

The Genesis of CppCon

My History with Conferences

By Jon Kalb, August 19, 2019

MacHack

This long and, perhaps to some readers, pointlessly meandering history is the story of my involvement with CppCon which is clearly the achievement of my career. This is a personal story, but it may be of interest to others.

In 1984, **Apple** released *Macintosh* and the CS department at the **University of Michigan**, specifically its above-average program on operating systems, wanted to hold a conference to discuss this new OS.

The university contracted with **ExpoTech**, a company that did science fiction conventions, to handle conference logistics, and **MacHack** was held in 1985. Instead of attracting academics, the conference attracted a lot of autodidacts, amateurs, and wannabes. So the University didn't plan to repeat the conference, but the attendees had a different idea. They approached ExpoTech with another idea and MacHack became a community conference. ExpoTech handled all the logistics, but the community formed a planning committee that handled all the content.

I remember hearing about this conference and because I loved the Mac and was trying to learn to program it (I wasn't a professional programmer at the time), I dreamed of attending. But it wasn't until a few years later when I met someone that had actually attended MacHack that I considered that it was possible that I'd go myself.

MacHack was an amazing experience. Attendance was always limited to no more than three hundred people, most of whom returned year after year. The keynote kicked off the conference starting at midnight of the day that everyone arrived. The highlight of the conference was the **Hack Show** which started at midnight on the last night of the conference. It was a contest where participants showed off their most creative hacks to the delight of attendees.

After my first year, I became a regular. I joined the planning committee and helped run the hack show. Attending MacHack changed my career. It gave me a level of confidence that I just wouldn't have had otherwise. I also met some great people. It also made an indelible impression on me about what a conference can and should be.

After attending for a few years, **Scott Boyd** and **Greg Marriott**, who ran the Hack Contest invited me to help put on the contest and to help with the Hack Show. I learned a good deal about how policies can support (or destroy) the culture you want to encourage.

Winning the Hack Contest was rather prestigious in the Mac development community and we had to be very careful to keep it both fun and meaningful. For example, although we announced several winners in special made-up-after-the-show categories, with prizes for all those winners, none of the prizes, not for a special category or for the overall winning hack, ever had significant monetary value. The most coveted prize was literally a rat trap that Scott wrote on with Magic Marker to commemorate the Best Hack victory for the year. It was very much in the spirit of the laurel wreath crowns of the ancient greeks.

If a sponsor wanted to give out something of real value, we always did that by drawing. We didn't want the contest to be for anything but recognition.

Some of the people I met at MacHack who would be known to people in the C++ community include **Jorg Brown**, **Nevin Libor**, **Howard Hinnant**, **Lisa Lippincott**, **Marshall Clow**, and **Sean Parent**.

MacHack folded as the energy went out of the Mac market. I went to **SD West** a couple of times because it was held in the Bay Area and was convenient to me. I met **Dave Abrahams** there and I attended a pre-conference class with **Bjarne Stroustrup** and **Herb Sutter**. But I wasn't a regular. SD West felt large, cold, and "corporate" to me.

Boost

In 1998, as the first version of the ISO standard for C++ was being released, **Beman Dawes**, the chair of the **Library Working Group** recognized the challenge to the Working Group of following their mission which was to *standardize existing practice*, that is, to bring into future versions of the standard, libraries in widespread use.

The challenge lay in the fact that all libraries in widespread use at the time were proprietary libraries and therefore not candidates for standardization. The few open source libraries that existed were not readily available nor in widespread use.

Beman worked with others in the Library Working Group, including **Robert Klarer**, on a proposal for a website that would be a repository of peer-reviewed, free libraries. The initial idea of this website was developed by Beman and Robert during the ISO C++ committee meeting in **Sophia Antipolis, France** in March of 1998. The goal was to create a repository of freely-available non-proprietary libraries that would be of high enough quality to be candidates for standardization.

Beman published a proposal for this repository, without including a name for it, in May of 1998.

<https://www.boost.org/users/proposal.pdf>

In our day, with GitHub, Open Source libraries commonplace, and cloud storage abundant and almost free, it is easy to overlook how important and revolutionary this resource was. We take it for granted now, but the idea of a peer-reviewed repository of freely available libraries was unheard in 1998.

