

How to Write and Sell a Technical Book

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I. INTRODUCTION

Getting a book published is a reasonably simple and straightforward process, particularly in electronics and other technical fields. However, the aspiring author must be mindful of a few guidelines if he is to successfully sell an idea to a publisher. This booklet provides the basic information you will need to write and sell your technical book.

Before progressing to the mechanics of preparing and submitting a manuscript, it is important to mention the first and most important principle: Before you start writing, make sure there is a market for the work you have in mind. The manuscript will be assessed in terms of salability as well as content, so you should be prepared to defend it on both fronts. The acquisitions editor may love your idea, but the marketing department always wields veto power. Many successful books address “niche” markets, but the niche must not be too restrictive or ambiguous.

Most successful technical books share many if not all of the following qualities:

1. They have definable appeal. In real terms, this means a market of at least 10,000 potential buyers (sometimes called the *market universe*).
2. They focus on a specific theme and develop the related topics. It is important to avoid grand dissertations on the history of the universe as well as detailed examinations of a gnat’s eyelash.
3. They are written in straightforward English. Anyone can write a complex book about a complex subject. A good author explains intricate concepts in understandable terms. Remember, the purpose is to inform and instruct rather than to overwhelm the reader with your brilliance.
4. They deal with relatively stable technologies. Leave hot news to the trade magazines. A book on electromagnetic wave propagation will have a longer shelf life than a book on room-temperature fusion.
5. They include many useful charts and illustrations. The reader needs to *see* what you’re talking about, so target up to 25 percent of the book to be graphics that support the text.

It does not matter so much whether you are writing a student-level textbook, a volume on advanced theory, or a practical “how to” manual. If the book provides useful and accurate information that is presented logically and succinctly, and if there is a clearly defined market for the book, someone will want to publish it.

The First Step

The next section of this booklet covers the most critical stage in a book project: the proposal. A good book proposal is a relatively extensive document, and it may require considerable research on the part of the author.

At first glance, it may seem as if the proposal is some kind of obstacle course designed to discourage you from writing a book. This decidedly is not the case. Remember that no one asks for this information frivolously, and the publisher wants you to succeed. But editors and reviewers cannot make an informed decision unless they understand your intent, and you need to convince them that there is a demand for the finished product. After all, a publisher who accepts your book may be investing as much as \$50,000 in your project. It is not unreasonable to ask what he is getting in return.

The proposal is the only opportunity you have to present a case in support of your book, so be as thorough as possible. If you are asked to complete a standardized proposal form, answer all of the questions to the best of your ability, completely but without unnecessary elaboration.

II. THE PROPOSAL

Most publishers offer proposal forms for prospective authors. The forms vary to a certain extent, but they invariably ask you to include all or most of the following components, so you can compile a perfectly acceptable document by adhering to this outline.

Synopsis

In a few paragraphs, usually not exceeding 500 words, explain the content and purpose of the book, discuss what kind of information gap it fills, and describe the intended reader. If the book is derived from some specific research or practical project, describe it.

Outstanding Features

List the most important features of your book. If possible, compare and contrast it to existing literature in the field and explain why your book is better or how it adds to the available knowledge base.

Market Description

Describe, as specifically as you can, the intended audience. Refer to specific industries, job titles, professional societies, academic courses, and any other information that will help the publisher to define and reach your target markets. Avoid generalities such as “engineers” or “anyone who is interested in...”

Try to create a picture of the typical intended reader, including educational level and profession. If you have an estimate of how many people fall into that category, provide a figure. This will help to gauge sales potential.

Estimated Size

Work up a projection of how long the book will be, preferably based on word count. (As a rule of thumb, a 6 × 9 book will have about 380 words on a page assuming no illustrations.) It is also helpful to provide an estimate of how many tables and illustrations the book will contain.

Completion Schedule

Provide a realistic, final, drop-dead date by which you can have the first draft completed. This need not be a calendar date; something like “six months after acceptance” is fine.

Table of Contents

Provide a complete table of contents. This should include chapter and major section headings as a minimum. Subsection headings for important topics are also desirable. A description of important illustrations may also be useful to reviewers. If the book is clear enough in your mind that you can generate this kind of blueprint, then you are probably ready to write it. It is critical to have the book mapped out at the very beginning to avoid overhauls, rewrites, and mutual frustration.

Sample Chapter

If possible, include a sample chapter from the book. This chapter should illustrate technical depth as well as style, so it *should not* be Chapter 1. If an appropriate chapter is not yet available, provide a realistic deadline for when it will be.

