PRODUCING A MANUAL SET IN THE COMPUTER INDUSTRY

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The technical writer's main role in the product development cycle is the production of user-friendly documentation, but the technical writer has another role that is almost as important: acting as the user's advocate. While outlining storyboards, scheduling the writing task, and arranging for testing the adequacy of the final manual, the technical writer will also be doing audience analysis and making recommendations concerning the user interface.

INTRODUCTION

A revolution in the way in which manuals are written is under way in the computer industry. This revolution was spawned by the awareness that the user interface--that is, the total equipment and information that a user can access--is what will sell the product. Suddenly people are listening when the writer says, "I can't document this because it's too hard to use," or "Let me be an advocate for the user during the design phase." They are also demanding that the manual set, which is usually a crucial component of the user interface, be ready on time.

THE OLD WAY

Until a few years ago computer products were often designed piece-meal. No one had responsibility for setting design goals and user-interface guidelines. For engineering, the emphasis was to get the hardware together and the code working; for marketing, it was to determine the market size and to sell the product. Design decisions were based on expediency and intuition (which meant that last-minute changes were common as expediencies and personalities changed). The technical writer came so late to the project and was under so much pressure to produce written copy that assisting with user analysis or product design was not possible.

The first draft of the manual set was probably already in demand when the writer came to the project, a situation which put the writer under unrealistic pressure to get something down on paper. The writing schedule, if it appeared at all, reflected this unrealistic pressure. The schedule did not show time for planning a manual set, for providing editorial support to marketing literature, or for re-writing pages when last-minute design changes were made.

The result was a user interface that was poorly designed, marketing literature that lacked editorial polish, and a manual set that was poorly designed and, worst of all, late. Because no user testing was done, problems with the design of the interface and with the manual set itself never surfaced until the product was in the field.

THE BETTER WAY

For convenience, we can divide the product cycle into three distinct phases:

* The investigation phase when the feasibility of the product is assessed

* The design phase when the product is designed

* The implementation phase when the product is prototyped and tested.

The better way is to involve the technical writer during each of these phases so that the writer can effectively plan the manual set and act as the user's advocate.

During the Investigation Phase

During the investigation phase, while the technical feasibility and the marketability of the product are being assessed, the technical writer researches the user, possibly doing a survey to determine the user's education, skill level, and general background. Here the technical writer may be assisted by someone with knowledge of human factors or psychology.

From the beginning the technical writer keeps the project focused on the user interface by advocating that goals be set for the functionality of the interface even at this early stage. Will it be faster? easier to use? easier to learn? more flexible? These goals will be used later, during design and testing of the interface and the manual set, when compromises will have to be made between

* an interface that is easy to use or easy to learn

* a system that performs optimally or allows the user to perform his task optimally

* a command language that is powerful or simple to use

* a manual set that is more task-oriented or more reference-oriented.

Finally the technical writer assists the marketing and engineering teams in writing a winning proposal so that upper management allows the project to proceed.

During the Design Phase

When the project is approved and design of the hardware and software begins, the technical writer performs the following tasks:

* Writes a user-interface styleguide to ensure that the interface is consistent and appropriate to the user and the user's tasks

* Suggests paper-and-pencil tests of the user interface

* When mocked-up screens become available, checks them for functionality (the technical writer may even produce mocked up screens, if suitable software is available, such as the Skylights program from Skylights Software in Bedford, Massachusetts)

* Once the design is frozen, assists the engineering team in finalizing detailed reference specifications

* Develops a user-topic grid as a first step in determining what manuals must be included in the manual set

* Based on the user-topic grid, develops a detailed documentation plan that specifies how the product will be documented to meet the needs of the user.

The development of the documentation plan marks the end of the design phase of the project and is written while the engineers begin prototyping the hardware and coding the software. If the technical writer has worked closely with the engineers during the design phase, doing user analysis and testing the user interface, only minor additional changes to the product design should be required. The design will be truly frozen.

Only when the design is frozen does it make sense to do a documentation plan. The documentation plan covers four items:

* User analysis
* Manual outlines
* Cost estimates
* Schedules

The documentation plan is the first major planning document dedicated solely to the production of the manual set. A good documentation plan ensures that the manual set is well-planned, under budget, and on time. The documentation plan requires the approval of both engineering and marketing.

During the Implementation Phase

During the implementation phase, while engineering continues to do prototyping and coding, technical writing begins producing storyboards or blueprints for the manuals. These blueprints are the key difference between the old and new way of writing manuals. They are detailed page-by-page plans of the contents of the manuals, and according to Sandra Pakin & Associates[1] and Edmond H. Weiss[2], producing these blueprints should take about a third of the total writing time. No longer does the technical writer begin writing the first draft based on a sketchy outline that becomes obsolete the moment the real writing begins. The blueprint for each manual is detailed enough to allow a team of writers to fill in the details and produce a coherent manual. The blueprints are signed off by representatives from engineering and marketing and can only be changed by mutual agreement.

Graphics (that is tables and diagrams) are an integral part of the blueprints. No longer are graphics produced in a panic beginning some-time after the first draft (since before then nobody is really sure what graphics will be needed); rather, the production of graphics begins as soon as the blueprints for the manuals are complete.

Ideally the first draft should be ready for alpha-testing (that is, testing of the product by the engineering-test team). If the engineer-ing-test team can use the manual set when it is verifying the product, the team is less likely to skim over the manuals, missing many technical errors.

The manual set should have reached the second draft stage, or editorial review, when beta-testing (i.e., testing by actual customers) begins. To gather valuable feedback, a survey on manual effectiveness and on the functionality of the user interface should be sent to the beta sites. More formal testing of the manuals and the user interface, possibly involving human factors specialists, may also be done.

Throughout the implementation phase the technical writing schedule is closely monitored (using a package such as Timeline), so that any problems are quickly corrected. The blueprints make this possible. Without the blueprints, the estimate of time required to complete a project can easily be off by months, since the writer literally does not know what the project involves until it is completed. The blueprints also make it easy to shift writing resources to cover slippages in the schedule without endangering the coherence of a manual. Because it is completely pre-planned, even if two or three writers work on it to meet the schedule, the final manual will still be coherent.

Also during the implementation phase, technical writing co-ordinates with marketing to ensure that the manual set and the marketing literature are complementary and meet the user's needs. Editorial support for marketing literature becomes one of technical writing's important functions.

SUMMARY AND CONCLUSION

The new way of writing manuals puts new demands on the writer. The writer is no longer an artiste who works alone and documents whatever comes from engineering and marketing. The writer must face the rigours of testing and of meeting a schedule. The writer must also be a team player who serves as the user's advocate in his relations with marketing and engineering and who coordinates closely with fellow writers to flesh out the blueprints of a manual set.

NOTES

1. Sandra Pakin & Associates, The Documentation Development Methodology (Chicago, IL: Sandra Pakin & Associates, 1982).

2. Edmond H. Weiss, How to Write a Usable User Manual (Philadelphia: ISI Press, 1985).

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