

## SUMMARY

- ◆ Considers how tools and technologies affect the documentation process and the profession
- ◆ Addresses the impact of softer skills such as project management
- ◆ Points to the need for future research on "what might be" in the future

# The Future of Technical Communication: Introduction to This Special Issue

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## INTRODUCTION

**T**raditionally, the focus of technical communicators has been on writing documents. However, in recent years, technical communicators have been widening their scope and expanding into areas such as interface and interaction design, information architecture, information design, and usability. In tandem with this expansion, the fundamental methods of delivering information have changed, primarily through use of single sourcing, XML, and multiple methods of delivery, all of which have increased the need for both collaboration and project management.

Defining what those new roles might be and clarifying how they fit within technical communication has been the topic of many conference presentations and recent publications, including one of my own (Albers 2003). Taking on issues such as Web design, information architecture, and information modeling, the authors of these publications all assume an underlying technology base. As Pringle and Williams show in this issue, practically all technical communicators consider technology essential to their jobs. Interestingly, except for single sourcing and content management, they all tend to simply accept the technology without considering how it shapes how technical communicators interact.

One issue that needs to be clarified is the difference between tools and technology. My students are constantly pointing to job ads requiring particular tools (notably PageMaker, FrameMaker, and DreamWeaver) and complaining that we are not offering courses that teach those specific tools. Yet in our department meetings and, judging from discussions on the Association of Teachers of Technical Writing discussion list, in all technical communication departments, there is a strong resistance to teaching tools. Because the tools change so rapidly, the practicality of

teaching specific tools is suspect (Kastman Breuch 2002; Selber 1994; Selting 2002). Unfortunately, I believe that even some teachers confuse tools with technology. DreamWeaver is a tool, but all the various Web design tools and how we use them to construct a Web site comprise a technology. How to use styles in Word is tool use; understanding why and how to use styles in a generic sense and realizing that all major word processing and desktop publishing packages support them is understanding a technology.

More than dealing with issues of how to use one tool to perform a task, we need to teach and consider how using various tool features (such as styles) or technologies (such as single sourcing) affects the documentation process. As Pringle and Williams discuss, we need to think of technology as the medium for communicating information, not as a set of tools. The contextual issues surrounding audience needs and effective communication must drive the choice and use of technology.

In 1997, Henrietta Shirk cast the issue of technology in terms of consolidated *versus* expanded roles for technical communicators. She argued that we initially

*Simply attempt to integrate new technologies into our current practices. This period of integration is followed by a developing awareness of transition from old skills and concepts to new ones and by an evolving redefinition of the roles of the technical communicator in relation to technology. These events expand the field itself by creating accepted new roles within it. (quoted in Carter 2003, p. 371)*

For this special issue, I was looking for forward-looking articles that consider how technology is changing the technical communication field and how those changes will affect the profession. Many researchers have examined

these topics recently, but the examination has tended to be a view of individual technologies and methods and the ways they fit within current documentation processes. The effects of softer skills, such as project management, have not received adequate consideration other than acknowledgement of its importance. In this issue, Moore and Kreth examine one aspect of the management issue, while Fisher and Bennion consider management within communities of practice.

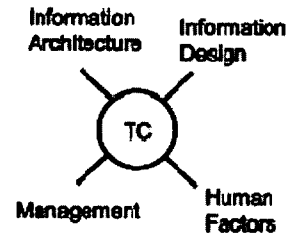
Rather than the more common articles focused on a single technology, I wanted to feature articles with a more integrated view that would address the interconnections and skill sets in an explicit manner. One goal of this special issue is to help with what Shirk called the “developing awareness of transition from old skills and concepts to new ones” by considering both how the field will be affected based on the new roles, and which jobs and skill sets will expand and which will shrink or be rendered obsolete. In this issue, Slattery looks at a small sample of writers with an ethnography-based study, and Rainey, Turner, and Dayton report on a survey that helps define the relationship between the core competencies of practice and academia.

The call for proposals for this special issue generated an overwhelming response that exceeded both my own and the editor's expectations. The 15 proposals submitted show the overall interest in the area of technology and the future of our profession. These proposals fell into two major groups, one focused on practitioner issues and one on academic/pedagogical issues. Because space constraints prohibited publication of all of the deserving articles proposed, a second issue focused on academic issues, scheduled for August 2006, was spun off, with Carol Barnum as the guest editor.

### NEW OR EXPANDED TECHNOLOGIES TECHNICAL COMMUNICATORS NEED

The title of this section, while long, reflects the view we all must take toward technology. Namely, what technologies are needed to support the skills set required for the job. Unfortunately, the opposite is more often the norm: defining/selecting a technology and then figuring out the needed skill sets. This is not unlike hiring a Web designer and writer; having them select a Web content management system, define a generic architecture for the site, and define an update procedure; and then finally, telling them what products and tasks they are documenting.

