

Potential for Unification of Musical Standards with I-MAESTRO

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Abstract

The I-MAESTRO project holds great promise for both educators and students and intends to provide a flexible and powerful platform for music education and creativity. However, the project may also deliver rewards to more than this intended audience. By employing music representation formats which aim to become international standards and by proposing strong, innovative, and robust pedagogical approaches, I-MAESTRO may become a forerunner in bringing much needed revolution and stability to a domain which lacks cohesion and ensure parity across educational bounds.

This work briefly outlines and discusses these issues and attempts to highlight areas of particular relevance for consideration and discussion. Some challenges are also proposed which may help the realisation of these goals.

1. Introduction

The I-MAESTRO project aims to achieve a number of major goals which will bring powerful software tools and resources into the field of music education. In the process of doing so, the project also intends to utilise a new format for standard music notation, create rich multimedia and interactive musical resources, and to produce a system which will allow rapid development of additional educational components within the form of a standard framework.

Standards bring a multitude of well-documented and well-evidenced advantages to any community or area where there is a large range of diversity and a mass of users and tools. Standards permit compatibility, monitoring of development and progress, reliability of tools and data, and increase accessibility to the objects which these standards embrace.

2. Standard Music Notation

Standards for musical notation have been few and far between in the interactive music world over recent years. That is to say, there has been a distinct lack of any!

As is often the case, there have been a number of ad-hoc standards which have emerged and been adopted by users and software developers. However, musicians have never truly enjoyed the luxury of being able to compose and store their important work in a format they know can guarantee interchange, content extraction, and compatibility across any computer platform or software package. This has been limiting for composers who wish to share their work and collaborate with others, and where this has been possible, it has imposed financial overheads.

Whilst formats such as NIFF, MIDI, and MusicXML have proved popular with both commercial and open-source software developments none have been formally ratified as an industrial or international standard. Thankfully, there has been a significant push by a critical mass of users within the music notation community in the last few years. This has led to the proposal and development of a detailed set of standards for music notation. This has peaked in a submission to the International Organisation for Standardisation (ISO). In conjunction with the Moving Picture Experts Group, this development has become known as MPEG-SMR (Symbolic Music Representation).

By embracing this new standard I-MAESTRO will become one of the forerunners of the new format. This will not only support the new MPEG-SMR standard, but also means that a new generation of composers and artists will be familiar with the format from its infancy.

3. Educational Standards

The technological and notational aspects of interactive digital music are not the only areas which

can benefit by the development and implementation of I-MAESTRO software and tools. A major thrust of the work undertaken in I-MAESTRO seeks to provide a coherent and effective learning package for music students. Not only does I-MAESTRO intend to improve and support existing learning paradigms and methods, there is great opportunity for the development of new multimedia and multi-modal learning technologies.

By engaging with traditional pedagogical models a great strength the project presents is that there is the opening to standardise musical education practice. This brings many benefits to both students and educationalists and ensures that the level and indicative syllabus of music education become consistent. Rather than have a large disarray of various methods and techniques which skews musical education, students can expect a quality level of training and resources regardless of any constraints.

Of particular note in this area is the intention to create a truly interactive and collaborative learning environment where students can potentially share and compare their work and compositions. This will help ensure that students across international, linguistic, and cultural boundaries will be working with common resources and employing the same methodologies and practices when it comes to learning and being creative with music. This assists in standardising the approach to learning and composing. However, this leads us to believe that, in time, it is possible to ensure that there is more clarity between composers. By making cross collaboration easier there is significant opportunity for many new and innovative musical compositions and practices to develop.

Sceptics will be apprehensive at the proposition of standard mechanisms being introduced when educating music students. Their argument will be that this will stifle creativity and make the process of composition and education become too rigid and regimented. However, I disagree with this argument. As discussed, we can see that by encouraging adherence to standard practices there is a wealth of opportunity for originality. The world of musical composition has always been a creative and an experimental one, and the tools proposed by I-MAESTRO are in no way restrictive. Creativity will flow as it has always done, but this time rather than flowing into a sea of disjointed and crowded compositions it will form complex networks of fresh rivers, lakes and crystal pools of musical diversity and imagination.

4. Conclusions, Discussion & Challenges

A major advantage of the deployment of I-MAESTRO is obviously its potential impact upon the

music and academic communities. I-MAESTRO encourages existing and well-known educational methods whilst also proposing new and inventive practices through its use of current and exiting technologies.

The electronic and interactive elements of the project will help to contribute to the interest and enthusiasm of students. Music education tends to take fairly traditional approaches and practical aspects can often become forgotten about when focussing on theory. I-MAESTRO proposes interactive, multimodal mechanisms for ensuring that theoretical and critical concepts are conveyed to students. These elements can not only help to embed the much needed theoretical knowledge but also provide tactile associations. Furthermore, in a distance learning environment, theoretical material may be the hardest part of a syllabus to deliver and mechanisms for more intense engagement may help overcome these barriers.

Another issue in particular which makes I-MAESTRO exciting is its intention to ensure maximum accessibility for a wide range of users who may be in some way impaired. This can present significant challenges and if I-MAESTRO is successful in managing to adapt to the needs of users then these durable engagement mechanisms will provide valuable insight, and provide guidelines and templates for ensuring accessibility in many other software applications. This is another area to watch closely, and may also lead the way to more accessibility standards being produced.

The main challenges to allow full realisation of the project are, I believe:

- Ensure development of practical educational approaches.
- Ensure milestones and progress is able to be monitored in distance learning.
- Be adaptable to different learning styles.
- Embrace MPEG-SMR whilst maintaining an 'open' architecture for future-proofing.
- Ensure multimedia and interactive elements of the project are not used or perceived as novelty, but are fundamental to the learning process and are educationally and technologically sound.

I-MAESTRO promises to bring much required change and stability to the music field. In highlighting some of these points I perceive as critical, I hope that I-MAESTRO will meet and excel in its intended objectives.