The Key to Successful Support:
Knowing Your TeX and LaTeX Users[*]

Anita Z. Hoover

University of Delaware
002A Smith Hall
Newark, DE 19716
`anita@brahms.udel.edu`

Abstract

The primary emphasis of this paper is to address the issues related to supporting TeX and LaTeX. One essential ingredient to successfully supporting any package is that you must know your users. In the case of TeX and LaTeX, this is especially true, because the user base can be so diverse. This paper will focus on support strategies that address different types of users and what you can do as a TeX and LaTeX support person to adopt these strategies in your organization.

Keywords: user support

1   Introduction

When I started working at the University of Delaware, one of my primary responsibilities was to build a sound structure to support TeX and LaTeX. Well, five years have passed, and I can say that a good foundation for support is in place but not without a lot of learning and understanding. I started this job never having used TeX or LaTeX. Shortly after getting involved, I realized that this was not going to be a short-term project, but one that would last forever. What I mean by this is that from week to week, I would learn of a new macro or style file, new previewer, new printer driver, new utility, new user and kept wondering how I was possibly going to stay above water and offer good support in such a changing environment.

In the preface of the *TeXbook*, I think that Knuth [6] summed up the transition one goes through when learning a powerful tool like TeX. I think his description can be taken a step further in defining the role of a support person—how he or she needs to grow and change in order to provide good support.

> . . . When you first try to use TeX, you'll find that some parts of it are very easy, while other things will take some getting used to. A day or so later, after you have successfully typeset a few pages, you'll be a different person; the concepts that used to bother you will now seem natural, and you'll be able to picture the final res-

ults in your mind before it comes out of the machine. But you'll probably run into challenges of a different kind. After another week your perspective will change again, and you'll grow in yet another way; and so on. As years go by, you might become involved with many different kinds of typesetting; and you'll find that your usage of TeX will keep changing as your experience builds. That's the way it is with any powerful tool: There's always more to learn, and there are always better ways to do what you've done before. At every stage in the development you'll want a slightly different sort of manual. You may even want to write one yourself.
> . . .

I think it is important to remember that you will always have users at these different stages of learning and, as such, the type of support you provide will also vary depending on the level of the user. It is also important to keep in mind that you will always have new users that will invariably require special attention when beginning to use TeX. Remember that you were once there yourself, and it is sometimes easy to forget and overlook the level of explanation required for new users. You will find that the time spent with these beginners will pay off in the long term because these users will become the support network in your organization, solving the basic questions within their own department.

With this in mind, I feel there are three areas of support that need to be addressed

---

[*] Presented at EuroTeX '92, September 14–18, Prague, Czechoslovakia.

1. Users
   What kind of users are using TEX and LATEX?
2. Style files and macros
   What particular style files and/or macros are necessary to fulfill the user's needs?
3. Tools
   What tools are necessary to provide a good working environment for using TEX and LATEX.

2   Users

Through my experiences, I can break down the different types of users into three groups:

1. Graduate students
2. Professors or professional staff who are writing books and/or journal articles
3. Technical secretaries

Our largest audience for all three groups listed above is in the "sciences." As a result, most of the users had already discovered the beauty of TEX and LATEX. They were convinced of its ability to offer high quality mathematics and overall typographic quality required for their documents.

However, the level and type of support required is quite different for each of these groups.

2.1   Graduate Students

Most graduate students familiarize themselves with the basics of TEX or LATEX, depending on which package what they want to use to write their thesis or dissertation. They usually purchase or have available to them a copy of the appropriate manual, *The TEXbook* [6] or *LATEX: Users Guide and Reference Manual* [8]. They also purchase a *Thesis Manual* [9] from the Office of Graduate Studies explaining the required specifications.

Based on the above analysis, I found that the best support for graduate students was to

1. develop a style file for LATEX and a set of macros for TEX that would meet the requirements of the Office of Graduate Studies at the University of Delaware. The style file and macros are called UDThesis.
2. write a document with examples that explain how to use the UDThesis style file for LATEX [1] and macros for TEX [2].
3. develop a short course (two hours) based on the documentation that would primarily be hands on. The course would focus on the creation of a basic front and body of a thesis or dissertation.

