

# Chapter 1

## Are You XPerienced?

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### *In This Chapter*

- ▶ Understanding what makes digital sound different from analog sound
  - ▶ Exploring the hardware that makes the noise
  - ▶ Using software to organize and play your digital music files
  - ▶ Making sure that you get and listen to your music legally
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**W**hether you've spent years assembling a music collection or are just now buying your first albums, music must mean something to you. And now you have this Windows XP machine to open up new possibilities for storing and listening to your tunes. The potential for using your computer for music is virtually limitless — how do you want to make your music better?

In short, the answer depends on several things. Windows XP is a great environment in which to organize your music collection. First, though, you have to understand what you're dealing with. Two files may sound the same coming out of your speakers, but their inner workings could make all the difference in whether your Barry Manilow recordings make the leap successfully to your playlists or fall behind, a casualty of incorrect formats.

### *The Whats and Whys of Digital Sound*

Some of us are old enough to remember when musical recordings were stored on cassettes or vinyl records (I had saddlebags made for my dinosaur to transport my collection around). These recordings stored sound in an *analog* format — the sound was recorded to the disc or tape as physical grooves or magnetic impulses. The medium got the song from the artist to the listener, but it still had some drawbacks.

The main drawback of these recordings is that they tend to degrade each time they are played. When you pressed the Play button, physical contact

was made between the recording and the player. Like rubbing sandpaper against wood, some of the detail on the recording would be worn away. Before long, you would start to hear the cracks and pops associated with old recordings (ironically enough, these sounds have now been digitally sampled and layered onto new recordings to make them sound “vintage”). The music would get lost behind the noise, and fairly soon, you would need to go out and buy a new copy to get that wonderfully clear sound back.

Second, vinyl records were a little hard to carry around and listen to wherever you want. Unless you have a full stereo system available, it wasn’t easy to hear your records in their intended glory. Cassettes made the music a little more mobile with the advent of the portable stereo and the Walkman, but the sound wasn’t quite as good as that from the vinyl records. This was a symptom of the format itself — the tape on which musicians usually recorded their music was several inches wide to allow as much detail as possible to be recorded. After the sound had been mixed down to the small stereo tracks of a cassette (along with the requisite hiss that accompanies sound recorded on that cassette), it had lost a little something.

Ah, but then came the compact disc. Instead of being carved into the grooves of the record or recorded on magnetic tape, the music was encoded on the disc as numerical information. A laser reads the information and translates that into your favorite song. Music fans have their preferences — some people still insist on the superiority of analog sound. But digital music is here to stay, for many reasons. I take a look at those reasons in the following section, “The benefits of digital sound.” First, it’s time to acquaint yourself with digitally recorded music. It’s a vastly different process, and some different terminology is associated with digital recordings.

## *The benefits of digital sound*

When you compare digital and analog sound, the first thing you need to examine is the *sample rate*. In analog recordings, the machine is always recording any sound or noise that is coming through the microphones. In digital recording, however, you don’t have a constant recording of what’s going on. Instead, you have a series of samples taken from the sound being recorded.

Think of it like a movie — a motion picture strings together a series of pictures to make it look like moving action. In this case, digital recording takes a series of “pictures” of what the sound is like and turns it into a digital recording. A standard compact disc contains sound that has been sampled at 44.1 kHz, or just over 44,000 times a second (that’s a lot of pictures!). However, you may run into digital sound on the Internet that’s been recorded at 48 kHz, 96 kHz, or even higher. Just think of it as getting more detail from more pictures.

But how do those pictures look? The more detailed those pictures are, the better the sound is. That's where *bits* come in. By increasing the number of bits (units of information, without getting too detailed) contained in the file, the amount of detail contained in each sample is increased. It's the difference between saying "The cat has white fur" and "The purebred Siamese feline has ivory fur with charcoal roots." See the difference? Now imagine the detail that you can get from higher bit rates in your music. Again, a standard CD has 16-bit sound, although you might occasionally run into higher bit sizes on the Internet.

Now consider the *bit rate* of the file. Digital music files are measured in the amount of information they play per second. In most cases, it's measured in Kbps, or kilobits per second. This is the amount of sound information presented to the listener every second. The standard for near-CD quality is 128 Kbps, and some files go up to 320 Kbps. On the other hand, files played over Internet radio are 56 or 64 Kbps to allow faster transport over networks, like your dialup or broadband Internet connection.

