Making Music Accessible

Introduction to the Special Thematic Session

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Abstract. Musical material is a very rich corpus of data. Data with all kinds of features, entities, relations and a potentially endless number of abstraction levels on all these perspectives. It is therefore important to establish which set of elements we are going to use for the preservation, processing and provision of music; which features are redundant; which building blocks are mandatory; and how many can be shared amongst all of them. These considerations hold especially true for the community that is dependent on the accessibility of music. The area of music encoding is moving towards greater unification and coordination of effort and it is important that accessibility requirements are built into design processes. This also requires organisations working in this area to make their requirements clear and to participate in emerging standards.

1 Introduction

In the field of accessible music, the primary technology over the last century has been Braille Music [1], but the increasing use of computers for creating and using music scores opens up new possibilities for addressing the needs of print impaired people. Of course, many people have by-passed music notation and become successful performers, creators and users of music without the need for access to music scores. The problem of music encoding for print impaired people is similar to that for many accessibility solutions: the accessible market is a niche market and solutions are designed with the mainstream market in mind. The solution at this stage is very often a piggyback solution, failing to incorporate the basic ideals of Design For All. The original software is usually designed with very robust and modern design methodologies, yet a quick solution is designed for the niche markets. If the original solution incorporates extensibility and questions how the solution can be adapted beyond the primary user needs, then the solution can become available to a wider market. The main task within accessible design is to encourage just this type of thinking and design, despite the fact that the rewards are rarely reaped in the short term.
2 Existing Approaches

2.1 Braille Music

One area of access to music that is still a huge problem is the unavailability of Braille scores. This is largely due to the expensive nature of music Braille production. The main factors governing the current price of Braille scores are costly manufacturing materials and transcription time. Transcribers must have an extensive knowledge of print music and be equally familiar with Braille music code [2]. Very often the transcription process for Braille Music is manual. The Braille transcription is then checked against the print score. There is a clear need for systems that eliminate the potential for human error and reduce the length of the process. Currently there are a variety of methods available to produce Braille music, including:

- Scanning print music and converting using digital transcribers
- Inputting music through a MIDI device (playing in or using MIDI file) and translating to Braille code
- Inputting a notated music file, transcribing to Braille (Dancing Dots [5])
- Inputting note-for-note with a software editor
- Using a print to Braille notation editor (such as Toccata [6] or BMK [7])
- Using tactile overlays (such as Weasel [8])

We can therefore surmise that to cut the cost of Braille music production, we must cut the time taken to transcribe the music; lessen the need for only specially trained transcribers; and reduce the cost of materials. This is precisely what is being attempted by some of the software and hardware that has been developed in recent years.

The need for one system that can be used to both notate print scores and perform Braille conversions has become greater. Current Braille transcription processes are extremely time consuming. Automation of the transcription processes would immediately reduce the need to check and correct transcriptions. Furthermore, a system should input and output a variety of file formats. It would also be desirable to have a system that can be used by the print-impaired themselves. However, there is no system capable of satisfying all of these requirements at the same time. The most suitable alternative in common use is a professional quality print notation editor and a separate Braille transcription programme, ensuring a higher quality product.

2.2 Spoken Music

Spoken Music provides a spoken description of the elements of the score. These spoken descriptions are provided in such a way that the information is compressed as much as possible to ensure the spoken elements provide usable information but also that the descriptions do not become unwieldy [3,4]. The format is proving very popular with print impaired users, who in the past have either had no access to scores, or have had to be content with the logistic problems of traditional production methods