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FROM MONKS TO MUTOPIA: CHANGING LANDSCAPE IN SHEET MUSIC PUBLISHING

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The current transition from paper to digital format represents a dramatic change that will forever alter the way we use, search for and acquire sheet music. After all, this has already happened with journals and is happening with books, but it is useful to put that change into perspective. Transition to digital world is a profound change but in the end it is just another in the series of incarnations of written information.

Variety of surfaces and printing techniques used through history illustrates just how inventive and resourceful humans continue to be as we strive to make sheet music more permanent, plentiful, portable and easier to use. For instance, very few music manuscripts from medieval times survive on fragile papyrus. More are preserved on velum and parchment replaced by yet another improvement, paper, in the late Middle Ages. Earliest printing technique, printing from type, (cast in the same way as printed word) was supplanted by copper plate engraving which was in turn superseded by lithography, the prevailing method of music printing today.  Yet, recent advances in computer technology revolutionized not only music publishing but the way composers write and conceive of music, by allowing them to create music scores without ever touching a pen through engraving software such as Finale and Sibelius. Granted, such innovations are still plagued by limitations or “digital lockdown” not the least of which is MIDI interface which limits artistic expression and fails to account for finer shadings of music language and therefore is still inferior to pen and paper as a recording tool.

ESHEET MUSIC AND PSHEET MUSIC

Any list of user advantages of electronic sheet music over its print counterpart would include: greater portability, customizable displays, instant availability, rapid sharing, easier transpositions and annotation, easier part extractions and page turns. Greater portability, customizable display, rapid sharing and instant availability are qualities inherent in any electronic publication and, for the most part, apply to electronic sheet music in the same way they would apply to ebooks and electronic journals. It is the rest of this list that is unique to sheet music and clearly demonstrates the benefits of electronic format. Ability to transpose music, a task which used to require recopying the entire piece (unless the transposition was done with tonal music up or down a half step in which case tinkering with the accidentals would suffice), with a push of a button is immensely attractive to composers and performers alike. Similarly, creating parts for a chamber, or worse an orchestral piece, required the composer or copyist to copy each individual part from the full score. This is now done in seconds with minimal effort, usually involving checking the parts for possible mistakes and cosmetic changes such as, adding dynamic marks, fingerings, changing fonts or stave spacing. Although page turns and playing from electronic sheet music from laptops and iPads is still not possible, specialized hardware such as eStand includes foot pedals that can be used for hands free page turns.
These advantages are offset by problems such as: availability, level of sophistication and customization of annotation tools, and display size. Print scores still comprise vast majority of sheet music and that is not likely to change any time soon. As technology improves this is less and less an issue since it even now takes a few seconds to scan a page. Recent high end scanners include functions such as machine page turns thus enabling extremely fast scanning of book length materials. The issue then becomes one of copyright and funding. Annotation tools have improved dramatically over the recent few years, but are still no match for written annotations. Complicated, individually developed analytical annotations placed in various parts of the score are difficult to incorporate in a software tool. One possible solution is using a tablet computer, but this is not a viable option for digitized scores in, for example, pdf format. The display size is a complex issue. Sheet music comes in a wide range of sizes suited to various purposes. While kindle sized devices might be perfect for viewing study scores (those pages are typically no larger than a kindle display) and might even work for short pieces and vocal scores it would certainly make for a cumbersome device from which to view a conductor’s score. While those can be viewed on larger displays such as laptop computers this would arguably make them less portable and the user would be better of with a print score.

Clearly, while electronic sheet music, in its current state, has its uses, chief among which is ease of sharing and various manipulations done at moment’s notice, print sheet music is still very much needed and superior when it comes to performance and music analysis.

**ESHEET MUSIC DISTRIBUTION**

Music librarians have long cultivated methods for most efficient acquisition of print sheet music materials and as a result we mostly acquire them from large vendors such as Theodore Front or Presser rather than piecemeal from individual publishers, unless the requested material is unusual in format, rare or otherwise unavailable from a vendor. In a digital world composers can now produce performance quality sheet music and self publish and sell their music. Sheet music producers then become the distributors. This is a very important new development as in the print world vendors are primary distributors of materials. Other sheet music producers include individuals, libraries and societies who digitize existing print sheet music currently in public domain. The established library sheet music acquisition model could and is likely to change. Another major difference for the end user and libraries is that most of the content currently provided by producers is free whereas vendor content, even when it involves electronic sheet music in public domain, usually comes at a cost.

