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2 What Are the Work Patterns of Technical Communication?

SUMMARY

Technical communication is more than just writing. Technical communicators make videos, diagrams, websites, and many other types of information resources. They often create the material for all of these formats at once so users can access them online, on demand, and simultaneously. Technical communicators advocate for users and work to ensure that information resources meet users' needs. And as more and more workers create information, it falls to the technical communicator to oversee writing and editing practices, helping their coworkers communicate more effectively and ensuring that their organization, as a whole, does so as well.

INTRODUCTION: CHANGING PATTERNS OF WORK IN TECHNICAL COMMUNICATION

During the rise of technical communication as a career category in the U.S. industrial economy, the work of technical communicators was difficult to evaluate in explicit terms because it was seen as ancillary to the production of manufactured goods and, as Faber (2002) and others note, disconnected from the service-oriented economy of the professions. But the work of technical communicators today is more readily visible and vital to the core mission and the bottom line of organizations of all types.

To create a vivid picture of the work of technical communicators today, consider the example of Elena.[1] Elena is a technical writer, or at least that's how she thinks of herself. But in truth she doesn't do much of what she, or anyone else for that matter, would call "writing" these days. She has had several job titles in the last few years: information developer (a title meant to equate her role on product development teams in the technology company she worked for with software developers), digital content analyst, and lately senior information designer. That last one is also her current title with the documentation contracting services firm she works for most often: Great Lakes Information Solutions (GLIS). GLIS finds Elena contract work with clients who need help with a variety of writing, editing, information design, content management, and electronic publishing problems. In exchange, they take a cut of the client fee.

This week Elena needs to bill hours on four projects for three different clients. Three of those projects are for clients of GLIS; the fourth is a project for an information services company for which she used to work as an in-house employee, but since a layoff, she now works for it on a contract basis, doing projects a lot like the ones she used to do when she was a digital content analyst there. She gets paid more than she used to for this work, but she also has to pay for her own health insurance and fund her own retirement account. GLIS makes this a bit easier than it might be, though, by providing its stable of contract workers access to group policies and financial planning services.

The goal of this chapter is to provide an overview of the work practices of folks like Elena: contemporary technical communicators. Three major work patterns are highlighted that are characteristic of technical communication today: information design, user advocacy, and content and community management. The chapter draws from the research literature in the field to reveal trends that contribute to the growing responsibility of technical communicators in knowledge-intensive organizations. A set of heuristic exercises drawn from the literature will help you practice the three work patterns. The patterns are made concrete in a story about one particular technical communicator, Elena. Her story helps illustrate how the patterns animate the day-to-day work of a technical communicator.

LITERATURE REVIEW

The kinds of work Elena does from day to day reflect three overall patterns of work that emerge from research in technical and organizational communication and that speak to the activities, responsibilities, and skills of technical communicators at the beginning of the twenty-first century. This chapter presents research on the core issues of each work pattern, highlights key patterns and skills, and presents strategies that you can implement. Here are brief descriptions of the three work patterns.

- *Pattern 1: Technical communicators work as information designers.* Technical communicators must create information that no longer stays neatly within the boundaries of a single genre or even a single medium, but is published in multiple formats for multiple audiences, using multiple display formats and technologies.
- *Pattern 2: Technical communicators work as user advocates.* Technical communicators work to ensure the usability of products in all phases of the user-centered design process. Often the technical com-

municator acts as the voice of the user, advocating design features that ensure users' needs are met and that the user experience gives the product a competitive advantage relative to others in the market.

- *Pattern 3: Technical communicators work as stewards of writing activity in organizations.* Technical communicators work in organizations where many other workers, and often customers and users, are writing and creating content. Technical communicators' expertise helps ensure that organizations support content development as a vital component to the organization's success, much as scientists ensure that pharmaceutical companies do good science.

As we might expect, there is considerable overlap among these three patterns of work when they are considered in light of the careers, projects, and even day-to-day routines of technical communicators. So from the outset, it might be best to think of these areas as regions in a Venn diagram. For folks like Elena, a typical day includes a blend of all three.

PATTERN 1: TECHNICAL COMMUNICATORS WORK AS INFORMATION DESIGNERS

A 2007 special issue of *Technical Communication Quarterly* was dedicated to research on the ways technical communicators are dealing with the circumstances of something the editor of that issue called "distributed work." At the organizational level, the term "distributed work" refers to the way individuals and teams often work at different times, from different locations, and across a variety of technological platforms and systems. But Spinuzzi (2007), in the introduction to the special issue, suggests a more precise definition of the term for technical communicators. He notes that distributed work describes both the means and ends of technical communication in that the work is "coordinative" in nature, so that it may enable the required "transformations of information and texts" (266). If this sounds as if technical communicators don't merely make texts from scratch, but instead manipulate many existing texts, images, and fragments of information in order to make new ones, then you are starting to get the picture.

Johnson-Eilola was among the first to sketch such a picture of the writing work that technical communicators do in scenes of distributed work. Writing around the same time that most people were becoming acquainted with the World Wide Web for the first time, Johnson-Eilola (1996) borrowed a category from Reich (1999) to characterize the nature of technical communication as "symbolic-analytic work." Symbolic analysts, to put it simply, solve problems with information, texts, and images. They find, arrange, synthesize, and transform existing texts to meet the needs of diverse users and to address new challenges. As Spinuzzi suggests, the primary act is one of *coordination*, though Johnson-Eilola warns that this should not be understood to be devoid of significant inventional (i.e., knowledge-making) responsibility. Why? Because coordination is merely the means by which technical communicators work. *Transformation* is the end goal. Making something new and adding value are the hallmarks of distributed work in technical communication. A key skill is understanding how information can move and how it should transform when it moves from one system to another, from one user group to another, and even from one culture to another.

