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The Society for Technical Communication is the largest association of technical communicators in the world. STC is currently classifying the Body of Knowledge for the field and communicating the value of technical communication. Its volunteer leadership continues to work with government bodies and standards organizations to increase awareness and accurate perception of technical communication. Membership is open to all with an interest in technical communication. Visit the STC Web site (www.stc.org) for details on membership categories, fees, and benefits.
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About the Journal

*Technical Communication* is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal’s goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

*Technical Communication* publishes articles in five categories:

- **Applied research** – reports of practically relevant (empirical or analytical) research
- **Applied theory** – original contributions to technical communication theory
- **Case history** – reports on solutions to technical communication problems
- **Tutorial** – instructions on processes or procedures that respond to new developments, insights, laws, standards, requirements, or technologies
- **Bibliography** – reviews of relevant research or bibliographic essays

The purpose of *Technical Communication* is to inform, not impress. Write in a clear, informal style, avoiding jargon and acronyms. Use the first person and active voice. Avoid language that might be considered sexist, and write with the journal’s international audience in mind.


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Menno D.T. de Jong, Editor

Technical Communication in Practice: Who Needs Professionals?

This is my first editorial after the double special issue on professionalization, guest edited by Nancy Coppola. The special issue helped us to consider our field from various angles. The articles provided a lot of food for thought and discussion. Most of them would not have been written without Nancy Coppola’s initiative to compile a special issue on this theme. I want to express my gratitude and appreciation to Nancy for her hard work and for the resulting two great journal issues. This is a clear demonstration of the value special issues may have for our discipline. It is my aim to draw up a list of themes for new special issues. Practitioners and researchers with challenging ideas are always invited to contact me.

Speaking about professionalism, the provocative question in the title, of course, is meant to be answered in only one way: we all need professionals. More specifically, we all need technical communication professionals. Technology is everywhere and technological developments seem to go faster than ever. Many western governments warn for a shortage of engineers to keep the innovations going. Within the engineering disciplines, however, the awareness is growing that there is always a human side to technology. Whatever is being developed, its success will depend on the people who are supposed to use it. This is not limited to the so-called technology acceptance, which, admittedly, is important for sales and dissemination. In the long run, however, it is even more important whether people and organizations are able to optimally benefit from the technology they adopt. And whether technological devices and software are geared to the needs of people and organizations. It is obvious that highly trained technical communication professionals are needed for this complex and responsible job.

On the individual level, underuse and inefficient use of software and devices seem to be common phenomena. Technological innovations in organizations often fail because of human and organizational aspects. I can mention many examples of all problems mentioned—underuse, inefficient use, and failed innovations—from my immediate experiences. And I am sure everyone can. However, the empirical evidence for the problems is still limited. The underuse and inefficient use of software and devices does not seem to be a major topic in the academic literature, even though it could help us to emphasize the role technical communicators may have. In the literature on technological implementations, the descriptions of successful implementation processes seem to be overrepresented. More attention to what happens in such processes will easily set the stage for the crucial role technical communicators may have.

In This Issue

This issue contains three articles. The first article is written by Clinton Lanier and can be characterized as a study of a technological innovation in an...
organization, and at the same time as a study into the practice of technical communication professionals. Lanier empirically investigated the implementation of a new content management system within an organization. He found that insecurity, perceived difficulty and unfamiliarity were key problems, and showed how these problems may be solved. I think this is a very relevant research direction within technical communication, opening doors to new professional and theoretical issues with high practical relevance.

The second article, by Meinald Thielsch and Isabel Perabo, is a new contribution to a long and fruitful line of research in this journal. Thielsch and Perabo conducted a large-scale survey into presentation software among German students and professionals. Rather than focusing on the design of slides—the main topic of several contributions in the past volumes of Technical Communication—they focus on the presentation software itself and the use of such software. As such, they sketch a broader picture of the use of presentation software. Their results also show that presentation slides may have a stand-alone function: when they serve as handouts, are sent via e-mail, and so forth. These may all be fruitful directions for future research into the use of presentation slides.

The last article in this issue is written by Saul Carliner. He applies the theories of business models to the practice of technical communicators, distinguishing between six different business models and acknowledging that there may be mixed variations in practice. Each business model is well-described, along with its implications for technical communicators. This article contributes to our knowledge about technical communication professionals at work, and more specifically about how their work is affected by the way they are embedded in an organization.

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**Frank R. Smith Outstanding Article Award 2011**

Each year, an independent jury of three researchers and practitioners selects one outstanding article and up to three distinguished articles that appeared in Technical Communication during the previous calendar year. This year’s jury members were Charlie Kostelnick (chair), Kit Brown-Hoeckstra, and last year’s winner, Tatiana Batova.

The award honors the memory of Frank R. Smith, during whose 18 years as editor this journal became established as the flagship publication of STC and of the profession.

This year, the jury selected one outstanding and one distinguished article.

**2011 Outstanding Article in Technical Communication**


“This article is an exemplary piece of research that addresses several important questions about genre conventions, reader expectations, and research methodology. It is well written, demonstrates thorough analysis, and uses statistical methods to prove significance. It illustrates how quantitative research methods can be applied to important communication problems, challenges regulations in favor of user-centered design, and is immediately useful to practitioners.”

**2011 Distinguished Articles in Technical Communication**

Luc Desnoyers. Toward a taxonomy of visuals in science communication. (May 2011)

“This article is ground-breaking work that addresses a key issue in visual communication that has not received much attention: classifying the wide array of disparate graphical forms used in many different scientific and technical disciplines. The article is well written, provides a broad scholarly perspective on the subject, and proposes an ingenious and comprehensive taxonomy that will enhance our understanding of visuals.”
Accounting for the Human Element When Planning for a Content Management System

Clinton R. Lanier

Abstract

**Purpose:** This article assists technical communication professionals in planning, designing and implementing a content management system (CMS) in their organization. As my organization discovered, few resources exist explaining the considerations involved in such an initiative, and there was a noted lack of information to help us plan for human-based factors affecting its success. This article attempts to fill that gap by relating our experiences.

**Method:** We first monitored the CMS to understand its use by our organization’s authors. Next, we conducted a survey to understand their perceptions of the system. We then made changes to the system based on the answers gathered in the survey. Finally, we monitored the system’s use once more after the changes were made.

**Results:** Our study suggested that authors did not want to use the new system because they were insecure in using it, perceived it as too difficult to use, and were unfamiliar with the system (among other issues). We then implemented a more familiar interface, created a version control system allowing them to revert to previous versions if they made mistakes, and created and deployed Web-based video tutorials. Finally, we tracked a noted increase in the use of the system by our authors.

**Conclusion:** Based on our experience, for future technical communicators considering a CMS, I suggest involving those affected as soon as possible, implementing tools that are familiar, providing multiple methods of training, and creating mechanisms to ease anxiety about mistakes and errors.

**Keywords:** content management system, distributed authors, organizational change, human factors

Practitioner’s Takeaway

- Content management systems can more easily be implemented when the human-factors are considered first, and technology considerations are made based on the human-based ones.
- Authors using a content management system must feel comfortable with the system, should feel invested in its implementation, and should not be anxious when using it.
- To ensure the above, steps can be taken throughout the process, such as involving authors in the planning of the system, training them throughout the process and providing support after deployment, and providing tools and mechanisms that are familiar to them.
Planning for a Content Management System

Introduction

For organizations hoping to implement content management systems (CMS), there are many resources available to help plan, coordinate and deploy them. But there are few resources that study the various disparate considerations of a CMS in isolation. Case studies that specifically focus on distributed authorship and the CMS, for example, simply do not exist. These types of studies are needed and necessary components of the decision-making process for organizations, especially when considering the resources involved in deploying a CMS.

This article examines a specific case at a medium-sized (less than 1,000 employees) organization that implemented a CMS (after carefully studying available resources). Among the many objectives of the new CMS was the transition away from a model of consolidated content creation, where a small group was responsible for writing and publishing, to a model that dispersed content creation over a network of distributed authors. However, within a year administrators noticed that distributed authors were not using the CMS, causing the content to become outdated or full of errors. Embarking on a research study, we set to find out how often authors used the system, what they used it for, and why they did not use it more often. Our hope was to implement interventions that would increase the frequency of the system’s use.

The next sections provide a general discussion about CMS grounded in technical communication. Following that is a brief section detailing the methodology used in the case study. Finally, the article ends with a discussion of the results found in the study and the subsequent solutions imposed.

Content Management Systems and the Technical Communicator

Content management systems (CMS) are large software platforms that evolved from the idea that organizations manage their information by storing it in a central repository allowing them to retrieve and deliver it in multiple formats for multiple purposes. This idea stems from the more general mechanisms of Knowledge Management Systems, which are “IT-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application” (Alavi and Leidner, 2001). In this environment “knowledge” can mean a number of organizationally important categories of data, such as personnel, customer, or financial information. More generally, each system manages information within a particular system, and that information (and the consequential manipulation of that information) is discipline-specific.

For the technical communicator, it is the CMS that has become important because it has focused much more specifically on the type of information that technical communicators are involved in creating, assembling and disseminating. Techniques, ideas and suggestions for managing content (as opposed to knowledge), have been discussed for almost a decade (Hackos, 2002; Nakano, 2002; Rockley, Kostur, & Manning, 2003), but only in the last 5-6 years have commercial software companies (as well as open-source software initiatives) been driving the creation of tools (the CMS itself) that provide the functionality called for by theory (Anderson, 2008).

And in the short amount of time since it was introduced, the CMS has evolved much and it has certainly become prevalent. Although failing to find any specific numbers stating how many organizations now use CMS, the number of available systems to choose from (according to cmsmatrix.com) is well over 200.

