From the president

Boris Veytsman

There is an interesting paradox in the history of technology. Early adopters start with the first variants of the innovation. They continue to use them while the world around them deploys newer and slicker versions, so the former look rather old and quaint in comparison — precisely because they have been pioneers in the acceptance of the new ideas. This can be seen in many examples; the quirks of the NTSC broadcasting standard adopted in the United States is one example. For another, I remember my surprise when I first saw the inside of Mission Control at NASA Goddard Space Flight Center: the communication devices with their cloth-covered speakers and mother-of-pearl buttons were reminiscent of 1960s turntables rather than futuristic visions of the latest *Star Trek*. Of course these devices were installed in that era and have never needed an upgrade.

The influence of this paradox can be seen in the place of TeX in the free software community — or rather in the wider free information community. TeX users already exchanged tapes of early implementations when the proprietary character of software was taken for granted by many actors in the field. The subsequent appearance of the Comprehensive TeX Archive Network, CTAN, became the model for such archives as CPAN, CRAN, and others. Our flagship publication, *TUGboat*, started publishing papers about free TeX software decades before the *Journal of Open Source Software* was conceived. However, for many users and activists of the free software community our approach may seem definitely quaint and strange. The fact that TeX has a dual role as a program to typeset the texts *and* a language to encode them does not help here. The need to preserve the integrity of the language and the ability to faithfully typeset old manuscripts led to the rather unusual requirements of the LaTeX project public license. I remember heated discussions with some purists insisting that LPPL, and the license of TeX itself, were not free. Fortunately, since the LPPL and TeX license requirements were accepted years ago by the GNU Project and the Debian Free Software Guidelines as free, we can put these discussions to rest.

There is, however, another side to the early adopter paradox. The first versions of an innovation often contain more ideas than the later ones. By streamlining the design, the subsequent generations of engineers strip the "unnecessary" ideas and thoughts. Thus, an innovator seeking inspiration is well-advised to study the early works. This is well known in the arts, where studying and copying old classics is considered an obligatory part of an education. Science and technology students are less keen to study classics — albeit my advisor, Prof. Nikolay Malomuzh, urged us to read papers by Einstein or Bohr rather than their summaries in textbooks. "When you read a textbook," he said, "you learn only what its author understood in the original paper."

The TeX community approach to free software is based on ideas from Don Knuth. As a prolific author and mathematician, Knuth followed the old traditions of mathematics when thinking about intellectual property. The way a theorem belongs to its author is quite different from the way Mickey Mouse belongs to Disney Studios. These ideas might be even more relevant now since the free software approach has become popular outside of the world of software itself. Scientific papers are increasingly available on preprint servers and open access journals. Many publishers and granting agencies require the authors to make both their data and code publicly available. The need to significantly accelerate science due to the COVID-19 pandemic has only accelerated these trends. The free software community becomes a part of a more general free information community. There is an understanding that the old licenses and notions based on the experience of free software, while very important, may be not sufficient for the many new kinds of information. The appearance of innovative ideas such as the Creative Commons licenses attests to this understanding. I wonder whether a re-examination of TeX community practices might be useful in the search for approaches to tackle the new reality of the open information epoch.

Besides providing food for thought about the approaches to the intellectual property, our community is also in the business of providing technical means for the free information movement. Many scientific and technical papers — as well as works of fiction, technical documentation, etc. — are typeset with TeX. As always, there is more to do. I think we should do more to aid free tools in supporting advanced features of (the ubiquitous) PDF documents. We need free tools for creation of accessible PDFs — a technology now being increasingly addressed by TeX developers. A less TeXnical but perhaps equally important problem is the improvement of the free PDF reading software, especially in handling PDF forms. I hope our development fund (`tug.org/tc/devfund`) can help with incentivizing developers to address these problems.

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