Weiss (2002) argues that the “artistic impulse” of most writers can prove to be the “greatest barrier to productivity and may even compromise the quality of the communication products” (p. 3). Too many writers seem eager to craft “perfect” prose with the writing aspects overriding the communication issues inherent in the specific audience and task. I've seen this attitude taken to the extreme when a writer admitted that no one would read the section of the



**Figure 1.** Expansion of technical communication into technology areas.

user document on which she was working, but then claimed that it was very important that it be perfect and that it must be written in case someone sometime wanted it.

Different aspects of the “craftsman” view have been discussed (Albers 2003; Hackos 2000; Weiss 2002), but all conclude that its time has long passed. Perhaps part of the reason is that too many writers want to ignore technology as much as possible; unfortunately, I think the end result is that they either miss the train or get run over by it. I've inwardly cringed when I've heard students say, “You know me and computers.”

Software developers have already shifted from the artistic impulse to an engineering discipline, and to some extent technical communicators have done so, as well (Williams 2003). The old stereotype of the programmer locked in a room with pizzas being slid under the door has long since gone the way of the dodo. But many writers still want to cling to variations of the locked door; they want to be left alone and given enough time to carefully craft sentences and paragraphs into beautiful, tight, coherent prose. Unlike programmers who have been forced to work on teams, many writers still work alone or with only one or two other writers, and have thus been able to maintain the craftsman attitude. But this attitude is, in the end, detrimental to their position within a company and recognition by coworkers.

At the 2004 STC Annual Conference, I attended a panel that examined the future skill and technology needs of technical communicators. A slide similar to the diagram in Figure 1 laid out the major areas into which technical communication must expand if it is to continue to grow and gain recognition.

Support for the relationships in Figure 1 appear in multiple articles in this issue. The panelists at the conference agreed that that management and business knowledge are a major missing piece in the typical technical communicator's toolbox of soft skills. Kretch and Moore address one view of handling some of the management issues with their discussion of heresthetics, while Fisher and Bennion take a broader view of project management issues.

To put the diagram in Figure 1 in context, the STC

conference panel was focused on information architecture. Obviously, it would be possible to draw a more complex drawing with more spokes. But the panelists all agreed that technical communicators needed to move away from simply writing and into the areas represented by the four spokes. In addition, they noted a change in employers' hiring over the past 10 years: a shift to an underlying assumption that new graduates can write—after all, they have technical communication degrees. Before the mid-1990's, simply being able to write was sufficient to get hired. That text-focused view is no longer common. What employers expect—and what graduates need to be competitive in the job market—is an expanded set of skills to complement their writing ability, skills that depend on various aspects of technology. And that technology skill set is simply what's needed to get a first job; technical communicators need to continue to learn new technologies and tools to remain competitive and employable.

This change has thrust increasing numbers of technical communicators *and* professionals in such diverse fields as software engineering, computer science, training, and human factors into the product development mix together. The process of developing information products has become cross-functional and interdisciplinary. Functional distinctions between those now at work in that process have blurred (Skelton 2002, p. 61).

While I have previously advocated a need for clearly defined career paths (Albers 2003), it's not a simple matter of each junior writer's having to make a choice and follow a path onto one of the spokes of Figure 1. Instead, from the beginning of their education as technical communicators through to retirement, writers need to be exposed to all five areas and gain the knowledge required to be conversant in the concepts and technologies of each. Becoming a specialist is not required—although senior people probably will specialize in one area—but all writers must be able to fluently discuss issues pertinent to each area.

I believe that Figure 1 is especially relevant to this special issue because all of those areas map out the future expansion of technical communication and all are highly technology dependent using a wide range of technologies. As writers, we need to be conversant in all areas with both the technology and the communications issues required to properly communicate information to readers.

Without the ability to coherently participate in the conversation occurring around the cross-functional and interdisciplinary team table, technical communicators risk either being left off the team because they not assets or being relegated to the clerical position of taking notes and cleaning up the team's reports. At a previous STC conference during the question and answer session for my presentation, one issue discussed was getting a seat at the table. Some of the people in the room had been admitted

to the table, but they all admitted that they had worked hard to expand their skill sets and convince management to give them that seat. Now that seat is easier to get but just as easy to lose if you can't contribute as an equal member of the team.

### THE EFFECTS OF TECHNOLOGIES ON THE FIELD

In an editorial, Hayhoe points out "to survive as a profession, technical communicators must be more than packagers of information for the technically uninitiated. We must become masters of the domains in which we work" (2002, p. 397). He later says, "achieving success as content creators and managers will require greater mastery of our organizations' technical subject domains than most of us possess today" (p. 397). Very true statements, but they require us to master both the technologies we write and communicate with and the technologies which comprise the subject domain.