And as the CMS has gained in popularity, it has come to realize much of its speculated potential. While there was almost a deterministic quality to many of the early articles concerning the CMS, all of them correctly speculated that the CMS would change the way professional and technical communication was carried out in the future.

More specifically, CMS have brought technical communicators closer to their role as database miners—information developers who raid databases to gather content for communications (documents or online help systems) assembled later (as suggested by Albers, 2000). They have also delivered the promise of structured content, documents that live as disparate pieces of text, combed through, selected and then used to create multiple types of information units in multiple forms of media from a single source (Rockley, 2001). And they have delivered distributed authorship, giving
organizations the ability to enact collaborative activities through time and space with content contributors working miles apart (Nakano).

Author-Based CMS Integration Issues

Literature exists on the choice, development and implementation of the CMS (see for example, Jones, Mitchko, & Overcash, 2004; Wiggins, Remley, & Klinger, 2006; Wisniewski & Stenstrom, 2007), and there are also articles which deliver best practice advice for the long term use of the CMS (see Goodwin, Burford, Bedard, Carrigan, & Hannigan, 2006; McKeever, 2003); however, few case studies exist that examine aspects of the CMS in long term use. The point is important, because as organizations transition from pre to post implementation, they will need to understand what issues may arise six months or a year later. Planning for contingencies is only benefited by case studies demonstrating the actual contingencies.

Specifically in the case of my organization, there existed no studies on how a CMS is actually used by its users—or more to the point, by the people who contribute content to the content management system—over a period of time. This gap was important to us when we researched the possibility of implementing a Web-based CMS. While we were confident that it had the functionality we required, we were concerned about its use by the distributed authors who would be writing, editing and generally maintaining information within the system.

Some peripherally-related literature about distributed authorship did help us make considerations about the system. They demonstrated, for example, the need for interfaces based on the authors and not simply the functionality of the system (McKeever, 2003, p. 689; Rockley et. al, 2002, pp. 297-309). We also learned about potential methods for enhancing collaboration between authors while they used the CMS (Rockley et. al, 2003, pp. 366-368). However, we did not know what to expect, and as it turned out, we encountered a number of problems related to the gap in knowledge after the CMS was deployed: authors were not using the system as we had expected them to, and we did not know why.

To help us understand why the authors chose not to use the new system, we designed a small research study to help us answer our main questions. Specifically, we wanted to know:

- How often authors would use the system
- For what purpose the authors would use the system
- Why some authors might use it more than others

Our hope was that the results of this study would help us employ changes that would encourage the authors to more frequently use the CMS as it had been designed.

The remainder of this article relates our experiences in deploying a Web-based CMS, and focuses specifically on the use of that CMS by its distributed authors. The following section discusses the information we were missing, our specific case and a research study employed to help us answer some of our questions. Following that is a brief discussion of the results of this study, and then the changes we undertook to encourage a more regular use of the system.

Case Study Context: Employing a Web-Based CMS in a Medium Organization

In the summer of 2008, my organization directed me to create a new Web site to replace the very outdated, HTML-based Web site in use at that time. The planning committee set numerous objectives for the new site; among these were:

- Facilitate distributed authorship
- Facilitate easy maintenance and updating
- Provide multi-media abilities for authors
- Allow site visitors to interact with content through reorganizing, manipulation and delivery options
- Provide easy retrieval of information
- Provide an easily searched repository of data

In short, all of the reasons cited by Hart-Davidson et al. (2008) that organizations give for transitioning to CMS. Many of objectives focused on the site’s visitors and were established to make the Web site—and the
organization itself—more competitive and on par with other similar organizations. However, just as many focused on the creation of content by our authors. These objectives were established to make content creation more effective and efficient across the organization.

Prior to the creation of a new site, we were using traditional ftp access to update the previous Web site. Because our server administrators did not want the login information in too many hands, they restricted access to only a small group of people. Thus, we depended on an outdated model of Web site content authorship.

In this model, one small, central group was responsible for updating, maintaining and sometimes creating content. This was inefficient because it required subject matter experts to transmit changes to this small group who then made the required changes and updates. This often took a lot of time, and overburdened the group with content updating when they were also required to make site-wide changes and updates.

This model was also ineffective because in many places on the previous site, content became outdated, full of errors, or was simply missing. Visitors were frustrated and often contacted subject matter experts directly rather than try to find information on the site.

So it was important for us to give authors the ability to create, update and maintain content directly. Many content management systems can create user groups with multiple users and access control mechanisms. Content creation and maintenance becomes a simple matter of logging in through a Web interface and entering information and data into the system’s editor. Because a Web-based CMS seemed to fit all of our needs, we decided to implement one.

Our small, eight-person Web development team spent nine months planning, designing and implementing the new Web-based CMS. Because we knew the importance of the distributed author role in the success of our new site, we spent numerous hours in resource development for them. We also conducted literature research to better understand what steps we could take to ensure they would use the system frequently. The specific steps we took to ensure authors were prepared before the system was deployed included the following:

- We designed a comprehensive user manual for the authors that extensively covered the activities they carry out on the Web site.
- We included them very early in the process by giving the information about the project’s status and impact via e-mail updates.
- We selected an editor with an interface structured very similarly to the interface of Microsoft Word, hoping to create familiarity and ease anxiety about a new system.
- Two weeks before deployment we scheduled two days of classroom-based instruction. Through a presentation we explained the new system and the author’s role. We then allowed the authors to explore the new system and get hands on experience.
- After the classroom-training we allowed the authors to interact and “play” with the system for two more weeks before it was deployed so that they could get used to the interface and become comfortable with their new role as distributed authors.

Though we felt we had done enough, eight months after deploying the system—in January of 2010—we noticed how infrequently authors were actually using the system. Though information should have been created or updated, very little changes were actually being made.
Understanding How The Authors Used the CMS

Methods
To find out how frequently the system was being used, we tracked authors over a 32-day span from March 22 to April 22, 2010 (32 days total, 24 work week days) to find out how often each was logging in to the system. Table 1 displays the frequency of logins for the set of authors, while Table 2 displays the number of authors who logged at different frequencies during this time.

Table 1. Mean and Standard Deviation of Logins per Author at the Beginning of the Study.

<table>
<thead>
<tr>
<th>Mean number of logins per author</th>
<th>3.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard deviation</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Table 2. Frequency of Site Logins per Author Before Changes Were Made.

<table>
<thead>
<tr>
<th>Number of logins</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2-10</td>
<td>8</td>
</tr>
<tr>
<td>&lt; 10</td>
<td>5</td>
</tr>
</tbody>
</table>

Not surprisingly, we were disappointed at the low number of logins per user, and the wide range of deviation from the mean, suggesting that many authors rarely if ever logged in. Content should have been changing frequently to accommodate a number of commonly updated items, like department news and announcements, but these results told us that these updates were not happening.

Our next step was to find out why users were not using the system more often. To this end we created a survey. The purpose of the survey instrument was to:

- Find out why infrequent users do not use the system more often
- Identify what factors authors find difficult about updating/changing information
- Identify what factors authors find easy about updating/changing information

The survey (see the Appendix) was posted on the online survey hosting Web site, surveymonkey.com, for 30 days (April 30-May 30). All users were sent multiple e-mails throughout the month to solicit as many responses as possible. At the end of the 30-day survey period we had accumulated a total of 26 responses from a possible 42.

Questions 1-4 and 8 were required of each respondent and covered very basic information. They were asked so that we may gain insight into how these authors perceived their role as content contributors to the Web site.

In brief, these questions revealed that:

- The vast majority of authors (21) logged in less than 10 times per month.
- Authors were most often updating, correcting or generally maintaining content and not necessarily creating new content.
- They make changes to the site for a variety of reasons.
- Most of the authors (21) stated that it was part of their job duties to change or create content on the Web site.
- Less than half of the authors (12) had performed similar work on the previous Web site.

Participants provided more substantive information in questions 5-7, which focused on why they may have infrequently used the system, and what they did and did not like about the system.

Question 5 was an optional question, and so was answered by 12 participants. Those 12 gave two entirely different reasons for why they infrequently used the CMS. Nine of the participants indicated that they did not change or create content more often because the information they were responsible for not changed very often. Many of these nine were responsible for updating information that concerned federal regulations, and so really only needed to edit or create content when those regulations changed (which did not happen often).

The remaining three, however, indicated that they did not use the system more frequently because they generally viewed it as difficult to use.
Planning for a Content Management System

Wished this was a little bit more user friendly and be able only (to) use Internet Explorer as the only Web browser since that is what is primarily used on campus. Very time consuming, the user is very limited with not many options.

Because it’s complicated and we’re told to make minor editing only.

It has become more frequent as I learn, but learning took a rather unnecessarily long time on both ends.

Question 6 asked participants what they specifically did not like about using the system. This question was also optional and of the 23 participants, 21 responded. Of those 21, 4 consisted of responses such as, “No opinion.”

The rest of the responses revolved around four shortcomings the authors perceived in the system. Many of the answers combined categories so that (for example) a problem was perceived both about the tool and about the process. The categories and their combinations—as well as the number identified—are shown in Table 3.

