

# Random Access

## Making Sense Out Of Digital Scores

**Y**ou knew the day was coming. It started with a knock on the door. A moment later, your student entered. After a pleasant greeting, she took off her coat, reached into her bag and pulled out her music.

As she approached the piano, you noticed she didn't have the familiar thick volume of Beethoven Sonatas with the blue cover. In fact, the cover wasn't recognizable as a book cover at all.

A moment later, she flipped open her iPad and pressed the power button. A light shown forth from the glassy surface and from a distance, you could easily see the opening notes of the *Moonlight Sonata*. As you glanced around the room at your shelves of musical scores acquired over the course of years of teaching, it occurred to you that you might be teaching in a museum.

### Confusing Times

The museum reference is admittedly harsh. There is nothing wrong with

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printed music. We have all benefitted from printed scores that are beautifully presented on large paper and easy to read. There's ample room for writing additional fingerings and other annotations, and they even provide a wonderful surface for those reward stickers!

The fact is, printed music has had a profound influence on the history of mankind. Music publishing began in the western world in the late-15th century. The earliest systems of printing music were cumbersome and output was limited. Prior to the rise of the German music publishers of the late-18th century, the circulation of musical compositions was largely limited to handwritten scores and rote learning. When the musical promise of the printing press was finally realized on a large scale, the entire field of music became democratized. Composers began to disentangle themselves from royal or church patronage, and a rising middle class increasingly partook of a musical education.

### Fast-Forward To The Present

Throughout the 20th century, music stores were ubiquitous. You could browse large numbers of scores, place orders for music that was not in stock, and even attend the occasional workshop presented by one of the many publishers that sent clinicians around the country.

Then, the Internet happened and sheet music stores began to disappear in droves. Although the Internet was

not the only reason for the demise of the brick-and-mortar sheet music retailer, the Internet has provided a compelling alternative for sheet music distribution.

Today, anyone can go online and browse musical scores and even view example pages before making a purchase. The online library is huge, and you can quickly search by publisher, composer, arranger, title, instrumentation, level of difficulty and other criteria. And in many cases, you can receive your order within days or less. In some cases, you can even print a score the moment you complete your online purchase.

### A Renaissance Or A Dramatic Demise?

With all of the modern conveniences of online shopping for printed music, it may seem odd to question its future. But the handwriting is on the wall: it is very difficult to find a musician who doesn't have at least one portable tablet capable of showing a musical score. In other words, the infrastructure is in place to distribute musical scores as digital bits instead of bits of paper.

### Paper Versus Digital Bits

A *bit* is a binary integer: 0 or 1. Bits are the building blocks of computer software applications that turn circuits on and off. Remarkably, those bits can be grouped together into larger collections of integers called bytes, and from there we can build complex



devices, such as an iPad, that display a musical score.

The advantages of electronic scores are many:

- No shelf space taken up
- No damage over time
- Easy to transport
- Multiple ways to turn pages (such as swiping the screen or tapping a wireless foot pedal)

Although you probably won't find yourself putting reward stickers on the surface of a tablet, you can do most of the other things that you normally do with paper, such as annotate the score.

Apps used for displaying electronic scores may even offer a number bells and whistles, such as:

- Metronome
- Audible playback of the score

- Audio recorder
- In-app purchases or Internet searches for additional scores
- Convenient groupings of frequently used scores into set lists

Although the advantages of electronic scores are many, typical electronic display devices are quite a bit smaller than the 9" x 12" paper that has traditionally been used for printing music. For this reason alone, many musicians have been less than enthusiastic about switching to digital scores. But this situation, too, will change. As this column is being written, Apple has announced the iPad Pro with a display area about the same size as a printed piece of music minus the white space around the edges.

### Types Of Electronic Scores

Although we can endlessly debate the merits of electronic and paper scores, it's more important to examine the different types of electronic scores—because they're not all alike. In fact, we're likely to see quite a bit of forthcoming competition among the various types of electronic scores as well as between the apps that are used to view and manipulate these scores.

### MIDI Files

A MIDI file is not a musical score at all. A MIDI file is a file that describes a musical performance on a note-by-note basis. There are a number of apps that will open a MIDI file and turn the performance data into standard music notation. However, it should be understood that a MIDI file does not contain fingering, marks of expression



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or slurs. In other words, the notation you get is relatively simple.

### PDF Files

The term PDF stands for *portable document file*, a file-type developed by Adobe. The idea behind a PDF file is you can use a document creation program—such as a word processor, page layout program or music notation program—to “print” to a PDF file. The resulting file will look the same on any device.

In the case of electronic scores, PDFs come in 2 basic types: (1) beautiful PDFs that were “printed to electronic paper” by a notation program, such as *Finale*, *Sibelius*, *Notion* or *Noteflight* and (2) printed scores that have been scanned into the computer and saved as PDF. PDFs that are scanned vary

widely in their visual quality. You can find thousands of them on the Internet, especially at the International Music Score Library Project ([imslp.org](http://imslp.org)).

There are innumerable programs that will display PDF music files. If you start with one such app and later decide you prefer another, you can easily move your scores to the new app.