One of the more vivid and detailed portrayals of the moment-to-moment and day-to-day work of technical communicators today is offered by Slattery (2007), who studied writers working for a technical documentation services company that contracts with client organizations in a variety of industry segments such as software/IT and pharmaceuticals. Slattery used screen-capture software to record five senior technical writers' work and then conducted a series of follow-up interviews in which the writers watched replays of segments of work. He concludes, among other things, that the documentation they were asked to produce "was not so much written as assembled—a pastiche of contributions from multiple individuals (and sometimes the technologies themselves) over the duration of a project" (315). Close up, this work can seem intimidating and strange when the image one has of "writing" consists of a single writer working with a single, coherent text.

The writers in Slattery's study were using multiple texts as sources, creating multiple texts at one time, and actively managing the links among many, many documents: "In his one-hour session of drafting a new technical document, Doug used 11 different documents across six software programs and one printout. Dirk used 20 documents across 15 programs in an hour and a half while revising a draft. And as Parker updated help files based on e-mail prompts, she used 37 documents across six programs in just under an hour" (318). Slattery gives the skill required to do this kind of work a name: textual coordination. Textual coordination, for Slattery, also involves the expertise required to identify, select, stage, and recombine bits of existing texts in order to form new ones (318).

An equally rich and fascinating portrait of the transformational aim of, in this case, a designer of digital media emerges in a case study by Graham and Whalen (2008). Graham, the researcher, shadowed and interviewed Whalen, the website designer, as he worked on a number of different client projects. One highlighted project was for a manufacturer of bar-code

scanners for whom Whalen created an e-greeting card using Flash, which recipients can play like a game. Whalen's design of that project, according to the published account, was a series of one transformation after another as he took familiar elements from the two dominant communication genres (greeting cards and online games) and from the company's corporate identity and marketing materials (bar codes, scanner images) and combined these into an interactive experience intended to carry a positive corporate message, boost the company's reputation, and thank customers. Whalen had multiple audiences, purposes, and contexts to consider, and he had to deal with multiple modalities (visual/textual), media (Flash animation, static websites), and genres (greeting cards, e-cards, games).

Graham and Whalen's illustration of the ways audiences, contexts, and purposes interact with modes, media, and genres helps show just how complex the coordinative work of new media design can be, given its transformational aims. And what seems to be true for both Whalen and for the senior technical writers that Slattery studied is that, despite the complexity of distributed work, there can be order amid the apparent chaos. The heuristics section in this chapter offers some strategies you can use as you learn to make texts that transform.

PATTERN 2: TECHNICAL COMMUNICATORS WORK AS USER ADVOCATES

"Know your audience." It is perhaps the oldest rule in the book when it comes to being a good writer in just about any genre. In technical communication, it is a mantra. When you are creating information meant to guide someone else through a task, for instance, there is just no substitute for being in the shoes of the user. Or, at least, as close to that as one can manage with careful inquiry, observation, and interaction with real users.

But sometimes for technical communicators, the rule might more accurately be phrased this way: "No, your audience." That is, not only must technical communicators lead the research effort to learn about users, they must also represent the knowledge gained about users—their goals, their needs, their preferences—in the design process as well. The results of audience analysis become, in these moments, the evidence required to make good decisions in a user-centered design (UCD) process. But if UCD is something nearly all development teams subscribe to in principle, in practice this way of working requires the users' interests to come first, ahead of those of developers, at least equal to those of clients paying the bill, and so forth. Hence, "No, your audience" is a phrase that represents what technical communicators must do to keep user interests at the forefront of decision making.

One of the more interesting changes that affect the way technical communicators work is that the same technologies that had been used almost exclusively by experts in work settings—computers, hand-held devices, and so forth—are now used by just about everybody in all kinds of contexts. Such a shift dramatically changes the conditions under which a piece of software and the information meant to guide action are usable. Mirel (2004) suggests that because of this kind of shift, even in work settings where problems are complex, *usable* is just not good enough. Systems must be *useful*. Usability is a minimal requirement: necessary, but insufficient. Usefulness is a higher bar, and the one that users who have choices will demand. Although Mirel's research on workers involved in complex problem solving was instrumental in emphasizing the usefulness of systems, the vast number of users engaged in complex activity that is not necessarily related to work is likely to make usefulness itself a minimal requirement and to lead to a yet higher bar: *compelling*.

Sun (2004) produced a detailed account of users whose interactions with technology help illustrate what lies beyond the goal of designing usable products, with her comparative study of Chinese and American mobile-phone text-messaging users. In the first phase of her study, Sun asked groups of young, urban students and early-career professionals to complete questionnaires and detailed use diaries, including a log of all the short message service (SMS) messages sent and received over the course of a given period. She then analyzed both the content and the patterns of messaging to determine what these users were texting about and where and when they were texting. The results were eye opening.

Among the more surprising findings, Sun's study revealed that both the Chinese and American users were willing to put up with what, in both cultures, amounted to a cumbersome interface for text entry in order to take advantage of what she calls the "social affordances" of SMS: unobtrusive, even covert, messaging, the ability to maintain social contact with friends and family despite a hectic schedule, and so forth. In short, usefulness trumped usability (473–474).

So what do Sun's results mean for designers and technical communicators? One implication is that design teams should not try to solve all the usability problems with a given system *before* it ships. Sun's work shows that not only is this impossible, but also that it is not always necessary for a product to succeed. Rather, technical communicators can take the lead in listening to users postadoption and learning from their feedback (478).