I recently published a more detailed analysis of various current sheet music digitization projects along with a list of over 100 individual sites, but since my main purpose here is to show how they affect what is collected and how it can be acquired I will focus on differences in aims and scope of these projects. Even thought sheet music digitization scope in libraries is still fairly modest libraries are currently one of the main producers of digital sheet music. This comes as little surprise since we own so much of it even if we often lack the resources to digitize it. Library digitization projects typically range in scope from collaborations of several library systems such as Sheet Music Consortium (collaboration between UCLA, Indiana University, and Johns Hopkins University) to National Library of Australia Sheet Music project whose sole
aim is to digitize its entire print music holdings. Most of these collections are, of course, displaying materials in public domain. On the other end of the spectrum are small scale unique collections such as Chopin Early Editions from the University of Chicago library. Societies follow a similar model, digitizing their print collections.

Before discussing society and individual projects it is worth noting that there is an additional, peer-to-peer distribution model which lies at the intersection of societies and individuals as eSheet music producers. International Music Score Library Project (IMSLP) is one of the most obvious examples. IMSLP has a turbulent history and it has been shut down for a brief period of time for copyright concerns. It was created in 2006 and enjoys huge popularity among music community, which is one of the reasons it has managed to endure for as long as it has.

The easiest and most obvious way to draw a distinction between IMSLP (or any other P2P sheet music producer) and a society is to look at a definition of a society to check if the characteristics of a society are a match for IMSLP. Looking at a Miriam Webster dictionary definition which reads “Society is an enduring and cooperating social group whose members have developed organized patterns of relationships through interaction with one another” I would argue that there are almost no similarities between IMSLP and a society. Does IMSLP consist of cooperating group of members following organized patterns of relationships through interactions with one another? I would argue that it does not. I would even go as far as to say that it does not really have any members at all. The contributors are united in a common goal, but they have never joined an organization. They have no obligation to continue contributing this material nor is this expected of them. The common purpose of IMSLP is digitization and distribution of eScores, but only the 3 individuals mentioned at the site are directly engaged in the these activities, the other (mostly anonymous) individuals provide majority of the content and act as contributors. In summary, while IMSLP shares some characteristics of organizations such as a common purpose and prolonged activity it does not act as a typical organization. Looking at the Oxford Dictionary definition of P2P networks it is clear that the IMSLP activity is much closer to the P2P model. The key part of this definition is “allowing shared access to files”. It is precisely this “file sharing” that is the key to identifying IMSLP or any other similar entity as P2P rather than a society. As a consequence, the organization of material will be left to contributors and the scope of what is included will be very broad and unpredictable compared to content provided by a society, which is governed by members who are actively collaborating to define their mission in more precise terms.

While most collections hosted by societies clearly focus on preservation and host materials of interest to musicologists specializing in certain areas and are not necessarily providing frequently preformed repertoire, other recent digitization efforts, such as that of Mozarteum, which provides access to critical editions of the entire works of W.A. Mozart are hugely important to music community. Clearly, raising awareness and providing links to these kinds of resources through our OPACS and other library discovery tools, such as subject pages and webliographies would benefit libraries by shifting some of the collection responsibilities and associated costs of acquiring and processing these materials. Even smaller collection such as Aarenai hosting French renaissance vocal music can be significant in that libraries no longer need tie up their collection funds in acquisition of specialized collections used by few experts.
The value added in terms of libraries then becomes bibliographer’s ability to identify, collect and organize these resources.

Collections digitized and hosted by individuals are perhaps the most questionable in terms of quality of sources, transcriptions and content. Currently, these mostly consist of materials of personal interest and self published music. Even those should not be discounted without further investigation. One of the possible future directions in this area, especially in the academic library word, would be to establish collaborations with faculty composers and create digital repositories of their works. Musical compositions are distinct from journal articles in that publication’s impact factor is not an issue and open source publishing is, generally, not considered inferior by tenure track faculty. Another difference that could act as a deterrent is that unlike scientific journal article authors and like books authors, composers do receive compensation from publishers for every score sold.

ESHEET MUSIC ACQUISITION MODELS

While it is still too early to be talking about established eSheet music acquisition models for numerous reasons, chief being its general scarcity as compared to print, it is useful to consider the nascent practices as dictated by what is currently available. At present, eSheet music can be acquired piecemeal from book sellers such as Amazon. This model, however, due to user license restrictions, is not a viable one for libraries. Even more specialized eSheet music seller’s offerings, such as Virtualsheetmusic.com\textsuperscript{x}\textsuperscript{i}, are governed by user licenses and cater to individuals rather than libraries.

Digital content has opened a doorway to heretofore unknown perils. It is a poorly kept secret that a growing number of libraries use Netflix subscriptions to supplement their film holdings. A literature search in Wilson’s Library Lit & Information Science Full Text database reveals several articles with detailed descriptions of Netflix use in libraries for this purpose. Raging debate on the web reveals that at least some librarians are aware that this is in clear breach of Netflix’s user license agreement which clearly states that “The use of the Netflix service, including DVDs rented to you by us and the Netflix instant streaming discs is solely for your personal and non-commercial use.” As previously mentioned, eSheet music is offered by Amazon through its electronic reader Kindle. Potential user license breaches are much more likely to occur as Kindle content is intended for personal use rather than an extension of library service. However, the device itself is not covered under such an agreement which means that libraries are welcome to loan them out to patrons without committing any violations. Also, any free, public domain content can certainly be downloaded and loaned out as well. The most obvious violation would result from downloading and paying for a work and then loaning the device to patrons.