In short, the benefits to using digital sound are the following:

- ✓ **Portability:** You can take digital sound anywhere on a variety of devices, and you can transfer it from network to computer very easily.
- ✓ **Durability:** Digital audio doesn't degrade like analog audio sources.
- ✓ **Options:** You can buy or record your audio in differing levels of quality and size, depending on your needs.
- ✓ **Sound Quality:** Unless you've invested thousands of dollars in audio-ophile-quality analog audio gear, you'll probably note a better sound coming from digital audio systems.

## *The tradeoff of better sound (and what you can do to counteract it)*

Like everything else in life, though, there is a tradeoff in getting this improved sound. For the increased detail and better sound, you give up space on your hard drive or memory card. The extra information and detail mean that more memory is taken up. The size of these files is usually measured in megabytes, or MB. For comparison, the size of current hard drives is measured in gigabytes, or GB. There are approximately 1,000MB in each GB. If your songs are recorded at a lower bit rate, you can fit more songs on your drive — but they won't sound as good. It all depends on what you want — more songs or better quality.

This is where *compression* comes in. To use less memory space, you can compress the data and reduce the file size while keeping the detail of the music

as close as possible to the original. When the file is compressed according to the appropriate file format (see the next section), the media player needs a *codec*, or compression/decompression instructions, to read it.

## *Fascinating File Formats*

Without the right program, digital audio is just a file in your computer. It's the media player that makes the music happen. A *media player* is a program that translates audio files into the song you wanted to hear. Windows XP comes bundled with Windows Media Player, the program you'll most likely use to listen to your songs. There are other options, but I'll talk about those later. It's important to note here that all of your digital audio files only become songs with the help of the media player.

I've talked about the basic attributes of digital sound files: size and detail. However, all of that information has to be organized and structured so that the media player can read it. It's just like being able to read and understand a different language. If the player "speaks" the language that these files are recorded in, it can reproduce the song and make beautiful music. If it can't speak the language, the numbers of the music just don't add up, and you get an error message — and no music. Because error messages are frustrating and I'm the kind of author who wants to spare you grief, I take a look at the major audio file formats and give you a basic understanding of what's going on and what it means to you.

### *WAV*

This method of presenting sound is the most detailed and rich of the available formats in Windows XP. All the detail is recorded at the chosen bit rate and sampling speed, and it's all done without compression schemes. It's digital sound presented in all its glory, and it takes up huge amounts of memory in the process. Four or five minutes of WAV sound can consume 40–50MB of memory, making it difficult to store a decent number of files. For that reason, you seldom see these files being sold over the Internet — they're just too big and bulky.

### *MP3*

If you've listened to the news in the past decade, you've heard this term. This is the file format that basically powered the popularity of digital music. It also

became associated with the controversy surrounding the “sharing” of music over services like Napster and Kazaa, but I tackle that subject in the section “Law and Order: MP3,” later in this chapter. Still, at its heart, MP3 is only a way of encoding music for listening on a computer or a portable player.

MP3 is an audio layer of the larger MPEG file format. The important thing to remember here is that this is a specific way to make the music file smaller while retaining much of the quality of the original CD or WAV file. Compared to a WAV file of 50MB, a typical MP3 file is 5–6MB. Obviously, that’s a huge size difference. However, you can hear the sound difference between an MP3 and a compact disc or a WAV file. The compression scheme is *lossy*, which means that some data is lost when the file is encoded. By increasing the bit rate of the file, you lose less data, but the file size increases accordingly.

Aside from size, the other advantage of MP3 is that it’s almost universally recognized. It’s the American Express of audio. Just about any media player or portable audio player can recognize and play an MP3 song. That makes it popular among users. It is not popular among most folks that sell music, however, because it’s easily copied and distributed over the Internet due to its small size.

## WMA

To go along with its Windows Media Player, Microsoft developed a compressed file format. The format is supposed to provide better sound at lower compression rates than MP3, although outside sources have taken issue with Microsoft’s claims. WMA files are also not as universal as MP3s — as with anything Microsoft owns, this is well-guarded proprietary technology. You can find this technology on portable audio players or media players, and it functions well with the Windows Media Player that’s bundled with Windows XP. It also allows music producers to better regulate how their music is used. WMA can be paired with licenses that restrict where and how the files may be used. This can make it difficult to transfer WMA songs to other media players and devices.

