

# EXHIBIT 1

**Materials Considered**

- Declaration of Roger G. Noll, *Apple iPod iTunes Antitrust Litigation*, Lead Case No. C-05-00037, July 15, 2008
- Reply Declaration of Roger G. Noll, *Apple iPod iTunes Antitrust Litigation*, October 19, 2009
- Deposition of Roger G. Noll, Ph.D. *Apple iPod iTunes Antitrust Litigation*, October 27, 2009
- Deposition of Roger G. Noll, *Apple iPods iTunes Antitrust Litigation*, September 19, 2008
- Affidavit of Gary L. French, Ph.D., February 23, 2009
- Jason Dedrick, Kenneth L. Kraemer, and Greg Linden, "Who Profits from Innovation in Global Value Chains?: A Study of the iPod and Notebook PCs," *Industrial and Corporate Change*, June 22, 2009.
- Kennedy, Peter, "A Guide to Econometrics," The MIT Press, 1985
- Naoki Watanabe, Ryo Nakajima, and Takatori Ida, "Quality-Adjusted Prices of Mobile Phone Handsets and Carriers' Product Strategies: The Japanese Case," Discussion Paper No. 1224, Department of Social Systems Management, University of Tsukuba, January 2009
- Pindyck, Robert S. and Daniel L. Rubinfeld, "Econometric Models and Economic Forecasts," McGraw-Hill 1991
- Riordan, Michael, "Anticompetitive Vertical Integration by a Dominant Firm," *American Economic Review* Vol. 88, No. 5 (December 1998)
- Rolf Dewenter, Justus Haucup, Ricardo Luteher and Petr Rotzel, "Hedonic Prices in the German Market for Mobile Phones, " *Telecommunications Policy*, Vol. 31, No. 1 (2004)
- Global Cool Hunt 2003/04, Hill and Knowlton, accessed November 3, 2009 at <http://www.signsofthetime.nl/image/globalcoolhuntfinal.pdf>

Songs in the Key of Steve, Steve Jobs may have just created the first great legal online music service. That's got the record biz singing his praises," Devin Leonard, May 12, 2003, at

[http://money.com/magazines/fortune/fortune\\_archive/2003/05/12/342289/index.htm](http://money.com/magazines/fortune/fortune_archive/2003/05/12/342289/index.htm)

"Apple launches the iTunes music store," Ian Bell, April 29, 2003, Digital Trends, <http://www.digitaltrends.com/computing/apple-launches-the-itunes-music-store/>

"Apple's iPod has its charms," Henry Norr, SFGATE.com, October 29, 2001, <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2001/10/29/BU215879.DTL&type=printable>

"For Apple, sweet music from iPod," Charles Haddad, Business Week, October 31, 2001, [http://www.businessweek.com/bwdaily/dnflash/oct2001/nf20011031\\_4266.htm](http://www.businessweek.com/bwdaily/dnflash/oct2001/nf20011031_4266.htm)

# **EXHIBIT 2**

ECONOMETRIC

MODELS

&

ECONOMIC

FORECASTS

*Robert S. Pindyck &  
Daniel L. Rubinfeld*

THIRD EDITION

Since  $x_i$ ,  $u_i$ , and  $v_i$  are all stochastic, it is not easy to evaluate the bias of  $\hat{\beta}$ . The reason is that the expected value of the ratio of two random variables is not equal to the ratio of the expected value of the variables. However, we can evaluate the consistency of  $\hat{\beta}$  by evaluating the expression for  $\hat{\beta}$  in the limit as the sample size gets large. This calculation is denoted  $\text{plim } \hat{\beta}$ . Since  $u_i$  and  $v_i$  are uncorrelated with each other as well as with  $x_i$ , it follows that<sup>1</sup>

$$\text{plim } \hat{\beta} = \text{plim } \frac{\beta \sum x_i^2}{\sum x_i^2 + \sum v_i^2} = \frac{\beta \text{Var}(x)}{\text{Var}(x) + \sigma_v^2} = \frac{\beta}{1 + \sigma_v^2/\text{Var}(x)} \quad (7.5)$$

This suggests that the presence of measurement error of the type in question will lead to an underestimate of the true regression parameter if ordinary least-squares techniques are used.

#### 7.2.4 Instrumental-Variables Estimation

The problem of errors in measurement of regression variables is quite important, and yet econometricians do not have much to offer in the way of useful solutions. As a general rule, we tend to pass over the problem of measurement error, hoping that the errors are sufficiently small to destroy the validity of the estimation procedure. One technique which is available and can solve the measurement error problem is the technique of *instrumental-variables estimation*. We shall briefly outline the concept of instrumental variables, in part because it is likely to be useful with measurement errors and in part because it is important when one is dealing with models consisting of systems of simultaneous equations.

The method of instrumental variables involves the search for a new variable  $Z$  which is both highly correlated with the independent variable  $X$  and at the same time uncorrelated with the error term in the equation (as well as the errors of measurement of both variables). In practice, we are concerned with the consistency of parameter estimates and therefore concentrate on the relationship between the variable  $Z$  and the remaining model variables when the sample size gets large. We define the random variable  $Z$  to be an *instrument* if:

1. The correlations between  $Z$  and  $\varepsilon$ ,  $u$ , and  $v$  in the equation approach zero as the sample size gets large.<sup>2</sup>
2. The correlation between  $Z$  and  $X$  is nonzero as the sample size gets large.

If we are fortunate to be able to choose from several instruments, we simply select the one instrument (or combination of instruments) having the highest correlation with the  $X$  variable.

