Corporate Downsizing: Opportunity for a New Partnership Between Engineers and Technical Writers

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Roles are changing in the leaner, meaner high-tech workplace. Downsized companies have fewer people to do the same amount of work, and those who remain need to pick up many of the tasks that others used to perform. Engineers and technical writers need to broaden their skill bases in order to survive in today's competitive environment. Engineers need to expand their technical skill sets to include communication skills. Technical writers need to add human factors and training to their skill sets. This paper describes how technical writers can help engineers cope with documentation tasks assigned to them and, in the process, broaden the skills of both writers and engineers to make them more competitive in the workforce.

Acting as partners in the documentation process, engineers and technical writers can work together to produce documentation with greater technical accuracy and usability than would have been possible had they been working separately in their traditional specialized roles.

Changing roles

Roles are changing in corporate America. While downsizing may have reduced costs and eliminated waste, it has left many corporations with fewer people to do the same amount of work. Programmers and engineers can no longer expect to spend all of their time writing code and designing products, and technical writers are expected to do more than write manuals. The need for specialization still exists, but survival in the new corporate environment often depends more on flexibility than on specialized skills.

In the leaner, meaner high-tech workplace, those who remain need to pick up many of the tasks that others used to perform. Clerical support staff were among the first to go. Engineers and writers now find themselves mastering the intricacies of word processors, database programs and spreadsheets, and they now know where all those esoteric forms so critical to day-to-day corporate survival are kept. Many handle their own filing and correspondence, and a few perform routine maintenance and repairs on the fax and photocopy machines. As technical support staff is spread thinner, the ability to perform your own workstation and network repairs can make all the difference in meeting project deadlines. Success in today's workplace depends on replacing the old "I don't get paid to do that" attitude with "Sure, I can do that."

Broadening skill bases

To stay competitive, engineers and technical writers need to broaden their skill bases. Engineers (with many notable exceptions) tend to focus on expanding their technical skills rather than developing their communication skills. Without strong communication skills, engineers may find themselves at a disadvantage when their jobs require them to communicate directly with non-technical management and customers. Technical writers

(again with notable exceptions) tend to focus on written communication and limit the expansion of their technical skills to the tools of their trade and research for their writing projects. A broader technical background can enable these writers to analyze new products more quickly and take on other technical tasks when such opportunities arise. Many technical writers have found that "to make a successful transition into a new area, we need to build on the skills that we already have and find new ways to make them work in new contexts" (Earle, Gillihan and Spencer, 1996). By expanding their communication skills to include teaching techniques, oral expression, and graphic presentation skills, technical writing specialists can become more versatile technical communicators.

As engineer and writer roles grow less distinct in a downsized company, the opportunity for a mutually beneficial exchange emerges. Engineers need to expand their communication skills, and writers are communication experts who can help the engineers hone those skills. To make the transition from passively describing products engineers have designed to becoming active 'product designers,' writers will need to broaden their technical knowledge (Horton, 1993). Engineers are just the technical experts to help them. Writers can also expand their own oral communication and graphic expression skills as they help engineers improve their communication skills.

Engineers *can* write

In the effort to cut costs and development time, somewhere along the line someone inevitably suggests, "I know: We'll get the engineers to write some of the documentation!" The round of groans that this suggestion generally elicits is based on the assumption that engineers do not know how to write, and if you could get them to accept the odious task of writing documentation, what they would produce will be unreadable. This assumption may be based on experience, but it has spawned the prejudice that engineers are innately incapable of writing intelligible documents. When we rid ourselves (and the industry) of this prejudice, we can clearly see that documentation written directly by engineers could be produced more efficiently than documentation produced by technical writers who must gather the information from those engineers. Even if we factor in the higher cost of an engineer's salary, "typically one and a half to two times as expensive as a writer/editor" (Steve and Bigelow, 1993), the time saved by having engineers write the documentation may convince a project manager on a compressed schedule to opt for the shorter time frame. But the efficiency of this approach cannot be realized unless engineers overcome the difficulties that make them reluctant writers.