Another implication of Sun's work is that technical communicators should be researchers in addition to being writers. One of the most interesting places to see how a technical communicator working primarily as

a researcher might make a significant impact is in risk communication. Risk communication, generally, deals with the ways information in a variety of forms is deployed to mitigate negative consequences ranging from immediate physical danger to financial risk.

Beverly Sauer's (1998) research on risk communication in the mining industry is one example of work that, in the end, prescribes new roles for technical communicators. Sauer wrote about the gap that emerges between safety regulations meant to govern miners' behavior and post-accident reports and depositions about miners' actions. One conclusion is that miners get hurt or killed because they fail to follow the rules as written.

But Sauer's research showed that from the miners' point of view, written rules may be inadequate and inaccessible during the moments when workers need to make a critical decision. There is literally no way, in some of the most high-stake situations, for a text to adequately convey what miners need to know to avert disaster. So how does it happen that tragedies are often avoided? Sauer used documentary evidence that included in-depth postincident interviews and depositions with miners to reveal that some of them use sensory information—what the miners call "pit sense"—to avoid injury or death during catastrophic events such as collapses.

Sauer's point is that the official model of how safety information originates and circulates is wrong. Some safety information—perhaps the most critical kind of information needed in the dynamic environment of a pending collapse, for instance—cannot be known in full ahead of time. The information originates with miners in the pit. Safety instructions follow after that—sometimes in time to save lives in an emerging disaster, and others only for "next time" (159).

So what are the implications for the role of the technical communicator in this type of situation? If we assume that the technical communicator is the person whose job is to write safety regulations—a fairly traditional role—then the implications are profound indeed. What is missing, according to Sauer's revised model, is the ability to listen in a timely way and facilitate the spread of knowledge that originates, quite literally, in the body of an individual miner, so that others can use it. A whole new mandate with a familiar ring to it: know your audience.

PATTERN 3: TECHNICAL COMMUNICATORS WORK AS STEWARDS OF WRITING ACTIVITY IN ORGANIZATIONS

Single-source publishing, distributed production, and user-generated content: these trends accompany a broader shift in North America toward an information economy. This shift is potentially positive for technical communicators because, to adopt the language of economics, it moves technical communicators' work higher up the value chain. But what exactly does this mean? Simply put, it means that the most valuable thing that many organizations produce, today, is information. And to the degree that the value of information is directly influenced by how it can be understood and used by others, then the core expertise of technical communicators is creating and maintaining that value.

This shift to information as a valuable commodity is easiest to see and understand in companies that sell information, or access to information, as their primary product. Google is one obvious example of this sort of company; it makes money primarily by providing a variety of services to web users and charging other companies to place ads where users will see them. Clearly, the value proposition for users of Google's search service lies in how it helps them find information.

But the shift that moves technical communicators up the value chain is not limited to companies that sell information directly. Even in the manufacture of traditional goods, it is often the information produced about and along with a product that is the most valuable commodity. It was not always so. A manufacturer of washing machines, for example, used to make most of its money from selling the machine. The information that went along with it—the operator's manual, the repair manual, the design specifications—those were necessary, but largely non-revenue-generating, by-products. Today manufacturers operate in a very different kind of environment that is global in scale and densely networked. And we must think, here, of both transportation and information networks.

What this means is that for the maker of medical devices, for example, there is no longer as much value in manufacturing the plastic housing or even the silicon chipset that goes into the devices, at least not in North America. These operations are lower in the value chain than the design of the devices, a process that involves not only engineering but also clinical testing to ensure that they do what they are intended to do. The company that is likely to sit highest in the value chain is the one that can produce the information needed by others to market the device as effective and to manufacture the components offshore. They likely also own the brand that will go on the finished product.

One implication of this trend is that it is no longer possible for technical communicators to be the only ones doing the "writing"—and here we would need to consider a broad definition of *writing* that can encompass the types of information and genres that an organization might produce. Now, everybody in the information economy writes or contributes to an

organization that must write, and write well, to stay competitive and fulfill its goals.

While initially there was considerable concern, if not outright fear, in the technical communication community about the shifts mentioned above and what they were doing to endanger the prospects for writing specialists, today there is less worry. Michael Albers wrote an article published in *Technical Communication Quarterly* in 2000 that was a cause of trepidation because it foretold significant changes in the responsibilities of technical editors. To be fair, Albers's own view was not pessimistic. In retrospect, we can say that he saw the importance of an editor's expertise growing as the possibilities for distributing content creation to more people grew. Writing specialists—those trained in making texts coherent and usable by their intended audiences—would move, we might say, a little higher up the value chain as more subject-matter experts (SMEs) contributed content to repositories from which finished texts could be dynamically assembled. But Albers knew that this message would be unsettling to many who still held a fairly traditional view of editing that involved technical communicators maintaining ownership over a single, coherent document (203).

Ten years later, we can say that Albers was right. Today, companies, even small ones, maintain much of their information as small, reusable chunks in content management systems (CMSs) that allow pieces of information to be reorganized and assembled into new texts on demand. For many organizations, a CMS is the way they manage their website. And for companies that publish information in print or online that they sell or provide as a service, a CMS is likely a critical part of production and quality control. Two key reasons organizations choose to adopt a CMS are to involve more people in producing content and to reuse more of that content whenever possible (Hart-Davidson 2010). Both of these trends, moreover, tend to cause shifts in the role that technical communicators play in organizations.