Assuming for the moment that such a variable can be found, we can alter the least-squares regression procedure to obtain estimated parameters that are con-

<sup>1</sup> We have utilized a result that for random variables  $Z_1$  and  $Z_2$ ,  $\text{plim}(Z_1/Z_2) = \text{plim } Z_1/\text{plim } Z_2$ . In this particular case we divide the numerator and denominator by  $N$  and use the fact that  $\text{plim } \sum x_i^2/N = \text{Var}(x)$  and  $\text{plim } \sum v_i^2/N = \sigma_v^2$ .

<sup>2</sup> Technically speaking, we need to refer to the properties of estimators in the probability limit.

sistent. There is unfortunately no guarantee that the estimation process will yield unbiased parameter estimates. To simplify matters, consider case II, in which  $y_i = \beta x_i + \varepsilon_i$  and only  $x$  is measured with error (as  $x^* = x + v$ ). The correct instrumental-variables estimator of the regression slope in the two-variable model is

$$\beta^* = \frac{\sum y_i z_i}{\sum x_i^* z_i} \quad (7.6)$$

The choice of this particular slope formula is made so that the resulting estimator will be consistent. To see this, we can derive the relationship between the instrumental-variables estimator and the true slope parameter in a manner similar to the derivation in Eq. (7.1):

$$\beta^* = \frac{\sum y_i z_i}{\sum x_i^* z_i} = \frac{\beta \sum x_i^* z_i + \sum z_i \varepsilon_i^*}{\sum x_i^* z_i} = \beta + \frac{\sum z_i \varepsilon_i^*}{\sum x_i^* z_i}$$

Clearly, the choice of  $Z$  as an instrument guarantees that  $\beta^*$  will approach  $\beta$  as the sample size gets large [ $\text{Cov}(z, \varepsilon^*)$  approaches 0] and will therefore be a consistent estimator of  $\beta$ . One might wonder why the variable  $x_i^*$  was not replaced by  $z_i$  in the denominator of the instrumental-variables estimator. The reader should check using the above procedure that the estimator  $\beta^{**} = \sum y_i z_i / \sum z_i^2$  does not yield a consistent estimator of  $\beta$  (see Exercise 7.2).

The technique of instrumental variables appears to provide a simple solution to a difficult problem. We have defined an estimation technique which yields consistent estimates if we can find an appropriate instrument. However, this is likely to be difficult when errors of measurement are present.

A few concluding comments may be instructive. First, the ordinary least-squares estimation technique is actually a special case of instrumental variables. This follows because in the classical regression model  $X$  is uncorrelated with the error term and because  $X$  is perfectly correlated with itself. Second, if we generalize the measurement error problem to errors in more than one independent variable, one instrument is needed to replace *each* of the designated independent variables. Finally, we repeat that instrumental-variables estimation guarantees consistent estimation, but it does not guarantee unbiased estimation.

### 7.3 SPECIFICATION ERROR

Our discussion of econometrics has relied heavily on the assumption that the model to be estimated is correctly specified. Once the correct specification of the model is assumed, model estimation and model testing become relatively straightforward. In reality, however, we can never be sure that a given model is correctly specified. In fact, researchers usually examine more than one possible specification, attempting to find the specification which best describes the pro-

<sup>3</sup> We will but not all, of tions on the i. Exercise 7.3).

# **EXHIBIT 3**



# A Guide to Econometrics

Peter Kennedy

SECOND EDITION

Second printing, 1986  
MIT Press editions, 1979 and 1985

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# Contents

## *Preface*

- 1 Introduction**
  - 1.1 What is Econometrics?
  - 1.2 The Disturbance
  - 1.3 Estimates and Tests
  - 1.4 Good and Poor ModelsGeneral Notes
- 2 Criteria for Estimation**
  - 2.1 Introduction
  - 2.2 Computational
  - 2.3 Least Squares
  - 2.4 Highest  $R^2$
  - 2.5 Unbiasedness
  - 2.6 Best Unbiased
  - 2.7 Mean Squared Error
  - 2.8 Asymptotic
  - 2.9 Maximum Likelihood
  - 2.10 Monte Carlo
  - 2.11 Adding UpGeneral Notes  
Technical Notes
- 3 The Classical Linear Model**
  - 3.1 Textbooks and Authors
  - 3.2 The Five Assumptions
  - 3.3 The OLS EstimatorGeneral Notes  
Technical Notes
- 4 Interval Estimation**
  - 4.1 Introduction
  - 4.2 The Unidimensional Case
  - 4.3 The Multidimensional Case
  - 4.4 LR, Wald and Likelihood Ratio
  - 4.5  $R^2$  AgainGeneral Notes  
Technical Notes

characterizes the usually reliable maximum likelihood method. If the errors are all normally distributed (and independent of one another), the maximum likelihood estimates cannot be calculated without extra information (such as knowledge of the ratio of the error variances or knowledge of the variance of the measurement error).

(2) Instrumental variables

This method is useful for any situation in which a regressor is contemporaneously correlated with the disturbance. In this method a new independent variable (called an instrumental variable) must be found for each independent variable that is contemporaneously correlated with the disturbance. This new independent variable must be correlated with the original variable and be contemporaneously uncorrelated with the disturbance. The instrumental variables estimator is then found using a formula involving both the original variables and the new (instrumental) variables; it can be shown to be consistent.

The major problem with the instrument variables technique is that it is difficult to find a 'good' instrumental variable, i.e., an instrumental variable that is highly correlated with the independent variable with which it is associated, but uncorrelated with the disturbance. Usually the choice of an instrumental variable is highly arbitrary - there is no way of knowing whether the most efficient of the available instrumental variables has been chosen. Worse still, there is really no way of checking if the instrumental variable is in fact independent of the disturbance. (Economic theory may be of help here.) Another objection to this estimator is that it leads to much higher variances than OLS. The weaker the correlation between the instrumental variables and their associated independent variables, the larger is the variance-covariance matrix of the instrumental variable estimator. Because the typical case is one in which the instrumental variables are not highly correlated with the independent variable with which they are associated, this technique is often accused of obtaining consistency at the cost of a high variance; the OLS estimator could be preferred on the MSE criterion.

