Report from the MusicXML Community Meeting

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Introduction

We held our third annual MusicXML Community Meeting at Musikmesse on Friday, April 17, 2015, followed by a reception sponsored by Hal Leonard / Noteflight. These meetings are part of the Musicbiz Lounge & Congress at Musikmesse. This year's meeting focused on framing the future for MusicXML development. Our agenda proceeded as follows:

- A brief introduction to MusicXML. Nearly everyone attending was already familiar with MusicXML, so we covered this portion quickly.
- MusicXML community progress over the past year since our last meeting, emphasizing the 25 new applications that added MusicXML support in that time.
- An update on the Standard Music Font Layout project (SMuFL), presented by Daniel Spreadbury from Steinberg.
- Future directions for MusicXML: content and governance, presented by Joe Berkovitz from Noteflight.

The second hour of our two-hour meeting was devoted to this last topic, with a half hour for presentation and a half hour for discussion.

The slides from the Musikmesse presentations by Michael Good, Daniel Spreadbury, and Joe Berkovitz are available online at the www.musicxml.com website. This document summarizes the discussions about future directions for MusicXML, including a possible change of governance to a World Wide Web Consortium (W3C) Community Group.

Attendees

We had 42 people who signed in at the Musikmesse meeting. The attendees for each meeting are listed here alphabetically by organization. People came and went during the meeting, so not every attendee may be listed here.

- Chris Adam, Apple GmbH
- Manfred Knauff, Apple GmbH
- Dominique Vandenneucker, Arpege Music
- Sam Butler, Avid / Sibelius
- Ainhoa Esténoz, Blackbinder
- Brenda Cameron, Cambrian Software
- Bernd Jungmann, capella-software
- Christof Schardt, Columbus Soft
- James Sutton, Dolphin Computing
- Davo van Peursen, Donemus Publishing
- Hans Lavdal Jakobsen, EarMaster
- Arnaud Zeller, Effelsoft
- Jari Eskola, Fennica Gehrman
- Mandy Feingers, Israel Music Associates

- Mark Adler, MakeMusic
- Michael Good, MakeMusic
- Thomas Bonte, MuseScore
- Nicolas Froment, MuseScore
- Michael Avery, MusicFirst
- Giovanni Rodriguez, MyScript
- Bob Hamblok, neoScores
- Hans Vereyken, neoScores
- Silke Van den Broeck, neoScores / Scored.be
- Stijn Van Peborgh, neoScores / Scored.be
- Reinhold Hoffmann, Notation Software
- Martin Marris, Notecraft Services
- Joe Berkovitz, Noteflight
- Peter John Bacchus, Notes in Cloud
- Martí Ferrer, Notes in Cloud
- Robert Piéchaud, self
- Chris Swaffer, PreSonus / Notion
- Robert Schäfer, Schott Music
- Dominik Hörnel, Scorio
- Karin Höthker, Scorio
- Ulf Eriksson, Scorx.Org
- Daniel Spreadbury, Steinberg
- Mats Holmquist, Take7
- Ron Regev, Tonara
- Andreas Wenger, Xenoage Software
- Shaun Riordan, Yaacomm
- Nobuhiko Hama, Yamaha
- Taro Tokuhiro, Yamaha / AMEI

In the remainder of this report, I will identify each contribution and suggestion by the name of the contributor, using just first names for the presenters Joe Berkovitz and Michael Good. The discussion is organized in chronological order.

Nicolas Froment made a video recording of the meeting that is now available on YouTube at https://youtu.be/2E-G5jLV-1A. The discussion starts about 1 hour and 29 minutes in.

Discussion of MusicXML Future Directions: Content and Governance

We saved our discussion time for a focused discussion regarding Joe's presentation on framing MusicXML's future. Much of the discussion revolved around the proposal for transferring MusicXML governance to a W3C Community Group, as well as an example of how MusicXML might evolve in the future by using Cascading Style Sheets (CSS) technology to better separate semantics from appearance.

Davo van Peursen asked about improving MusicXML's capabilities as a tool to analyze music. There is a lot to learn from linguistics where you can compare texts for differences and similarities. Could MusicXML better support analysis of differences between versions, or about the essence of a composer's style?

Joe replied that musical informatics and analysis is an important area that should be added to the list of MusicXML use cases. Michael replied that two musicology applications that already use MusicXML: music21 from MIT, and MelodicMatch from the University of Melbourne. Michael continued that strengthening MusicXML's capabilities for musicology is a great idea. There are already some features for analysis in MusicXML, but they have not yet been used that much. It would be best to

have active participation by those building musicology applications so we can be sure that the new features are useful and practical to implement.