At the time, I was not involved in the ISO committee or with the founding of **Boost**. I do remember the first time I visited *boost.org* there were four libraries there. I don't remember which ones they were, except that I recall *dir_it*, a library for iterating over directories. It was credited to **Dietmar Kuhl** and I don't know if it was the basis of the *Boost.Filesystem* library that has since been standardized. The earliest snapshot of boost.org in the **Wayback Machine** is from early November of 1998 and it shows six *Boost Libraries*, three *Beta Libraries*, and one *Experimental Stuff*.

<https://web.archive.org/web/19991222101954/http://www.boost.org/libraries.htm>

Note that initially **Boost** did not accept "open source" libraries. They only accepted "*free*" libraries with a *clear copyright notice*. From an early FAQ:

Are open source license libraries acceptable? No, not currently. Open source licenses often require redistribution or availability of source code, inclusion of license document with machine-executable redistribution, give the initial developer rights to licensee modifications, and need a lawyer to understand. These would be immediate disqualifications for many business, commercial, and consumer applications. Boost aims to avoid subjecting users to hard-to-comply-with license terms.

<https://web.archive.org/web/19990825042708/http://www.boost.org/more/faq.htm>

Initially, every library author was free to determine their own "*copyright terms*" (I assume they meant license), with the idea being that users could decide which libraries offered acceptable terms on a library by library basis.

Eventually, Boost would work with the Berkman Center for Internet & Society at Harvard Law School to develop its own open source license. It may be the least restrictive of any open source license available.

<https://www.boost.org/users/license.html>

Initially, the license was optional for library authors to use or not, but eventually all existing libraries were licensed under it and all new libraries were required to accept the Boost License.

All the individuals involved in starting Boost were Standards Committee members, but as Boost became more and more successful, it developed its own online community of authors and users. My first official involvement with Boost, was when I started the **Boost Users** email list in the fall of 2001.

SmartFriends™ U

A couple of years after I started the Boost User list, Scott Boyd let me know that he was thinking of putting on a conference for some "smart friends." He was taking a work break and thought it might be fun and interesting. Over a weekend in September 2003 we put on the one and only SmartFriends™ U.

<http://smartfriends.com/U/>

It was great fun. I got to meet **Alex Stepanov** for the first time. He was our keynote speaker and I got to give the formal introduction for him at [his talk](#). I was very honored by that. I also got to see so many friends from the MacHack days and I realized how much you can appreciate people that you see only once a year for a few years, if you have something important in common with them.

Of course, I also learned about running a different kind of event. It was a small two-day single-track conference. We didn't have a contest but we did have a few special features. The conference was held in the California redwoods and I volunteered to lead a hike before sessions each day. But the biggest special feature was something that we kept as a surprise. I thought that attendees would love this, but I didn't want anyone to come to the conference only for this. "Come to think hard about code and have fun too."

I had heard on some website about these kids that had remade the *Raiders of the Lost Ark* movie. It was a shot-for-shot remake done by teenagers during their summer breaks over a period of five years. When I heard about it, I wanted to hear more about that adventure, but I also wanted to see the film. I convinced Scott that we should make it a surprise event at the conference and I reached out to the film's director, now an adult, Chris Strompolis, and asked him if he'd like to spend a weekend in the redwoods and show off his film.

Chris agreed and he and his wife joined us at the conference. We never put it on the schedule. After the last session on Saturday, we told everyone to regather after dinner at a particular time for a surprise. I told them that the only thing I was going to tell them was "no cameras."

When everyone re-assembled at the appointed time, we just started showing the movie... with no introduction and no explanation. I loved seeing the film for the first time and can only imagine how much fun it must have been for the audience that was seeing it "cold" with no idea what to expect. Since then, the remake has had national magazine profiles, its own website, and a movie made about it, but like most people in 2003, most of the attendees had never heard of it.

<https://web.archive.org/web/20150713160635/http://www.vanityfair.com/news/2004/03/raiders200403>

After the screening, Chris stood up, introduced himself, started telling the story of the remake, and taking questions. He was still taking questions four hours later. By that time we'd re-assembled outside where we were making s'mores over the fire pit.