Several special cases of the instrumental variables approach should be noted.

- (a) The most popular instrumental variable is the lagged value of the independent variable in question; it is usually correlated with the original independent variable, and, although it is correlated with the disturbance vector, because it is lagged it is not contemporaneously correlated with the disturbance (assuming the disturbance is not autocorrelated).
- (b) The two-group method, in which the observations are split into two equal-sized groups on the basis of the size of the regressor and then the

True relationship

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# **EXHIBIT 4**

## Apple's iPod has its charms

Henry Norr

Monday, October 29, 2001



The big news in consumer electronics last week was the iPod, the portable MP3 player Apple plans to start shipping in a couple of weeks.

Like everyone else who attended the product's debut in Cupertino, I came away with an evaluation unit to play with, plus CD copies of all the songs loaded on it -- a gesture intended to show that Apple's endorsement of the MP3 format doesn't mean it condones stealing copyrighted music.

(Steve Jobs grouched that the CDs had cost his company \$50,000, but as usual you can't fault his skill at press manipulation -- Apple got its money's worth and more in news coverage and reviews.)

The product itself is quintessentially Jobsian: Striking design, cutting-edge technology and remarkable ease of use, for which you have to pay a pretty stiff price (\$399) and use a Mac.

And not just any Mac, but one with FireWire ports built in, which means a recent one. My wife's iBook and my daughter's iMac don't qualify -- at two and three years old, respectively, they're too old. Apple says it has sold about 7 million iPod-compatible Macs.

With a polished faux-silver shell -- like the cigarette cases rich people flash in old movies -- and a white-plastic facade, the deck-of-cards-sized device is certainly gorgeous to look at.

On the other hand, after using my unit for a few days, I've got some gripes about the design. First, both back and front are extremely susceptible to fingerprints. There's no clip to hold it to your belt or keep it securely in your pocket. (Mine already fell out of my shirt pocket once, when I bent over to pick something up).

You don't even get a protective case or carry bag with it. (What do you want for \$400?)

The FireWire port, through which you load music and charge the built-in battery, is on the top and has no cover. Maybe I'm paranoid, but I worry about dirt, sweat or even rain getting in among the pins.

And while Apple boasts that the earbuds accompanying the iPod have something called Neodymium transducers -- a kind of rare-earth magnet that's supposed to improve sound quality -- they're not much use to me because they're too big to stay in my ears. Steve's must be bigger than mine. .

### By the numbers

Looks aside, the iPod is remarkable for its combination of small size and high capacity and the unique download speeds FireWire provides.

It's by no means the smallest or lightest portable music player -- many popular MP3 players weigh only 3 or 4 ounces (one called the Dynamic Naked Audio Player weighs just 1 ounce), while the iPod tips the scales at 6.5 ounces.

But these petite players, which use flash memory for storage, hold only an hour or two of music, while the iPod, with a 5-GB hard drive for storage, accommodates 65 hours of CD-quality audio -- more than enough to play from 5 p. m. Friday to 9 a.m. Monday, without repeating a single cut. (You would have to keep recharging the built-in battery, which lasts about 10 or 12 hours per charge.)

At the other end of the spectrum, you can find competing players that have hard drives, including some that hold even more than the iPod. Creative Labs' Nomad Jukebox line, for example, includes a 6-GB model that now sells for only \$220 and a 20-GB version for \$400. The latter holds 10 days' worth of uninterrupted CD-quality music, or much more if you use the Windows Media format, which Apple doesn't support. The Nomads also have some useful features the iPod lacks, such as a line-in jack so you can record music on it without going through a PC.

Those devices, however, weigh more than twice as much as the iPod, and they're too big to fit in a pocket unless you're wearing cargo pants.

That's because they use conventional-sized hard drives, while Apple has adopted a new ultra-slim, 1.8-inch-diameter format. (Toshiba sells what appears to be the same drive on a PC Card for \$399 -- a price that makes Apple's look downright reasonable, because the iPod can also be used as a normal hard drive but the Toshiba card won't double as a portable music player. )

In short, you can beat the iPod on size or on capacity, but not on both. .

### **Light my fire**

The other unique attribute of the iPod is the speed at which you can fill it. FireWire is more than 30 times faster than the USB 1.1 connectors competing devices rely on. The iPod can copy an entire CD in five to 10 seconds. USB-based devices need three to five minutes for the same job. Loading 1,000 songs takes less than 10 minutes. Doing the same via USB would require five hours.

Here, as with its iMovie video-editing software, Apple is leveraging its smart decision a couple of years ago to make FireWire standard on all new Macs.

Apple invented the technology, but it's now a standard available to anyone, and some new PCs -- from Compaq, Hewlett-Packard, Sony and others -- have it built in (sometimes with the FireWire name, sometimes as IEEE-1394 or i.Link)

Unfortunately, however, FireWire is still not included on most PCs, and some models that have it -- notably those from Sony -- have a more limited implementation. (Apple's six-wire version carries power, so the same cable that carries the music can charge the iPod's battery; Sony's four-wire version doesn't provide power.)

Jobs said last week that Apple will consider making the iPod available for Windows. But that won't be easy as long as FireWire isn't part of the standard PC platform. Sure, FireWire cards are fairly cheap and not hard to add to PCs, but the extra cost and complexity are sure to kill the deal for most potential buyers.

In a year or two, all new PCs are likely to have USB 2.0 ports, which are as fast as the current version of FireWire -- technically even a shade faster. That will enable Apple or other companies to make iPod-like devices for the Windows world. For now, though, USB 2.0 is even less common on PCs than FireWire.