This method has proven to be very effective [5]. Even though graduate students are usually only around for several years, their experiences help considerably with support because they help new graduate students and encourage them to read the documentation and attend the short course. We also work very closely with the Office of Graduate Studies to ensure that our macros meet their specifications, and they too inform us of any

problems that arise to determine if the macros are incorrect or the student made a mistake. This is a tremendous help believe it or not, as we have found problems with the macros that must have been there for months, but students just would get around them by using correction fluid or cutting and pasting in changes.

In general, you will begin to see that good support just doesn't come from one person (even if technically you are the only designated support person). It is crucial to be able to communicate and work with others in your organization to provide a successful support network.

2.2   Professors and Professional Staff

Again, this particular group of users is usually familiar with the basics of TEX and LATEX. They also purchase or have available to them a copy of the appropriate manual. However, I have found that two levels of support are necessary for this group based on whether or not they were provided with style files and/or macros to meet the requirements of the publisher [5]. I classify them into two groups:

1. User-defined macros
   The user must define macros to design the document to meet a publisher's specifications and then submit a final printed copy.
2. Publisher-defined macros
   The publisher supplies macros that meet the publication specifications. The user uses these macros to design the document and then either submits a final printed copy or sends in the TEX/LATEX file.

In terms of support, group two is relatively self-sufficient provided the documentation is written well and examples are included. In most cases, the only support required is interpretation of the publisher's terminology and documentation.

Group one, on the other hand, can sometimes be a real challenge to support. Although most of these users are familiar with TEX/LATEX, they are not familiar enough with modifying or creating style files or macros to follow the specifications of a publisher. Currently, I need to work with each user and make the necessary changes. This is the most time-consuming activity as a support person. However, if the information is shared with the user, then more than likely he or she can use this information for future documents. I feel that two manuals are desperately needed: (1) "How to modify LATEX style files" and (2) "How to set up a book/journal specification with TEX." I understand that the first of these two manuals is soon to arrive on the scene.

In both groups, you will find that the key to minimizing support lies in the ability of the author and publisher to communicate. Much time is wasted on issues concerning design and layout. The author says they are unhappy with a particular format, the author asks you to make the changes, the publisher sends back edited copies that change it back to the original specifications, and on and on. This process can get quite frustrat-

ing for the author, publisher and support person. Try to encourage the user to make these issues as clear as possible up front. This kind of support will be more valuable than getting into a design war.

2.3 Technical Secretaries

This particular group of users is not usually familiar with TEX and LATEX. More importantly, they are not accustomed to teaching themselves by using a manual. I have found that many times the problems are not even specific to TEX/LATEX, but more the basic unfamiliarity with the background in which the paper was written, Greek symbols, mathematical expressions, etc. These problems introduce an entirely different level of complexity based on support. Many of these types of problems were stated clearly by Kubek [7]:

> ...TEX use seems to be largely confined to the technical professionals with degrees in the fields listed above, who have taught themselves with only the *TEXbook* to guide them (and wouldn't have a clue as to how to teach anyone the program who doesn't speak *at least* three programming languages). For those of us who had to look up the word "algorithm" several times in the dictionary and still wouldn't recognize one even if it asked us to dance, a major dilemma arose when faced with the prospect of learning TEX "by the book." Not only is the *TEXbook* oriented toward programming, but a lot of the commands don't even look like they're in English!

Based on similar experiences, I have found the following to be most successful in supporting this group of users:

1. Provide two short courses (three hours each) that teach the basics of TEX/LATEX. This course is mostly hands-on, where a particular formatting technique is discussed, and the participants in the class type in an example using the information they just learned. They process the file using TEX/LATEX and preview it to see their results.
2. Provide exact examples (as many as possible) that cover commonly asked questions like, "I need to change my margins," "I need to change my equation numbering," "I want a full page figure or table," etc.
3. Time permitting, take advantage of some of the common word processor features available to interface with TEX and LATEX and provide some short cuts for typing and error detection. For example, designing keyboard layouts and macros for WordPerfect [4].
4. Encourage users to share their experiences and examples with each other to solve their problems.