List of Competing Books

Presumably, your expertise includes a basic knowledge of literature in your book's field of interest. If any similar books are in print (even if obsolete), provide a list of them and explain why yours is different and better. Remember that publishers do not necessarily view the existence of competitive books as a problem. On the contrary, they often measure the potential market for your book by the number of others in the field. If nothing else is in print on the subject, that could imply that a market does not exist. If your book is truly unique, be sure to explain why no one else has addressed the topic.

Author Biography

If you are not already a world-renowned author, a list of previously published works can be helpful. These need not be books, but it is expected that you at least have some symposium papers, technical articles, and so forth available for examination. Your present occupation, educational background, and other credentials should be included. Be sure to mention (and perhaps highlight) any items that emphasize your ability to write a quality book. This is of utmost importance to the publisher. Exclude any irrelevant data (family, hobbies, etc.).

List of Suggested Reviewers

The prospective publisher will consult several reviewers to assess the quality and content of your book. If you can suggest some individuals with the background to provide competent and objective reviews, include their names, addresses, and credentials.

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The above-listed items should be included with your cover letter. A complete, well executed proposal will speed up the review process and cut down on needless correspondence.

III. MANUSCRIPT PREPARATION

Advancements in computer hardware and publishing software continue to streamline the process. Book production is faster and simpler than ever before, and less of a burden is placed on the author. It is no longer required (or, for that matter, desirable) to follow complex rules for margins, line spacing, and the like. The old-fashioned divisions between editing, typesetting, illustration, and pasteup are disappearing, as these steps are often performed in the same pass.

Word Processing

Before you start generating the document file, you need to understand something about how the book will be assembled by the production department. There is a big difference between preparing a document that will forever exist as a word processor (WP) file and preparing one that will be incorporated into a page layout program to produce a more complex finished product. Because intricate objects and styles created within a word processor often do not export properly, keep in mind that simpler is better.

Do not submit your “final” manuscript until it is really, truly finalized. The manuscript probably will be edited in the WP, but it will then be imported into a layout application such as Quark, InDesign, or Frame-maker. Once this has happened, there is no going back, so it is extremely important to get it right before the conversion. You *cannot* make changes later by submitting updated WP files. This would require the production department to start over from scratch, incurring hours or even days of extra labor. See Section IV for a more detailed discussion of this issue.

In general, it is best to save each chapter as a separate file. An exception would be a very short (<40,000 words) book.

Page Layout

Over the years, word processors have added many new features. Quite a few people have become proficient in generating complex newsletters, brochures, and so forth with them. This is great for companies that

generate documents for in-house use, but it is a major headache for book publishers. If you can embellish your manuscript into a beautifully laid out document that looks just like a finished book, we can offer one piece of solid advice:

Don't do it!

There are several good reasons, among which are:

- Page layout and type specifications vary from one publisher to the next—and often from one book to the next, even with the same publisher. They are complex, usually covering 10 to 50 pages. They are also based on measurements that may be unfamiliar to you (e.g., picas, points, gutter margins, bleeds), so you have absolutely no chance of coming up with an acceptable page layout unless (a) that is your profession and (b) you have the publisher's spec sheet in hand.
- You are probably working with an 8.5 × 11-inch document. The book almost certainly will be something else.
- Text flow and graphic placement will change as the book is edited, thereby destroying your beautiful layout.

It seems logical that a publisher would be happy to receive a book that has already been laid out in pages, but in reality that simply creates more work for the people who have to undo everything you have done. Resist the urge.

Illustrations, Photographs, Etc.

It is highly desirable to provide camera-ready art, but only if you can do it right. Your publisher may accept neat, legible, hand-drawn figures, but some allow only a specific percentage of the production costs for artwork. If the cost goes too high, all or part of the expenses may be deductible from your royalties (as always, read your contract). If you choose to produce your own artwork, the following information will be useful.

Line Art

You should be aware that there are two basic types of line art: vector (e.g., as generated in Adobe Illustrator) and bitmapped (e.g., Photoshop files). Vector art is generated by sending instructions to the output device (such as a laser printer) that specify, for example, where a line should begin and end, how much curve it should contain, line thickness and color, and so on. There is no reference to resolution (dots per inch, or dpi), because vector art does not specify how many dots are to be placed between point A and point B. The output resolution is determined by the capabilities of the output device. In general, vector art is preferable to bitmapped, as it is more compact and prints faster, but increases in hard drive capacity and processor speed have made it less important.