Apple will also face a diplomatic dilemma if it tries to bring the iPod to the PC. The device is beautifully integrated with iTunes, Apple's music-player program for the Mac.

But bringing iTunes to the PC would be a challenge to Microsoft, which has made no secret of its determination to make its Windows Media Player the dominant standard on the PC. And Apple at this point is highly dependent on Microsoft, which produces both the standard Web browser (Internet Explorer) and the market-leading productivity applications (Office) for the Mac platform.

Perhaps Apple will try to produce software that adds support for a PC version of the iPod to Microsoft's Windows Media Player, but that brings up another complication: The iPod is designed mainly for MP3 music. (It also supports a couple of other audio formats, but not Microsoft's Windows Media format.)

Microsoft, on the other hand, is trying to keep its distance from MP3, apparently to ingratiate itself with the music industry and to promote its own "digital rights management" (read: copy-protection) technologies. The Windows Media Player, for example, can play MP3 files, but it doesn't have built-in support for "ripping," or converting, CD tracks into MP3 format -- a process that's central to the way the iPod works. .

### **Bottom line**

If you've got a Mac with FireWire and \$400 to spend on a pocket music player, the iPod is a pretty cool contraption, though you might want to wait for the iPod II.

For Windows users there's nothing quite comparable, and there won't be for some time. Of course, there are plenty of PC-compatible MP3 players with virtues of their own, including much lower prices.

One lesson from all this, whatever you think about the iPod: the era of digital entertainment demands better than USB 1.1. If you're planning on investing in a new PC soon, hold out for one with FireWire, USB 2.0 or -- best of all -- both.

Tech21 appears every Monday in The Chronicle. Send your comments and tips to Henry Norr at [hnorr@sfnchronicle.com](mailto:hnorr@sfnchronicle.com).

<http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2001/10/29/BU215879.DTL>

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# For Apple, Sweet Music From iPod

This new pocket-size, 1,000-song MP3 player is a breakthrough product. And a PC version is coming next

The iPod is no bigger than a deck of cards, but I predict this new handheld digital-music player will stand tall. Very tall. It's going to do for MP3 music what the original Palm Pilot did for handheld computing in the late '90s -- that is, ignite demand like a match to dry twigs.

Have I gone nuts, you may wonder? Apple has a miserable track record in consumer electronics outside of computers - and it's not for a lack of trying. In the 1990s, Apple released Pippin, Emate, and Newton -- all consumer devices that failed miserably.

But the iPod is different. To understand why, we need to review some recent history. Travel back with me to the early 1990s, when Apple and others tried to create a market for handheld computers, but none of their products captured the public imagination. Each device, including Apple's original Newton, was either too big, too complicated, or too expensive -- and some were all three. The Newton did improve, but not enough to capture the public imagination.

Handhelds languished until the 1996 release of the Palm Pilot. At last, here was a product with the right combination of computer processing power, portability, and ease of use. Equally important, the Palm Pilot was a single-purpose machine, dedicated to keeping addresses, appointments, and notes. It defied the Gatesian philosophy that a computer has to be all things to all people. The lesson here is that consumers might have been ready for a handheld computer, but they held back until just the right machine hit the market.

**WINNER AMONG LOSERS.** I see history repeating itself with digital music players. There's no shortage of them on the market now, including Iomega's HipZip, the Rio, and Creative Lab's Nomad. I've played with each of them and found all fatally flawed. The HipZip (\$299), while tiny, is underpowered, holding only 80 minutes of music on a 40-megabyte disk. The Nomad (\$400) has a built-in hard drive that can hold more songs than the iPod, but it's barely portable. The thing is so bulky, you need a purse to carry it, and its hard drive runs like molasses. The Rio (\$179.95) I found clumsy and buggy. And all three are slow in transferring music from a computer to the device.

The iPod (\$399) ticks every one of these shortcomings. It's a breeze to use, automatically loading any digital sound file after you've saved it in Apple's iTunes software. And it syncs the two every time you plug it into your Mac, just like a handheld computer. No more dragging songs or individual music files back and forth between the two, as with some of the other digital music players.

The iPod also packs a lot of capabilities into a very small package. Its 2.4-inch by 4-inch body is only a quarter-inch thick. Yet it includes a 5-gigabyte drive that can hold up to 1,000 songs, which makes having an iPod the equivalent of carrying my entire vinyl record collection around in a shirt pocket. The drive uses Apple's FireWire technology, designed to speed up the transfer of large digital files such as those for music or video. That makes adding music to the iPod a snap: It takes 10 seconds to transfer a typical CD and less than 10 minutes to load 1,000 songs.

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The FireWire technology, for which all new Macs have a special port, also recharges the iPod's lithium-polymer battery. The battery runs up to 10 hours, the longest of any on a consumer computer device. With a 10-hour battery, a 1,000-song library, and a case that fits in your pocket, what music lover isn't going to want an iPod?


**EXPECTED GAINS.** Alas, the iPod does differ in one way from the old Palm Pilot, at least for the moment. It works only with the 7.5 million Macs equipped with a FireWire port and capable of running iTunes, which requires either version 9 or X of Apple's operating system. I don't think that will long remain an obstacle, however. Apple is readying a PC version of iPod, and many PCs are also equipped with FireWire ports.

That's why I think iPod will be a double win for Apple. First, it will prompt many Mac users to upgrade to OS 9, if not all the way up to X. It's that cool. And second, I'm betting that the iPod, glistening in the storefront window, will lure music lovers of all stripes into Apple's new stores.

In short, the iPod will transcend the tired old debate over whether Windows or the Mac OS is the better operating system. The iPod will appeal to anyone who wants to carry their beloved songs with them everywhere.