Of course the attendees loved it.

http://javworld.com/JAVBlog/comments.php?id=P24_0_1_0

I got some criticism from non-attendees after the conference, because we didn't announce this special screening. I regret nothing. I only wanted people at the conference that wanted to attend for the main content. The surprise was for them.

I still remember Lisa Lippincott's criticism at the end of the conference, about starting with the early morning hike and extending to the end of the movie. She said, *You can start at eight in the morning and you can go until nine at night, but you can't do both.* Yes, Lisa, we can. And at any conference I run, I'm happy to take the criticism: *Too much good stuff.*

BoostCon

Meanwhile the online Boost community was growing. People who had never met in person started to work with each other quite a bit and felt that they should arrange to meet in person.

Dave Abrahams took up the challenge to create a conference. Dave's father was a physicist and, as a boy, Dave had spent time at the **Aspen Center for Physics** and thought it would be a wonderful venue for a small conference.

Until this time, Boost had been a zero-dollar organization. All the labor was volunteered and the **University of Indiana** supplied hosting support for the website. I believe this was arranged with the support of **Andrew Lumsdaire**.

But running a conference requires signing documents, accepting revenue, and paying expenses, potentially lots of expenses. The economics of events are that, if properly planned, they can be financially successful as long as the number of attendees meets expectations. Events are required to make a room block commitment at a venue in order to hold the rooms required for the event. If attendance falls below expectation, not only is registration revenue below expectations, the event may be responsible for paying for unused hotel rooms.

Putting on an event is a risky undertaking and generally requires some depth of financial reserves. This Boost clearly did not have. As a practical requirement of putting on the conference, Boost became a project of **Software Freedom Conservancy**.

<https://sfconservancy.org/>

Conservancy had been founded with support from Google to be the legal non-profit entity for any open source project that wanted to be a non-profit organization, but didn't want to take the task of incorporating and getting IRS approval of their non-profit status. None of the existing Conservancy projects had put on a conference, so this was a new experience for the team at Conservancy.

Conservancy negotiated contracts with the Aspen Center for Physics for the conference venue and the Aspen Meadows Resort to provide lodging for attendees.

My understanding is that Beman put down his personal credit card to guarantee rooms, but I don't know that for a fact. I do know that from the first, the conference was in the black and soon Boost became (based on its financial reserves generated by the conference) the largest of Conservancy's projects.

In 2007, the first **BoostCon** was held at the Aspen Center for Physics with Dave serving as the conference chair and Sean Parent giving the keynote address.

I remember hearing about BoostCon and, although I loved Boost and the conference sounded interesting, I wasn't certain that I wanted to spend an entire week just talking about Boost. I missed the first couple years of BoostCon, but then I had a conversation about it with Marshall and Nevin. They told me that it was really a C++ conference. So I went and haven't missed one since.

C++Now

SD West had never defined itself as a C++ conference and offered lots of non-C++ content, but Herb had told me that their surveys indicated that most of their attendees were C++ programmers. After SD West folded, I felt like there was a vacuum that needed to be filled by a large mainstream C++ conference in the US.

During BoostCon 2011, I talked to Dave Abrahams about this idea. I told him that BoostCon was the closest thing in existence to the conference I had in mind and that I thought BoostCon could evolve into the conference I envisioned.

I pointed out that the new standard (C++11) would be published later that year and that there would be a lot of interest in C++11 in 2012, which we could leverage. I told him that we should change the name of the conference to something with C++ in it. I said we should add a third track as a C++11 tutorial track and attract a lot more attendees.

Dave was interested, but he said that it wasn't up to him. He invited me to make my proposal to the BoostCon planning meeting which always meets on the last night of the conference. The meeting attendees were very receptive, but rejected my proposed name *The Future of C++ Conference*. They wanted something more immediate. They wanted **C++Now**.

Since the third track was intended to be a tutorial on the (then) new C++11, I sketched out a series of session topics that covered the main new features of both language and library in just over a dozen sessions. This plan was very well received by the planning committee at BoostCon 2011. I was excited about what this meant for the 2012 conference and I was also excited about being asked to serve on the new Boost governing body.

