TEX consulting for fun and profit

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1 About this article

At TUG 2008 I made a talk about my experiences as TEX consultant. Sometimes I have been asked to write it down. While the video of that talk is available [7], it might still be worthwhile to put to paper my observations and the lessons I learned during the years of paid consultancy. Thus I decided to write down some things I discussed in 2008 — and some new thoughts and observations.

It goes without saying that everything in this article is based on my personal experience and reflects my tastes and opinions. When I mention "lessons", they are lessons for me: the reader is free to consider them either trivial or erroneous (or even both simultaneously). Also, the words *I, my, me* are used in this paper more frequently than is usual in technical or scientific literature; again this is caused by the chosen genre of personal reminiscences.

I am grateful to Karl Berry, who encouraged me to write this paper, to Dave Walden whose interview [8] rekindled my memories, to my numerous customers, who provided many valuable lessons, and to the TEX community, without whose energy and dedication my career as a consultant would be impossible.

2 First steps

I started to use TEX in the middle of the 1990s, and quickly fell in love with it. In the first years TEX was for me synonymous with LATEX; my first book about TEX was Lamport's manual [5]. I quickly appreciated the possibilities for extension and customization in the TEX system, and decided to write my own packages. I've read the Guide [1] and the first edition of the Companion [3] — the one that featured St. Bernard with a barrel on the cover. I remember spending a whole day reading the descriptions of all the LATEX packages on CTAN — it was still possible then to do this in one day.

My first packages were just this — something for my own use. I was sending out many letters (a usual pastime for a postdoc), so I wrote the envlab package for printing envelopes. A journal where my co-author and I published a paper required an alphabetic list of symbols used in equations, so I wrote the first version of the nomencl package (later its development was taken over by others). LATEX programming requires a working knowledge of TEX, so I studied *The TEXbook* [4]. I still often consult it and the great reference manual by Victor Eijkhout [2].

After several years of personal use and occasional packages published on CTAN, I got used to giving TEX advice to colleagues and students. Once I opened *TUGboat* at the page with the advertising rates for TEX consultants, and found out that they were ridiculously low: $35 for a full year of listing both in the print and web editions. Thirty five dollars is a nice sum for an experiment: even if you fail, it is not too much to lose, and even one consulting engagement would justify many years of advertisement. Thus I sent money to TEX Users Group. This was in the end of 2005. The first offer came in about six months after this.

My ideas about the consulting were rather nebulous. Probably something along the lines of interpreting cryptic TEX error messages. However, my first engagement was completely different: a publisher of scientific journals wanted to train the help desk staff to troubleshoot authors' problems with LATEX. This was a rather lucky beginning for me: I have been teaching physics on different levels from grade school to graduate school since the 1980s. It was relatively easy for me to create a course (mostly based on the great book by Oetiker *et al.* [6]) and teach it in a two-day seminar. By the way, I was pleasantly surprised by the help desk staff: they turned out to be smart people, interested in learning and asking great questions. It was a fun assignment. I spent some time in preparing the materials, but then I was able to use them several times more for other audiences: TEX training turned out to be an important part of my business.

In 2007 I got a couple more engagements. They were from publishers; I was to program a LATEX style based on their design. Actually this activity turned out to be the main part of my consulting. Again, I was lucky: from the beginning I got to know very good designers and learned to interact with them.

This does not mean that I never got to "interpreting TEX error messages": occasionally I get desperate pleas for help from people stuck with compilation of their documents. Unfortunately for me (and fortunately for them), these problems are usually easy to solve. More often than not they are subject to my "15 minutes rule": I do not charge for an occasional quick advice that takes less than a quarter hour of my time. The main drivers of my business are packages for publishers and seminars for TEX users.

3 Some lessons learned

3.1 Fun and profit

While doing anything it is useful to reflect *why* you do it, what do you want to get from the activity?

The title of this article includes the words “fun and profit”; let us discuss them.

As to the profit, I found out that TEX consulting brings more than I thought when I sent these $35 to TUG. It easily pays for travel to TUG conferences, for books about typography, fonts and typesetting etc. Even after these business expenses there is some money left. On the other hand, this consulting is definitely not something one would retire upon or quit the day job for. Of course, I never put much effort into expanding my business; the advertising budget is still dominated by the yearly *TUGboat* ad. I wanted this consulting to be a modestly paying hobby, and I got pretty much what I wanted.

The fun element is much more prominent in this business. I enjoy learning new stuff — and I learned a lot! I now program in TEX much better than I did when I wrote only for myself. I learned many odds and bits of typesetting: what do Hebrew books use for front matter page numbers, why Hans Straßer becomes HANS STRASSER in small caps font, what is the difference between early Tschichold and mature Tschichold, how many degrees are in the humanist axis tilt, and many other exciting things. If you like book-related trivia, consulting is a good way to collect it. Also, it is a good way to meet interesting people and get acquainted with many different businesses. Among my customers were editors, engineers, geologists, mathematicians, philosophers, physicians, publishers, statisticians, typographers, … — and I learned a bit from each of them.

