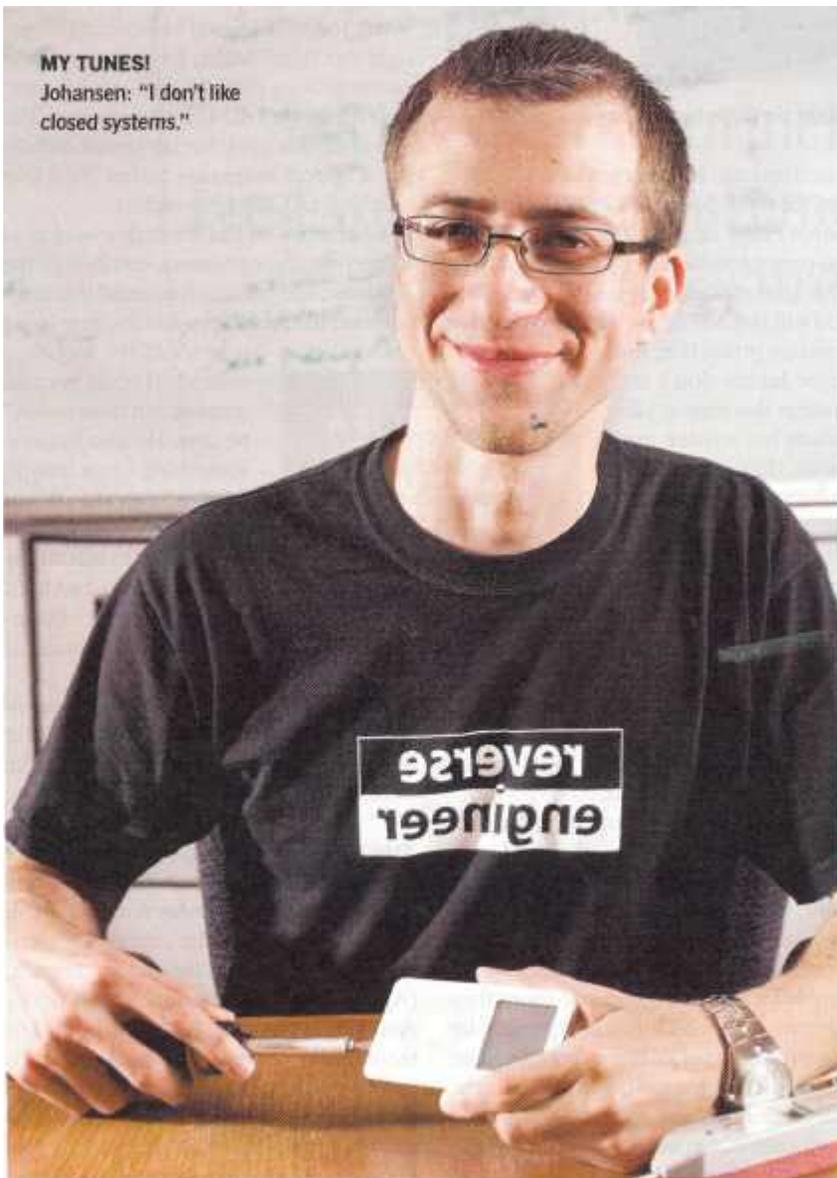


# DISPATCHES

## Unlocking the iPod

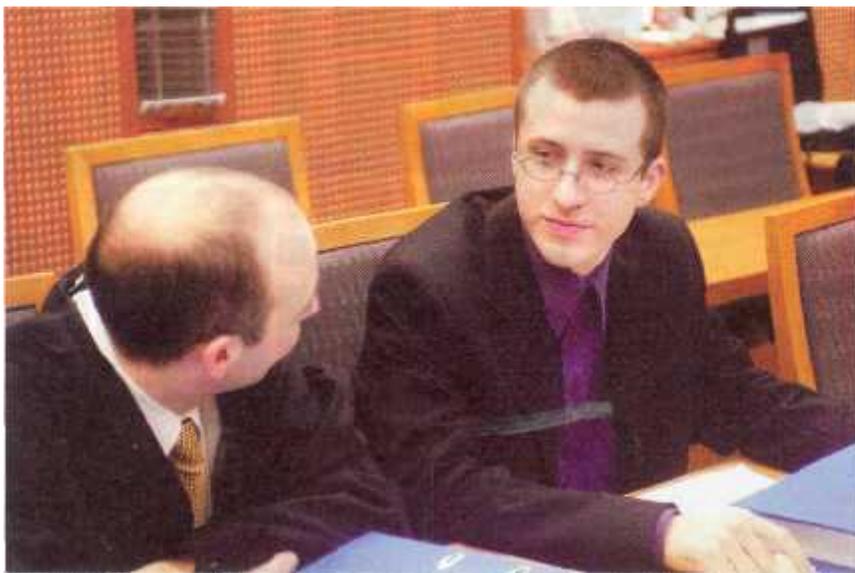


Jon Johansen became a geek hero by breaking the DVD code. Now he's liberating iTunes—whether Apple likes it or not. **BY ROBERT LEVINE**

**G**ROWING UP in a small town in southern Norway, Jon Lech Johansen loved to take things apart to figure out how they worked. Unlike most kids, though, he'd put them back together better than they were before. When he was 14, his father bought a digital camera that came with buggy software, so Jon analyzed the code and wrote a program that worked better. When Johansen bought an early MP3 player that kept crashing, he studied how it worked, wrote a more reliable program, and posted it on the Internet so other people could download it for free. Later, the company that made the device asked him about writing a new version, but he didn't hear back after he sent in his resume. "I assume it had something to do with my age," Johansen says dryly. He was 17.