## AAC

This file format is a derivative of another, more advanced MPEG encoding scheme called MPEG-4. It is currently being used primarily by Apple’s iTunes service to sell music over the Internet. Apple claims this format allows better sound reproduction (sound familiar?), and Apple has made it the centerpiece of iTunes and its portable music player, iPod. Because AAC is a newer format, not all media players and portable devices are compatible with it. However,

## Finding the free stuff

You can find plenty of alternatives to the main file formats, most of them provided by the open source software movement. Windows XP is proprietary software, where the inner workings are guarded and the rights to use it are restricted by the selling of the software and the license to use it. (Don't worry, you got the license when you purchased the Windows XP software or purchased the computer that it came on.) In *open source software*, the people who created it let others see how the software works, and they charge little or nothing for people to use it.

If you delve deep into the Internet, you may see file formats like Ogg Vorbis (OGG), Shorten (SHN), or FLAC (Free Lossless Audio Compression). These formats have been developed by people outside of Microsoft or Apple for use in creating and distributing digital audio.

The price is attractive — little or nothing can usually find space in your budget. Some of these formats even work with the more common media players, like Windows Media Player and Winamp. However, this is not always the case. Sometimes, the files have been written to work with only one compression scheme or player. It all depends on what the software writers had in mind when they created their particular flavor of audio.

You may want to investigate these file formats as you run across them. They could help you listen to music that you've never heard before or allow you to store your music in a way that's more convenient for you because of smaller file size. However, because this book focuses on Windows XP and the file formats that are most commonly used with it, I spend most of my time discussing the files I highlighted in the main text.

it's gaining acceptance, and it could become more prevalent. It can also handle some digital rights management, so music producers can control how and where AAC songs are distributed.

## Real

This format was primarily developed as a *streaming format*, that is, a file that's listened to over a network without being saved on your computer (I talk more about this in Chapter 8). Because streaming requires a smaller size to be sent over dialup or broadband Internet connections, Real audio (designated with the file extension `.ra`) is usually among the smallest file size available. However, it's hampered by a comparable reduction in sound quality and the fact that nothing but the proprietary Real Player can handle these files. The Real Player is a free download, although many critics and users alike have complained that finding the free download among the many advertisements for its premium player and services is like finding dust bunnies in Martha Stewart's house — very difficult. Unless you prefer to use the Real Player, you probably won't run across the file very often.

## MIDI

MIDI, or Musical Instrument Digital Interface, gets its own section because it's so different than the formats I talked about earlier. Technically, MIDI is not audio; it's a set of instructions on how something (like your computer's sound card) should create music. It's like a cookbook. The MIDI cookbook tells something that already has all the ingredients (the notes of the music) how to arrange them and play them to make music. Because it's just a set of instructions, the MIDI file size is quite small (often measured in kilobytes as opposed to the larger megabytes). How those instructions sound can vary depending on the device that is used to play those instructions. The sheet music for a Beethoven symphony makes no sound, but the music will likely sound better when played on a concert piano as opposed to a thrift-store keyboard. MIDI files are not often sold to the public as music, but MIDI does play a part in home recording. Because of this, I talk more about it in Chapter 12. You can also get a more exhaustive look at MIDI by checking out *Home Recording For Musicians For Dummies*, by Jeff Strong (published by Wiley).

## Just the Facts

Along with the actual sound, the formats of your sound files can carry text information about the song. This can include the name of the artist, the title of the song, the genre in which the song belongs, the date it was produced, and any additional tidbits and morsels. This is an invaluable tool, because it allows you to organize your songs and see what you're listening to. MP3 files carry an *ID3 tag* that stores this information; the other file formats also carry similar information. Without it, looking for information about your songs could be as hard as finding something you need right after you've moved. It's all there in boxes, but without the labels, you have no idea what's in the boxes. Even if all your kitchen items end up in boxes in the kitchen, you would still have to look through each box to find what you wanted. With these labels, your media player can search and bring you the song you wanted much quicker. Your player can also use these tags to organize playlists of your songs and transfer them to other devices, like a portable media player. Look for more information on this subject in Chapter 5.

## Storing and Moving the Goods

You have so many places in which you can put audio files these days. Before, sound was only available on vinyl records, cassettes, or the much-maligned 8-track cartridge. Now, you can find songs on CDs, DVDs, and portable audio

players; online; on your cell phone; and just about anywhere else a little bit of circuitry and a speaker can be crammed in. This is one of the biggest advantages of digital sound — portability. Digital songs can be copied and moved quite easily, in most cases without losing any of the original sound quality.