A bitmapped graphic, as the name implies, consists of a table of values for each “bit” or dot in the piece of art. For simple black-and-white graphics, each bit is either a one (black) or zero (white). Because you cannot generate such a table without knowing in advance how many dots the graphic will have, bitmapped graphics necessarily incorporate a specific resolution.

Many bitmapped graphics, particularly those appearing on the Internet, are created at 72 dpi. This is unacceptably low for commercial applications. For line art, 600 dpi or better is recommended, with 400 generally being the minimum.

Your word processor probably includes some graphic capabilities. Newer versions of Microsoft Word, for example, include some fairly sophisticated illustration tools, but artwork created in Word is not easily exported to any standard high-resolution format. Likewise, charts and graphs created in Excel® are low-resolution images. It is best to use a standalone graphic application.

Photographs

Photographs should be sharp and of relatively low contrast. (Reproduction always increases contrast.) Few technical books use color photos, so provide grayscale if you can. Photos should be of at least 300 dpi resolution at their final dimensions. Up to 400 dpi is desirable.

General Principles

Keep these principles in mind when generating artwork:

- It is OK to import your graphic files into the WP documents, but make sure they are also available as standalone files. The importation process can change them such that they will no longer export properly.
- The preferred file format is EPS. TIFF and JPG are also acceptable. Save your art in one of these formats if possible. If not, the production department can usually convert them for you. Do not convert your artwork to PDF, as this will require the publisher to convert them, and it's a relatively slow process.
- Try to avoid screen fills (that is, dot patterns). These may look fine coming off your laser printer, but printing presses use ink, which tends to spread and make the image look fuzzy. Instead, use solid black or pattern fills if possible.
- Keep in mind that illustrations in a standard 6×9 inch book cannot exceed about 4.5×7 inches. If you want to make them larger for later reduction, that is fine. But remember that any type included in the illustration will be reduced by the same proportion.
- Use a sans serif font for illustrations to provide contrast to the body text. Helvetica is common. Type should neither exceed 12 pt nor be smaller than 6 pt in the final, imported and sized graphic, so plan accordingly.
- Ultimately, you should judge the quality of your artwork by high standards. Draw programs can be fun and amazing, but your final product has to compare favorably to books you have on the shelf. Be objective and critical.

Copyrights and Permissions

If you include illustrations from outside sources, you must obtain written permission to use them (see also Q&A section). Under most publishing contracts, this is the author's responsibility. Write to the source, identifying exactly what you want to reproduce and for what purpose. A sample permission request form is

downloadable from our website, and you may reproduce it at will. Send copies of the completed permission forms to your publisher, and keep the originals.

Note that U.S. government documents cannot be copyrighted, so they make excellent sources of illustrations. In addition, most vendors of electronic components and systems will provide drawings and photographs of their products, free of charge, just to get the product exposure.

Equations and Special Symbols

Special symbols are readily available on your keyboard. You just need to find out where they reside. In Word, for example, use the “Insert” pull-down menu, choose “Symbol,” and click on the one you want.

Later versions of Word include a limited equation editor, which is a stripped-down version of MathType. It is advisable to purchase the full version from the publisher, Design Science (www.dessci.com/en/products/mathtype), unless your equations are all very basic. Another good utility is the MathEQ Expression Editor, from LiveMath (www.livemath.com/matheq/). Equations generated with these programs are PostScript based, so they port nicely to a range of other applications.

Typefaces

Font incompatibilities were once a major headache for the publishing industry, with the battle being between PostScript and TrueType. The problem has been largely resolved by the introduction of OpenType fonts, but it is still best to avoid unusual fonts from questionable sources.

Most technical books are printed using Times or Century Schoolbook for text, and Helvetica for tables and figures. If you stick to these, it will make things simpler for everyone.

Reference Books for Authors

Many reference sources exist on the subjects of writing style, abbreviations, and so forth. Because professional editors are paid to take care of such details, and because standards vary considerably from one pub-

lisher to the next, the author really cannot hope to produce a “perfect” manuscript. On the other hand, a sloppy manuscript is usually taken as a sign of a sloppy mind, so you should make a serious attempt at rough compliance with some widely accepted standards.