Because of the different levels of learning, you need to keep in mind that nothing is obvious and at the same time, give the user the benefit of the doubt. Sometimes there is a fine line between the two, but as you spend time with your users, you will begin to know them and what particular method of support works best for them.

3 Style Files and Macros

What makes supporting TEX and LATEX even possible is the fact that so many people have contributed thousands of style files, macros, printer drivers, previewers, etc. One person can not begin to solve every problem without the help of others who have developed expertise in particular areas and who are willing to share their solutions.

My concept of support is based heavily on relying on others to solve common problems. I don't believe in re-inventing the wheel! I would rather spend the time looking around the network searching for a solution to a problem, than immediately trying to write a style file or macro to do the job. In most cases, I find the solution to my problem and a few additional helpful hints along the way.

In order to take advantage of these resources, you need to be familiar with and have access to network facilities. I feel this is an essential asset for a support person. At least you can provide a link to the outside world for your users. I'm sure, in part, the reason we have such a good support structure at the University of Delaware for TEX and LATEX is based on our ability to access the network. We can inquire and receive an immediate response. This would not necessarily be the case for those who do not have access to the network. However, at least having access to this information is better than re-inventing the wheel.

I would like to mention a few network resources I have found invaluable in providing support for TEX and LATEX.

- **Archie**
  Archie provides an electronic directory for locating software, documents, and archives on the Internet and was conceived and written by Alan Emtage and Peter Deutsch of the McGill University Computing Centre. Archie maintains a database of numerous FTP sites throughout the Internet. Each site is updated approximately once a month, ensuring that listings are kept up to date. Archie also provides a large collection of descriptions of public domain software packages and documents.
  > From the "Supplementary TEX Information" file:
  > The Archie server contains file listings for hundreds of ftp sites. Telnet to `quiche.cs.mcgill.ca(132.206.2.3)` and type `archie` when asked to log in. Then type `help`.

Check with your local systems administrator about an Archie server nearest to you or write to `archie-l@cs.mcgill.ca` with questions about Archie itself.

- **TEX Newsgroup**
  `comp.text.tex` is a newsgroup available via the USENET network news article and utility files system. This particular newsgroup focuses on all forms of TEX and allows for interactive question and answer discussions.

  If you mail questions and/or responses to `INFO-TeX@SHSU.edu`, then they are cross posted to the `comp.text.tex` newsgroup.

- **FAQ (Frequently Asked Questions)**
  Posted monthly by Bobby Bodenheimer (`bobby@dry.mu.caltech.edu`) is the "Frequently Asked Questions" about TEX. This file currently contains answers to 34 common questions asked about TEX and LATEX. Following is the question and answer to obtaining a copy of this information.

  How can I get a copy of this article?
  You're reading it aren't you? SAVE it :-). Seriously, though, this article is posted monthly to `comp.text.tex` and cross-posted to `news.answers`. It is therefore archived at any site that archives `news.answers`. `news.answers` is archived on `pit-manager.mit.edu` (`18.72.1.58`), and this article is available there via anonymous ftp in the directory `./pub/usenet/news.answers/tex-faq`. If you do not have anonymous ftp, send an e-mail message containing the lines `SENDME FAQ.` to `fileserv@shsu.edu` (`fileserv@shsu.bitnet`). Another way to retrieve it via email is through the mailserver at `pit-manager`: send a message containing the lines `help` and `index` to `mail-server@pit-manager.mit.edu` for information on how to obtain it.

  Other `news.answers/FAQ` **archives are:** `cnam.cnam.fr` (`192.33.159.6`) in the anonymous ftp directory `/pub/FAQ`; `ftp.uu.net` (`137.39.1.2` or `192.48.96.2`) in the anonymous ftp directory `/pub/usenet` (also available via mail server requests to `netlib@uunet.uu.net`, or via uunet's 1-900 anonymous UUCP phone number); and `archive.cs.ruu.nl` (`131.211.80.5`) in the anonymous ftp directory `NEWS.ANSWERS` (also accessible via mail server requests to `mail-server@cs.ruu.nl`). Many of the archives mentioned in question 22 also maintain current versions of this article.