Many engineers experience difficulty in writing manuals and non-technical documents. This may be due in part to a lack of writing experience and training in the mechanics of writing, but a further obstacle to this kind of writing is not knowing how to address the intended audience. Good technical writing begins with an audience analysis. Once inexperienced writers have learned how to address the intended audience, it is largely a matter of putting the appropriate information down on paper in a form appropriate to the needs of that audience. Another obstacle many engineers face is a lack of familiarity with the tools and processes used in producing manuals and non-technical documents. They are masters of the hardware and software tools of their trade, but few mastered the page layout programs, illustration packages, printing and scanning peripherals, and other tools required to produce professional-looking documentation. And they probably have not thought about the basic processes of outlining, paragraph development, and sentence structure since high

school. As a result, when faced with a blank screen or piece of paper, they may feel a little intimidated.

There is a resource available to help engineers over these hurdles. The technical writers who turn to them as technical subject matter experts are subject matter experts in their own field. Once writers and engineers recognize this, they can share their expertise. Writers can help engineers with audience analysis, information development, documentation tools and writing processes. Engineers can help writers broaden their technical knowledge and, in the process, both will gain valuable training and inter-personal communication experience.

Documentation subject matter experts

Technical writers can offer engineers the benefit of their experience to guide them through documentation assignments. Writing is a lonely task, and having someone to turn to for guidance and advice is a valuable benefit. Creative writing talent is an elusive gift, but not a requirement for effective technical writing. Many useful technical writing techniques can be clearly identified, defined and taught. To provide effective documentation support, experienced technical writers need to resist the temptation to do the writing themselves. They must take time to analyze their own writing process (much as a knowledge engineer analyzes expert behavior in order to create an expert system) and share the expertise they have accumulated with their engineer "clients."

This support can take the form of direct training or on-demand consulting. Writers can offer in-house training in the mechanics of writing, the use of documentation tools, techniques for accurately targeting the intended audience, and tips for organizing documentation projects. These can be formal classroom presentations or one-on-one tutorial sessions. They can provide templates and sample documents to serve as models for the engineers to follow. Technical writers can proofread and edit engineers' documents in progress, and they can provide on-call consulting support. Operating a "writing hotline," providing a writing tips column in the company newsletter, and maintaining a database of training materials, techniques, templates and sample documents are a few of the ways technical writers can provide on-going support for engineers' documentation projects.

Better documentation

By working together, engineers and technical writers can produce documentation with greater technical accuracy and usability than would have been possible had they retained their traditional roles. With engineers involved in the writing process, the technical content of the documentation does not need to be passed from engineer to writer. This eliminates much of the distortion and oversimplification of information that can result from the transfer, not to mention the time lost in information transfer and technical review of the resulting document. Writers acting as consultants can focus on ensuring that the information addresses the intended audience and that the appropriate terminology and tone are employed. This will require a greater depth of technical involvement on the part of the writer, possibly including user interface design issues and product usability testing.

A recent study of three documentation projects with varying degrees of collaboration between engineers and technical writers revealed that "a high degree of integration between technical communicators and developers can result in improved information products" and that "developers strongly believed that the input from the technical communicators made

(the product) more functional and easier to use" (Pieratti, 1995). Though this study did not address the issue of engineers writing documentation, it clearly indicates a positive relationship between the cooperation of engineers and writers in product development and the usability of a product and its documentation.

Better engineers and technical writers

By working together, engineers and technical writers can expand their existing skills and develop new skills, making them more valuable in the workplace. Engineers who write well are more valuable to corporate employers than those whose demonstrated skills are purely technical. Not only can they reduce the time required to develop and document a product, but their flexibility makes them more adaptable in a changing work environment. Writers who can teach others to write and play an active role in the product development process are not only more valuable writers but also potential trainers, testers, or human factors engineers. By moving out of their traditional roles, engineers and writers can forge new fulfilling roles for themselves in the corporate workplace.

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