The more expertise technical communicators have about how to organize writing patterns, and about concepts such as how genres work, the less likely they are to spend their time actually writing. The more experienced and senior they become, the more likely they are to adopt roles as managers: managers of content, yes, but also managers of people. In a more recent article published in *Technical Communication*, Albers (2003) updated his vision of the career track of the technical communicator in light of developments in the world of CMS and single sourcing. He noted that the image of the technical writer controlling all the details of a document from start to finish—from initial outlining to drafting to revising and

editing—belonged to a "craftsman" model of document production that was difficult and, in any case, unproductive to sustain in single-sourcing environments (337). As a result, tasks we once associated with technical communicators exclusively, such as "writing" and "designing and manipulating graphic displays of information," belong now only to junior-level technical communicators. Senior-level technical communicators are decision makers, who spend their time defining high-level requirements for a range of information products and training others to produce the content for those products.

It is not that writing has gone away. Nor is it the case that technical communicators are not involved with writing. It is, rather, that the whole organization must write, and write well. And the charge of the senior technical communicator is to look after the quality of writing at an organizational level and to see that it is constantly improving.

We are only just beginning to see research on the ways technical communicators can help whole organizations transform their writing and communication practices for the better (see, e.g., Hart-Davidson et al. 2008). But we do have a rich body of work from researchers who examine communication practices at an organizational level with an eye toward improving the way these organizations function by improving the way they write.[2] Two well-known researchers in this area are JoAnne Yates and Wanda Orlikowski. When they collaborate, they produce studies that are particularly valuable for the way they reveal how organizations work, or fail to work well, as a function of how well they communicate.

In one such study, for example, Kellog, Orlikowski, and Yates (2006) examined a category of activity they called "boundary crossing," a key factor in the success of businesses that must regularly coordinate their own activity (and interests) with those of other businesses in order to succeed. They learned that successful boundary crossing involves coordination at two levels. The first level is strategic and involves sharing knowledge and establishing common ground. The second level is more directly communicative and involves the use of specific methods for "boundary spanning," such as shared "routines, languages, stories, repositories, and models" (24). By carefully observing the project work of a corporate web development firm known as Adweb in their study, Kellog et al. discovered an interesting and useful pattern: "Adweb members *displayed* work across boundaries (i.e., they made their work visible and accessible to other communities), they *represented* work across boundaries (i.e., they expressed their work in a form that was legible to other communities), and they *assembled* their separate contributions across boundaries into an emerging

collage of diverse elements (i.e., they reused, revised, and aligned their work over time so as to keep it dynamically connected across multiple communities)" (28).

Displaying, representing, and assembling are, for Kellog and her colleagues, categories of communication practices. Over time, members of the organization learn to do them in conjunction with one another, as a matter of routine, creating an overall structure for coordinating (and boundary crossing) that the researchers call a "trading zone." Borrowing the concept from another researcher, Kellog et al. find the concept of a trading zone to be useful because it emphasizes two key aspects of boundary crossing: exchange and transformation.

By now, you should be hearing something familiar: the essential moves or basic particles of the information economy—the atoms that make up organizational work, if you will—are acts of coordination and transformation. You might recall from the discussion of the first work pattern, earlier in this chapter, that these are also the fundamental moves that make up the work of technical communicators, according to some researchers. Technical communicators work in the trading zone. Or, as Albers might point out, junior technical communicators do. Senior technical communicators are involved in creating the conditions for the trading zone to function and, over time, in improving those conditions so that it functions optimally.

HEURISTICS FOR PRACTICING INFORMATION DESIGN, USER ADVOCACY, AND CONTENT AND COMMUNITY MANAGEMENT

What should you do to prepare yourself for a career that blends information design, user advocacy, and content and community management? You can start by learning to make texts that transform, getting to know your users, and getting users actively involved in shaping information that suits their needs. If you do these things, you may find yourself becoming more valuable to your workplace as you help others execute a coherent communication strategy for the whole company or organization. The heuristics that follow reduce rather complicated strategies to a series of steps, so that you can visualize and try them out. But these heuristics are not formulas for doing the work of technical communication; that work is simply not formulaic. The work patterns described in this chapter have many variations. You can think of the heuristics that follow as similar to those deceptively short, tricky practice tunes called études that musicians use to strengthen their skills in particular areas of their art. You may not be able to get through the whole exercise at first. Work through what you do know how to do, however, and as you learn more, return to these to extend your repertoire.

FOR INFORMATION DESIGNERS: LEARN TO MAKE TEXTS THAT TRANSFORM

As I have written elsewhere, technical communicators today must shape texts that can be readily transformed, and in the case of interactive genres, can themselves transform to meet the needs of their users (Hart-Davidson 2004). The pattern might be complex, but it can, in fact, develop and become a routine and even a shared set of actions for technical communicators. A simplified version of that routine is represented below.

Coordinative Work

1. Select source texts from (or that will be combined to create) the source repository of information required by the audiences you are creating resources for. You will make this project easier if you choose a text genre that already has a semantic structure you are familiar with. (You may switch the order of steps 1 and 2 if needed.)

2. Get to know your audiences. Talk with them and pay special attention to what they do, what specific tasks they need your information to perform. Also pay attention to who they are and how this might influence what information they need and how they prefer to have that information delivered.

3. Analyze source texts and inventory the contents, preferably using some kind of standard labeling system. This labeling system may later become a set of descriptive tags. As you go, use techniques such as Rockley, Kostur, and Manning's (2003) reuse map that will help you define shared versus audience-specific objects in the source. A reuse map is a grid that documents all the places that a single piece of information shows up within or, perhaps, across publications. Definitions for key terms and mission statements are two examples of commonly reused information types. Reusing information not only saves the effort of rewriting; it also ensures consistency. Also note where information is missing and will need to be created.