Sometimes, however, the things Johansen tries to improve were made a certain way for a reason. When he was 15, Johansen got frustrated when his DVDs didn't work the way he wanted them to. "I was fed up with not being able to play a movie the way I wanted to play it," that is, on a PC that ran Linux. To

# DISPATCHES TECHNOLOGY



COURTESY OF THE OSLO DISTRICT COURT

**NOT GUILTY** Johansen was acquitted of hacking one of his DVDs by an Oslo court in 2003.

fix the problem, he and two hackers he met online wrote a program called DeCSS, which removed the encryption that limits what devices can play the discs. That meant the movies could be played on any machine, but also that they could be copied. After the program was posted online, Johansen received an award from the Electronic Frontier Foundation—and a visit from Norwegian police.

Johansen, now 22 and widely known as "DVD Jon" for his exploits, has also figured out how Apple's iPod-iTunes system works. And he's using that knowledge to start a business that is going to drive Steve Jobs crazy.

If you want to be specific—and for legal reasons, he does—Johansen has reverse-engineered FairPlay, the encryption technology Apple uses to make the iPod a

closed system. Right now, thanks to FairPlay, the songs Apple sells at its iTunes store cannot easily be played on other devices, and copy-protected songs purchased from other sites will not play on the iPod. (The iPod will play MP3 files, which do not have any copy protection, but major labels don't sell music in that format.) Johansen has written programs that get around those restrictions: one that would let other companies sell copy-protected songs that play on the iPod, and another that would let other devices play iTunes songs. Starting this fall, his new company, DoubleTwist, will license them to anyone who wants to get into the digital-music business—and doesn't mind getting hate mail from Cupertino.

So far, DoubleTwist consists of four cubicles in a generic-looking glass-and-steel building in Redwood Shores, Calif., one client, and no full-time employees other than Johansen and co-founder Monique Farantzos. As he and Farantzos explain DoubleTwist in a conference room they share with several other companies, he points to a sheet of printer paper tacked on the wall that has a typed quote Jobs gave the *Wall Street Journal* in 2002: "If you legally acquire music, you need to have the right to manage it on all other devices that you

own." As Johansen sees it, Jobs didn't follow through on this promise, so it's up to him to fix the system, just as he fixed the software for his father's camera.

"Today's reality is that there's this iTunes-iPod ecosystem that excludes everyone else from the market," says Johansen. "I don't like closed systems."

Companies that rely on closed systems don't much care for him, either. For his role in writing DeCSS, Johansen was charged with breaking the Norwegian law that prohibits gaining unauthorized access to data, then was acquitted twice when courts ruled the data were his own. The movie studios didn't like that decision, which almost certainly would have been different in the U.S., where the 1998 Digital Millennium Copyright Act (the DMCA, for short) prohibits circumventing digital-rights-management technology (or DRM) for any reason. The movie studios used that law to successfully sue a hacker magazine called *2600* that linked to DeCSS on its website.

Johansen, who had left high school at 16 to become a programmer, testified in the *2600* case and became frustrated that companies could prohibit customers from using

a product the way they wanted. "I really became interested in these issues," he says. He also became something of an icon to hard-core geeks: When Johansen announced on his blog that he was selling the old iPod he had used to break FairPlay, a Berkeley researcher bought it

to keep as a souvenir.

"We all talk about disruptive forces in business," says Mike McGuire, an analyst at the Gartner Group. "This guy is a disruptive force unto himself."

THERE'S AN OBVIOUS question: Isn't opening the iTunes system illegal? There is no obvious answer. FairPlay is not patented, most likely because the encryption algorithms it uses are in the public domain. (Apple would not comment for this story.) And Johansen says he is abiding by the letter of the law—if not, perhaps, its spirit. To let other sites sell music that plays on the iPod, his program will "wrap" songs with code that functions much like FairPlay. "So we'll actually add copy protection," he says,

"THIS GUY IS A  
DISRUPTIVE  
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DECLARES.

**AT A GLANCE**

**MISSION POSSIBLE** Johansen broke the iPod's encryption years ago.

**MISSION PLAUSIBLE** Copyright law in the U.S. permits some reverse engineering, but the limits are untested.

**MISSION IMPRACTICAL** Could be an uphill battle. If you're in the music business, do you want to side with DVD Jon or Steve Jobs?

# DISPATCHES TECHNOLOGY

whereas the DMCA prohibits removing it. Helping other devices play iTunes songs could be harder to justify legally, but he cites the DMCA clause that permits users, in some circumstances, to reverse-engineer programs to ensure "interoperability."

