

VLDB 2021: Designing a Hybrid Conference

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ABSTRACT

The 47th International Conference on Very Large Databases (VLDB'21) was held on August 16-20, 2021 as a hybrid conference. It attracted 180 in-person attendees in Copenhagen and 840 remote attendees. In this paper, we describe our key decisions as general chairs and program committee chairs and share the lessons we learned.

1. KEY DECISIONS

Our main goal when organizing VLDB 2021 was to foster high-quality interactions. We worked under the assumptions that there would be restrictions due to the Covid-19 pandemic, but that large indoors gatherings would be allowed, and international travel would be possible in August 2021. As a result, we designed the conference as an in-person conference with the possibility of remote attendance.

1.1 Program

To foster interactions, we prioritized in-person attendance (over fairness across time zones) and we encouraged live exchanges (over asynchronous communication).

We kept the traditional VLDB format, with plenary sessions and up to seven parallel sessions. We scheduled unique sessions for research papers, industrial papers, keynotes, tutorials, and workshops at a suitable local time in Copenhagen. We thus chose not to repeat sessions, as opposed to VLDB'20 and SIGMOD'21, to avoid diluting potential audiences. To be accommodating for remote attendees, both in Asia and in the Americas, we held plenary sessions in the afternoons in Copenhagen.

We encouraged speakers to give live talks, whether in-person or remotely. In addition, we collected pre-recorded 10-min videos for all papers as backup and for archival purposes. Despite our encouragements,

many remote attendees chose to use their recorded video rather than give a live presentation, despite their attendance of the session.

Poster and demo sessions were organized as purely virtual events to minimize cost and to ensure a safe setup for these traditionally close-proximity sessions during the pandemic. Finally, we included virtual-only roundtable sessions beyond the local daytimes due to the large number of remote attendees, and because of their popularity and effectiveness in previous virtual conferences.

While we encouraged workshop organizers to run in hybrid mode, we gave them the option to run virtual-only workshops. Six of the 13 workshops chose the virtual-only option.

1.2 Digital Platforms

The requirements for the digital platforms were to provide (i) a schedule for all attendees, (ii) access to live sessions for remote attendees, (iii) support for synchronous and asynchronous interactions among attendees and (iv) opportunities for sponsors to reach all attendees.

We wanted to minimize the total number of platforms, so we chose (1) *Whova* as the only entry point to the virtual part of the conference, and (2) *Zoom* to stream the sessions to remote attendees. We used YouTube and Bilibili for the pre-recorded videos.

In *Whova*, we enabled the *exhibitor center* and the *artifact center*. The exhibitor center allows sponsors to customize their interactions with the attendees, while the artifact center allows paper authors to continue discussions beyond the sessions with other attendees.

In *Zoom*, we opted out of the webinar mode to further increase interactions among the attendees. While the webinar mode of *Zoom* is more secure against disruptive attendees, it creates an isolating

experience for both the attendees and the presenters. The conference organizers have the power to react to disruptions, rather than being pessimistic and proactively avoiding them, especially when conference access requires a paid registration.

We relied on Gateway for the setup and management of Zoom sessions. Gateway knows our conferences and the virtual platforms, such as Zoom, Whova, and YouTube, very well at this point, and their services were extremely valuable during the conference. We relied on the audio/video (A/V) equipment, network capacity and technicians from the venue to stream up to seven sessions in parallel. For in-person presentations, slides were streamed directly from the presenter’s laptop (connected to Zoom), while audio and video was streamed from the venue’s A/V equipment.

We introduced two new functions in the conference organization, digital platform chair and artifact chair, to manage consistency across the digital platforms and to guarantee the quality and the timely delivery of the pre-recorded videos, respectively.

The role of the *digital platform chair* has already become part of our conferences with the virtual format. This role is necessary to manage the content on the virtual event platform and coordinate with other parties about population of and updates on this content. Digital platform chairs are also the first responders when the conference attendees have questions about the virtual platforms of the conference.