Transformative Work

4. Model the information, creating an outline that makes the relationships among the information chunks explicit. In this step, your chunks should have semantic names rather than structural ones—labels that emphasize what the information means rather than the form it might take.

Choose labels like "product description" rather than "paragraph." The goal of this step is to represent the information free of style and presentation details, because this will allow you to apply more than one set of presentation rules later.

5. Begin creating the primary transformations: sketch "views" of the information you have assembled and designated that are appropriate for each audience. What will the view look like for mobile-device users? For those with administrative privileges and tasks? Your building blocks for each view are the elements you included in the content outline you created in step 4. You are now defining how they will appear when your users see them.

6. Design the secondary transformations: define how each of the primary views you sketched in step 5 will transform to meet the needs of users as they interact with it. When a user clicks an object's title in a list of products to get more information, what will they see next? You may need to create additional style rules, describe how screen elements will change, and even specify what information will need to be stored and/or retrieved from a database to make the transformations happen smoothly.

7. Go back to your audiences, as often as you can, to test out the decisions you are making. Whenever you can, have them attempt to do the tasks for which you are creating information resources. Watch them carefully. Can they do what they need to do? Seek their feedback. Do they feel confident that they are achieving their goals? Does your information help them?

Coda. Repeat steps 1–6, as needed and in response to feedback from step 7.

FOR USER ADVOCATES: GET TO KNOW USERS OR, BETTER YET, GET THEM INVOLVED

I had occasion to offer some advice to technical communicators a few years ago about a phenomenon called Web 2.0 in the pages of a trade publication of the Society for Technical Communication (Hart-Davidson 2007). In that article, I asked technical communicators to think of Web 2.0 not so much as a change in the way the web works, but rather as a change in the way users behave. Users produce rather than merely consume information in a Web 2.0 model, and they also sort, categorize, label, rank, and rate it. When they do those things, they add value to existing information. And they do it all whether we ask them to or not. So what is a technical communicator to do? Aren't all those things the very same things we used to do? Are we out of work in a Web 2.0 world?

Not by a long shot. It just means, as we saw with Sun and Sauer, that our relationship to users needs to change. They say things; we listen. They write; we help them do that.

Here, then, are four things technical communicators should practice, to become more effective user advocates. Think of the list as something to practice and document examples in your professional portfolio. For each one, consider: What experiences do I have that fit the descriptions here? What can I include in my portfolio—sample documents, evaluations from supervisors, prototypes—that will demonstrate what I've learned?

1. Listen to users (and watch what they do). While this seems like a straightforward recommendation, it is not always seen as the first priority when organizations design, create, or revise information. It should be the first priority. And there should be explicit procedures in place for listening and watching. If there are not, it may fall to the technical communicator to work with managers and designers to develop listening procedures. Many companies currently use social media such as Facebook or Twitter as ways to listen to customer feedback, for instance. Traditional methods of gathering feedback such as surveys, focus groups, and interviews may also be useful.

2. Participate in the development of new tools and services that respond to emerging user needs. Technical communicators are often expected to participate in the full cycle of product development, providing insight and working alongside others on the team. For example, it is not uncommon for a technical communicator to be asked to bring evidence-based recommendations for product features to the team. That evidence should come from the kind of direct interaction with users described in step 1.

3. Curate (i.e., gather, organize, label, etc.) the ever-growing content collections produced by users. If you are successful at building ways for your users to give you good feedback, you may begin to provide the means for users to create their own support information. And if you are successful at that, you will soon have another problem: how to keep a growing repository of information organized, so that it can remain useful and usable. While your users may well provide answers to one another about technical questions on a user forum, chances are they will not monitor forum posts looking for the best solutions or even for the most common questions or problems. But if you can do those things, you will add value to a user-created resource.

4. Create designs that allow users to pursue their goals with minimal technical demands. The most powerful evidence of a successful design comes when users can simply do what they need to do. When that happens, it can look like nothing out of the ordinary has taken place. And so it can be a challenge to document! Think of the way the interface designers

of the iPhone must have felt when they first saw a three-year-old successfully navigating the touch-screen interface. That is powerful evidence of the intuitiveness of the design. We can become so focused on problems when we are attending to users' needs that we sometimes forget to watch for those moments of seamless activity that constitute success.

FOR CONTENT AND COMMUNITY MANAGERS: IMPROVE YOUR COWORKERS' ABILITIES TO WRITE TOGETHER

Building on Kellog, Orlikowski, and Yates (2006), you might consider the three categories of boundary-crossing practices as areas to examine and improve in the organizations where you work. To the degree that you can do this, you will likely become more valuable to the organization. You can start by attuning yourself to the ways that an organization writes. Start by observing writing activities and making those that are routine more visible, just as Kellog and her colleagues did.

Each of the practice categories listed below is something a technical writer might do to improve organizational writing activities. It is common for organizations to do a great deal of writing without actively training or evaluating workers' writing practices.

For each category listed below, the bulleted items represent a genre that a technical communicator might create or an action she might take to help an organization improve their writing practices. These are only examples. Many others are possible, and not all of these apply in all settings.

To work with this heuristic, start with a workplace context, a company or organization with which you are familiar. Survey the bulleted items. Add additional ones that you think might work in the setting you have identified. Delete some that you think are not relevant. For each bulleted item, try to collect an example—a physical artifact like a document or a picture—of what the practice results in or how it is carried out. You may have to make one.