"The law protects copyrights," he says, "but it doesn't keep you locked into the iPod." Johansen isn't the only one who feels that way—or the only one who has found a way around FairPlay. In 2004, RealNetworks released a program called Harmony that would allow songs from its RealPlayer Mu-

sic Store to play on the iPod. Steve Jobs memorably accused the company of using "the ethics and tactics of a hacker" and threatened to sue. Instead, Apple released a software update that made Harmony ineffective—although Real subsequently fixed that. Another company, Navio Systems, has announced that it has developed a way to play iTunes songs on other devices. Several more programs on the Internet will strip the FairPlay encryption from a file, but none of them has a large following.

And not everyone who wants to open up the iPod is a hacker. There have been demonstrations in the streets of France over Apple's DRM, and lawmakers there have attempted to require Apple to license FairPlay. Apple said that such a move would be "state-sponsored piracy."

In the U.S., courts have traditionally allowed inventors to reverse-engineer products to determine how they function. But the DMCA allows programmers to do that only in certain cases. "What he's working on is clearly in the spirit of the reverse-engineering the courts have been most friendly toward," says Fred von Lohman, a senior staff attorney at the Electronic Frontier Foundation who has informally given Johansen advice. "But the law is untested, and the case is complicated."

Since the DMCA was passed, the most relevant legal precedent is a case in which the videogame maker Blizzard sued an ISP that hosted an unapproved server where people could play its games, which the court found to be a DMCA violation. "On the surface, Apple would have a good case," especially when it comes to making

iTunes songs play on other devices, says Robert Becker, an attorney at Manatt Phelps & Phillips who has represented the copy-protection company Macrovision. "Apple would say you're buying music under certain restrictions."

Indeed, how you feel about what Johansen is doing may depend on how you feel about a question that will become more important as the media business gradually embraces digital distribution: What exactly are you buying when you purchase a song on iTunes? An unscientific survey of friends gener-

ated only one answer: a song. An attorney, though, might say that you are buying a license to play a song on a specific set of devices—and that using Johansen's software violates Apple's user agreement (the one you didn't bother to read when you signed up for iTunes). If the distinction seems minute, suppose you replace your iPod with another digital music player; unless you convert them to MP3s, your songs from iTunes will be as useful as eight-track tapes.

FOR A MAN so intent on changing the way music is sold, Johansen isn't a big fan himself. "I've probably bought ten CDs in my whole life," he says. Much of the music he does have—mainly techno—he buys from iTunes. When the store went online, it didn't accept foreign credit cards, so Johansen bought iTunes gift certificates on eBay.

Instead of going to concerts, Johansen bakes. His blog, *So Sue Me*, features dessert recipes along with news about technology and arguments about copyright law. When DoubleTwist signed its first client—which Johansen declines to identify—he made an apple pie to celebrate.

Johansen has a soft-spoken modesty that belies his stature as a hacker. He was among the first to crack FairPlay—he did it for fun on a vacation in France—and he has also broken a Microsoft code. "If reverse engineering were a sport," says Michael Robertson, the Internet entrepreneur for whom Johansen worked before setting up DoubleTwist, "Jon would be on the all-star team."

Johansen realizes that taking on Apple could make figuring out FairPlay look easy. But he seems to regard the fact that he could get sued as one of those complicating factors an engineer must deal with, and he keeps the reverse-engineering clause of the DMCA near his desk for easy reference. "We don't want to go to court, because it's a waste of time and money," he says. "But if it comes to that, we will test these issues in court."

Johansen's legal arguments involve the rights of consumers, but opening the iPod could also be good for the music business. The major labels worry that compatibility concerns will slow the digital-music market, especially when Microsoft comes out with its own closed system this Christmas. Chafing at Apple's one-price-fits-all policy, they would love to see more retailers enter the market. But it says something about the power of Apple that none provided an executive who would speak for the record.

It is anyone's guess how Apple will react—the company hasn't contacted DoubleTwist. (Johansen says he had lunch with Jobs last January, but he hadn't yet started his company.) So far, Apple hasn't sued anyone who has created or distributed any of the FairPlay hacks. That could be because the company is afraid that losing a case would set a precedent that would encourage imitations of the iPod. Or it could be that Apple doesn't want to give anyone the publicity.

Whatever Apple does, Johansen could have a hard time making DoubleTwist into a viable business. Companies could be reluctant to license Johansen's software for fear of being sued along with DoubleTwist. And they might have a tough time convincing the major labels to let them sell their music, since the labels know how much that would upset Apple. "There has to be an agreement between the label and the retailer," says Josh Wattles, an attorney at Dreier and a former corporate counsel at Paramount Pictures. "What's the likelihood of a record company granting that?"

Whether or not Johansen makes any money with DoubleTwist, he will almost certainly make his point. "The iTunes music store was getting so popular, and I was kind of fed up that people were accepting that DRM."

On the other hand, if Apple gets fed up with *him*, he'll end up making his point in a courtroom. ■