The only two avenues for eSheet music acquisition at this time are purchases of large collections on CDROMs such as CD Sheet Music\textsuperscript{x}\textsuperscript{ii} and database subscriptions to services from Alexander Street Press or Naxos.\textsuperscript{xiii} One of the most obvious disadvantages of purchasing a large collection is the inevitable overlap with the existing print collection and large quantities of
public domain material, libraries can digitize on their own. These two acquisition models come with their individual issues as well. CDROMs can only be accessed by one user at a time and patrons need to access the materials at the library. Additionally, unless these pieces are added to the OPAC, patrons are usually unaware of this content as they cannot search for it along with other library materials.

Databases, on the other hand, while remotely accessible by multiple users and, for the most part, not requiring much in house maintenance come with their own unique challenges. Unpublished and unregistered sheet music published prior to 1890 is in public domain as is that registered and published in the United States prior to 1923. Additionally, since copyright extends to 70 years after the death of the author works of those who died before 1940 are currently in public domain. This covers the majority of the repertoire of western classical music. Chances are some of it is already freely available from other libraries as part of their digital collections or massive P2P digitization projects such as IMSLP. Sheet music databases should not be summarily dismissed as they still contain vital works of 20th and 21st century composers as well as critical editions but this should be taken into account when weighing the pros and cons of subscribing to a sheet music database.

Like most digital formats, eScores digitized by ASP and Naxos are compatible with personal computers and very few reading devices. The issue is one of on lack of standards rather than lack of effort on part of any individual vendor. Standards are needed to insure cross platform access. Currently, PDF is the most frequently used format. Some of the other more ubiquitous formats are the extremely flexible XML based MusicXML, which works best with notation software such as Sibelius or Finale. Others include Guido and LillyPond. All of these are open source formats. Vendors will need to work toward integration all of those under one unified interface eliminating potential software/hardware compatibility issues.

Music in digital format can be much easier to locate, and searching can, on occasion, turn into a lesson in music history. This is especially appealing to younger generation of patrons now referred to as digital natives. Currently, librarians use catalogs and various bibliographies to locate music written for specific instruments. We might do this by looking at a particular LC call number range, or we might conduct a composer as an author search and use the LC call number range as a limiter. These are all tried and true techniques that produce results, but are, unfortunately, as user studies continue to show not utilized by our patrons. In this respect, while still less effective in terms of search precision than library catalogs, vendor search interfaces such as those of ASP and Naxos, empower the researcher by using simpler, less daunting interfaces.

Finally, the familiar issue of ownership versus content leasing, which has been debated by librarians since the advent of first electronic journals, is far from resolved. With journals the transition was gradual as most libraries at first subscribed to both print and electronic journals. As journal prices soared and the library budgets declined libraries were forced to cut their paper subscriptions and sacrifice their holdings in order to continue to provide access to journals. It is only in recent years, primarily because of the increased sophistication of search interfaces, that we have seen an almost uniform transition to electronic journals. With sheet music this trend is
not as widespread. Unless there is a large contingent of “digital natives” with strong preference for sheet music in digital format, it is advisable to compare database holdings with the library print score holdings.

**USAGE METRICS**

eSheet music is still one of the newest digital formats and only recently offered as a subscription service. As a result there are not many usage studies to provide a rule of thumb or a standard against which we could measure usage. Furthermore, most sheet music databases are not counter compliant. Consequently, even when presented with vendor provided usage statistics, it is difficult to determine what is being counted. Is it the website visits, downloads, views, searches performed? As a result it is difficult to determine cost per use. Most libraries are interested in searches performed to evaluate the search interface effectiveness, but we would not consider this as a useful measure for cost evaluation. Most music librarians would rather count a score download or at least a thorough view beyond just glancing at the first page of a work. This issue will eventually be resolved as more libraries adopt the eSheet music subscription model, but unless the vendor is counter compliant comparing usage data across platforms will remain meaningless.

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iv http://digital.library.ucla.edu/sheetmusic/


vi http://chopin.lib.uchicago.edu/

vii http://imslp.org/

viii http://www.merriam-webster.com/dictionary/society

ix “designating or relating to a network in which each computer can act as a server for the others, allowing shared access to files and other resources”

x http://arenai.free.fr/Database.htm

xi http://www.virtualsheetmusic.com/

xii http://www.cdsheetmusic.com/