The role of the *artifact chair* is essential to manage the process for collecting all the conference artifacts, such as pre-recorded videos, posters, etc., and coordinating all the parties that are involved from paper authors to Gateway (in VLDB 2021). During the process of archiving these artifacts, the artifact chair hands-off the necessary information and consents to the person responsible from archival.

In addition, as usual across all conferences, we also used the conference website to make the conference schedule information public and social media to promote the conference.

1.3 Cost and Fee Structure

The main cost of the conference is associated to the venue, catering, A/V equipment, and personnel as well as social events. The fixed cost of a hybrid conference is much higher than for a traditional conference because of the cost of A/V equipment and personnel needed to cover seven parallel sessions.

We used a professional conference organizer, Kuoni, to take care of interactions with the venue and all

service providers as well as sponsors. Kuoni also took care of the registration site. We introduced a flexible registration process that allowed changing remote to in-person registrations and vice-versa, up to two weeks before the conference start date. In this way, attendees could accommodate changes in personal circumstances as well as changes in company or government policies during the pandemic.

Note that we complemented the professional service from Kuoni with contributions from student volunteers. In particular, we needed volunteers to periodically transfer the list of registered attendees from Kuoni to Whova.

We decided to introduce a significant fee for remote attendance in order to cover the costs associated with professionally live-streaming sessions from the conference venue. Our rationale was that these costs should not be shouldered only by authors, since they are among the ones contributing to the attractive content of the conference.

In addition and as usual, we minimized the cost for student attendees. Fellowships from the VLDB SPEND committee as well as NSF covered registration fees for 75 students attending remotely and 14 attending in-person.

2. LESSONS LEARNED

2.1 Session Recordings

We initially considered session recordings as optional and not part of our core requirements. This was a mistake: recording sessions and making them available to conference attendees should be a requirement for any hybrid conference. It brings a lot of value to remote attendees and in-person attendees alike, specially in a multi-track conference such as VLDB.

There was a high demand during the conference for the session recordings to be available as soon as a session finished. We decided to record all the sessions, unless session chairs, presenters or attendees rejected, and make them available to the attendees through Whova. However, it takes time and manpower to edit, render, and upload session recordings to YouTube. As a result, most sessions recordings were available only two to three days after the sessions. We decided to make these session recordings available to attendees in Whova for a while longer after the conference ended. Note that there were about ten registrations after the conference was over, showing the value and the necessity of session recordings for attendees.

2.2 Sources of Complexity

Several sources of complexity that are unique to a hybrid conference required more attention than expected.

2.2.1 Session planning

With remote presenters joining from many different timezones, a key design question was whether to organize the paper sessions primarily based on the topic of the papers or the timezone and attendance mode of the speakers. We chose to group the papers based on topic first to allow a more natural flow in each session. Then, we attempted to schedule each topic-based paper session at a timeslot that is the most ideal for the majority of the remote speakers in that session, based on their timezone, while avoiding topically similar sessions running in parallel.

2.2.2 Streaming sessions

The requirement to stream sessions from the venue as well as remote presenters is a source of complexity before and during the conference. Indeed, both the Zoom manager and the A/V technicians at the venue must know the presentation form for each presentation (live in person, live on Zoom, or pre-recorded video). Collecting this information from all authors before the conference is complex as it involves several tracks managed by different chairs (research, industry, tutorials, keynotes, workshops). This information must be consolidated and shared with both the Zoom manager and the A/V technicians in a format that is convenient for them (e.g., grouped by day, session time for Zoom managers and by day, room, session time for A/V technicians).

To eliminate sources of inconsistencies, we chose to minimize the number of persons in the organizing committee interacting with Zoom manager and A/V technicians. This resulted in less autonomy for workshop chairs, who needed to interact with the conference general chairs to prepare for and manage session streaming.

2.2.3 Session chairing

A hybrid session setup increases the responsibilities of session chairs. First, they have to give directions to speakers and attendees about the hybrid setup, such as informing them about where to stand with respect to cameras and how to speak to the microphone to be audible and visible. Then, they shall monitor both in-person and virtual attendees to prevent people from being disruptive for the session. Finally, they must bridge the in-person and virtual parts of the session by coordinating speak-

ers and questions on both sides.