Table 3. Categories and Combination of Categories and Frequencies for the Answers Provided by Authors for Question 6

<table>
<thead>
<tr>
<th>Categories (including combinations)</th>
<th>Description</th>
<th>Example</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool-related</td>
<td>These were concerns relating directly to the CMS itself, including the mechanism used to create and edit content.</td>
<td>It is not user friendly.</td>
<td>3</td>
</tr>
<tr>
<td>Limitations-related</td>
<td>These were concerns about the limitations the development team put on the style and layout of content. As well as access limitations to certain features.</td>
<td>The customization is so limited that it’s difficult to emphasize new or important information and draw the user’s eye to different parts of the page.</td>
<td>2</td>
</tr>
<tr>
<td>Knowledge-related</td>
<td>These were concerns about the author’s own knowledge limitations.</td>
<td>I’m not familiar with all the features.</td>
<td>1</td>
</tr>
<tr>
<td>Process</td>
<td>These were concerns about the process used for creating or updating content.</td>
<td>The process for uploading files … is not transparent. I still have many pages that need to be converted from our old pages on the TCC and this is labor intensive and hence is not getting done.</td>
<td>4</td>
</tr>
<tr>
<td>Tool/Knowledge</td>
<td>Combination of tool and knowledge-related concerns.</td>
<td>The https: I don’t know how to change this. Also, getting single space between lines of info.</td>
<td>6</td>
</tr>
<tr>
<td>Tool/Limitations</td>
<td>Combination of tool and limitation related concerns.</td>
<td>We do not have access privileges to change…headings that appear on the left-hand side of the browser. Every time changes are made and then saved, the program seems to randomly change fonts, italics, bold facing, font size, and much more.</td>
<td>1</td>
</tr>
</tbody>
</table>
Question 7 asked authors what they *liked* about using the system and was again an optional question. Eighteen authors chose to respond. Of these, two simply said that nothing was easy and one stated “no opinion.” The remaining 15 responses fit into three categories (table 4).

**Results**

Even after the steps we took to ensure that authors were trained and familiar with the system, and had time to practice and engage it before going live, we should not have been surprised that very few were even using it. After all, the implementation of a Web-based CMS introduced a new technology into an organization already familiar with a previous technology. The new technology effectively altered the very structure of this organization because it created new responsibilities and effectively a new position in each office (Kahn, 2000). Authors who had previously relied on a centralized system of content generation and maintenance were now faced with a decentralized system that made them directly responsible for the tasks they had previously outsourced.

Understanding this problem is extremely important because as Anderson points out, if they refuse to adopt the new system, it will completely fail. And though, as she cites in her study, many of the proponents of the technology would suggest that the lack of adoption is due to technological reasons—the system is not easy to use, the interface is clumsy, etc.—the “buy in” decision of the authors relies on social reasons.

When new technologies are introduced into an organization, users will decide to adopt that technology based on five different factors (Dayton, 2004; Rogers, 1995):

- **Relative advantage:** The degree to which an innovation is perceived to produce significant benefits for the user; may be measured in economic terms, but social prestige, convenience and satisfaction are also important.
- **Compatibility:** The degree to which an innovation is perceived to be consistent with existing norms and values, past experiences and needs.
- **Complexity:** The degree to which an innovation is perceived as difficult to understand and use.
- **Trialability:** The degree to which an innovation is perceived to be something that can be tried out before committing to adoption.
- **Observability:** The degree to which the results of an innovation are perceived to be readily visible to others. (Dayton, 2004, p. 209).

Based on the results of our survey, we concluded that the frequency of use depended on three of these interrelated factors: relative advantage, compatibility, and complexity.

**Relative Advantage.** Because some users felt that there was little relative advantage to the system, they used it infrequently and only to make very rote or easy updates. Only 4 out of the 23 authors stated that they used the system to create new content while the rest conducted very easy content changes. Further, nine authors only updated content when they had to because requirements and regulations changed: they saw no benefit to creating or updating other information. While definitely related to other issues, understanding the system as merely a way to edit existing content when

<table>
<thead>
<tr>
<th>Categories</th>
<th>Description</th>
<th>Example</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of use</td>
<td>Comments focused on how easy the tool was in various ways and for various reasons.</td>
<td>Updating existing pages is straightforward.</td>
<td>10</td>
</tr>
<tr>
<td>Familiarity</td>
<td>Comments focused on how familiar the layout of the interface was.</td>
<td>The “MS Word” format is nice.</td>
<td>3</td>
</tr>
<tr>
<td>Standardization</td>
<td>Comments focused on the standardization of the process.</td>
<td>The process has been standardized so easy to learn from other users.</td>
<td>2</td>
</tr>
</tbody>
</table>
Planning for a Content Management System

necessary suggests no perceived advantage to creating new or original information.

Compatibility. The new system was nothing like the previous system the authors had worked with. It required they work with a new tool, learn new procedures and understand a new vocabulary. In fact, the new system was a complete change from the old methods of updating or creating online content. It was no wonder many authors felt the new system was simply not compatible with their familiar methods of authorship or procedures for updating content.

Complexity. Aside from the issues of compatibility, authors were understandably frustrated by learning a brand new interface to go along with a brand new process. All of the authors relied mainly on Microsoft Word as a desktop publishing mechanism and Microsoft Internet Explorer as their primary Web browser. Though the new system used an interface similar to Microsoft Word, it still contained many of the characteristics common to publishing in an online environment, such as no options to have single or double spacing between line breaks. Further, one important feature of the new system—the mechanism used to upload and insert files into a Web page—was only available by using Mozilla Firefox, an open-source Web browser completely foreign to over 90% of the authors. This forced them to work with even more unfamiliar mechanisms to carry out their tasks.

The result of these factors culminated in a reluctance to really use the CMS, or a reluctance to use it as effectively as it could be used. The rationale behind their infrequent use was represented by the results of Table 3 and the various limitations they perceived.

Our next step was to implement interventions that overcame these factors by making the authors more comfortable with the system, by ensuring they had enough resources and training to better understand the system, and by creating the perception of relative advantage in the system. We specifically looked to address the factors in Table 3 as much as possible.

Interventions

We quickly noted that education and training would address factors of both complexity and compatibility—represented specifically by many of the tool, knowledge and process-related issues in Table 3. However, because our staff was drastically cut the year after deploying the system (from eight to three members), we simply did not have the resources to work directly with each author or to provide more workshops about the CMS.

So we did the next best thing by creating a series of very brief screencast tutorials quickly explaining the various tasks involved in using the new system to create, update and modify content. The subjects of the tutorials included:

- Adding new content to the Web site
- Editing existing content in the Web site
- Uploading/Inserting images into content
- Uploading/Inserting files into content
- Linking to other content items or to information outside of the system
- Cutting and pasting from Word documents

To specifically address tool and process related issues, we worked to make both even more familiar and comfortable to our authors. We speculated that if we made the processes and tools as compatible as possible—that is, if they fit with previous and comfortable norms in the authors’ workplace—they would be more inclined to use the system. Specific changes are below.

A New File Upload System. We created a new file upload system allowing authors to utilize Internet Explorer as their browser of choice. The previous mechanism required they use Mozilla Firefox, software most were unfamiliar with, which created anxiety and reluctance to upload files when it was necessary to do so. The mechanism was also integrated into the online editor, whereas before the tool was located in a different place. This made it clumsy to use because authors had to leave the editor, find and use the mechanism, and then return to the online editor.

Cut and Paste Directly from MS Word. We created a mechanism allowing authors to cut and paste directly from Microsoft Word. Through discussions with authors we found out that instead of creating content directly in the online editor, they typically created it in Microsoft Word, and then cut-and-pasted it into the editor. The result was a number of formatting issues because Word will not only transfer text, but also the MS-native formatting. The authors blamed the system
for “messing up the layout” when they transferred their content over. We initially asked them to cut-and-paste into a plain text editor and then transfer the content into the online editor. Obviously this was just too complicated and took various steps to complete. The new mechanism allowed them to create content in most any outside system, and then transfer it safely without carrying over the native layout and formatting of the system used. The layout of their content kept more general styles, like paragraph or list spacing, but font size and style was then transformed by our organization’s Web-standard templates.

A toolbar resembling MS Word. We reformatted the online editor’s original toolbar to resemble Microsoft Word, and we included similar functionality. The online editor that the authors were using was in many cases an alien mechanism for our authors. While there were some options that should have been familiar due to their similarity to MS Word (Figure 1), in general it looked and acted quite differently.

An example was the inability for authors to enter single line breaks. Because the editor’s WYSIWYG component was simply a layer on top of the HTML code, line breaks were read as <p> (paragraph) tags by the system and would then be double spaced—this was an unfamiliar action to our authors and they were frustrated that they could not control the spacing in the text of their content.

Our solution was to integrate a toolbar (Figure 2) with more functionality and options. The toolbar looked much more like a typical MS Word toolbar and included many of the same icons and functions they would find in the more familiar desktop publishing tool they more frequently used.

Figure 1. Original Toolbar with Options for the Online Editor

Figure 2. Updated Online Editor Toolbar with More Functionality and Options

A new “versioning” system. We created a new “versioning” system, which allowed authors to revert to previous versions of content should they make mistakes while editing. Though truly unnecessary because data is always backed up in the database, this feature would add a level of security about the changes users made to content within the site in the hopes that insecurity about permanent errors would not affect the frequency the authors used the system.

To address issues of relative advantage, we began sending out regular newsletter-like e-mails containing tips and procedures demonstrating how easy and useful it is to create new content. We specifically highlighted reasons for creating new content in terms that fit the context of the authors (for example, we demonstrated that authors could create new content discussing news and items of interest from within their departments). We also began stressing the importance of their new responsibility through the e-mail, by including site analysis so that they would understand the impact of their content (in terms of how many visitors looked at the pages they controlled).

Intervention Outcomes

In terms of the number of site logins, we have found that they have increased over the tracking we did in March-April, 2010. Tracking for a 15 work-day period—began 45 days after we made all of the changes to the mechanism and deployed the video-tutorials—displayed an increase in the mean number of logins to the system, and a slight drop in the standard deviation (table 5).
Planning for a Content Management System

Table 5. Mean and Standard Deviation of Logins per Author After Changes Were Made

<table>
<thead>
<tr>
<th>Mean Number of Logins per Author</th>
<th>4.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Deviation</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Over a period twice as long in March, only 16 people had logged into the system between 1 and 14 times. In this case, 27 people logged in during that time (Table 6). More importantly to us, was the number of times people logged in frequently (at least 2-3 times per week) during that period: 15 during the most recent sample versus 6 during the March sample.