The following are examples of where you can store your sound files on your computer:

- ✔ **Hard drive:** Storage of sound files requires some type of drive. You've probably heard the term *hard drive* associated with computers. This is the internal device that stores the majority of files and data on your computer. The hard drive can store the most amount of data in a small amount of physical space, which is why most of the popular portable audio devices use this component to store large amounts of songs. It's also the most expensive storage device in overall cost, but the cost per gigabyte is quite small. You pay a hundred or more dollars for a hard drive, but you get more memory than a flash drive at a comparable cost.
- ✔ **Optical discs:** Optical discs, like CDs and DVDs, can handle large amounts of data (up to 700MB and 4.7GB, respectively), and they're much cheaper forms of storage compared to a hard drive. You can also burn optical discs as data CDs (which hold files to be read by a computer or another device) or music CDs (which play in a standard CD player). The two are not always compatible, however. Older CD players can't read computer files.
- ✔ **Flash memory:** Flash memory is relatively small compared to the previous two storage devices (most portable media players that use flash memory top out between 512MB and 1GB), and it's impossible to accidentally skip ahead or move back the player while moving. For that reason, it's a popular choice among portable players that are meant to be used while exercising — the extra movement might disrupt other players, but not this one.

Moving data to and from all of these devices is relatively simple. You connect a wire from the computer to the device, or perhaps you use your Internet connection to download a file. The devices simply exchange a series of numbers that can later be read by a player or portable device. Or, in the case of streaming media, the data is read as soon as it is received. The moving or copying does not reduce the quality of the sound, because digital copies don't degrade. Furthermore, no physical parts can degrade.

Of course, like most technologies, the process of transferring music is more difficult in practice than in theory. Each device is built around one or two types of connections, and many are available. Most players are built around standard connections called *USB* (or Universal Serial Bus) or *FireWire*, which allows high rates of data to be transmitted quickly from device to device. For more on USB and FireWire, see Chapter 2.





Look for computers and devices that can handle both types of connections. This will make your life much easier when you're trying to find the right connector cable.

## *The Nuts and Bolts of Hardware*

It doesn't take any special equipment to play these files. You probably already have the tools in your computer right now. But it's important to understand what makes the music happen, so I look briefly at each part of the puzzle.

### *Processors and memory*

The processor and memory in your computer make the whole thing run. They keep the programs running and working. They are the brain and the nervous system of your computer, and the old adage "bigger is better" is true here. In this case, you're looking for faster processor speeds and more memory (or RAM) to accurately reproduce music. It takes much more power to play an audio file than it does to create a spreadsheet (or to write a book on music). The good news is that this isn't as big a concern as it was just a few years ago. Just about any computer you purchase today has more than enough speed and power to play back music. I talk more about the demands placed on processors and memory in Chapter 2.



This doesn't mean that you should try to play music, download a bunch of files, and burn a CD all at the same time. Computers with less memory or slower processors might balk at handling all of these tasks at the same time. Try reducing the amount of applications that are open on your computer to allow for better audio playback.

### *Sound cards*

The *sound card* is the piece of hardware that makes the sound happen. Again, this piece of equipment has made huge leaps in the last few years. It is no longer a concern whether sound cards can accurately reproduce music. Now, it's a question of whether the sound is heard in stereo or perhaps more advanced formats, like 5.1 or 7.1 surround sound.

Sound cards are often not even "cards" anymore. The components that computers use to reproduce music or other sounds are often included right on the main circuitry of the computer itself (the motherboard). This can be both a blessing and a curse — if you like the sound of the computer, everything's

wonderful. However, because the sound is built in, you're stuck with it unless you disable it and install something new. It's not as complicated as it may sound, but it's still extra effort. Again, I talk more about sound cards in Chapter 2.

## *Speakers*

Speakers make the air move and create the sounds you hear. Most computers come bundled with a set of speakers that connect to the sound card (or internal sound). That's not always good enough, because these speakers are rather small and can't always faithfully reproduce the music. (Bass speakers are so big for a good reason — they need to be!) Depending on how your computer's sound is set up, you may want to consider getting surround-sound speakers (which include a main speaker, smaller satellite speakers, and a subwoofer for bass).

This assumes, of course, that the music you're playing has been designed for multiple speakers. Most standard recordings today are mixed to stereo, or two channels. Running a stereo recording through a surround-sound setup still only gives you a stereo sound output. You start hearing the differences when the audio has been specifically encoded for surround sound, like in many video games and movies. For now, because popular music is still focused on stereo, it is the main format of my discussions.