It is not within the scope of this booklet to provide a tutorial on writing styles. We recommend the following references:

The Chicago Manual of Style
The University of Chicago Press
www.press.uchicago.edu

Mathematics into Type
by Ellen Swanson
American Mathematical Society
www.ams.org

The Elements of Style
by Wm. Strunk Jr. and E. B. White
Macmillan Publishing Co., Inc.
us.macmillan.com

IEEE Standard Dictionary of Electrical and Electronic Terms (ANSI/IEEE Std. 100-1988)

and

Graphic Symbols for Electrical and Electronics Diagrams (ANSI Y32.2/CSA Z99/IEEE Std. 315)
Institute of Electrical and Electronics Engineers
www.ieee.org

IV. MANUSCRIPT SUBMISSION

So your manuscript is complete, the illustrations are done, you've proofed the tables and equations, and you're ready to submit it. Well, maybe.

Go over it one more time. Pretend that the text will appear in print exactly as you see it and that there will be no more opportunities to make revisions. Before a book goes into page production, the text needs to be in its final, final form. *Late revisions are the bane of the book production process.* If you add or delete a paragraph (or even just a line or two) near the beginning of a chapter, the change is likely to affect the text flow on that and subsequent pages all the way to the end. The placement of tables and illustrations will be fouled up. Hours of difficult and tedious work may be required to effect your "minor" change.

Double check the illustrations as well. Should that "u" really be a "mu"? Is a label bumping up against the line art? Is a photo too dark or not sharp enough? It's much easier to fix a piece of artwork *before* it has been placed into the page layout.

As they say, "time is money," and we're talking about yours. Last-minute changes are known as *author adjustments (AAs)*, and most contracts limit how many you can make without being billed for the unplanned labor. If you submit "camera-ready" illustrations that do not meet the publisher's standards, your contract probably allows the publisher to charge the cost of redrafting them against your royalty account. If the book is heavy in artwork, this can be substantial. It is extremely important to avoid nonessential corrections after the book is in production. We know of one case in which a persnickety author insisted on more than 1500 AAs, requiring three major overhauls of the page proofs. In the final analysis, the chargebacks exceeded his total royalties, and he never received any payments at all. Read your contract and remember—the large print giveth, and the small print taketh away.

When you really are ready, you can submit the book over the Internet, on a CD, or by any mutually agreeable means. Many e-mail systems restrict the size of attachments to a few tens of megabytes, so if your package exceeds the limit, you will need to compress the files or perhaps even transfer them via an ftp site. The publisher will provide instructions on how to do that.

And, of course, keep at least two copies of everything. Your hard drive *will* fail at the worst possible time.

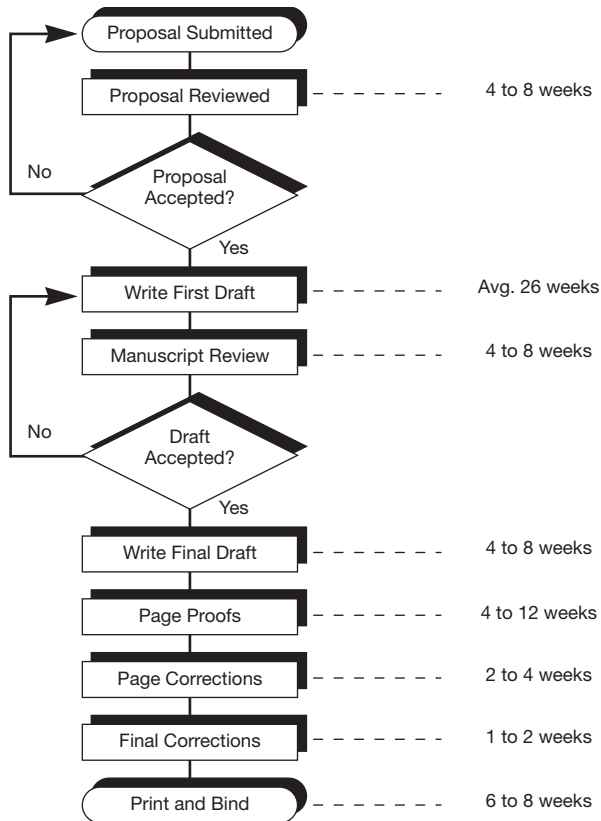


Figure 1 Publishing Flowchart

V. TIMETABLE

It is desirable to get your book to market as soon as possible, but book publication is time consuming, and you usually encounter delays. When writing the book, keep in mind that some of today's hot technologies may be old news by the time the book is printed and bound, so don't try to be newsworthy. Figure 1 illustrates the main book production stages and related time periods in flowchart form. Under certain circumstances, this process can be accelerated, but the figure is representative of the majority of publishers at this time.