Table 6. Frequency of Site Logins per Author After Changes Were Made

<table>
<thead>
<tr>
<th>Number of logins</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>2-10</td>
<td>20</td>
</tr>
<tr>
<td>&lt; 10</td>
<td>2</td>
</tr>
</tbody>
</table>

Authors are utilizing the system in a more consistent and generally frequent manner. We have not yet surveyed them to find out exactly how they are utilizing the system, but as Rogers makes clear, comfort with a technology is one of the key factors to ensure it is successfully deployed in an organization. Clearly, authors are becoming more comfortable with the CMS.

Informal feedback has been both overwhelming and positive. Authors have told us that they especially enjoy the videos they can access and watch as convenient for them. Our records indicate that the page linking to the videos has been accessed more often, and more time has been spent on it by the visitors (the page is a secure page that can only be accessed by authors). Over a two-month period, between mid-August to mid-October of 2010, the page was visited 351 times, and visitors spent a total of 282 minutes on the page. The previous two months saw 306 page visits and a total of 74 minutes spent on the page.

We have also received e-mails that question or confirm our new guidance on how the tools for the system can be used, such as the following sent in early September by one of the authors: “So does this mean I don’t have to use Firefox anymore?”

Other informal feedback included sighs of relief from an author when I explained in person the addition of the tool allowing them to revert to previous versions should they make a critical mistake while developing content. As stated before, this mechanism was always in place for the administrators, but now the authors themselves had the ability and so their confidence in using the system elevated significantly.

We have additionally seen a dramatic decrease in the amount of support that authors are seeking from us. Previously we were frustrated that some authors consistently asked us to do very routine tasks for them—such as uploading files. Such episodes have fallen from approximately five requests per week to one or two every couple of weeks (we currently have no help ticket tracking system). For those requests we do get, we first point authors to the online video tutorial that demonstrates the task being requested. Very rarely have we had to either do the task for them or demonstrate in person how to carry out the task.

Conclusion

Changes to organizations, especially as it concerns introducing new technologies, create a myriad of effects, most of which are often overlooked when planning for those changes. Though we took many of the right steps—drawn from the advice given in relevant literature—we were still quite naive insofar as the full consequences of switching our Web presence to a Web-based CMS.

The effects of these changes to the members of our organization were especially important, because the new system relied on the authors actually using it in order to truly be effective. As it turned out, many of our authors were less than pleased with the system, and resisted utilizing it. They counted many issues as reasons for not using the system more frequently, but those issues were drawn from specific factors common when new technologies are introduced.

By studying our problem, identifying the specific issues and larger factors, we were able to create an intervention program that better supported our authors in their use of the CMS. By publicizing the changes we
made and by demonstrating how easy those changes made the new processes, we dramatically increased the use of the new system. Though we are waiting to conduct another full survey to reliably gauge the authors’ perceptions of the system with these changes, informal feedback has been overwhelmingly positive.

Based on our own perceptions of this case, organizations should make the following considerations when implementing a content management system. These considerations are specific to the human component of any CMS.

**Tool-related Considerations**
- Ensure new tools closely resemble tools authors are already familiar with.
- Integrate all needed tools into a single mechanism.
- Facilitate integration and use with other familiar systems.
- Create safety and recovery mechanisms to increase user-confidence.

**Knowledge-related Considerations**
- Provide numerous briefings well in advance of deployment, preferably during planning.
- Allow authors to provide feedback on system and feel like they influence its design.
- Ahead of deployment, provide in-person workshops that focus on the system and the author’s role.
- Give authors time to test or “play” with the system before the system is live.
- Provide lasting support after deployment.
- Desk side support.
- Updated user manuals.
- Screencast tutorials.
- E-mail support.
- Help system/knowledgebase.
- Regular newsletters.

**Procedure-related Considerations**
- Standardize the process through shared, written policies and procedures.
- Define roles that authors will play in new process.
- Make expectations throughout process explicit.
- Do not give the impression that authors are authors by ‘default’.
- Make the position valuable by stressing the importance to everyone, not just the author.

Much of what is written about the CMS pertains to the mechanics of the system: how it works, its functionality, its cost or ease of use. However, as noted by Anderson, these items are really the simplest components of the system, because they can be easily modified.

If a software tool within the CMS is too slow or does not offer enough functionality, that tool can be replaced or the source code can be rewritten so that the functionality exists and the tool performs faster than before. However, human factors are much more difficult to identify and then to “fix.”

Authors may not come out and tell us exactly why they are not using a system. In our case we approached this question from a number of different directions until we had a broad and specific understanding. The steps to “correct” the “problem” were also difficult, requiring numerous interventions and components.

Understanding the human factors involved when integrating a CMS is perhaps much more important than understanding the differences between the many varieties of CMS available. After all, if authors do not “buy in” to a system, it matters little what tool you give them.

**References**


About the Author

Clinton R. Lanier is an Adjunct Professor of Technical Communication at New Mexico State University. He also owns a professional communication consulting agency, Word One Consulting, in Las Cruces, NM USA. Contact: crlanier@nmt.edu.

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## Appendix: Survey Used

<table>
<thead>
<tr>
<th>Question asked in survey</th>
<th>Answers possible</th>
</tr>
</thead>
</table>
| 1. How would you describe the frequency with which you use the NMT website to edit or create articles? | Infrequent User (< 4 logins per month)  
Moderate User (4-10 logins per month)  
Frequent User (10+ logins per month) |
| 2. What is your primary task when logging in to the NMT website?                         | Change or update existing pages or articles.  
Create new pages or articles.  
Other (please describe)                                                           |
| 3. What is the primary reason for editing pages on the NMT website?                      | Inputting or updating the same type of information that routinely changes (for example, adding or changing job announcements, equipment, etc.)  
Keeping people up-to-date on office events, news and announcements.  
Updating information about your office, program or department that has changed.  
Other (please specify)                                                              |
| 4. Is adding or changing content on the NMT website part of your job duties?            | Yes  
No                                                                                   |
| 5. If you answered “Infrequent User” to question #1, why do you not use the NMT website more frequently to create information or make updates and modifications? (optional) |                                                                                  |
| 6. What do you find difficult about updating/changing or adding information on the NMT website? (optional) |                                                                                  |
| 7. What do you find easy about adding or updating/changing information on the NMT website? (optional) |                                                                                  |
| 8. Before using the current NMT website, had you updated/changed information on the previous NMT website? | Yes  
No                                                                                   |
Use and Evaluation of Presentation Software
Meinald T. Thielsch & Isabel Perabo

Abstract

Purpose: Although computer-based presentations are nowadays an expected standard, empirical research on them is still surprisingly rare: Little knowledge exists about general attitudes toward presentation software or users’ functional demands other than editing texts and images. Therefore, we focus in our explorative study on users’ handling and evaluation of such software, including a comparison between educational and business users.

Method: A total of 1014 participants (51% female, 49% male) took part in a web-based study. Among them were 444 students and 570 employees from different fields. The online questionnaire consisted of 67 questions in three parts and was based on the current literature and ratings of five experts.

Results: Our results show a strong preference for using Microsoft PowerPoint, which led to rather satisfied users. Computer-based presentations are mainly used in educational settings, talks, and meetings. Differences between students and employees were identified, with the latter showing a broader use. Furthermore, independent of occupation, participants stressed the importance of usability aspects such as ease of use, compatibility, or loading speed; however, they equally desired more creativity in computer-based presentations and better speakers.

Conclusions: The process of slide generation seems to be patchwork, and a large amount of time is spent on design and animation; thus we recommend measures to reduce the time spent on matters of visual style. In addition, current presentation software still suffers from several usability issues. Generally, the central function of the speaker and the supporting role of the presentation software are to be stressed.

Keywords: presentation software, computer-based presentations, PowerPoint, usage, evaluation

Practitioners’ Takeaway

- Microsoft PowerPoint is the market leader, but software like Microsoft Excel or Adobe Acrobat are widely used as well.
- Presentation software is used mostly in educational and business settings.
- Students and employees differ in occasion of usage, creation, and use of slides. Nevertheless they show the same needs and functional demands.

- Because a lot of time is spent on design and animation, well designed and user-friendly templates are needed.
- Current presentation software suffers from several usability issues.
- The speaker’s role for a well perceived presentation is to be stressed.
Introduction

Do you remember the last time you saw a computer-based presentation? You probably attended one not too long ago; maybe you attended to one today. Over the past few years, computer-based presentations have become an almost daily means of sharing information. Millions of people work with presentation software and even more listen to presentations with digital slides. This “new” form of communication—the combination of mostly visual computer-based elements with speech, gestures, and the speaker’s performance—has rapidly spread over the last two decades. Overhead transparencies were used until the late 1990s, when software and hardware supporting video projections became popular (see Gaskins, 2007).

Presently, computer-based presentations are a widespread standard and expected in most presentation situations. For many years, Microsoft has led the market with its program PowerPoint. Zongker and Salesin (2003) estimated a market share of 95% in 2003, and a Forrester study (Montalbano, 2009) widely confirmed this number, stating that only 8% of enterprise customers use alternative products. Journalists estimated an occurrence of 30 million PowerPoint presentations every day (e.g., Parker, 2001; Simons, 2004) and use of more than 400 million copies of Microsoft PowerPoint (Simons, 2004). However, no empirical data or validation proves these numbers by Microsoft. Countless guidebooks, articles, and essays provide advice on how to create computer-based presentations, sharing opinions or telling stories about presentation experiences.