---

**Haddad**, Atlanta-based correspondent for *BusinessWeek*, is a longtime Apple Computer buff. Follow his weekly [Byte of the Apple](#) column, only on BW Online  
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By Devin Leonard  
May 12, 2003

(FORTUNE Magazine) – Steve Jobs loves music. But as with a lot of geeks in Silicon Valley, his musical tastes are a little retro. He worships Bob Dylan and is the kind of obsessive Beatles fan who can talk your ear off about why Ringo is an underappreciated drummer. So Dr. Dre, the rap-music Midas whose proteges include Snoop Dogg and Eminem, is the last person you'd expect to see huddled with Jobs, for hours on end, at Apple headquarters in Cupertino, Calif. No, they weren't discussing whether John or Paul was the more talented Beatle. Rather, Steve had invited Dr. Dre up from Los Angeles for a private demonstration of Apple's latest product. After checking it out, Dre had this to say: "Man, somebody finally got it right."

The product that wowed him was the iTunes Music Store, a new digital service for Mac users offering songs from all five major music companies--Universal, Warner, EMI, Sony, and BMG. Though Apple had yet to sell a single song by the time FORTUNE went to press, Jobs is already causing a stir in the record business. Forget about rumors that Apple is bidding for Vivendi's Universal Music Group, the world's largest record company. Jobs says he has absolutely no interest in buying a record company.

The real buzz in the music trade is that Steve has just created what is easily the most promising legal digital music service on the market. "I think it's going to be amazing," says Roger Ames, CEO of the Warner Music Group. Jobs, not surprisingly, is even more effusive. He claims his digital store will forever change not only how music is sold and distributed but also the way artists release and market songs and how they are bought and used by fans.

One thing's for sure: If ever there was an industry in need of transformation, it's the music business. U.S. music sales plunged 8.2% last year, largely because songs are being distributed free on the Internet through illicit file-sharing destinations like KaZaA. Unlike Napster, KaZaA and its brethren have no central servers, making them tougher for the industry to shut down. The majors have tried to come up with legal alternatives. But none of those ventures have taken off because they are too pricey and user-hostile.

The iTunes Music Store, by contrast, is as simple and straightforward as anything Jobs has ever produced. Apple users get to the store by clicking a button on the iTunes 4 jukebox, available for download when the service made its debut on April 28. You can listen to a 30-second preview of any song and then, with one click, buy a high-quality audio copy for 99 cents. There's no monthly subscription fee, and consumers have virtually unfettered ownership of the music they download. Jobs is rolling out the iTunes store with previously unreleased material by artists including Bob

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Dylan, U2, Missy Elliott, and Sheryl Crow. There will be music from bands like the Eagles, who have never before allowed their songs to be sold by a legal digital music service. And Jobs is personally lobbying other big-name holdouts, like the Rolling Stones and the Beatles, to come aboard.

The iTunes Music Store may be just the thing to get Apple rocking again too. As everyone knows, it's been a tough couple of years for the computer industry as well. Apple swung back into the black in the first quarter of 2003 after two quarterly losses, but its profits were only \$14 million, compared with \$40 million a year ago. And as popular as Apple's iPod portable MP3 player may be, it contributed less than \$25 million of Apple's \$1.48 billion in revenues last quarter. So Jobs is betting that by offering customers "Hotel California" for 99 cents, he can sell not just more iPods but more Macs too.

Apple's competitors dismiss the iTunes Music Store as a niche product. How, they ask, can Apple have any impact on the music industry when its share of the global computer market is a minuscule 3%? "It's a very positive thing for their community," says Kevin Brangan, a marketing director at SonicBlue, which makes Rio MP3 players. "But their community is a very small percentage of the overall market."

Jobs, however, isn't targeting just Mac users. He plans to roll out a Windows version of iTunes by the end of the year. (Apple already sells a Windows-compatible version of the iPod, which accounts for about half of all units sold.) It is a dramatic departure for Steve, who has deliberately kept the Mac's best features off the screens of the much larger Microsoft-dominated world.

Steve isn't suggesting that his new service will lift the computer industry out of its funk. But he is 100% convinced that the Music Store will rejuvenate the ailing music business. "This will go down in history as a turning point for the music industry," Jobs told FORTUNE. "This is landmark stuff. I can't overestimate it!"

The idea that anybody from Silicon Valley can swoop in and save the music industry seems laughable at first. But by nearly every account, this is not just some Steve Jobs sales job. In fact, the Music Store is being copied by rivals even before it hits the market. The reason, as Dr. Dre noted, is that nobody has come up with a better plan to sell music online. So iTunes or something like it had better work. Otherwise, the music industry as we know it could soon disappear.

It's a sunny afternoon in early April, and Jobs is rhapsodizing about his new music service at Apple headquarters. He is clad in the same outfit he dons nearly every morning so he doesn't have to waste time choosing clothes: a black mock-turtleneck shirt, jeans, and New Balance sneakers. There's been a slight change in his uniform, though. The 48-year-old Apple CEO now rolls up the cuffs of his jeans. (What would Dr. Dre think of that fashion statement?)

But Steve isn't interested in talking about his new look on this day. (He later allowed that he just bought pants that were the wrong size.) He's here to talk music. "It pained us to see the music companies and the technology companies basically threatening to take each other to court and all this other crazy stuff," he explains. "So we thought that rather than sit around and throw stones, we'd actually do something about this."

He was equally appalled by the music industry's reluctance to satisfy the demand for Internet downloading that Napster had unleashed. Who could blame him? After bludgeoning Napster to death in court, record companies promised to launch paid services with the same limitless selection and ease of use.