VI. TYPICAL QUESTIONS AND ANSWERS

- Q. How long should the book be?
- A. Markets exist for short monographs ($\approx 10,000$ words), fat textbooks (250,000 words or more), and anything in between. But there is a preference for books of 300 pages or longer because they provide a better ROI. A printed page = approx. 400 words, not including art.
- Q. How much can I expect to make in royalties?
- A. There is no easy answer to that. Different publishers pay different royalty rates, ranging from about 10 percent to as high as 20 percent. But higher rates do not necessarily translate into more dollars; small publishing houses may offer higher percentages but generate lower sales volumes.

A successful technical book should sell at least 5000 copies. Some do much better. At \$75 and a 12 percent royalty, that comes to \$45,000 over the life of the book. You should not expect to hit the best-seller list, but this isn't chump change. And if you have 10 books in print...

Q. Can I ask for a cash advance?

A. Cash advances are not common with technical books, but you might be able to negotiate a few hundred dollars to offset out-of-pocket expenses—especially if you are an established writer. It doesn't cost anything to ask. But the general concept is that the publisher is investing a fair amount of money in your book, and unless you lack confidence in your own project, you should be willing to share the risk.

Q. How much material can I use from other sources?

A. Quite a bit, but be careful. If you only paraphrase someone, it is diplomatic to reference the source, but no permission is necessary. But if you use more than a sentence or two verbatim, you will need to get written permission. Other publishers appreciate it when you direct the reader to their books, but not if you use so much material that it could conceivably damage the market for the original.

If there is any question in your mind as to whether permission is required, play it safe. Don't count on anyone's good will—get it in writing or you may get a lawsuit instead.

Q. What happens when the book goes out of print?

A. Most contracts provide that the copyright reverts to the author. However, copyrights are legally transferable property, and the publisher may opt to sell your contract to another company. That company then has a certain period of time to reprint the book or release the rights to you.

Q. How do I handle pronouns and gender-specific terms?

A. Many editors and publishers still consider grammatical correctness to be more important than political correctness. Therefore, it is acceptable and expedient to follow the centuries-old convention that "his" means "his or her," just as "man" in its general sense refers to both male and female. Avoid gender stereotyping, but don't clutter up your manuscript with trendy inventions such as "s/he" or "craftspersonship." If the editor has a different philosophy, he/she will make his/her required changes in the book as it/is edited, and the reader will have to muddle through.

- Q. How long does it take to get a publishing contract?
- A. Figure about three months. This may seem like a long time, but most reviewers do something else for a living, which means your project is reviewed on weekends and evenings as time allows. Plus, it is not unusual for a publisher to ask for a revised proposal. If you don't receive a definitive answer within a couple months, try another publisher—but don't burn any bridges.

Be patient. Only bad book proposals are processed quickly.

VII. WHERE TO SUBMIT A PROPOSAL

Whereas most best-selling works of fiction are handled by author's representatives (agents), the niche market of technical publishing is not affluent enough to support a legion of go-betweens. As a result, you have two viable alternatives.

Publishing Houses

There are hundreds of book publishers in the U.S.A., and dozens that deal with technical manuscripts. The larger ones such as McGraw-Hill and Prentice Hall have many divisions, each of which has its own editorial focus. It can be advantageous to deal with large publishers because they have the marketing muscle to make your book a success. But it can be frustrating and time consuming to work your way through the nooks and crannies of these large institutions.

On the other side of the street, many small publishing houses exist to address specialized niches that have been ignored by the industry giants. It is often easier to sell a book to them, but sales volumes (and royalties) may be lower. Because small publishers are less flexible in terms of editorial focus, you should understand their target markets before submitting anything. Detailed information on most book publishers is available in publications such as *Literary Market Place*, which can be found in the reference section of most libraries.

Book Producers

A book producer, sometimes called a “book packager,” is an independent company that produces books for publishers. Typically, the book producer locates an author; works with him through the review, editing, and production phases; and then turns the project over to the publishing house for printing and distribution. The publisher buys the copyrights and pays royalties directly to the author. Book producers’ fees are paid by the acquiring publisher, so the author usually receives their services at no charge. Because book producers know the market and the needs of many different publishers, they often can provide the simplest and fastest path to the sale of your book. J. K. Eckert & Co., Inc. has been providing book packaging services since 1988, and prospective authors are invited to contact us at inquiries@jkeckert.com.