Finally, plan where, when, and how you could observe writing practices in action in the workplace setting you are imagining. Watch several instances. Can you identify where the opportunities are to implement these work display, representation, and optimization practices to make an improvement?

Work-display practices make work done by one or more members of a team visible and accessible to others.

- Send e-mail updates to project team.
- Create project plans.
- Post status information on a project wiki.
- Update project logs.
- Flag finished milestones on a calendar.

Work-representation practices express the work of a group in a way that others may use to adapt their own practices.

- Convert textual process descriptions into diagrams or charts.
- Write and circulate notes from a team meeting.
- Create or update role descriptions for a project.

Work-optimization practices enable work products to be reused, revised, and aligned over time and dynamically connected across multiple communities.

- Reuse project-plan milestones in a progress-report presentation.
- Develop a common format for all presentations in order to allow different team members to contribute sections independently.
- Create templates for common genres and store them in a shared repository.
- Facilitate review by establishing criteria, review work flow, and deadlines.

ELENA'S STORY: INFORMATION DESIGN, USER ADVOCACY, AND CONTENT AND COMMUNITY MANAGEMENT

In this section, I put all three work patterns together in a way that helps those preparing for a career learn what it might be like to work as a technical communicator. I'll return to our fictional character Elena, to see how she shifts among the three work patterns discussed above, and how she shifts roles, tasks, projects, and teams in the course of her everyday routine.

Elena is spending the morning doing "information design." This is a kind of work that she finds nearly impossible to explain to her friends and family when they ask her about projects she is working on. Her computer screen is full of windows, and there are many more minimized in her task bar. It looks chaotic, but she has a system. She is flagging terms in a large repository of text and image files that make up the source for a number of technical manuals. Two of the manuals can be viewed in a format that nonspecialists would recognize as a manual, though neither is printed. A third and much larger "manual" is really, at this point, just a collection of marked-up text files—nearly 10,000 of them in all—that do not yet have an easily visible structure that brings them together into a coherent whole. The other two manuals consist of a subset of these same files, but because there are style sheets already created, she can use a browsing tool to ren-

der them rather than reading them in her integrated development environment (IDE). The ability to do that makes it a little easier to find terms that need to be added to the controlled vocabulary for the repository—a kind of glossary, she would tell you if you looked puzzled—because she can see more of the context in which a reader might encounter the term. To flag terms that either need a new definition or may need a revision, Elena moves back and forth between reading the rendered version of one of the manuals, creating links in the corresponding text files in the IDE, and adding the terms to a work list she has created as a separate file. Later she will break that file into separate lists of terms to send to her SMEs, who will write and/or revise the definitions.

All three manuals contain technical information for medical devices. The client designs and markets these devices in the United States and the European Union, but uses a network of manufacturers in Asia who produce hardware, components, and firmware for the devices. The technical manuals that Elena is working on are used by these manufacturers and, occasionally, by other companies who create add-on devices, replacement parts, or other consumable supplies for users of the devices. The manuals are published in three languages: English, German, and Korean. In the next release, a fourth will be added: Mandarin. Roughly two-thirds of the source text is originally produced in German, as the client is headquartered there, and the rest is produced in English. Elena works with English text only—much of it translated from the original German—but she also does some work to prepare the English versions for translation to Korean and Mandarin, mostly smoothing out syntax in English into a straightforward subject-verb-object pattern so that the translators have short, clear phrases to begin with. This service is a value-added option that this particular client is trying out for the first time, so her "agent" at GLIS has asked her to give it special emphasis. They hope to sell this service to the same client for other projects they are bidding.

Elena is mentally rehearsing what she will say in the design-team meeting that starts in a few minutes. She will take the meeting on the phone. The rest of her team is on the other side of the continent, three time zones away. She and one other person on the team, the user-interface designer, have been texting back and forth all morning in preparation for what they both anticipate will be a contentious discussion, if not a honest-to-goodness fight. Her role in the meeting will be to speak on behalf of the users of the product under development, to ensure their needs are met.

At issue in the design meeting will be her recommendation for changing the design of a software product used by medical technicians; the change will prevent a common transcription error that occurs because the modal interface design forces users to switch between screens. To find the information they need, users need to be in search mode, but to enter a new value, they have to switch away from search results to enter data in diagnostic mode. Elena and the UI designer, Chad, will be arguing for a dashboard view that eliminates the modes and allows users to find and enter information without changing views. This, they will say, will avoid a lot of errors. Elena will point out that it will also save them the cost of developing help and training information meant to guide users around this problem and to fix errors in patient records that result from it. This should play well with the project manager, who wants to keep development costs low.

The issue under discussion is not a new idea, or a new problem. If the past is any indication, the product manager will resist the suggested change because it involves significant changes to the existing codebase and, therefore, significant cost. The software developers will likely agree—at least one of the people who will be on the call is the same person who, the last time the issue came up, insisted that this problem was with "stupid users" rather than with the design of the product. Chad pointed out that these errors occurred because modal interfaces force people to adapt themselves to the machine because of the machine's constraints. These constraints no longer exist as practical matters of processing or memory now, of course, but they remain in the codebase of legacy products like this one.

Elena takes a deep breath, sips her coffee, and puts her phone on speaker. If she had time, she'd recite to herself the user-advocacy work patterns she knows so well: "listen, participate, curate, create." This call will be a tour through all four. She's ready for battle.

Elena puts her phone on mute. Waiting a beat to be sure that the red indicator light is glowing, she says, out loud, "Since forever!" This is in response to Dan's snide question to her: "Since when are you an interaction designer anyway?" She smiles. Dan's comment is an acknowledgment, however begrudgingly, that she has persuaded the team lead to go with the UI changes she and Chad have been pushing for.