Surprisingly, empirical research about computer-based presentations is still rare (excluding approaches in educational science; see below), and much of the nonempirical work is of limited value (Farkas, 2006). To the extent that presentation software—especially Microsoft PowerPoint—is widespread, so too is the diversity of the opinions concerning its benefits. Thus, the aim of our study is to ask the users what they think about presentation software: which software they are using, how they create and use slides, and which functional demands they have.

Research and Critics on Computer-Based Presentations

Computer-based presentations evoke wide-ranging and ongoing discussions, especially in the field of education. Several studies in this area address students’ reactions to PowerPoint and students’ preferences (e.g., Apperson, Laws, & Scepanisky, 2008; Burke & James, 2008; Burke, James, & Ahmadi, 2009) or academic performance and recall (e.g., Amare, 2006; Bartsch & Cobern, 2003; Lowry, 1999; Sugahara & Boland, 2006; Szabo & Hastings, 2000), giving advice on how to design PowerPoint slides (e.g., Garner, Alley, Gaudelli, & Zappe, 2009; Jones, 2003; Murphy, 2004) or discussing general teaching issues (e.g., Craig & Amernic, 2006; Levasseur & Sawyer, 2006). Thus far, this research has not led to a clear conclusion. Although students like to be taught with PowerPoint (e.g., Susskind, 2005; Szabo & Hastings, 2000), the results regarding its effectiveness for learning and teaching are inconsistent, sometimes demonstrating positive and sometimes negative effects (for an overview, see Lavasseur & Sawyer, 2006).

Furthermore, critics of computer-based presentations are generally afraid of adverse effects on communication behavior and oversimplification of information in presentations (Clarke, 2001; Nunberg, 1999), where visual effects might take the place of well founded arguments (Gates, 2002). The sharpest criticism comes from Tufte (2003, 2006), who criticized users for presenting too little information in too few words and blamed PowerPoint for cultivating this mode of presentation. He argued that PowerPoint is format oriented rather than content oriented, resulting in simple bullet lists instead of causal analysis or analytical structures of decision making. A problem with this fundamental criticism is the lack of empirical foundation (excluding a first case study approach by Stark & Paravel, 2008). But this sort of criticism has further stimulated discussions about the way we present information with computer-based tools. As a result of this discussion, Kaplan (2011) stressed the role of PowerPoint in a company’s strategy and its important part in organizational culture and social interaction between coworkers. Still, little empirical research has focused on this special form of human–computer interaction.
Use and Evaluation of Presentation Software

Research on Presentation Software and Its Use

However, we must recognize first approaches in analyzing the relationship between presentation software and its users: From the perspective of information technology adoption in education contexts, Hu, Clark, and Ma (2003) analyzed the acceptance of Microsoft PowerPoint among schoolteachers. They found that acceptance of this presentation software is influenced primarily by its perceived usefulness, as well as indirectly by job relevance and perceived ease of use. In this study, the perceived usefulness of the software was rated only medium, and this perception was surprisingly minimally elevated by a 4-week training program on Microsoft PowerPoint.

Farkas (2005) approached this topic by identifying and discussing theoretical general content principles of PowerPoint slides and problems related to presenters’ behavior. He criticized an overload of text and reasons that this stems from the presenters’ fear of forgetting their words. In a later publication, Farkas (2006) proposed several additional evaluative criteria for presentation slide design and content inspection including status, style, and skills of the presenter. Farkas introduced a wide scope approach, which analyzed context factors and everything from content to presenters’ attributes. Due to the amount and diversity of relevant variables, an empirical investigation following Farkas can only be done step-by-step. Thielsch, Nikolaeva, and Förster (2006) tried to close the issues proposed by Farkas by conducting a group discussion with presentation experts and an online study among PowerPoint users. Besides some usability issues, this study identifies problems with inexperienced users (as mentioned by Farkas [2006]) and the implementation of corporate design issues in PowerPoint presentations. In another approach, Spicer and Kelliher (2009) evaluated via a survey and semi-structured interviews how presenters author, practice, and deliver presentations. Both studies (Spicer & Kelliher; Thielsch et al.) arrived at similar results regarding authoring and giving presentations. On average, presentations contained 20 to 25 slides, and participants in these studies stated that typical presentations lasted approximately 30 minutes. Farkas (2009) discussed several mediating effects influencing the authoring of a PowerPoint presentation. In this work, he distinguished between design choices in creating a presentation and mediation effects caused by a presentation software itself, like inflexible linearity caused by the slide metaphor of PowerPoint.

Furthermore, in a very specific approach, Mackiewicz (2007a) evaluated users’ reactions to different fonts in PowerPoint presentations and users’ perceptions of clarity and attractiveness of graph slides (Mackiewicz, 2007b). She found no differences between sans serif and serif fonts and provided some practical advice on fonts that were evaluated as best with respect to perceived readability, professionalism, interestingness, and attractiveness. Mackiewicz (2007b) made recommendations for color and graph designs based on a study with 37 participants who favored cool colors and 2D rather than 3D graphs.

However, apart from such first approaches and some very specific studies conducted for the development of new presentation software (e.g., Lichtschlag, Karrer, & Borchers, 2009), empirical investigations of presentation software and oral presentations with computer-based slides remain rare.

Aim of the Current Study

This lack of empirical research leads to the approach of the current study. Research in this domain has aimed mostly at matters of learning and instruction (see above) or at analyses of slides used and advice for creating presentations (e.g., Apperson et al., 2008; Jones, 2003; Mackiewicz, 2007a, 2007b; Murphy, 2004). Besides a general preference of students for Microsoft PowerPoint in learning situations, very little is known about general user attitudes toward presentation software, typical tasks users perform, or their functional demands beyond editing texts and images. Thus, the present study focuses on users’ evaluations of and their work with presentation software.

Our first aim was to explore which software is used at which occasions and how satisfied users are. Microsoft PowerPoint seems to be an unchallenged market leader, but from our experience, other software products—some of them not designed originally to be used as presentation software (e.g., Microsoft Excel or Adobe Acrobat)—are used as well. Second, we wanted to investigate how users create and use computer-based presentations. Our third aim was to explore what functional needs users have and what they think is missing in common presentation software. Moreover, we wanted to examine business and academic populations...
to compare differences and similarities between the use of and needs of presentation software in these two groups. We hope this information will help us to understand better to which extent results from studies in educational settings could be transferred into the business world.

Method

Participants
The study was announced as a survey among users of presentation software. A total of 1014 volunteers participated anonymously in this study, 519 (51%) were female and 495 (49%) were male. Age ranged from 15 to 73 years ($M = 29.50; SD = 8.96$). Participants’ occupation could be divided into two groups: 444 students (80% university, 13% high school, 7% vocational school) and 570 employees (largest subgroups—18% commercial; 13% information technology; 11% media; 11% science; 10% consulting; 8% healthcare; 6% teaching).

Potential participants were invited to participate via a German online panel and by e-mail, which they were asked to forward further (snowball technique). Participants did not receive any compensation for completing the study.

Measures and Procedure
The survey used in this study was based on recent literature and our former research on usability of presentation software (Thielsch et al., 2006). The initial set of items was independently checked for completeness, quality, and comprehensibility by five experts in the domain of presentation software (researchers as well as developers and designers). The final web-based questionnaire consisted of 67 questions that were divided in three parts and are described in Figure 1.

Part 1: Use and evaluation of presentation software
- At what occasions is presentation software used?
- Which presentation software is generally used?
- Which presentation software is used most often?
- How many years have participants used presentation software?
- How many times per month do they use presentation software?
- How satisfied are participants with the most often used presentation software?

Part 2: Tasks and user behavior
- Portion of preparation time used for content, design, animation, and other activities
- Ways of creation and work on presentations, for example working with colleagues, creating handouts or PDFs (asked aspects can be found in Table 2)

Part 3: Functional demands on presentation software
- Importance of different properties of presentation software, for example loading speed, printout, or animation effects (asked aspects can be found in Table 3)
- Evaluation of the most used software product with regard to these properties
- What are possible improvements of common presentation software? [open-ended question]
- What is missing in computer-based presentations from an audience point of view? [open-ended question]

Figure 1. Components of the Questionnaire Used in Our Study

In the first part of the survey, after providing demographic information, participants answered general questions regarding their use and their evaluation of presentation software. In the second part, they answered questions about user behavior and typical tasks performed in presentation software. The third part of the survey contained questions regarding five properties of and 17 functional demands placed on presentation software beyond the pure presentation of text, tables, and images. Participants were also asked to rate their most frequently used software regarding these aspects.
Use and Evaluation of Presentation Software

At the end, participants had the opportunity to provide suggestions for presentation software in two open-ended questions.

Results

Use and Evaluation of Presentation Software

When asked about occasions for use, participants described a broad range of presentation software usage (see Table 1). Overall, presentation software was reported to be used most frequently in education and teaching, followed by talks and meetings. Whereas employee’s use of presentation software was equal in both areas mentioned, students differ greatly in their uses. As one might expect, students showed the highest use in educational contexts and much fewer use in talks and meetings, which were named third after private occasions. Regarding employees, about one-third used presentation software for company or product presentations during conferences, trade fairs, and private occasions. Overall, students and employees used computer-based presentations at different occasions: Both groups showed significant differences in all areas of usage ($7.01 \leq \chi^2 \leq 148.02; df = 1, N = 1014, p < .01$) except for entertainment ($\chi^2 (1,1014) = 1.11, p = .32$). Thus, only entertainment purposes were equally high among students and employees.

When asked which programs they used in particular for presentations, participants named Microsoft PowerPoint (96%), followed by Microsoft Excel (33%) and Adobe Acrobat (29%). Other presentation software, like Keynote or OpenOffice.org Impress, were mentioned by approximately 10% of the participants. This picture changed when participants were asked to state which software they use most for presentations. For that question, Microsoft PowerPoint was named by 83% of the participants, while no other software reached values higher than 4%. Small differences existed for program use, depending on whether the participant was an employee or a student: Employees tended to use a slightly broader range of software products, whereas students relied mostly on PowerPoint ($\chi^2 (1,1014) = 7.73, p < .01$).