To deal with these increased set of responsibilities, we assigned two session chairs per session – one playing the traditional role of a session chair, the other acting as a stand-in for the online-participants, monitoring their questions. With the smaller number of senior researchers attending in person, we were forced to ask them to chair two or even three sessions, and if possible recruit an ad-hoc second session chair before the session began.

2.2.4 Enforcing consistency

The schedule for a traditional conference program mainly contains information about which paper is presented or who presents at each session. This information is also enough for the attendees to decide which sessions to attend. However, to be able to run the sessions of a hybrid conference, a schedule document must be created that contains the additional information on the Zoom links, video location information for pre-recorded videos, the presentation modes for each talk, etc. This requires coordination of information from several independent, globally distributed parties, and we introduced a scheduling chair to oversee this process.

2.2.5 Publishing session recordings

We received many requests to publish recordings of keynotes or individual presentations. Publishing recordings introduces legal issues linked to personal data. These issues should be clarified before the conference starts so that legal forms are available at conference registration time.

Session recordings tend to have several attendees appear in the recording for brief moments of time in addition to the speakers. Given GDPR, a process must be established to handle cases, where attendees repeal their consent afterward to either remove the corresponding videos or edit out the corresponding person.

The pre-recorded videos of papers will be archived on the PVLDB website, since they do not pose the same level of complexity for GDPR. Indeed, consent from the speakers is enough to archive them in a GDPR-compliant way.

2.3 Trade-offs

There is a fundamental trade-off between interactions and inclusiveness. Both VLDB'20 and SIGMOD'21 implemented a 24-hour format, which scheduled each session twice, allowing attendees from all timezones to catch all the sessions at a reasonable waking time. As for SIGMOD'20, we chose to not repeat sessions and thus ensure a larger number of

attendees per session.

Overall, interactions among in-person attendees and interactions between in-person and remote attendees were very fruitful. However, the setups we had on Whova to boost interactions across all attendees, such as exhibitor and artifact centers, were not as highly used as we envisioned. In the future, making an additional effort with more networking sessions or deploying an additional platform, such as Slack, to boost such interactions may be necessary.

The demo and poster sessions, held virtually, attracted almost only authors. We initially planned a Zoom breakout room per demo and poster. However, we turned poster sessions into ad-hoc roundtables to increase the quality of interactions among poster authors.

Roundtable sessions have become a very popular part of VLDB and SIGMOD in the past couple of years, leading to many fruitful discussions. For VLDB 2021, we had many very exciting roundtable topics lined up thanks to our dedicated roundtable chair, and chose to run these roundtables in parallel (four to seven at a time). However, this parallelism hurt the attendance of the roundtables. For future conferences, having not more than a couple roundtable sessions in parallel should be a design principle to increase attendance and interactivity.

2.4 Scale

With 180 attendees in Copenhagen, VLDB 2021 felt like a small, intimate conference, with a mix of senior researchers and students. Our choice of fee structure, made the conference financially viable, even with much fewer in-person attendees than we originally planned for. The model of hybrid confer-

ence we worked with should scale to larger number of in-person attendees. Whether this model would work with fewer in-person attendees remains an open question.

2.5 Sustainability

While the topic of sustainability may seem orthogonal to the hybrid conference design, the hybrid format has great potential to facilitate more sustainable conferences. Allowing people to attend a conference remotely allows cutting down the cost of (flight) travel in addition to making the conference more inclusive and accessible. Similarly, being flexible with workshop program and allowing some workshops to be virtual could facilitate more sustainable options for the future. We are still investigating, with the sustainability chair, whether there are good options to actively offset the estimated carbon footprint of the conference.

3. CONCLUSIONS

This paper summarized our design and the lessons we learned about the hybrid format of VLDB 2021. Hybrid conferences foster interactions and bring the community together in-person, yet allow people who are unable to travel still be part of the conference. We believe that the hybrid format for scientific conferences is here to stay and opens up new opportunities for everyone.

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