’s touch-tablet rig in action, he was impressed — and perplexed. “Steve pulled me in a room when everything was failing on the iPod phone and said, ‘Come and look at this.’ ” Jobs showed him the ENRI team’s multitouch prototype. “They had been getting, in the background, the touch Mac going. But it wasn’t a touch Mac; literally, it was a room with a PingPong table, a projector, and this thing that was a big touchscreen,” Fadell says.

“This is what I want to put on the phone,” Jobs said.

“Steve, sure,” Fadell replied. “It’s not even close to production. It’s a prototype, and it’s not a prototype at scale — it’s a prototype table. It’s a research project. It was like eight percent there,” Fadell says.

David Tupman was more optimistic. “I was like, ‘Oh, wow, yeah, we *have* to find out a way to make this work.’ ” He was convinced the engineering challenges could be solved. “I said, ‘Let’s just sit down and go through the numbers and let’s work it out.’ ”

Alternative iPhone prototype.

The iPod phone was losing support. The executives debated which project to pursue, but Phil Schiller, Apple’s head of marketing, had an answer: Neither. He wanted a keyboard with hard buttons. The BlackBerry was arguably the first hit smartphone. It had an email client and a tiny hard keyboard. After everyone else, including Fadell, started to agree that multitouch was the way forward, Schiller became the lone holdout.

He “just sat there with his sword out every time, going, ‘No, we’ve got to have a hard keyboard. No. Hard keyboard.’ And he wouldn’t listen to reason as all of us were like, ‘No, this works now, Phil.’ And he’d say, ‘You gotta have a hard keyboard!’ ” Fadell says.

Schiller didn’t have the same technological acumen as many of the other execs. “Phil is not a technology guy,” Brett Bilbrey, the former head of Apple’s Advanced Technology Group, says. “There were days when you had to explain things to him like a grade-school kid.” Jobs liked him, Bilbrey thinks, because he “looked at technology like middle America does, like Grandma and Grandpa did.”

“[SCHILLER] WAS TOLD, LIKE, GET ON THE PROGRAM OR GET THE FUCK OUT. AND HE ULTIMATELY CAVED.”

When the rest of the team had decided to move on multitouch and a virtual

keyboard, Schiller put his foot down. “There was this one spectacular meeting where we were finally going in a direction,” Fadell says, “and he erupted.”

“We’re making the wrong decision!” Schiller shouted.

“Steve looked at him and goes, ‘I’m sick and tired of this stuff. Can we get off of this?’ And he threw him out of the meeting,” Fadell recalls. Later, he says, “Steve and he had it out in the hallway. He was told, like, Get on the program or get the fuck out. And he ultimately caved.”

That cleared it up: the phone would be based on a touchscreen. “We all know this is the one we want to do,” Jobs said in a meeting, pointing to the touchscreen. “So let’s make it work.”

ROUND TWO

There was a whole religious war over the phone” between the iPod team and the Mac OS crew, one former Apple executive told me. When the iPod wheel was ruled out and the touch ruled in, the new question was how to build the phone’s operating system. This was a critical juncture — it would determine whether the iPhone would be positioned as an accessory or as a mobile computer.

“Tony and his team were arguing we should evolve the operating system and take it in the direction of the iPod, which was very rudimentary,” Richard Williamson says. “And myself and Henri and Scott Forstall, we were all arguing we should take OS X” — Apple’s main operating system, which ran on its desktops and laptops — “and shrink it down.”

“There were some epic battles, philosophical battles about trying to decide what to do,” Williamson says.

The NeXT mafia saw an opportunity to create a true mobile computing device and wanted to squeeze the Mac’s operating system onto the phone, complete with versions of Mac apps. They knew the operating system inside and out — it was based on code they’d worked with for over a decade. “We knew for sure that there was enough horsepower to run a modern operating system,” Williamson says, and

they believed they could use a compact ARM processor — Sophie Wilson’s low-power chip architecture — to create a stripped-down computer on a phone.

"THERE WERE SOME EPIC BATTLES, PHILOSOPHICAL BATTLES ABOUT TRYING TO DECIDE WHAT TO DO."

The iPod team thought that was too ambitious and that the phone should run a version of Linux, the open-source system popular with developers and open-source advocates, which already ran on low-power ARM chips. “Now we’ve built this phone,” says Andy Grignon, “but we have this big argument about what was the operating system it should be built on. ‘Cause we were initially making it iPod-based, right? And nobody cares what the operating system in an iPod is. It’s an appliance, an accessory. We were viewing the phone in that same camp.”

Remember, even after the iPhone’s launch, Steve Jobs would describe it as “more like an iPod” than a computer. But those who’d been in the trenches experimenting with the touch interface were excited about the possibilities it presented for personal computing and for evolving the human-machine interface. “There was definitely discussion: This is just an iPod with a phone. And we said, no, it’s OS X with a phone,” Henri Lamiroux says. “That’s what created a lot of conflict with the iPod team, because they thought they were the team that knew about all the software on small devices. And we were like, no, okay, it’s just a computer.”

“At this point we didn’t care about the phone at all,” Williamson says. “The phone’s largely irrelevant. It’s basically a modem. But it was ‘What is the operating system going to be like, what is the interaction paradigm going to be like?’ ” In that comment, you can read the roots of the philosophical clash: The software engineers saw P2 not as a chance to build a phone, but as an opportunity to use a phone-shaped device as a Trojan horse for a much more complex kind of mobile computer.

THE INCREDIBLE SHRINKING OPERATING SYSTEM

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hen the two systems squared off early on, the mobile-computing approach didn’t fare so well.

“Uh, just the load time was laughable,” Andy Grignon says. Grignon’s Linux option was fast and simple. “It’s just kind of *prrrrrt* and it’s up.” When the Mac team first got their system compiling, “it was like six rows of hashtags, *dink-dink-dink-dink-dink*, and then it just sat there and it would shit the bed for a little bit, and then it would finally come back up and you’d be like, Are you even kidding me? And this is supposed to be for a device that just turns on? Like, for real?”

“At that point it was up to us to prove” that a variant of OS X could work on the device, Williamson says. The mafia got to work, and the competition heightened. “We wanted our vision for this phone that Apple was going to release to become a reality,” Nitin Ganatra says. “We didn’t want to let the iPod team have an iPod-ish version of the phone come out before.”

One of the first orders of business was to demonstrate that the scrolling that had wowed Jobs would work with the stripped-down operating system. Williamson linked up with Ording and hashed it out. “It worked and looked amazingly real. When you touched the screen, it would track your finger perfectly, you would pull down, it would pull down.”

That, Williamson says, put the nail in the Linux pod’s coffin. “Once we had OS X ported and these basic scrolling interactions nailed, the decision was made: We’re not going to go with the iPod stack, we’re going to go with OS X.”

The software for the iPhone would be built by Scott Forstall’s NeXT mafia; the hardware would go to Fadell’s group. The iPhone would boast a touchscreen and pack the power of a mobile computer. That is, if they could get the thing to work. ■

Brian Merchant is the author of *The One Device: the Secret History of the iPhone*. He's an editor at *Motherboard*, Vice's science and technology arm; the founder / editor of *Terraform*, its online fiction outlet; and his work has appeared in *The Guardian*, *Slate*, *VICE Magazine*, *Fast Company*, *Discovery*, and beyond.

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