<table>
<thead>
<tr>
<th></th>
<th>Employees (n = 570)</th>
<th>Students (n = 444)</th>
<th>Overall (N = 1014)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and teaching</td>
<td>72</td>
<td>97</td>
<td>83</td>
</tr>
<tr>
<td>Talks and meetings</td>
<td>70</td>
<td>32</td>
<td>53</td>
</tr>
<tr>
<td>Private occasions (for example, ceremonies)</td>
<td>32</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td>Company presentations</td>
<td>43</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td>Conferences and trade fairs</td>
<td>39</td>
<td>7</td>
<td>25</td>
</tr>
<tr>
<td>Product presentations</td>
<td>30</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>Entertainment</td>
<td>8</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: All values in percent, rounded to nearest whole number. Multiple answers were possible.

Participants reported having used presentation software for an average of 6.5 years ($M = 6.44, SD = 3.81$) and, on average, nearly six times per month ($M = 5.85, SD = 9.30$). We asked about the participants’ satisfaction with the most used presentation software using a seven-point Likert scale ranging from “very unsatisfied” (1) to “very satisfied” (7). Participants reported significant but very small differences between users’ evaluations of Microsoft PowerPoint, Impress, Microsoft Excel, and Adobe Acrobat ($F = 2.66, df = 3, p = .05, \eta^2 < .01$). The four products reach values between 5.29 (Microsoft PowerPoint) and 5.62 (Adobe Acrobat), indicating rather satisfied costumers ($0.89 \leq SD \leq 1.25$). However, users of Apple’s Keynote reported a much higher level of satisfaction with their preferred software ($M = 6.5, SD = .73$). This difference to the other users was highly significant ($F = 32.65, df = 1, p < .01, \eta^2 = .03$).

Tasks and User Behavior

In the second part of the survey we explored user behavior and typical tasks performed in presentation
software. During the preparation of a typical computer-based presentation, users focused 59% of their time on content ($SD = 17\%$), 28% ($SD = 13\%$) on design, 9% ($SD = 8\%$) on animation, and 5% on other activities. We found no or only very small significant differences in the different amounts of preparation time between students and employees. (We conducted a MANOVA with job status as independent variable and the preparation time ratings as dependent variables; effect sizes for the univariate differences were very small with $\eta^2 \leq .01$.)

A presentation is often created by several people, and many new presentations are based on previous ones made by the same author. We asked participations how often they used data or design from another presentation, providing a seven-point Likert scale ranging from “never” to “always” (see Table 2). One-third of the respondents claimed to have never built a new presentation based on previous presentations of other people, whereas another one-third reported once in a while using previous presentations. A large percentage (92%) of the participants imported data from other sources or applications into a computer-based presentation. Pictures and images were imported often (57%) or even always (17%), while video or audio files were rarely used to enrich presentations. Approximately one-third of the participants frequently imported text or tables from other applications.

Presentations were more frequently exported to a PDF than to a website; in fact, 72% of the participants stated they never exported a presentation as a website. Printing out handouts occurred only marginally more often than sending the presentation via e-mail. Nearly two-thirds of the respondents never or seldom used the presenter view tool (see Table 2). Except for the use of the presenter view ($\chi^2 (1,1014) = 4.08, p = .40$), students and employees differed in all aspects of presentation software use ($13.62 \leq \chi^2 \leq 116.27; df = 1, N = 1014, p < .01$). While students tended to work with colleagues and printed handouts more frequently, they indicated slightly smaller frequencies in the remaining task activities compared to those of employees.

<table>
<thead>
<tr>
<th>Table 2. Creation and Use of Computer-Based Presentations</th>
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<tbody>
<tr>
<td>Preparation together with colleagues</td>
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<td>----------------------------------------</td>
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<tr>
<td>Preparation together with colleagues</td>
</tr>
<tr>
<td>Creation based on own former presentations</td>
</tr>
<tr>
<td>Creation based on presentations from other people</td>
</tr>
<tr>
<td>Import from other applications: text</td>
</tr>
<tr>
<td>Import from other applications: tables</td>
</tr>
<tr>
<td>Import of pictures and images</td>
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<tr>
<td>Import of videos</td>
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<tr>
<td>Import of audio content and sounds</td>
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<tr>
<td>Export of presentation as website</td>
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<tr>
<td>Export of presentation as PDF</td>
</tr>
<tr>
<td>Printing out presentation as handout</td>
</tr>
<tr>
<td>Sending presentation via e-mail</td>
</tr>
<tr>
<td>Use of presenter view</td>
</tr>
</tbody>
</table>

Note: All values are rounded percent to the nearest whole number. The answer anchors were explained to the participants as follows: “never” means less than 5% of presentations, “seldom” means 5–35% of presentations, “once in a while” means 35–65% of presentations, “often” means 65–95 % of presentations, and “always” means more than 95% of presentations. Table 2 shows what percent of participants chose each answer option for each particular question.
Use and Evaluation of Presentation Software

Functional Demands on Presentation Software
At the beginning of the third part of the questionnaire, participants were asked to rate the importance of different properties and additional functions of presentation software. The three properties considered most important were basic demands from usability engineering: fast loading time, independence from technical settings, and independence of the operating system (see Table 3). Interestingly, common functions such as sound effects or clip arts were reported to be unimportant. Additionally, participants were asked to rate their most frequently used software in regard to these aspects, using a five-point Likert scale from 1 (“very bad”) to 5 (“very good”). Due to the small case numbers for other products, only Microsoft PowerPoint was analyzed, and results showed mostly mediocre evaluations of approximately 3 (“satisfying”). Only the picture import function of Microsoft PowerPoint was consistently rated as ‘good’ (M = 3.95, SD = .92).

As before, in the analysis of preparation time amounts, we found no or small significant differences between students’ and employees’ functional demands for presentation software. (In a MANOVA, with job status as independent variable and the preparation time ratings as dependent variables, effect sizes for the univariate differences were very small, with $\eta^2 \leq .01$). Thus, both groups reported the same functional demands and were comparable in their needs regarding presentation software.

In an open-ended question, participants were asked to state possible improvements of common presentation software. We received 502 responses, which we organized into 20 categories using content analysis. A higher ease of use was demanded most often in 17% of responses, followed by 12% of the responses stating that nothing needed to be improved. In 10% of the responses, higher compatibility of presentation files was desired. Other requests, listed in more than 5% of responses concerned better graphics, presenter viewing tools, improved import tools, and improved layouts and style templates. Overall, about 40% of the responses addressed usability aspects.

The last question—what participants missed as a member of the audience when listening to computer-based presentations—received 388 responses, which we organized via content analysis into 15 categories. While 12% of the responses stated that nothing was missing, 20% shared a desire for a better speaker, and 11% wanted more creativity in presentations. Overall, technical aspects are named in 41% of the responses, while 48% of the responses mentioned the performance of the presenter.

Table 3. Five Most and Five Least Important Properties and Additional Functions in Presentation Software

<table>
<thead>
<tr>
<th>Function</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most important properties:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fast loading speed</td>
<td>4.31</td>
<td>0.83</td>
</tr>
<tr>
<td>Same look in all settings and situations</td>
<td>4.20</td>
<td>0.99</td>
</tr>
<tr>
<td>Executable on all computers and operating systems</td>
<td>4.20</td>
<td>1.07</td>
</tr>
<tr>
<td>Excellent printouts</td>
<td>3.64</td>
<td>1.09</td>
</tr>
<tr>
<td>Hyperlinks between slides</td>
<td>3.55</td>
<td>1.12</td>
</tr>
<tr>
<td><strong>Least important properties:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large amount of animation effects</td>
<td>2.39</td>
<td>1.11</td>
</tr>
<tr>
<td>Large amount of clip art</td>
<td>2.36</td>
<td>1.11</td>
</tr>
<tr>
<td>Capability to display 360° pictures</td>
<td>2.32</td>
<td>1.15</td>
</tr>
<tr>
<td>Sound effects</td>
<td>2.29</td>
<td>1.12</td>
</tr>
<tr>
<td>Capability to display live video streams</td>
<td>2.17</td>
<td>1.08</td>
</tr>
</tbody>
</table>

Note: Answers were given on a five-point Likert scale (1 = “completely unimportant,” 2 = “rather unimportant,” 3 = “neutral,” 4 = “rather important,” 5 = “very important”).
Presentation Software in Use

Regarding the use of presentation software products, we confirm the prior estimates (Montalbano, 2009; Zongker & Salesin, 2003) of an approximately 96% market share of Microsoft PowerPoint when we asked which software participants use. However, even when participants reported their most used programs, PowerPoint was still found to dominate the market with 83%. Surprisingly, the second and third most used programs were Microsoft Excel and Adobe Acrobat, two products that were not originally designed as presentation software. Indeed, based on the weaknesses of Microsoft PowerPoint, we assume that either the need for showing numbers and calculations or the wish for identical-looking presentations (independent from presentation occasion, technical settings, or operating system) is a reason for switching to one of those products. Recognizing this trend, Adobe has started to stress the presentation capabilities of Acrobat.

Thus far, other presentation programs only play a small role in this market, which might be due to students’ preferences for PowerPoint (e.g., Susskind, 2005) and its quasi de facto status as a standard in educational settings (James, Burke, & Hutchins, 2006). Thus, many people will rely on this product later in their business lives because it is well known from their student days. Furthermore, users of Microsoft PowerPoint are rather satisfied (as was also found by Thielsch et al., 2006), and therefore, from a sales point of view Microsoft might have no urgent need for changes or upgrades. But it would be interesting to know more about what this satisfaction means and from where it derives. Furthermore, the relatively high use of nonpresentation programs like Adobe Acrobat or Microsoft Excel for presentation purposes shows that “something” is missing in PowerPoint. In addition, an interesting direction for further research could be an investigation of what made the small group of Keynote users so much more content than all other user groups and if that cause differs from a general loyalty or halo-effect within the Apple community.