- **FTP Sites, Major Archive Sites, Mail Servers, and Mailing Lists**
  Posted monthly by Guoying Chen

(`chenguo@lab.ultra.nyu.edu`) is the "Supplementary TEX Information" file. This is the so-called "Supplement to the Frequently Asked Questions" file; it is intended to complement Bobby Bodenheimer's "Frequently Asked Questions" file. Note that there is some duplication of material.

This file is monthly (in early days each month) posted to USENET newsgroup `comp.text.tex` and cross-posted to `news.answers`. This file is in several parts. It is reposited in `CS.NYU.EDU` (`128.122.140.24`) at `~ftp/pub/tex/` and also in many good archivers, e.g. `rusinfo.rus.uni-stuttgart.de` at the `/soft/tex/documentation/` as the file `FAQ.supplement-mmm.yy` (mmm-yy is the month and year). In that directory is also the `comp.text.tex` FAQ.

- **TEX Macro Index**
  Recently released by David M. Jones, is the first edition of the TEX Macro Index. It is available at six different anonymous ftp/or mail server sites.
  A brief description of the TEX Macro Index follows.
  This is an index of TEX macros. Its scope includes all macros that are available via anonymous ftp or mail-server or some similar mechanism. Commercial packages will be included only if a full Index entry is supplied to me by the vendor.
  Since the Index is devoted to macros, fonts and special-purpose programs are mentioned only when they are necessary to explain the purpose of a set of macros.
  Each entry is divided into several fields with the following functions:
  Name: The name of the macro package.
  Description: A short (usually 1-3 line) description of the package.
  Keywords: A list of keywords to facilitate searching for special-purpose macros, as well as to help describe the macros. A glossary of keywords can be found at the end of the file.
  Archives: A list of archives where the package can be found. Whenever known, the primary distribution site is marked with an asterisk.
  Author: The name and address (preferably electronic) of the author of the package.
  Latest Version: The date and/or version number of the latest release of the package.
  Supported: Whether or not the package is supported, that is, whether the author wants to receive bug reports and/or comments on the package.
  See also: A list of other packages with similar features.
  Note: Any additional information that seems pertinent.
  In addition to the list of packages, the Index

also contains a brief list of TEX Archives with descriptions of the services they offer.

How to Retrieve the TEX Macro Index?

1. `archive.cs.ruu.nl` (Netherlands)

   How to get `TeX-index.Z` from the archive at Dept. of Computer Science, Utrecht University: NOTE: In the following I have assumed your mail address is `john@highbrow.edu`.

   Of course you must substitute your own address for this. This should be a valid internet or uucp address. For bitnet users `name@host.BITNET` usually works.

   by FTP:

   (please restrict access to weekends or evening/night (i.e. between about 20.00 and 0900 UTC)).

   `ftp archive.cs.ruu.nl (131.211.80.5)` user name: anonymous or ftp password: your own email address (e.g. `john@highbrow.edu`) Don't forget to set binary mode if the file is a `tar/arc/zoo` archive, compressed or in any other way contains binary data. get `TEX/DOC/TeX-index.Z`

   by mail-server:

   send the following message to `mail-server@cs.ruu.nl`
   (or: `uunet!mcsun!hp4nl!ruuinf!mail-server`):
   `begin path john@highbrow.edu`
   (PLEASE SUBSTITUTE *YOUR* ADDRESS)
   `send TEX/DOC/TeX-index.Z end`
   NOTE: *** PLEASE USE VALID INTERNET ADDRESSES IF POSSIBLE. DO NOT USE ADDRESSES WITH ! and @ MIXED !!!! BITNETTERS USE USER@HOST.BITNET ***

   The path command can be deleted if we receive a valid address in your message. If this is the first time you use our mail server, we suggest you first issue the request:
   `send HELP`