Tightly coupled with subject domain mastery is the mastery of the technology associated with both the domain and with our communication of the relevant information. Remember, the user cares nothing about how the manual is automatically generated through nifty scripts that assemble XML fragments and create a FrameMaker file for final editing. The user cares only that the correct information is provided in the correct format at the point when it's needed.

Considering how various technologies integrate with our current work practices and how they will change those practices is a difficult issue to address. The vendors who provide tools sell them with a hype-filled message of how their products will revolutionize the business and then provide training on only the basic operation of the tool. Issues of how the technology applies to the business and how a tool relates to the other tools and technologies in the company are neglected. Or, to parody a textbook, the methods of integration are left for the writer to solve.

Coupled with the development shift is a shift to cross-discipline teams that are changing project management (see Fisher and Bennion in this issue for one view of this shift), changes that are fundamental enough to bring into question what is meant by technical documentation and what skill sets a technical communicator must possess. Providing context-based help and moving more information into the interface shift both how we view audience needs and what we write to address those needs.

### A research agenda to move technical communication forward

Building a discipline requires research that develops a sound theoretical foundation that builds on the practitioner's processes, techniques, and experience. I realize that about 94% of the people receiving this journal are practitioners, and most don't want to read about theory and research. However, only with good research can we have

good theories which can be applied to practical situations and to make predictions about the outcomes.

As it currently stands, other disciplines have driven the research in areas such as human-computer interface and information architecture, with technical communication all but left out. Missing is our overall examination and synthesis of how that research and discipline movement will affect technical communication as a discipline in both the short (three to five years) and longer terms. These changes do not operate in a vacuum; all affect the others in ways that are both obvious and subtle or as yet unforeseen. For example,

*In the past, we have certainly seen a trend toward integration of technologies into writing. For example, before desktop publishing, one would not have expected writers to know much about font or layout, as they were specialists in text, grammar, style, rhetoric, information, or any one of a number of fundamental "on the page" skills. After widespread adoption of desktop publishing, which put the means of production into every writer's hands, writers' job descriptions were likely to include a requirement that they know layout software, understand typefaces and white space, and participate in the physical publication process in ways that were previously unheard of. (Carter 2003, p. 319)*

Twenty years after the introduction of desktop publishing, we are in the midst of a new shift—driven by Web writing, content management and single sourcing—in how documents are perceived, viewed, and created. Gregory (2004) considered the differences between writing for the Web and for print, and concluded that the differences were exaggerated. In other words, the writing aspects were the same. In a very real way, the writing isn't different whether you are writing double-spaced text to be sent to a typesetter, using a desktop publishing system, or writing Web content. However, before everyone leaps up and claims they are majorly different, note that I said the *writing*. The *writing process* and the *skill sets* required to be an effective technical communicator in each of those three writing situations is radically different. The technology required to be effective in each of those situations is also different, and an effective writer must be able to handle that technology.

*With most of the challenges of usability and communication already solved, Weiss argues, technical communicators in the U.S. may have to accept less interesting and challenging work, as documentation becomes more routinized. A possible alternative, he says, is for technical communicators to become the problem solvers and designers who will create the content management systems and document databases. (Williams 2003, p. 325)*

I strongly take issue with Williams's claim that "most of the challenges of usability and communication [are] already solved." Or, to sound a contradiction, I agree that most of the challenges for our current documentation methods have been solved but hold that the we have barely scratched the surface of the real challenges for clearly communicating information. These challenges arise from unknowns much more fundamental than which tool to use or how best to format a procedure. I think that we need to reexamine what and how we produce documentation and communicate information at a very basic level. If we have solved the problems, why are so many manuals and help systems still unused? Why are so many Web sites still so unusable in terms of navigation and—especially—content? For one possible view, see Mirel's article "Applied constructivism for user documentation" (1998).

We could have a long discussion about whether Weiss is correct in his claim about the challenges being solved, but how we'll be communicating in the near future most definitely remains an open question that must receive attention as part of technical communication scholarship to allow us to position ourselves proactively. Ignoring this research will lead to technical communicators having to react to changes in technology and risking continued marginalization.

Technical communication from the practitioner's view has a heavy focus on the technology side, while often ignoring the softer social side. The academic view, on the other hand, often seems too focused on rhetorical or discourse analysis of texts, while ignoring both the technical and social side. We need to move both sides closer to a middle ground.

Many of the problems an organization blames on technology actually stem from social issues related to poor or inadequate communication. We need to define the relationships between the technology, the social aspects, and the business needs. Further, we need to gain an understanding of how to predict how changes which occur when a thread connected to any of these relationships is pulled. We need to examine how those threads are interconnected into a complex web and gain the understanding so we can begin to predict how ripples will spread.