They did just the opposite. Universal and Sony rolled out a joint venture called Pressplay. AOL Time Warner (the parent of both Warner and FORTUNE's publisher), Bertelsmann (BMG's owner), EMI, and RealNetworks launched MusicNet. But instead of trying to cooperate to attract customers, the two ventures competed to dominate the digital market. Pressplay wouldn't license its songs to MusicNet, and MusicNet withheld its tunes from Pressplay.

The result: Neither service had enough songs to attract paying customers, who couldn't care less which record company a particular song comes from. "It was strictly the greed and arrogance of the majors that screwed things up," says Irving Azoff, who manages the Eagles and Christina Aguilera. "They wanted to control every step of the [Internet] distribution process."

The record companies were also fearful about doing anything that might cannibalize CD sales. So

they decided to "rent" people music through the Internet. You paid a monthly subscription fee for songs from MusicNet and Pressplay. But you could download MusicNet tunes onto only one computer, and they disappeared if you didn't pay your bill. That may have protected the record companies from piracy, but it didn't do much for consumers. Why fork over \$10 a month for a subscription when you can't do anything with your music but listen to it on your PC? Pressplay launched with CD burning but only for a limited number of songs.

At the end of last year, Pressplay and MusicNet licensed their catalogues to each other, ending their standoff. MusicNet also now permits subscribers to burn certain songs onto CDs. But MusicNet users still can't download songs onto portable players. "These devices haven't caught on yet," insists MusicNet CEO Alan McGlade. Never mind that U.S. sales of portable MP3 players soared from 724,000 in 2001 to 1.6 million last year. Pressplay, for its part, lets subscribers download some songs onto devices, but only those that use Microsoft's Windows Media software. That means no iPods.

Pressplay and MusicNet say it's too early for anybody to dismiss them as failures, but it's difficult to see them as anything else. The music industry has little to show for its investment--Sony and Universal are believed to have spent as much as \$60 million so far on Pressplay. The two services don't release their subscriber numbers, but Phil Leigh, an analyst at Raymond James, believes that together they have signed up only about 225,000 customers. "It was clear to me in my first 30 days on the job that Pressplay was a first effort and a work-in-progress," says Andrew Lack, who took over as CEO of Sony Music Entertainment in February. "No one was saying, 'This is it. We can't sign up people fast enough.'"

Consequently, the five major record companies have had to slash costs in the face of declining sales. BMG laid off 1,400 people, EMI shed 1,800, and Sony Music recently announced it was reducing headcount by 1,000. Even with those cuts, average profit margins for the five majors have slipped to 5%, compared with 15% to 20% in the late 1980s when the CD came into vogue. "All the chickens are coming home to roost at the same time," says media analyst Claire Enders. "This industry has never been faced with such cataclysmic conditions before. It has no roadmap on how to cope with them."

The irony is that the music industry has always survived by introducing new formats--from the 78-rpm single to the 33-rpm vinyl LP album in the 1950s, to the cassette tape in the 1970s, to the compact disc, which sparked a rebirth of the industry in the 1980s. Now nearly everyone in the business admits that the only clear path to the future is to come up with a legal, online alternative to KaZaA and other illegal file-sharing services. This could be the mother of all format shifts, because it would largely eliminate manufacturing and distribution costs. But nobody in the music industry has been able to get there. "This new technology has swept by us," laments Doug Morris, chairman of the Universal Music Group.

As long as people can get free music online, the music industry's chances of recovery are dim. But stealing songs on the Internet isn't as much fun as it used to be. For one thing, file-sharing services are teeming with viruses. The Recording Industry Association of America has also upped the ante with a new suit accusing four college students of operating piracy networks. That's likely to put a damper on illicit computer activities in many dormitories. In addition, the record companies are planning to introduce new CDs with two sets of the same songs--one that can be played on your CD player and another that you can listen to on your computer but that can't be uploaded onto KaZaA.

In a world where CDs can't be shared on the Internet and music pirates are hauled into court, there may be huge demand for a legitimate digital music service. But it's going to have to be one that's a lot better than what the music industry has offered so far. Apple's timing, in other words, could hardly have been better.

Jobs didn't set out to be the music industry's savior. He was such a latecomer to the digital music world that some observers wondered if he'd lost his knack for spotting trends long before his competitors. Heck, Apple didn't even include CD burners as standard equipment on its computers until two years ago. But once Jobs focused on music, he was consumed by it. He saw people ripping CD tracks and loading them onto their hard drives. So in 2001 Apple introduced the iTunes jukebox software, which lets users make their own playlists or have the computer select songs randomly.

What else might Mac users wish to do with their MP3 files? Apple engineers were certain they'd want to load them into a pocket-sized portable player with a voluminous hard drive. So they created the iPod, a device that works seamlessly with iTunes. Apple has sold almost a million iPods, even though the least expensive one costs \$300.

Then Steve had an epiphany: Wouldn't it be awesome if people could buy high-quality audio tracks via the Internet and load them directly into iTunes instead of going to the store to buy CDs to rip? It dawned on him that Apple had all the pieces in place to start such a business. For one thing, the company already had the Apple Store, an online operation selling more than \$1 billion a year in computers and software, most of which can be purchased with a single mouse-click. It also runs the Internet's largest movie-trailer downloading site.

The only thing missing was music. Until recently it would have been impossible for a major tech company like Apple to license tunes from Warner, EMI, Universal, Sony, and BMG. Executives at those companies simply didn't trust their peers in the technology world. Many felt--not without some justification--that PC makers promoted piracy because it helped sell computers.