2. `ftp.th-darmstadt.de` (Germany)

   The TEX Macro Index is available via anonymous ftp from
   `ftp.th-darmstadt.de(130.83.55.75)`
   directory `pub/tex/documentation`
   file `styles-and-macros.Index.Z`

3. `ftp.math.utah.edu` (USA)

   The TEX Macro Index is available via anonymous ftp from `ftp.math.utah.edu` `(128.110.198.2)` in the file `pub/tex/tex-index`. To retrieve it by e-mail server, send a message to `tuglib@math.utah.edu` with the subject or body
   `"send tex-index from tex".`

4. `Niord.SHSU.edu` (USA)

   To retrieve the TEX Macro Index in 8 parts suitable for electronic mail handling, include the command: `SENDME TEX-INDEX` in the body of a mail message to `FILESERV@SHSU.BITNET` (`FILESERV@SHSU.edu`).

5. `TeX.ac.uk` (UK)

   The TEX Macro Index is available via anonymous ftp, JANET NIFTP and mail server from the UK TEX Archive, `TeX.ac.uk (134.151.40.18)` in the file `[tex-archive.doc]TeX-index.txt`.
   To retrieve it by mail server, send a message to `TeXserver@tex.ac.uk` containing the following line
   `FILES [tex-archive.doc]TeX-index.txt`

6. `theory.lcs.mit.edu` (USA)

   The TEX Macro Index is available via anonymous ftp and mail server from `theory.lcs.mit.edu (18.52.0.92)` in the file TeX-index in the directory `pub/tex`.
   To retrieve it by mail server, send a message to `archive-server@theory.lcs.mit.edu` containing the following line
   `send tex TeX-index`
   The Index is also available in compressed, zip'ed and zoo'ed format in the files `TeX-index.Z`, `TeX-index.zip` and `TeX-index.zoo`, respectively. Note that if you want to request one of the compressed files by mail server, you'll have to specify a method of ASCII encoding by including one of the following lines in your mail message:
   `encoder btoa`
   `encoder uuencode`
   `encoder rscs`

In early 1991, I hoped that some type of document would be developed to provide information about macros, tools, etc. I'm glad to see that something has so emerged quickly onto the scene. I'm sure the entire TEX community will benefit from the time David has put into this Index. Many thanks David.

4   Tools

In order to support any package efficiently, you need to be able to specify a working environment that is acceptable for TEX and LATEX. For example, if you do a lot of telephone consulting, it can very time consuming and frustrating if someone calls and says "I have this error, Missing }, but I can't seem to find anything wrong." Sometimes you just want to say, "SO, what do you want me to do?" All joking aside, much of this frustration can be eliminated if the proper tools are available.

First of all, I would say that having the appropriate documentation is essential. As the support person, you should have a copy of as many of the popular TEX, LATEX, etc. manuals as possible. As a user, you should have a copy of the appropriate manual for TEX or LATEX (whichever package you would use). This avoids the

translation of information over the phone, network, etc. You can specifically refer to page numbers for solutions and hopefully the user will realize that he or she had the answer to his or her problem all along in the manual and will use it the next time before they call upon you.

Following is a list of common books that I see floating around in the TEX user community.

- *The TEXbook*, Donald E. Knuth
- *TEX for the Impatient*, Paul W. Abrahams
- *A Beginner's Book of TEX*, Raymond Seroul and Silvio Levy
- *The Joy of TEX*, Michael Spivak
- *LATEX: A Document Preparation System*, Leslie Lamport
- *LATEX for Engineers & Scientists*, David J. Buerger
- *LATEX for Everyone*, Jane Hahn
- *LAMS-TEX The Synthesis*, Michael Spivak

Secondly, I would say that there are many tools available to make using TEX and LATEX much easier. Sometimes, knowing all these tools can be difficult especially when you are supporting several computer platforms. For example, some tools are available in UNIX and not for PC's and Mac's, and vice versa. However, there are a number of tools that go across platforms and certainly are worth implementing as part of a basic configuration [5].