Beman and Dave created the **Boost Steering Committee** at BoostCon 2011, with Beman as its chair. Until then the community was largely self-organizing (under the leadership of some very influential leaders like Beman and Dave). Beman was the Boost contact for Conservancy. Conservancy spent money and signed contracts (for the conference) as Beman requested. But the feeling was that rather than having a single individual in that role a committee needed to be formed to be the official voice of Boost in dealing with Conservancy with the authority to bind the organization to an agreement or policy. I may have been invited to join the committee as a founding member because of my leadership in setting a new direction for the conference, but I think it was more of just being in the right place at the right time when Beman and Dave were looking to recruit committee members.

<https://sites.google.com/a/boost.org/steering/>

I didn't realize it then, but I now believe that Beman and Dave were preparing for the switch to Git. This issue was so divisive in the Boost community that it might never be resolved by consensus. Having a body charged with the authority to commit the community to a specific action might be the only way to solve the Git impasse.

(Later, when the Git issue came to a head, the Steering Committee, with Beman as its chair, handled this with grace. Years later, after Beman had passed the role of committee chair to me, a similarly divisive issue concerning building with CMake came before the committee. This time the committee, under my leadership, botched it badly. I still regret how that was handled and accept that much of the fault lies with me.)

It turns out that where content is concerned, planning isn't enough. When submissions came in for the new conference, **C++Now 2012**, there weren't any that fit into the tutorial track that I had outlined. I had naively assumed that, since my outline was well received by the planning committee, people would submit those sessions.

I realized that if this was going to succeed, I was going to have to make it happen. So I started recruiting. I went down the list of sessions trying to find speakers for all the topics. Of course the reputations of Dave, Beman, and BoostCon helped with this. We were able to recruit top people, many of whom had helped define these features on the ISO C++ Standard committee.

I contacted my hero from my MacHack days, Howard Hinnant, the primary author of move semantics and the then chair of the Library Working Group. He was interested, but said that it would be hard for him to justify the trip. As a small conference BoostCon only covered expenses for keynotes, not regular program speakers.

Dave had already invited a keynote speaker for 2012, so I asked him if there was room in the budget for another keynote speaker. At this time I wasn't a conference organizer. I had attended planning meetings, but I really didn't know anything about how to put on the conference and had no idea about the budget.

Dave let me know that a second keynote was possible and we invited Howard to do a keynote on move semantics and he volunteered to do a couple of regular program talks on new features of the C++11 standard library.

I'm very proud of the tutorial track that we put together. Looking back, it was clearly the most knowledgeable set of speakers to talk about C++11 that early in its existence.

Then something happened that changed my career. Dave asked me to be his conference co-chair. He had seen what I had done to make the tutorial track a success and he told me that he thought that if my vision for C++Now was going to succeed, I should be making it happen.

I was honored and intimidated by this responsibility. I decided that, given Dave's reputation and my being almost completely unknown in the C++ world, that I'd let Dave be the face of the conference and I would do everything I could to handle the details of running the event. (I wasn't thinking in these terms at the time, but my rough idea was that Dave would be the conference chair and I would be the conference manager. Despite the disparity in these roles, Dave graciously shared the title of Conference Chair with me.)

I learned about the budget, contracts, and a lot of what it takes to put on a conference. And it was successful. BoostCon 2011 had about eighty-five attendees and C++Now 2012 had about one hundred thirty-five. We had three keynotes, three tracks, and attendees loved it.

At the Boost Steering Committee meeting that year (we have one at every C++Now), I made a request to start a Student / Volunteer program to support students attending C++Now and to help run the conference. As soon as I made the request, **Hartmut Kaiser**, our conference program chair and another Steering Committee founding member, immediately said that he had been planning to propose the same thing. This proposal was well received by the committee.

The other request I made of the committee was clarifying my spending authority as conference chair. I didn't want to have to ask the committee to approve every expense, or even every expense that hadn't been anticipated. But I also didn't want to exceed my mandate. What was the committee's guideline?