Dominik Hörnel liked the CSS concept of separating syntax and semantics, as well as the idea of starting the MusicXML standardization process. But the MusicXML community is a group of pretty small companies – there are no Microsofts sitting here. How might this process be supported financially to build up this community? People at small startups are doing lots of other work, so how can they afford the time to work on standards efforts? It's easier for larger companies to find people to dedicate to standards efforts.

Joe replied that there are some larger companies willing to invest in this process, such as Hal Leonard. But we need to engage together as a community to share the work: it's too much for any one organization. It is not easy, but if we don't do it, we could remain in limbo indefinitely and not have the format evolve as it needs to for its long-term survival.

Bob Hamblok also supported the ideas of the consortium and CSS styling. Time spent on MusicXML implementation, tooling, and discussion is time that neoScores already spends on its products and services. We can collaborate together to make the standard and all our products better.

Christof Schardt mentioned that he has no expertise in the standardization area; he's just a developer with technical ideas, and a musician. He thinks it seems good to move MusicXML governance to a more neutral forum, and one could expect more dynamic contributions. He reiterated his request from past years to map more notation application concepts into the language. As interactive applications develop, it is now really urgent to have more semantic layout information. This involves encoding the reasoning – the how and the why – behind the end result. For instance, why is a stem up or down? Is it an automatic setting or did the user flip it manually? Another example is how measure widths are controlled. Future versions of MusicXML need to encode more data on the level of the algorithms involved in notation layout.

Michael agreed with this, and then proceeded to clarify MakeMusic's position regarding possibly transferring MusicXML to another organization like the W3C. When he sold Recordare to MakeMusic 3 years ago, he lost the ultimate say in making these types of decisions, though he has strong influence on them. The common interest is that the standard must evolve to meet new use cases and market needs. If it doesn't, that's big trouble for everyone here, including MakeMusic. MusicXML is probably more strategic than ever for MakeMusic, both in terms of the Finale feature set and bringing more repertoire into the SmartMusic library. For instance, if a SMuFL version of Maestro is included with the next release of Finale, MakeMusic would not want an updated version of MusicXML with better SMuFL support to be delayed beyond when this next version ships.

Michael continued that it might be more practical for MakeMusic to have a MusicXML 4.0 with more SMuFL support and semantic layout within the current governance, working in parallel on the details of transferring MusicXML to the W3C. At that point, Steinberg's products using SMuFL would be further along, and Steinberg might be more willing to transfer it to the same W3C Community Group. Having both technologies from both companies transferred at the same time might make it easier for both Michael and Daniel to sell to the decision makers in their respective companies.

Reinhold Hoffmann mentioned that the bigger companies have to have some kind of leading roles in moving standardization forward. Notation Software as a small company wants to support that. Reinhold believes that there needs to be a standard environment, community, or consortium for MusicXML. Otherwise he believes things will not survive long-term, even though there is nothing better than MusicXML on the market now. The larger companies need to provide more of the financial support.

Michael asked Joe a follow-up question on how he envisions this working if MusicXML eventually moves from a W3C Community Group with no membership fees required to a full-fledged W3C

Working Group. There are invited experts, but somebody has to pay membership fees. A tiny number of members and a larger number of invited experts would probably not be viable for W3C.

Joe replied that before Noteflight was acquired, it was a tiny bootstrapped startup for several years. Yet it was very worthwhile to contribute to standards organizations as they could find the time, because the return for their business was very substantial. Within the W3C Audio Working Group, they could state what was necessary for the survival of their business, and then see it take root and be implemented by others. There is leverage to working on standards that is exciting and rewarding. This doesn't mitigate anything that Reinhold said, but there is a plus side of the ledger too for small companies. W3C also has a sliding scale of membership fees based on organization size and location.

Martin Marris believes this standardization proposal is worth enthusiastic consideration. Improving MusicXML validation is one of Notecraft Services's strongest needs. MusicXML profiles and standardization would help. Notecraft has been doing music file conversions for about 25 years, and it's amazing how many things can go wrong. Martin is also really intrigued by the CSS proposal. He wonders how well this technology that was developed for text and graphics could work for music notation, and how much you can really separate content from layout. If that could be pulled off it would be amazing – that is a large part of what his company does. He wants to be a stakeholder in this process.