- Check Matching
  `texmatch` is a program that checks for matching delimiters in TEX and LATEX documents. I know this is available on most computer platforms; however, I am not sure about the Macintosh.
- Spell Checking
  `detex` is a filter that strips TEX and LATEX commands from a document. This is needed for some computer platforms before using a spell checker program.
  On the PC and Macintosh platforms, spell checkers are available that allow the user to set up a dictionary of words (which can contain control sequences) related to TEX and LATEX. This has the added value of reducing TEX errors because it is less likely to have a misspelled control sequence.
- Previewing
  Any previewer is fine as long as there is at least one available to preview a `.dvi` file. One may also consider having a previewer for PostScript, too. I have found this invaluable with trying to include PostScript into TEX and LATEX documents. In general, having a previewer is a must. This should be true not only from the user's point of view, but especially the support person's point of view.
- Including Graphics
  If you have a method that works for you, GREAT! However, if you have not committed, then consider using PostScript. Of course this means you need to get a PostScript capable printer, a DVI→PostScript printer driver, and the software you are currently using to generate your graphics must provide an

option to create a PostScript file.

The DVI→PostScript printer driver of choice is `dvips` (written by Thomas Rokicki). It is well supported and has given the best and most consistent results when trying to include PostScript graphics from many different applications. `dvips` has been ported to many different computer platforms. It provides a set of macros, `epsf`, and also works well with the `psfig` macros, where either can be used to facilitate the inclusion of PostScript into TEX and LATEX documents.

Providing support for including PostScript into TEX and LATEX documents will become essential in the future. Over the past two years, I have seen its popularity grow and, as a result, the support I was providing needed to grow, too [3].

1. Learn enough PostScript to be able to interpret errors and modify an existing PostScript file.
   PostScript Language Reference Manual, Adobe Systems Incorporated
   PostScript Language Tutorial and Cookbook, Adobe Systems Incorporated
2. Learn the two macro packages available for including PostScript, `epsf` and `psfig`.
3. Learn as much as possible about what macros or programs are available to accommodate what users might want to do with PostScript. For example, rotating, two-up, etc.
4. Get to know the applications and printers that users will be using to generate PostScript files and run a lot of tests.

5 Summary

Although providing good support for a package like TEX or LATEX can be difficult, it is possible! It will take time and work to get to know your users, address their needs, and let them know what your expectations are as the support person.

There are three basics points to keep in mind:

1. Remember the different stages of learning as a user and support person. Try not to overestimate or underestimate your users.
2. Know what is available (or where to find existing solutions) to solve common and difficult problems. Don't re-invent the wheel!
3. Keep up with the technology.

All of these ideas are essential in providing accurate, efficient, and timely support. Hopefully, in return, you will develop a strong support network in your organization.

References

[1] CNS USER SERVICES, *The LATEX UDThesis Format*. University of Delaware, Newark, June 1990.

[2] CNS USER SERVICES, *The TEX UDThesis Format*. University of Delaware, Newark, June 1990.

[3] CNS USER SERVICES, *Getting PostScript into TEX and LATEX Documents.* University of Delaware, Newark, June 1992.

[4] ANITA Z. HOOVER, "Using WordPerfect 5.0 to Create TEX and LATEX Documents", *TUGboat* 10(4), December 1989, pp. 549–558.

[5] ANITA Z. HOOVER, "LATEX/TEX User: A Typist, or Typesetter?", *TUGboat* 12(3), December 1991, pp. 397–400.

[6] DONALD E. KNUTH, *The TEXbook. Computers and Typesetting,* Vol. A., Addison-Wesley, Reading, Mass., 1986.

[7] ROBIN L. KUBEK, "TEX for the Word Processing Operator", *TUGboat* 10(4), December 1989, pp. 561–566.

[8] LESLIE LAMPORT, *LATEX: A Document Preparation System.* Addison-Wesley, Reading, Mass., 1986.

[9] OFFICE OF GRADUATE STUDIES, *Thesis Manual: A Degree of Excellence.* University of Delaware, Newark, June 1990.