Apple, however, straddles the worlds of technology and entertainment like no other software or hardware maker. Along with running Apple, Jobs is CEO of Pixar, the digital-animation studio whose movies include Toy Story and Monsters, Inc. He also has plenty of admirers in the music world. Some of Apple's most zealous fans are rock stars who use Macs, both at home and in the recording studio. "Musicians have always adopted Macs," says Trent Reznor of Nine Inch Nails fame. Jobs is enough of a rock star himself--is anybody in the technology world as cool?--that he's been able to get U2's Bono on the phone to discuss the iTunes Music Store. He's personally demonstrated it to Mick Jagger.

The iPod, too, has become a fetish item among musicians and notoriously technophobic music company executives. "I'm addicted to mine," says Interscope Geffen A&M records chairman Jimmy Iovine. It made sense to Iovine and a lot of other record-company big shots that if Apple could transform a geeky device like the portable MP3 player into a sexy product with mass-market appeal, it might be able to work similar wonders with online digital music sales. It's probably no coincidence that the most vocal boosters of the Apple store are Universal and Warner, whose debt-ridden parents--Vivendi and AOL Time Warner, respectively--are under pressure from investors to get out of the music business entirely.

The record companies were still leery enough of Apple that they would agree only to one-year deals with Jobs. Nevertheless, he was able to persuade Universal, EMI, Sony, BMG, and Warner to stop fixating on their subscription models and take a radically different approach to selling digital music. People want to own music, not rent it, Jobs says. "Nobody ever went out and asked users, 'Would you like to keep paying us every month for music that you thought you already bought?'" he scoffs. "The record companies got this crazy idea from some finance person looking at AOL, and then rubbing his hands together and saying, 'I'd sure like to get some of that recurring subscription revenue.'" He adds: "Just watch. We'll have more people using the iTunes Music Store in the first day than Pressplay or MusicNet have even signed up as subscribers--probably in the first hour." We'll let you know in a future issue if that bold prediction proves accurate.

Record-company executives aren't ready to dump the subscription model--yet. "I'm not sure subscriptions are going to work," says David Munns, CEO of North American Recorded Music for EMI. "A mixed model where you can rent some music and download what you really like could work. Let's keep an open mind." But what really grabs music executives about iTunes is its sheer simplicity. "It's a lot easier to get people to migrate from physical CDs to buying individual songs online than it is to jump-start a subscription service," says Warner's Ames.

Apple is trying to make that transition as easy as possible. With the iTunes Music Store, you can browse titles by artist, song title, or genre. Songs will be encoded in a new format called AAC, which offers sound quality superior to MP3s--even those "ripped" at a very high data rate. That means each AAC file takes up a lot less disc space, so you'll be able to squeeze better-quality music, and more of it, onto your computer and iPod. Moreover, each song will have a digital image of the album artwork from the CD on which the track was originally sold. Says Sony's Lack: "I don't think it was more than a 15-second decision in my mind [to license music to Apple] once Steve started talking."

Apple has also come up with a copy-protection scheme that satisfies the music industry but won't



alienate paying customers. You can burn individual songs onto an unlimited number of CDs. You can download them onto as many iPods as you might own. In other words, the music is pretty much yours to do with as you please. Casual music pirates, however, won't like it. The iTunes jukebox software will allow a specific playlist of songs or an album to be burned onto a CD ten times. You can burn more than that only if you manually change the order of the songs in the playlist.

And anybody who tries to upload iTunes Music Store songs onto KaZaA will be shocked. Each song is encrypted with a digital key so that it can be played only on three authorized computers, and that prevents songs from being transferred online. Even if you burn the AAC songs onto a CD that a conventional CD player can read and then re-rip them back into standard MP3 files, the sound quality is awful.

The iTunes Music Store will initially offer 200,000 tunes, paying the record companies an average of 65 cents for each track it sells. Ultimately Jobs hopes to offer millions of songs, including older music that hasn't yet made it to CD. "This industry has been in such a funk," sighs singer Sheryl Crow. "It really needs something like this to get it going again."

If the iTunes Music Store or something like it takes off, that could change how new music is released, marketed, and promoted. Until recently the chief fear in the music industry about letting people buy individual songs via the Internet was that it would kill the album by enabling consumers to cherry-pick their favorite tracks. Music company executives now bravely say that a singles-based business might actually revive sales.

Steve is doing everything he can to stoke their optimism. "Nobody thinks of albums anymore, anyway," he argues, perhaps a little too blithely. "People think of playlists and mixes. We'll still sell albums as artists put them out, but for most consumers of popular music, we think they'll more likely buy single tracks that they like. And then they'll organize them into customized playlists in their computers and on their iPods."

The reality is that initially, at least, the record companies will probably sell less music if they shift to an Internet-based singles business model. For years they have been able to get away with releasing albums with two or three potential hits bundled with ho-hum filler cuts. That has been wonderful for the industry, but it has made a generation of consumers who pay \$18.99 for CDs very cynical. "People are sick and tired of that," says singer-songwriter Seal. "That's why people are stealing music."

For some artists, the idea of a singles-driven business is anathema. "There's a flow to a good album," says Nine Inch Nails' Reznor. "The songs support each other. That's the way I like to make music." But Crow says it would be a relief to put out singles instead of producing an entire album every time she wants to reach fans. "It would be nice to have a mechanism to release a song or two or three or four on their own," she says.

A renewed emphasis on individual songs could well improve the quality of music and lead to a reordering of the entire industry. It won't happen overnight, but the record companies had better get used to this new model. Now that Apple has gotten the music industry to support its pay-per-download store, nearly all of its Wintel PC-based rivals say they will augment their subscription businesses with similar offerings. "Steve's pushing the ball forward here," concedes Rob Glaser, CEO of RealNetworks, which owns nearly 40% of MusicNet and plans to purchase Listen.com's well-regarded Rhapsody subscription service.