We discussed it and the committee moved that I could personally approve any expenditure that:

- Didn't obligate the organization to make payments in future years
- Didn't exceed expected revenue

This was more authority than I'd hoped for, but it showed a great deal of wisdom on the part of the committee and it has made it much easier for me to run the conference.

The next year at C++Now 2013, we hit our then self-imposed limit of one hundred fifty attendees and I came to the conference with several ideas about how we could continue to grow the conference.

A Mainstream C++ Conference

But the Steering Committee wasn't interested in growing the conference and didn't accept my proposals. They liked the intimate nature of the small size (as a veteran attendee of MacHack, I was sympathetic to the appeal of a small conference) and they felt that growing the conference would stretch the limits of the venue.

I was very disappointed. I had a vision for a large mainstream C++ conference, but I understood the concerns of the committee. Trying to turn C++Now into that large mainstream conference might or might not succeed, but it risked destroying an amazingly good conference in the process.

At the planning meeting on the last night of the conference, I shared my disappointment. I explained my vision for a large mainstream C++ conference in the US, but I said that I agreed with the rest of the Steering Committee that that conference would have to be someone else's project because C++Now was going to focus on being the best experience it could be as a small conference serving the niche of cutting-edge library developers.

But as the planning meeting progressed, attendees kept asking questions about this other conference. Where would it be held? What would it be like? What kind of policies? What kind of content? Of course, because this was my dream, I answered the best that I could, but then tried to steer the meeting back to the business of planning for C++Now 2014. Clearly there was an appetite for the conference of my dream and I was right that there was a vacuum.

After the meeting, **Chandler Carruth** came to me and told me that if I wanted to go ahead with this conference, the organization to work with was the **Standard C++ Foundation**. I had heard of the Foundation and been to its website at isocpp.org, but I didn't know much about it or its purpose at the time (it was still a pretty new organization then).

Chandler was the Foundation's treasurer, so he was able to fill me in. Herb Sutter had formed the Foundation by approaching a number of companies in the C++ community (including his own employer, **Microsoft**) to launch a not-for-profit whose mission was to promote the use of Standard C++. Unlike other languages like **Java**, **C#**, or **Swift**, C++ has never had a large company that tried to promote it and the Foundation would try to fill that role. (C++ was created at Bell Labs and AT&T put resources into developing it for internal use, but didn't put much effort into evangelizing it for outside users.)

Chandler told me that the idea of launching a conference was discussed at the formation of the Foundation, but that it was considered too ambitious for the Foundation to take on.

I pointed out to Chandler what I had said at the planning meeting, that this *wasn't* going to be *my* project, that I had a full time job as a software engineer, and that I was already running one conference. I considered this too ambitious for me as well.

But it was my dream and the more we talked about it (until late into the night), the more I considered it possible. As someone that has worked as a conference organizer, I was well aware of the phenomenon of people at a conference volunteering themselves for things that they later realize are totally unrealistic for them to take on. So Chandler and I reached an agreement. We'd get together in a couple of months (we both live in the Bay Area) to see if this still seemed like a good idea.

Later, when we met it was still my dream and I'd been thinking about it a lot. I started working on a slide deck to present to the C++ Standard Foundation's board of directors, who, Chandler let me know, would be meeting in the Fall. But later that summer, Chandler called me and said that Herb would be in town on ISO business, and asked if I wanted him (Chandler) to set up a meeting. I said that my slide deck wasn't finished yet, but I'd love the opportunity to discuss with Herb, because it would help me prepare my presentation.

Herb, Chandler, and I met so that Chandler and I could share our thoughts. I laid out my dream for a large mainstream C++ conference and how I felt that this was within the mission of the Foundation.

Herb agreed, but said that he didn't feel like he had the bandwidth to take on such an ambitious project. I looked at Chandler and I remember thinking at the time, *I guess there is no backing out now*, as I said to Herb that what we were thinking was that *I* would run the conference.

Herb said, well, in that case, I guess we are going to have a conference. I said, *But don't we need to present this to the Foundation board?* He said he was president of the Foundation and that in that role he should make some decisions on his own and that this was going to be one of those decisions.

So that is how CppCon started.