## *Portable audio players*

This gets a much closer look in Chapter 5, but these devices are one of the most popular ways to listen to music. Portable sound started with the Walkman, which allowed people to take cassette recordings with them. Now, you can take CDs, DVDs, or your audio files with you wherever you go. Your length of enjoyment depends only on the amount of songs in the player and the juice left in your battery. These players can use any of the three types of storage media I discussed in the section “Storing and Moving the Goods,” earlier in this chapter, depending on where they are used.

## *The Softer Side of Audio*

I've looked briefly at the hardware components you need to make your computer a music machine. You also need programs to make the music happen. These programs interpret the numbers and instructions that are present in the digital file formats and do one of three things: play the music, download the music, or edit the music.

## *Media players*

Because you have Windows XP, you already have a media player on your system (specifically, Windows Media Player). Many other commercial or free players are also available. They all handle basically the same thing: They play music or videos. Most can also handle some sort of organizational function (they can keep track of your files) and even play some sort of light show to go along with it. These players can also change how they look and interact with your computer, depending on what you want them to do. I take a closer look at media players in Chapter 5.

## *Download programs*

A Web browser can usually handle all your download needs. Using Internet Explorer, you can bring all manner of files (digital or otherwise) into your home. However, some stores require the use of specialized download programs to bring their files onto your computer. This isn't because Internet Explorer (or your preferred Web browser) can't handle the process of downloading. It's because these stores (such as iTunes or Rhapsody) want to control how their music leaves their *servers* (a central computer that sends out the information requested by computers like yours) and where it goes. If you want to use a particular store, you use its download software. Many companies also combine a media player or organizational function with these download programs.

## *Editing programs*

You probably won't have to use this type of program very often unless you're creating music. Music-editing programs are just like word processors for text. They allow you to record, edit, or delete sections of a recording and make it closer to what you want. This topic is covered in more detail in Chapter 13, but it may also be useful for you if you want to create transitions between songs on CDs that you burn. Some of these functions are also built into a media player. For example, Winamp can eliminate silence between songs and create automatic cross-fades with the push of a button, just like on the radio.

## *Law and Order: MP3*

You have a basic overview of what can be done with digital music from what you've read so far. What should stick with you now is that digital music is easy to move around via networks and is easy to store on CDs and other

media. And with all this moving, the sound doesn't lose quality like analog recordings do. This is great for music fans, because it's easy to get music in this format. Although the MP3 format may not be as high quality as a CD, its continuing popularity shows that most people are willing to give up the additional quality in exchange for the convenience and availability.

This convenience and availability moved the recording and distribution of music into an entirely unexplored area. Never before had there been such a widespread network available to distribute music to literally millions of listeners worldwide. Also, never before had this network been available for free. And never before have we had such legal and ethical conflicts about how this network was built.

## *Peer-to-peer file sharing*

You probably first heard about peer-to-peer file sharing as part of a single brand name: Napster. In the late '90s, this service put the exchange of MP3 files at the attention of the nation. This service allowed computer users to *rip*, or copy, songs from a CD and convert them to MP3 files. These files could then be exchanged over the Internet by other uses of the Napster software. Napster used central servers to allow the file transfers to continue, while other services transferred files directly from a user's computer to another computer. Hence, the term *peer-to-peer* (or *P2P*) *file sharing* — where each file is transferred from one user to another — was born.

## *Legal setbacks*

The problem is that the legality of this exchange is highly suspect. According to copyright law, a user who purchases a media product like a CD or movie can make a backup copy in case the original gets damaged. However, any more copies that are made are illegal. You've probably seen this warning message at the beginning of movies. The question was whether these digital copies were legal. And it was answered when the courts decided to shut down the original Napster network; the transmission of these files was deemed to be illegal.



While they share the same name, the current Napster service should not be confused with its previous version. The Napster brand name and logo were purchased and are being used by another company to sell music downloads via a subscription service that's endorsed by those companies who own the music.

Pandora's Box was already open, however, as many other services sprung up to take Napster's place. Names like Kazaa, Morpheus, and Limewire became more commonplace as alternatives to the now-defunct Napster. The problem is that these networks are still illegal. They are distributing copyrighted music without the permission of the owners of that music, and the owners are not being compensated for the distribution.

Two persuasive arguments are used by proponents of file sharing to justify their activities. One is the increasing cost of popular music. Indeed, the courts have determined that the major record labels did overcharge customers, and in 2003, participants in a class action suit received small payments in a judgment against the major recording labels. An additional component to this argument is that the record companies make money at the expense of the artists. (Trust me; as a musician, I'm sympathetic to this argument.) However, the files being shared are still illegal copies. That does not affect the legality of file sharing. It's still considered piracy.