Later, she will calmly explain that attending to user interaction (UX) is precisely what she was brought in to do. In fact, they paid her to go and watch users working with their product, talk to those users, and bring that information back to inform the next release of the product. UX designer

may not be her title on this particular job, but UX research is certainly one of her responsibilities.

She can now turn her attention to her next goal of persuading the project manager—the person who controls the purse strings for this product—that what she has learned from observing users for a limited time in just two work sites is so important that they should be doing this much more often. She heard many, many good ideas for improving the product in the few hours she spent with users. And she has only been able to suggest the most basic of these to the development team so far. What really needs to happen, she thinks, is that those users—those nurse practitioners who, after all, know their work contexts the best—need to be on the next conference call. Sometimes there is no substitute for the voices of users.

The afternoon finds Elena working on the long-term project for her former employer, the company that sells streams of filtered content to libraries and other companies. The company doesn't create the content it sells access to, nor does it do much to repackage it in traditional publication formats. The value-added service they sell to their clients is most visible, in fact, in what is left out of the streams of data rather than what is contained in them. In a world awash with information, they filter out what is unwanted, leaving only the most valuable, trustworthy, and useful information.

Elena is going through a series of client comments—some of them solicited during a recent round of phone interviews and others that have come in unsolicited via e-mail—and trying to synthesize from these a list of priorities for improving their data-filtering offerings for a particular industry sector: pharmaceutical and medical-device manufacturing. This is information-design work, first in coordinative mode, preparing to make transformations that bring value to users. It is Elena's responsibility to monitor the use patterns of the community as they change over time, acting as a "community manager." Her report will make the service the company provides more valuable to this community by ensuring that they continue to see information they need to see and less of what they do not wish to see.

The recommendations that Elena will make will ultimately find their way into code: XML formats that determine which clients see what types of information from the thousands of content providers the client company has relationships with. But Elena will not deliver the recommendations in code. She will write a report and, if necessary, create some diagrams that illustrate how the new filters should work to fine-tune the way the content must flow. She would tell you that it's a lot like plumbing, or maybe more like heating and air-conditioning and ventilation. Air flows rather than liquid flows seem a more apt metaphor for the material she is trying to direct. Elena knows that the more customized a flow is for a given customer, the happier they are likely to be. But, at the same time, the more a given flow (and here we are talking about a filter or combination of filters) can be reused, the more profitable it is to the client. And so she is working to find patterns in customers' comments, requests, and complaints that will allow for the optimum balance between customized and generalized. Those patterns will be the basis of her recommendations in the report.

It is Sunday afternoon, and Elena is working in a local coffee shop, a pile of print documents spread out on the table. From a few feet away, anyone who knows Elena might guess it is just another work project. But this one is a bit different. The papers are a mix of genres: scientific journal articles, EPA standards, and water-quality test reports. Elena is sorting them, highlighting the occasional passage, and looking for evidence.

This project concerns the neighborhood where she grew up and where her mother and stepfather still live. For years now, there have been concerns about contamination in the aquifer that supplies the part of the city in which the neighborhood sits. Recently a citizen action group has formed in an attempt to pressure local and federal government agencies to perform additional testing. Elena learned about the group when a member brought a flyer to her mother's door. The flyer announced a meeting and included a call for volunteers with specific kinds of skills. They wanted folks with science degrees and laboratory experience, lawyers, and health-care professionals. And last on the list: technical writers. She went to the meeting.

Once there, she saw that there was indeed a way for her to help, but it wasn't exactly what the organizers had imagined a technical writer might do. They wanted her to write a brochure to explain to community residents—mostly nonscientists and many without a college degree—what the potential negative effects of unregulated contamination of their community's drinking water might be. She listened and nodded. But as the meeting went on, she heard something that made her think of a different way she might be helpful.

Partially in response to the pressure brought by the group, the regulatory commission had agreed to hold a series of public meetings to discuss

the results of previous water-quality tests of the aquifer and whether further tests were warranted. Public comment was solicited for these meetings, and individuals could respond in writing as well as raise questions and concerns during the meeting itself. The group had already decided that it would be most effective if a report could be written explaining the group's position on the need for further testing. But group reports were not allowed at this stage, as they fell outside the strict guidelines established for "public comment." Individuals could submit, but groups could not.

Elena formed a plan right away. She could establish a website where community members writing reports could coordinate what they were doing, share the evidence they were finding, and report on the focus of their individual arguments. Because community members represented different perspectives on the issue—legal, health, economics, and environmental—there would be a range of individual reports. But Elena knew they would be more effective if they were all driving toward the same overall conclusion. At the heart of the website would be two features. One would be a discussion board on which to post questions, share ideas and links to reference material, and coordinate further meetings, reviews, and so forth. The other feature would be a shared repository of scientific source material that provided the best evidence, previous reports by the regulatory agency that gave members a framework for presenting their claims, and templates for the reports themselves to create some common structures and ensure similar overall impact of the members' reports.

She pitched that idea as the meeting came to an end, and the group sat silently for a moment. They had never had a "writing steward" before. They did not quite know what to make of someone like Elena, who could step in and help them execute a communication plan. Then a chorus of laughs broke out. And in another second they were tossing out ideas right and left about what kinds of resources each had to share with the group, digging into briefcases and producing folders stuffed with the documents that now filled the small table at the coffee shop. That was last Saturday. A week or so later, Elena is creating an index of the resources she had collected so far. This index would sit in the "scientific resources" folder of the shared repository and provide the members with a title, author, date, and abstract of each article and report contained there. This metadata format would then be used to create a new entry in the index whenever a new resource file was added.