3.2 Why TEX is not enough

While learning non-TEXnical things is a part of the fun of consulting, it is also a requirement of the job. The customers rarely have purely TEXnical problems: more often than not they want solutions for other aspects of their typesetting or even the general information processing work flow. If a consultant can help them with these, he or she becomes more valuable. For example, most customers expect you to edit their `.bst` files. They may or may not realize that the language there is completely different from TEX — you are supposed to know both. Similarly you should be ready to answer questions about graphics and graphics manipulation, typography, options for Ghostscript runs, and many other things.

Sometimes these questions become rather exotic. One of my customers wanted to put hyperlinks from the table of contents *and* the index into a PDF file. While the hyperref package, of course, would do this easily, the customer wanted to work with the PDF created by quite different tools. An evening reading PDF specifications gave me the idea how to do this. This probably was as far from TEX as one can get on this job.

3.3 People one meets

The success or failure of a consultant ultimately depends on the customers. Somehow I (almost always) met really good customers, and most of my projects were a pleasure. In this section I would like to talk about these customers.

Since I have no permission to name the names (and it would probably not be ethical for me to do so), I will talk about composite categories of the people I worked with.

I learned many things from the *typographic designers.* These are the people who write the specifications for the styles I coded. In the ideal case the designer understands the ways of TEX; unfortunately such designer is a rarity. Thus it is the job of a TEXnician to learn to understand the designers and follow their ideas. I was lucky to meet really good designers and to have a privilege to work with them.

Technical editors are the primary consumers of the code I wrote. A consultant has to learn how they work, what do they expect, their customs and conventions. The good and trusting communication with the editors is probably one of the most important things in this line of business.

Of course, another class of consumers is the *authors.* Most TEX-writing authors think that they know TEX, and some of them really do. For the author of a package they are the tireless testers and submitters of bug reports. No editor ever gives such stress test to my styles as an author wanting to use a dozen incompatible packages with it. The best author, of course, is the one who reads the manual. Unfortunately, many authors never bother to do this. I provide lifetime support for my packages; more often than not my answers to the queries include the phrase “as explained on page *NN* of the manual…” Still, it is worth remembering that we work for the authors, not the other way round.

A separate category is the *self-publishing authors*, i.e. the authors who are simultaneously editors and publishers of their works. Usually these are students preparing their theses for submission. In this case they have rather harsh deadlines and strict requirements for the output. Often they are very anxious whether they can satisfy these deadlines and requirements, so a part of the job is to reassure them that everything is going to be done in time and right.

3.4 Some tips

During the years of my consulting I learned some things which turned out to be useful outside this occupation.

When you work simultaneously on many different projects, it is necessary to keep track of the things you are doing. Therefore a version control system is indispensable. I made a habit of putting all code and documentation under version control from the beginning of the project, and regularly committing changes. This habit has saved me many times.

Another important thing is to write detailed documentation. It is difficult to keep in mind all the details of all the projects. Many times when I got an e-mail from an author or editor with the questions about a style written several years before, I appreciated the fact that everything was documented and commented. Of course, for this to work the documentation should closely correspond to the code — that is why literate programming is essential for this work. Fortunately, the standard LaTeX tools for class and package writers (see [1]) provide a simple interface for literate programming. It is useful to write the user manual first, and then implement it in the code.

Artists learn to paint by studying old masterpieces. I found that reading the code of TeX wizards is one of the most direct ways to improve my skills and understanding of TeX.

I never had any business before I started this consulting, so my business advice may seem naïve. Still, I'll offer a couple of tips.

Many customers are worried about the long-term deployment of the code. I usually offer free lifetime support and bug fixing — this helps to alleviate these worries. As mentioned earlier, I also have the "15 minutes rule": if I can answer a question in 15 minutes or less, my advice is free; perhaps that's also part of the advertising budget.

Most of the customers do not know much of TeX. They do not understand what is easy and what is difficult to do. Well, if they did, they would not need consulting. In my opinion this means a certain responsibility on behalf of a consultant: to be fair, honest and to think about the customers' interests. For example, you can get and offer to write code for something which can be done by using existing packages. It would be much better for your self-esteem and for your relationship with the customer to point out that she or he can save money by reusing the existing solutions rather than paying you.

4 Conclusions

Looking back at these years of TeX consulting I feel it was a lucky idea to send an ad to *TUGboat*. I learned much about TeX and many other related and not so related things. Some of this knowledge and skills helped me in other endeavors. And it has been a lot of fun.

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