Presentation Occasions

In examining the occasions when presentation software was used, we revealed some interesting findings: As expected, a high use was observed in educational settings, both among students and employees. While students use computer-based presentations during their education, one can assume that educational settings for employees refer to trainings such as work-related professional training programs or on-the-job trainings. As expected, professionals reported a frequently use of computer-based presentations in talks and meetings, for company and product presentations, and during conferences and trade fairs. However, we were surprised by the frequency of presentation software used at private occasions—by students as well as employees. But based on the anecdotal evidence that every member of our research team remembered more than one wedding ceremony with pictures of the happy couple shown via PowerPoint or family celebrations with slide-based quiz games, the use of computer-based presentations in private settings has (to our knowledge) become quite normal. Given the broad use of presentation software, we stress the need for high compatibility of presentation files. Users might also desire software creators to offer more design-templates from which they can choose.

Creating Presentation Slides

Answers to questions concerning the creation of computer-based presentations showed that this process often seems to be patchwork. Users prepare slides with colleagues or base presentations on other presentations. This finding is in line with the results of the study by Spicer and Kelliher (2009), who, based on data gathered with semi-structured interviews, also described the multiple use of the same presentation or its elements. The content of computer-based presentations is often generated within other programs or software applications (especially pictures and images that are imported into a presentation). In this area, the differences between students and employees in our study may be explained by different job requirements. For example, students are encouraged to work in groups and to create handouts for their presentations. In contrast, employees with years of experience have a larger number of previous presentations and materials that they can employ and import into their current presentation.
Use and Evaluation of Presentation Software

In addition, it can be assumed that most users are not professional designers or graphic artists. Thus, the large amount of time spent on design and animation (36% of preparation time, according to Thielisch et al., 2006) suggests that typical presentation software invites or, even more, entices the user to work on the noncontent part of a presentation. Farkas (2008) discussed the efforts employees must exert to create a good presentation and questioned critically to what extent this effort is in line with the employers’ demands for efficiency in the employees’ time. In addition, Farkas (2006, p. 166) stated that presentations often have a “second life in standalone mode” that is separate from the oral presentation. Our results showed that this mostly occurred when presentations were printed out (handouts) or exported into a PDF-file and only seldom occurred in the form of a website. This continuing use of a presentation may motivate the user to put a lot of effort in its graphic design. From an organizational perspective, we recommend well designed and easy-to-use templates to enhance the employee’s production of presentations and to reduce the time spent on print versions or matters of visual style.

Functional Demands
The third part of the survey clearly showed the functional demands of the presentation software user (see Table 3). Important aspects were the loading speed of presentations, the independence from operating systems, and the same look in all settings and situations, which is also an issue for corporate identity. In the open-ended questions, participants stressed ease of use and the compatibility of presentation files. These are typical usability demands, as usability is defined over the effectiveness and efficiency users can achieve their goals (ISO, 1998). A large variety of clip art or sound effects seemed to be undesired, and sound effects are often disregarded in the literature (e.g., Jones, 2003; Moreno & Mayer, 2000; Murphy, 2004; Thielisch et al., 2006). Most of the time Microsoft PowerPoint is rated only adequate regarding different functions—people are satisfied but not glowing. Nevertheless, a substantial number of participants stated that nothing is missing, and they demanded no improvements in presentation software. In contrast, the speakers themselves and the creativity of presentations were often mentioned as needing improvement from the audience’s point of view. This implies that choosing a good design might be important, but instead of putting too much energy into that, one is rather advised to put the time into preparing a good speech. A number of answers (48%) requested improvement in aspects that are the responsibility of the presenter and not the software. This result reminds us of the central function of the speaker, which is also stressed (e.g., by Farkas [2006] or Garner et al. [2009]), and the supporting role of presentation software.

Limitations
Some limitations should be considered when interpreting the results of our study. First, although our study was based on a large sample, all participants shared the same cultural background. The shared background might be a source of bias if user behavior regarding presentations software differs significantly, e.g., between the U.S. and Germany. Second, our approach was explorative and based on self-reports. We chose this method of data collection because it seemed to be the best way to reach our goal of a broad description of presentation software usage among different user groups. To gain deeper insight regarding the usage of several software products or special user tasks, a direct observation of users’ behavior, analysis of presentation slides (e.g., Brier & Lebbin, 2009; Garner et al., 2009; Mackiewicz, 2007a, 2007b), or the use of tracking methods would be appropriate. Third, as in all fields of human–computer interaction, the usage and market shares of the software products under study is relatively fast moving and prone to technical improvements that may change user behaviors and evaluations in the future.

Conclusion and Further Research
Taken together, our study delivers background information on users’ evaluations, tasks, and wishes regarding presentation software and its usage. We gathered some insights regarding the use and appraisal of software. Additional analyses showed on the one hand that students and employees use presentation software at different occasions and differed in creation and use of slides. Thus, results regarding such aspects could probably not be transferred to the other group without some reservations. On the other hand, both groups reported most of the same functional demands...
and were very comparable in their needs regarding presentation software.

Further research should investigate the surprisingly frequent use of presentation software for private occasions or to identify factors underlying the very positive evaluation of Apple’s Keynote compared to other products. Answering questions about how to enhance employees working with presentation software, how to focus preparation time on slide content, or how to prepare a good oral presentation is highly interesting for applied research.

Our results regarding typical tasks and users’ behavior with presentation software could help developers to improve such products or to create new ones (like the software Fly by Lichtschlag et al., 2009, or NextSlidePlease by Spicer & Kelliher, 2009). Additionally, our data provide further information regarding the problems with presentation software and the concerns of big critics like Tufte (2003, 2006); we showed that a remarkably large proportion of time is spent on design or animation issues, even by nondesigners, while there is a desire for creativity within presentations and better speakers. The creation of computer-based presentations demands a variety of design choices, which are as well mediated by the presentation software (Farkas, 2009). Design aspects like beauty and visual aesthetics of computer-based presentations could be an interesting research topic, especially as these aspects have recently gained much attention in other domains of human-computer interaction (for an overview, see Moshagen & Thielisch, 2010). As easy as computer-based presentations are to create, presenters seem to be seriously challenged to create good presentation slides and to deliver a good talk. Thus, this mode of presentation depends only partly on the software itself. In particular, the interaction between the software product, the preparation of slides, and the behavior of the speaker should be of great interest for further research.

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**About the Authors**

**Meinald T. Thielsch** is a postdoc at the University of Münster, Department of Psychology, where he teaches primarily in the area of psychological assessment. His research interests include human–computer interaction and especially perception, use, and evaluation of interactive products. Further information can be found at www.meinald.de. Contact: thielsch@uni-muenster.de

**Isabel Perabo** graduated in 2011 from the University of Münster and has a diploma degree in Psychology. Her diploma thesis deals with user experience of online questionnaires.

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Using Business Models to Describe Technical Communication Groups

Saul Carliner

Abstract

**Purpose:** According to the management literature, a business model explains how an organization makes money (generates revenue). These models not only affect revenue but, because generating revenue is central to the survival of an organization, affects all other operations.

**Method:** Applies the theory of business models from the management literature to technical communication groups, using descriptions of technical communication groups from empirical studies to identify the most common business models for these groups and suggests how the source of revenue affects operations.

**Results:** Technical communication groups typically fall into one of these models: (a) Venture Capital Model—groups that produce content published for sale; (b) Design Model—groups that design the architecture and oversee implementation of Web sites, large information campaigns, user interfaces, and designed-in information; (c) Agency Model—groups that produce marketing communication, employee communication, and other high profile content; (d) Development Shop Model—groups that support a strategic effort by developing help, user’s guides, reference manuals, and similar product information; (e) Technical Support Model—groups that produce materials for internal users; and (f) Contractor Model—groups that update documentation for products and services have long life cycles (often lasting for decades). Although the literature on technical communication advocates for the Design model, most technical communication groups operate under the Development Shop, Technical Support, and Contracting Models, as well as mixed models.

**Conclusions:** This theory does not prescribe actions technical communication groups should take to change their status; rather it describes why technical communication groups in different organizations might have different experiences.

**Keywords:** business models, management, power and influence, value
Introduction

Theories describing the core work of professional technical communicators are widely documented in the literature in technical communication, such as theories on the process of writing (for example, Flower & Hayes, 1981), theories on the role of genres in directing writing activities (for example, Berkenkotter & Huckin, 1995; Swales, 1990), and theories linking the creation of genres to the environments (activity systems) that create them (for example, Spinuzzi 2003).

Similarly, the literature on technical communication also documents the situations in which professional technical communicators work. For example, the literature describes the different organizational structures in which technical communicators work. Various membership surveys taken by the Society for Technical Communication (STC) and its chapters and special interest groups suggest that some technical communicators work in stand-alone departments, some work as teams within departments that have responsibilities beyond communication, while others work as lone-writers—the only technical communicators in their organizations. (As a result of these differences, I use the term group rather than department as the overarching term to refer to the situations in which technical communicators work.) The peer-reviewed literature describes differences in the range of authority that technical communication groups have. For example, in her study of the production of technical communication products in four organizations, Hovde (2010) contrasts one organization whose technical communication staff consists of a part-time university student whose authority is limited to production issues with the operations of other groups. One of those other groups is a department of full-time and experienced technical writers who propose the structure and content of their documents but do not have final approval of their work. Although raising concerns about the “second-class” status of technical communicators, Hovde’s research actually presents situations in which technical communicators in different situations have different levels of influence.