### MusicXML Files

A MusicXML file is a text file that has been exported from a music notation program. Today, there are at least 200 music programs that will read and/or write MusicXML files. This type of file was originally designed in the early 2000s by Michael Good as an interchange file format, enabling you to export from—say—*Finale* and import to a similar program, such as *Sibelius*.

Little by little, we are starting to see music display apps that use MusicXML data. Keep your eye on this format. MusicXML files contain semantically meaningful information (unlike a PDF file), and that may prove to be a game-changer as we move forward in the 21st century. In the case of the proprietary music files discussed below, many are based on MusicXML data.

### Proprietary Music Files

Lastly, there are proprietary music file types. These files are readable only in the app with which they are associated. If you purchase proprietary music files from 3 different vendors, you’ll find yourself switching between 3 different apps for displaying these files. The acquisition of proprietary files is generally associated with a personal,

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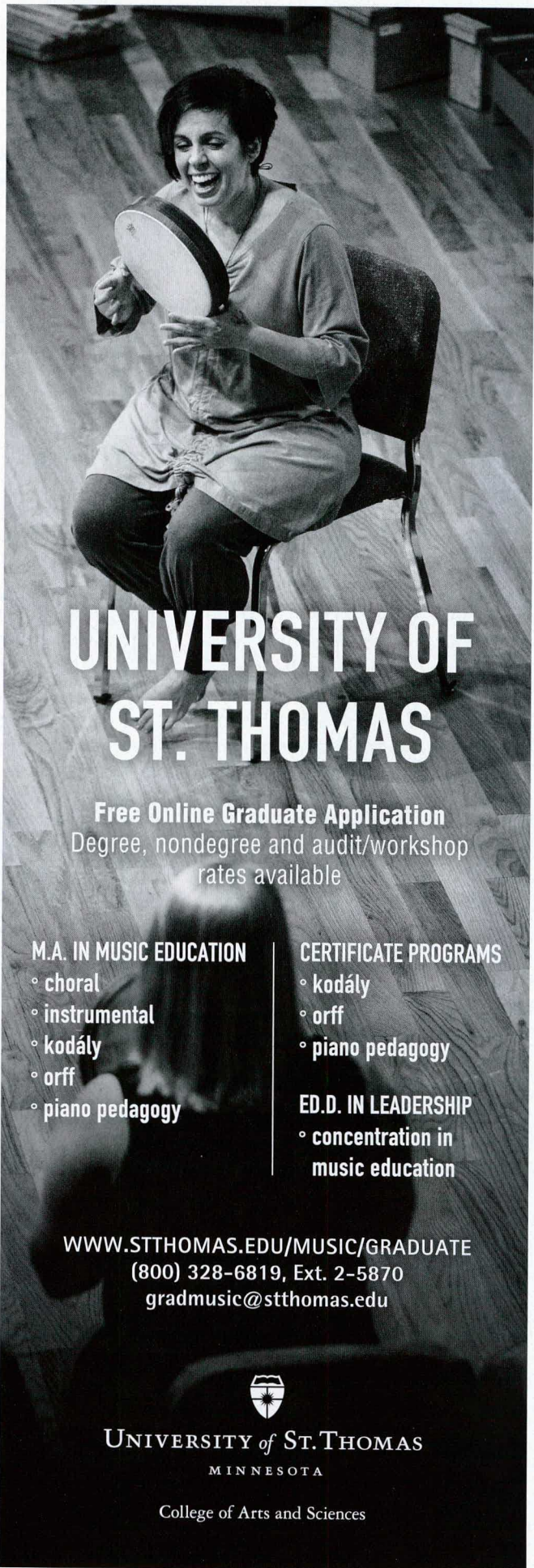


online account that must be established. Unlike a PDF or MusicXML file that can be freely given to another person, a proprietary music file will only be readable in the app that is associated with the unique customer account from which it was purchased. In other words, sharing is restricted.

### The Future

Electronic files are clearly the future for delivering musical scores. Music publishers are scrambling to figure out exactly what this future looks like and are trying out different formats and experimenting with different features. From the publisher or author perspective, proprietary files are generally attractive because sharing is restricted. At the same time, proprietary files offer the greatest opportunity for musical engagement with the student or performer.

It is an interesting time with new developments emerging rapidly! In all likelihood, the ideal score-type is just around the corner.



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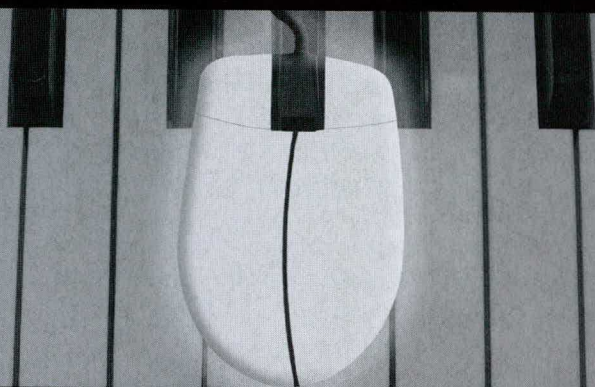
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