Michael replied that MusicXML was deliberately designed to mix semantics and visual appearance because there is no hard distinction between the two in music notation: appearance represents semantics. Separation of concerns was not a new issue when MusicXML was designed 15 years ago. This doesn't mean that we shouldn't revisit the issue now, especially given the evolution of CSS technology in the interim. Some things, like the data in MusicXML's appearance element, should be quite simple to move to a CSS implementation.

Michael asked that if anybody thought a different group than W3C would be better, such as the MIDI Manufacturers Association (MMA), or thought that moving to a consortium was a bad idea, to please be sure to say something now.

Robert Piéchaud said that the CSS proposal sounds equivalent to the concepts of engraving rules and house styles in notation programs. On the other hand, CSS was developed as a way to beautify an existing web page; the visual content is already there in the web page. Maybe instead of a separate format or file, whether CSS or JSON, those settings could be included within the MusicXML format itself as new tags? It might make things easier to override.

Joe replied that this is possible and you have the full range of choice of options. The CSS example in his presentation should not be taken too literally.

James Sutton provided another example of the need for more semantic information in a future version of MusicXML. There are no semantics for MusicXML <words> directions – they might be related to tempo, dynamics, or something else. What should a program do with it, when it could mean anything? Michael agreed that this is an area where more semantics could be encoded within a MusicXML file, going beyond the association of playback elements that is present in MusicXML 3.0.

Bernd Jungmann responded to Michael's request for comments about other standards organizations and change of governance. Capella participated in MPEG several years ago. They spent time and travel money, but achieved nothing. Se he is suspicious about a change of governance, though he has no personal experience with W3C. This is quite an important question; you must know more details about an organization like that before recommending we should go there. One question is whether travel expenses will rise. Bernd has never been to NAMM in California because it is too far away. Would moving to W3C necessitate having to travel there? Any change in governance always requires some efforts with new web sites and the like, and there is time and effort associated with that too. It

is very nice to have MusicXML in a workable state as it is now. Will it be better under W3C, or will it only be more expensive?

Joe responded that he had not made the case for the W3C as a specific organization today, so that was something we still needed to address. W3C is a much different organization than MPEG; it is much more agile, focused on software specifications that need to evolve rapidly. Community groups at W3C are even lighter weight and can create their own processes for things like face-to-face meetings. He suspects we would wind up with a process pretty similar to what we have today in terms of travel and working remotely. Working groups usually have a couple of face-to-face meetings each year in rotating locations, but not everybody attends. Most work is done remotely, as we currently do with MusicXML.

Michael responded that we could decide to keep Musikmesse as a venue for face-to-face meetings as part of a W3C Community Group, assuming that Musikmesse continues to provide this venue with all the changes happening to the fair next year. There is also an interesting connection with larger, governmental standards organizations like the International Electrotechnical Commission (IEC). The MMA has expressed an interest in co-publishing a W3C Community Group report in music notation. In the past, IEC has published MMA specifications, and they have also expressed interest in the music notation area. So we might even be able to get the benefits of an official worldwide standard, with particular benefits for Asian markets, without all the costs. Michael was involved in the same MPEG project as Capella while he was at Recordare, and would not recommend moving MusicXML to MPEG.

Conclusion

As the discussion indicates, most people who spoke out at the meeting were favorably inclined to moving MusicXML to the W3C. There was support for adding more notational semantics to MusicXML – not just the what, but also the how and the why. Many were intrigued by the CSS proposal.

At the reception afterwards, after Bernd had a chance to discuss the W3C proposal with some colleagues, he told me that if MakeMusic, Steinberg, and Hal Leonard / Noteflight all agree that the W3C Community Group is the way to proceed, that was good enough for him. Several people who did not speak out during the public discussion session also told me afterwards that they liked the W3C Community Group proposal.

This year's meeting met my goals for getting a better sense of the MusicXML community's reaction to a possible change of governance to the W3C, as well as some general directions for future MusicXML evolution. We will continue discussion of these topics online in the MusicXML forum.

As in past years, we received very good feedback from the people who attended the meeting. The reception sponsored by Hal Leonard / Noteflight was successful, with people staying for an additional hour after the meeting to talk in smaller groups. Thanks again to Hal Leonard and Noteflight for their sponsorship and providing the refreshments for the reception. As before, the audio/visual and other meeting support from the Musicbiz Lounge & Congress was first rate.

Musikmesse is making major changes next year with the show dates moving to Thursday through Sunday, changing the exhibition halls used at the show, and opening the show to the public each day (aside from a single trade-only business-to-business hall). We don't know if Musikmesse will continue to provide this type of meeting venue. As long as they do and are willing to include us, we plan to keep this community meeting an annual event.