After she finishes the index, her plan is to start working on the brochure. She looks forward to being able to write again.

CONCLUSION

There are two ideas in this chapter that may come as something of a surprise to those who are new to technical communication, or to those who have not kept up with recent changes in the field. The first is the idea that opens the story of Elena in the introduction: technical communicators do much more than just write; so much more, in fact, that it sometimes seems as if the writing they do is a minor part of their job responsibilities. The second idea is that technical communicators' contributions have moved closer to the bottom line: they routinely contribute directly to the most valuable aspects of a company's business or an organization's mission. Elena's work in the examples above, for instance, bears directly on whether a design will save the company money (e.g., by reducing errors and increasing efficiency). Both of these trends are supported by research such as that reported in the U.S. Bureau of Labor Statistics (BLS) Occupational Outlook Handbook (2010) and on O-Net, the BLS resource site that lists details about work activities, qualifications, and so forth for various jobs in the U.S. economy. In fact, the BLS projects better-than-average opportunity for job growth in technical communication through 2018 in a diverse range of industry sectors, including software, IT consulting, and health care. Technical communication is trending well because technical communicators are becoming more valuable for their companies and organizations.

DISCUSSION QUESTIONS

1. As noted in the introduction, the three work patterns of technical communicators highlighted here frequently intersect. This is most visible when you consider the details of specific projects. Select a project you have worked on or that you have read about, and trace the ways the work involved exhibits one or more of the patterns. It may help to sketch a Venn diagram with three overlapping circles. Place key events from the project in each region.
2. A key coordinative skill that experienced writers in Slattery's study developed was the ability to pre-stage their work environment for a productive session of work. What do you do before you write to make sure that you have what you need to be successful? Does this differ when you are revising? Composing a multimodal text or website? What tools (electronic and physical) do you keep handy? What rituals or routines do you rely upon to keep yourself on track?
3. Make a content inventory for an organizational website with which you are familiar. List the content types present on the site and, as best

you can, who in the organization (by role, if not by name) is responsible for creating, editing, and approving them. For each type, note how frequently it is produced by the organization. For frequently produced content types, how consistent is the overall structure from one instance of the type to another?

4. Design an alternative view of an informational document for display on a mobile phone or other device with a small screen. Try to keep all the information the same—that is, reuse the text and images from the current format—but make the new view as useful and usable for the new display as you can. For an added challenge, tailor the new display for a specific audience. Some ideas for informational documents to use in this exercise: course-catalog information for students, movie reviews, nutrition information for fast-food menu items.
5. Talk with several users of a product that you also use. Ask open-ended questions designed to gather feedback about how they use the product, such as "tell me about a time when you used the product in a way that made you satisfied" and "describe a situation in which you experienced a problem using the product that you were eventually able to solve." What kinds of information from these accounts would be helpful for members of a design or development team to know? What similarities did you hear among the users' responses? What surprised you?
6. When you work with others, what are some of the challenges related to helping them write well together? What have you done to make a team that you've been a part of work more effectively together?
7. Document a day in your life as a writer, using a visual format like a flowchart that allows you to show the flow or sequence of actions. What parts of this flow or sequence do you see as constituting a successful pattern? What aspects would you like to repeat each time you write? What aspects would you recommend to others and why? What aspects constitute patterns you'd like to change or avoid next time?
8. Which of the types of work Elena does is most appealing to you and why? Which do you feel most prepared for? Least prepared for? Looking at your planned program of study for your major or concentration, where will you develop the skills and knowledge to hone your strengths and build your experience?

NOTES

1. Elena is not a real person. She is a composite character whose job titles and work patterns are borrowed from several real people.

2. I can't review all of that valuable work here, but I recommend that readers see the full-length works by Cross (2003), Smart (2006), Winsor (2003), Spinuzzi (2008), Grabill (2007), and Simmons (2007), to name just a few. Also see the outstanding collection edited by Zachry and Thralls (2007).

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JIM HENRY

3 How Can Technical Communicators Fit into Contemporary Organizations?

SUMMARY

Every contemporary organization possesses an organizational culture that distinguishes it from others, and technical communicators who seek to fit into any organization must develop skills as cultural analysts. This chapter discusses a number of studies of technical communication that have drawn on such cultural analysis, then presents a framework for conducting participant observation, compiling fieldnotes, interviewing culture members, collecting and analyzing artifacts, and writing. Many of these methods can dovetail directly with one's work as a technical communicator on any given project, and the chapter presents an extended example as illustration: A team of technical writers charged with composing an annual report for a nonprofit organization interviewed organizational members, collected artifacts, and compiled extensive fieldnotes to help them fulfill the assignment. In the course of their cultural analysis, they perceived a need in the local culture that they knew they could fill—and they did so. Thus the chapter provides a method not only for fitting into the contemporary organization but also for exercising greater agency as a part of it.

INTRODUCTION: PONDERING A WORKPLACE CULTURE

Kate and her two peers, Jin and Cassie, have just met their point of contact for the nonprofit organization with which they'll be working during the next eight weeks to help compose that organization's annual report.[1] They have connected with Sylvia, the director of development of Women's Family Planning Centers (WFPC), through our Service Learning Center on campus to fulfill the major collaborative writing assignment for our technical writing course. Sylvia has arranged this first meeting at a popular off-campus café to explain a bit more about the organization and its mission. All three technical writers already know of the organization (though none has visited it), and none has ever written an annual report. They are eager to learn more and get started on the writing project. At this meeting, Sylvia