A significant problem is the lack of empirical research into how to handle the technology issues within technical communication. The call for papers for this special issue specifically requested empirical research, but I didn't receive any quantitative empirical proposals. This special issue has a survey by Rainey, Turner, and Dayton which provides a good start. But we need to move beyond surveys. The number of articles reporting survey results that are being published led me to wonder whether we'll have a good view of people's attitudes but little knowledge about acting on those attitudes or predicting the effects of changes to a writer's situational context.

### The future of technical communication

I am willing to claim that many of our current writing processes using new technologies are not unlike the early online writing days when we clung to the book model and created pages that users needed to click through one at a time and that contained navigation cues such as "3 of 5." I also remember one vendor showing off an online book tool (which didn't survive long) that used the paper book structure of preface, table of contents, and chapters. Yet, as online writing skills and our understanding of user responses increased, design techniques such as the "3 of 5" disappeared from modern Web design. But the fundamental changes that need to happen within the discipline of technical communication are not so obvious and thus are harder to comprehend and implement. We need to consciously work on how to address these issues.

Also up in the air is the basic question of how technical communication will change as jobs require a more varied skill set that no individual can be reasonably expected to master. Undeniably, a jack of all trades attitude is not what we need. We must find ways for the field to position itself to ensure a smooth transition as the skill sets increase. Breuninger and Hackos (1997) call for strategic planning.

*We must do strategic planning if we want to ensure our survival as publications professionals in our organizations. Without strategic thinking and an established plan to redefine the future, we are likely to find ourselves reorganized, disassembled, downsized, and outsourced. If we continue to focus on today's crisis and the plans for next week, we will find that no one will ask us to take a longer-term and larger perspective. (p. 365)*

Strategic planning in this context is figuring out how technologies integrate and what effects they will have. Tactical planning is figuring out how to implement a single new technology. Reaction planning is complaining about how management, without warning expects the writing group to use a new technology that they didn't choose themselves. Post-mortem planning is wondering how the company could outsource documentation to an overseas company and lay off the writers who had produced perfectly written, unread manuals. Which one is your company doing and do the writers have a seat at the table?

It's very tough to drain the swamp when you spend all your time battling alligators. Individuals need to strive to be more integral, organizations such as STC and ACM SIGDOC need to provide support for and push an agenda at a higher level than individuals can operate, and academic programs also need to reexamine the core goals that technical communication graduates should possess (see the article by Rainey, Turner, and Dayton in this issue). The expanding

responsibilities of a technical communicator make an exclusive focus on writing and rhetorical issues too narrow.

Writing and rhetorical issues are important and must be taught in an academic program, but failing to realize that employers consider those skills a given and judge prospective employees on a more extensive set of skills handicaps both the student and the long-term growth of the field. All technical communicators need to understand the technologies in Figure 1, at least to a limited extent. And more than just understanding the individual technologies, we need to consider how they interact and influence each other. No technology exists alone, no matter how much we try to isolate it. It influences and is influenced by other technologies and social issues. Making informed choices requires first acknowledging that those interconnects exist and then understanding them. Once more we are back to pulling a string and watching the web ripple, or pulling multiple strings and watching the ripples get out of control and tear the web apart.

No technology is neutral. People handle technology and address its problems and solutions with respect to their current knowledge space. Right now, as a field, our knowledge space is too small, and our academic knowledge space (what we teach) is definitely too small and confining. Many technical communicators move into related positions and find themselves well positioned with technology. But that move is either the result of strong individual motivation or corporate decisions that moved entire departments, sometimes kicking and screaming, into new technologies that the department often had little input in choosing.

"One of the most crucial tasks of the technical communicator is to provide information that users need by carefully selecting the right mix of content and then developing, arranging, and presenting it effectively for the audience" (Hayhoe 2002, p. 398). The knowledge required for developing, arranging, and presenting information requires an understanding of the various technologies and tools available and an understanding of how the audience responds to those technologies and tools. Writing is only one element of providing that information; to ignore the other elements is to ensure both our long-term obsolescence and lack of power and respect within the project team and corporation.

### CONCLUSION

The future of the field will be technology laden. Technology permeates everything a practicing technical communicator does. How we react to changes in that technology on both the individual and organizational level will have a dramatic impact on the development of the profession. What I fear is that technology will be dumped on us without our input and that we will shoulder the blame when that technology fails to perform as expected. We need to be proactive to prevent such a situation by considering how the various technologies

should be integrated into our work practices to support effective communication.

The purpose of this special issue is to step back from a close examination of any particular technology or job description, and instead to examine how they will affect the development of technical communication as a discipline. Unfortunately, although there are six excellent articles in this issue, it is lacking one aspect I had wanted to cover. As Hackos points out in her commentary, most of the articles examine the "what is" of the present rather than "what might be" in the future. I hope that this special issue inspires multiple researchers to look long and hard at the potential effects of technology on technical communication's future. When such articles appear in a journal's table of contents, then I'll know that this special issue was a success. **TC**

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