But Glaser insists that Apple is ignoring a significant part of the digital music market by offering just downloading. He says Rhapsody users spend 72% of their time listening to streaming music. Only 13% pay \$1 to burn cuts onto CDs. "If you make a really cool playlist of 200 songs on Rhapsody, you pay only \$9.95 a month," he says. "If you use Apple, it's \$200. Maybe guys like Steve and me can afford that, but I'm trying to run a service for everyone else too."

No matter what happens, Jobs will likely sell more Macs. But that's not all he's after with music. The Music Store is his latest effort to diversify Apple's sources of revenue beyond Macs. With Apple's share of the desktop computer market stuck at less than 5% in the U.S. and less than 3% worldwide for several years, the iPod is the most obvious new line of business, steering Apple onto the home turf of consumer-electronics giants like Sony and Matsushita. Now Apple makes almost as much operating profit on each iPod it sells as it does on each iMac, even though the iPod costs a fraction as much to manufacture. So it should come as no surprise that Jobs is releasing three

new versions of the iPod in conjunction with the Music Store (for more on that, see Peter Lewis's column in Tech.)

Jobs has been very shrewd about the way he moved the iPod into the PC universe. Anyone who has tried the iPod with both systems will tell you it's a lot more fun to use if you plug it into a Mac running Apple's OS X than into a Dell with Windows XP. "The Windows iPod sucks" is Seal's appraisal. "But what they are really doing is trying to get people to wonder, 'Hmm, should I switch over?'" Jobs is betting that the iTunes Music Store, like the iPod, could be just such a Trojan horse.

It's not as easy as it sounds. How many Windows iPod owners know what they're missing by not using OS X? Do any of them really care? Perhaps that's why Jobs is rolling out iTunes for Windows too. In fact, Warner's Roger Ames is trying to broker a deal in which AOL would adopt iTunes as its music-management software. "Steve was resistant at first," Ames says. "But now I understand that he's decided to go that way." AOL has been trying to develop its own music store to go along with its subscription service but hasn't figured out a billing system for individual tracks as Apple has. A deal with AOL would land the iTunes Music Store on the desktops of AOL's 26 million subscribers. That could quickly make Apple the dominant seller of digital music on the Internet. AOL would neither confirm nor deny a possible deal.

A big play for Windows users would be a huge shift for a man who has largely created a product--the Mac--that exists in a walled garden cut off from the much vaster PC world. Clearly, Apple will benefit enormously if it boosts its share of the computer market by even 1%--such a gain would lift its revenues by nearly a third and increase profits even more. In the meantime, if the iTunes Music Store takes off--and computer users of all stripes start buying millions of songs online each month--that will translate into tens of millions of dollars in new revenues per month for Apple.

His adventures in the music business have led to other changes in Jobs' thinking. During the photo shoot with Sheryl Crow for this article, he acknowledged to the singer that he had never really understood what rap music was all about. But while playing with a prototype of the iTunes Music Store on his Mac at home in recent weeks, he had started downloading some of Eminem's tracks.

"You know, he really is a great poet," Crow said.

To which Steve replied, "Yeah, he's starting to kind of grow on me."

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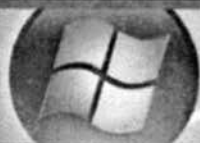
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# Apple launches the iTunes music store

By: Ian Bell • April 29, 2003

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The iTunes Music Store offers groundbreaking personal use rights, including burning songs onto an unlimited number of CDs for personal use, listening to songs on an unlimited number of iPods, playing songs on up to three Macintosh computers, and using songs in any application on the Mac, including iPhoto, iMovie and iDVD.

“The iTunes Music Store offers the revolutionary rights to burn an unlimited number of CDs for personal use and to put music on an unlimited number of iPods for on-the-go listening,” said Steve Jobs, Apple’s CEO. “Consumers don’t want to be treated like criminals and artists don’t want their valuable work stolen. The iTunes Music Store offers a groundbreaking solution for both.”

The iTunes Music Store features over 200,000 songs from music companies including BMG, EMI, Sony Music Entertainment, Universal and Warner. Users can easily search the entire music store to instantly locate any song by title, artist or album, or browse the entire collection of songs by genre, artist and album. Users can listen to a free 30-second high-quality preview of any song in the store, then purchase and download their favorite songs or complete albums in pristine digital quality with just one click.

The iTunes Music Store also features exclusive tracks from over 20 artists, including Bob Dylan, U2, Eminem, Sheryl Crow and Sting, as well as special music videos from several of these artists which users can watch for free. In addition, the iTunes Music Store highlights new releases, staff favorites and up-and-coming artists, and delivers a compelling variety of music from many genres and time periods, ranging from Rock and Hip Hop to Jazz and Classical. The ability to browse the entire music store by genre, artist and album combined with free high-quality previews of every song lets users explore music in an entirely new way, to easily find the hits they love and discover gems they’ve never heard before.

All music on the iTunes Music Store is encoded in the industry-standard AAC audio format at 128 kilobits per second which enables smaller files and faster download times while rivaling CD-quality sound superior to the quality of MP3 files at the same size. The AAC audio format, developed by Dolby, was also adopted to provide the audio encoding for the industry-standard MPEG-4 video format.

The iTunes Music Store is fully integrated into iTunes® 4, the fourth major release of Apple’s popular digital music jukebox software, allowing users to purchase, download, organize and listen to their music using just one application. iTunes 4 features major new enhancements including Rendezvous, a music-sharing between Macs, so users can legally stream their music to other Macs without the hassle of copying files from computer to computer.

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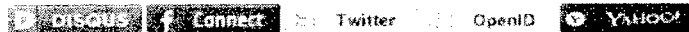
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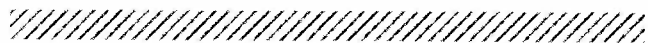
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