File-sharing proponents have also claimed that previewing music is an important part of the music-buying process and that people are buying more music because they can listen to it before they buy it. While this may be true, legal ways exist to obtain previews of songs before purchase. Web sites like iTunes and Amazon have sections where buyers can listen to songs before they purchase them; it's just like having a listening station in a traditional record store. Again, that does not eliminate the fact that file sharing uses illegal copies of copyrighted material.



This section applies only to files that are distributed without permission of the owner. If someone wants to give away his music (music that he created and owns the copyright to) on P2P, it's perfectly legal.

## *Other drawbacks of P2P*

In addition to the dubious legality of sharing files, other problems can result from using P2P. Both the files exchanged and the service itself can cause problems.

### *Viruses and undesirables*

You can't always be sure what you order from the menu of a P2P site is what you're going to get. You may get the song, but you may also get something much worse. Unscrupulous users have been known to mask viruses as audio files and turn them loose on P2P networks. Other undesirable elements, like pornography, can also be inserted into the network to look like songs. It's always a question of what you're going to get, and it may be better to be safe than sorry.

### *Spyware and adware*

Both the service and the files may be responsible for putting software on your machine known as *spyware* or *adware*. This software can track what you do on your computer and where you go on the Internet, and use it to foul up your system. It can increase the amount of pop-up ads you see or change the home page of your browser. At its worst, this software can affect the performance of your computer by clogging the processor with unnecessary functions and tasks. This slows the system and increases your frustration.

### *Securing your system*

You can take the following three steps to make sure that your system stays clean:

- 1. Don't install P2P file-sharing systems.**
- 2. Install virus protection on your computer, and keep it up to date.**
- 3. Regularly update Windows XP with the security patches that are available through Microsoft's Windows Update system.**

## *Copying and burning files*

And the debate continues to rage on. Many lawsuits against organizations and P2P users have resulted, and the matter is still being settled in the courts. Until it is settled, the law says that sharing these files is illegal, and it is best to avoid it. This doesn't mean that you can't make these files — it's just a matter of how you use them.

As a consumer purchasing a recording, it's still your right to make a backup copy. It's also your choice on what media you want to make that copy. If you choose to rip the CD to your computer and keep your backup copy on your hard drive, that's fine. Go ahead, and tell 'em I sent you.

Many copyright owners are also more than happy to allow you to transfer files to your portable media players or burn the songs to a CD to listen to elsewhere, if you want to leave the original at home, for example. A good rule of thumb is that as long as the recording stays in your possession, it's probably going to be okay.

The problem arises when you start making copies of songs or albums and giving the copies to other people. The purchase allows you to maintain copies, not to distribute them to others. Others may borrow them, but not make copies. This makes things like mix tapes (a collection of songs) dubious, but we haven't arrived at the day when the Recording Industry

## File sharing: Should you do it?

I'm a little biased as far as file sharing is concerned, because I'm a musician who has recorded commercially available CDs. While I won't be making a living off of these CDs anytime soon, I'm still concerned with what happens to them. That being said, I can certainly sympathize with those who feel recordings are overpriced. I'm a certified recording addict, and I love purchasing and experiencing new music. If it were cheaper, I could get more. It's a simple equation. Still, I don't feel right violating the law to get my hands on recordings.

A great amount of debate continues over the business practices of the music industry, a field not exactly known for its adherence to ethics and fair business practices. Hopefully, that atmosphere will change soon. The Internet gives artists new distribution potential for their music. They can now reach their listeners (in theory) without the aid of a record company, keeping more profits to themselves. I'd love to see that happen, but that still doesn't make unauthorized downloading legal.

Okay, I'll step off my soapbox now. Gotta head down to the music store.

Association of America (RIAA) is going after Johnny Heartthrob for giving his true love a collection of romantic tunes that tells her *exactly* how he feels. It's the mass distribution of piracy, for profit or otherwise, that the copyright owners and the courts are concerned with.

Most download services are also offering the ability to share copies of songs legally among several sources. For example, you may be allowed to burn a certain number of copies of the song and transfer the file an unlimited number of times to your portable audio player. Hey, it's their dime. If these services give you permission, go right ahead. Again, it's illegal only if you're acting against your rights as a purchaser and against the wishes of the copyright owner.