What the technical communication literature lacks is a theory that, at the least, classifies these differences in situations in which technical communicators work and, at the most, suggests how the conditions for technical communicators varies under these different conditions, such as differences in the nature of the work they perform and differences in influence in different situations.

Although our literature lacks this theory, it does exist in the literature on management. In particular, business models, a popular and increasingly researched theoretical construct, provide a theoretical basis to explain differences in status, reporting structure, and assignments among technical communication groups. The concept was initially developed to explain how organizations generate revenue, especially organizations engaging in e-commerce (Weill, Malone, D’Urso, Herman, & Woerner, 2005).

But the concept has been broadened to apply to other industries, like communication, to organizations other than for-profit businesses, as well as to internal departments. In terms of the communication industry,
Business Models of Technical Communication Groups

Business analysts have used the concept to explain problems in the mass communication industry (Carr, 2009; Clifford, 2009; Perez-Pena & Arango, 2009; Rich, 2009). In terms of government and nonprofit organizations, some social service agencies that once relied almost exclusively on government funding have changed their business models and now seek alternate sources of income as that funding shrinks. Such agencies offer some services on a fee-for-service basis and are more actively soliciting donations and sponsorships. Similarly, Maguire (2008) notes that nonprofit organizations that publish magazines and academic journals, such as the ATTW, IEEE, and STC follow implicit business models to publish these journals.

Business models also apply to individual groups within organizations, such as a Research and Development division and a Technical Communication department. These groups all receive funding. For many groups, the funding comes in the form of a yearly budget allocation. For others, the funding comes as payment for services, sometimes a single payment to cover an entire project, sometimes payments for actual hours worked and related expenses incurred. Although many technical communicators might think about the amount of funding they receive, fewer have probably considered that the manner in which they receive income has an impact on their operations beyond the mere money. At the least, such differences in payment schemes could explain the financial flexibility of technical communication groups in different situations. At the most, such differences could explain situations in which technical communicators work and how these differences result in differences in power and status within organizations. That, in turn, could provide a theoretical basis for describing the differences in power and status among technical communication groups.

Power and status is a recurring theme through the years in the literature on technical communication. Not only does Hovde (2010) mention it; so does Spilka (2000). Coppola (2011) and Savage and Kynell (2003) go further, editing multi-part works to the issue.

This article applies the concept of business models to technical communication groups. First, it explains what business models are and contrasts the concept with other descriptions of the management of technical communication groups. Next, this article provides a taxonomy of common business models for technical communication groups. An example of a large technical communication group with several departments that each operate under a different business model illustrates the practical implications of these different business models. The article closes by considering some broader implications of business models to the theory and practice of technical communication.

About Business Models

The central purpose of a business model is to explain how an organization makes money (Afuah & Tucci, 2000; Chesbrough & Rosenblum, 2002)—also referred to as generating revenue. For example, does the organization receive a lump sum (apportionment) at the beginning of the year as most cost centers do? This is the case with many internal technical communication groups (Carliner, 2012; Carliner, Qayyum, & Sanchez Lozano, 2012). Or does the organization receive payment for each project, as most firms that provide consulting and contracting services do (Chesbrough & Rosenblum, 2002)?

Management researchers have noticed that the manner in which organizations generate revenue also affects all other aspects of their operations. For example, researchers have noticed that the manner in which an organization generates revenue influences the processes for creating products and delivering services. The means of generating revenue also affects the flow of information and other resources (Weill, Malone, D’Urso, Herman, & Woerner, 2005). In organizations that have a guaranteed source of income, like internal technical communication groups that receive an annual apportionment, the process usually begins when a technical group (Engineering, Software Development, or a similar group) initiates a request for an assignment. Most communicators in these groups interact with clients through a project or departmental manager. In contrast, in organizations that receive funding by the project, like contracting and consulting firms, the process usually begins with a request for a proposal for a project, and work would not begin until the client approves the request. In these situations, communicators might interact with clients through an account manager rather than a project or department manager.
A second aspect of operations affected by the source of revenue is the cost structure of products and services (Chesbrough & Rosenblum, 2002). For example, what percentage of costs are direct costs (that is, go directly to the service, such as the cost of a technical communicator’s time) and which costs cover overhead, additional costs, such as rent on the office where the technical communicator works and the cost of the manager? For those organizations that do so, what is the percentage of profit (that is, the funds left after expenses are subtracted from revenue)?

A third aspect of operations affected by the source of revenue are relationships with clients, suppliers, and others (Weill & Vitale, 2001). For a technical communication group working under an apportionment system, for example, the guarantee of funds require that technical communicators be available for all projects planned within the organization. These technical communicators receive approvals for budgets, hiring, and other aspects of operations from their sponsors. Sponsor is a generic term that refers to the internal or external client who can either authorize or stop payment on technical communication services (Robinson & Robinson, 1989). In contrast, technical communication groups that are paid by the project only work with their sponsors when a need exists. Furthermore, sponsors typically expect the technical communication group to manage its own internal affairs like budgets and hiring, although sponsors might voice opinions.

A fourth aspect of operations affected by the source of revenue is the way that the organization creates value for its sponsors (Linder & Cantrell, 2000). For example, a technical communication group funded by apportionment is usually part of a larger organization and creates value for the sponsor by providing a piece of a larger product or service, like the documentation of a computer, the training provided as part of a professional services contract, or the user interface of a software program. In contrast, a technical communication group funded on a per-project basis fills a gap in the skill base of the customer organization.

How Business Models Contrast with Other Explanations of Differences among Technical Communication Groups

Business models contrast with other explanations of differences among technical communication groups. Some of these other explanations are rooted in the opinions of their authors and make assumptions about the ways that technical communication groups do and should operate—views that empirical evidence often does not support. For example, several authors have suggested that the ideal structure for technical communication groups is as profit center (Boiko, 2009; Kline, n.d.; See, 1995). In the most basic terms, a profit center is a group that charges for its products and services with the intention of generating more revenue than is needed to provide the service (a profit) (See, 1995). The limitation of such suggestions is that they often lack concrete details about how a technical communication group might operate under such an approach, much less how they might make the transition. Commenting on Boiko’s advice that technical communication groups should operate as profit centers, Hamilton (2009) comments that Boiko “conceded that this is hard to do.”

Other explanations of differences among technical communication groups are strongly rooted in theory or empirical data. For example, Hackos (1994) adapted the Software Process Maturity Model (Pfleeger & McGowan, 1997) to technical communication projects. The Process Maturity Model differentiates among organizations by the sophistication of their project management processes, ranging from ad-hoc processes to ones that are optimized through feedback loops. The advantage of the Process Maturity Model is that it suggests that technical communication groups are likely to experience different working conditions based on the sophistication of project management in the organizations. However, this model does not suggest the types of projects on which technical communicators might work, the skills they might use, or the level of influence they might have within an organization.

Hackos (2007) proposed a second approach, the Project Portfolio Model. The project portfolio model advises managers to evaluate the types of projects on which they can do well and those on which they can’t,
and to adjust their workload to focus on those projects that groups can do well. The advantage of such a model is that it recognizes that technical communication groups do not perform all projects equally well. However, this approach is not predictive. It is, instead, a framework for evaluating work.

The third, and perhaps most popular, approach is value-added (Redish & Ramey, 1995), which suggests that, by collecting concrete, quantifiable evidence of ways that technical communication projects have added value to the organizations that published them, technical communicators can add to their prestige within the organizations that employ them. As a variation, the Aberdeen Group identified specific ways that technical communication products affect satisfaction and revenue of the products they support (Houlihan, 2009). However, both of these approaches only explore the impact of individual communication products. It only explains how to determine whether technical communication products and services ultimately added value, rather than explain how organizational structure and processes supported or constrained technical communicators in producing such valued work.

Researchers further assume that providing empirical evidence of value results in tangible benefits to technical communication groups, but no research explores such impacts. Empirical evidence of similar issues in the field of training suggests that evidence of value-added is often not as persuasive as hoped (Subramony, 2006).

Methodology
The common models for technical communication groups are derived from two sources:

- Empirically derived case studies of the work operations of technical communication groups (such as Hovde 2010; Kain, 2006; Power, 2009)
- Surveys of the work practices in technical communication groups (Carliner, 2004, 2012; Carliner, Qayyum, & Sanchez-Lozano, 2012)

Although conducted for other purposes, patterns recurred in this literature, showing consistent patterns of operations and influence associated with different types of assignments. The taxonomy emerges from this observation of patterns.

The literature on business models suggested that the way an organization receives funding affects all of its operations—not just getting money, but also the way an organization manages projects, how it defines work quality, and how it interacts with sponsors. So the operations of technical communication groups operating under each business model identified was analyzed from a number of perspectives suggested by the literature, including:

1. The types of projects on which the group is likely to work
2. The value of information (content, communication products) to sponsors
3. To whom the group might report
4. The skills that the technical communication group values
5. The time frame of projects on which the group works
6. The nexus of respect that the group earns from its sponsor
7. How sponsors assess the success of the work they receive from the technical communication group (suggesting, in turn, what constitutes “value” to them)

Business Models for Technical Communication Groups
Business models can address the shortcomings of the approaches just described and explain how technical communication groups operate within larger organizations and the extent of influence they have within them. This section applies the theory of business models to technical communication. It first explains the methodology used to derive the application, then it describes a taxonomy of business models for technical communication groups.
A Taxonomy of Business Models for Technical Communication Groups

To think about this in practical terms, consider the example of the Technical Communication group at MegaCorporation, led by Director of Technical Information, Vicki Harrington. Vicki has direct responsibility for 143 technical communicators working in 9 departments and indirect responsibility for another 20 temporary workers. The nine departments include:

- One (1) User Experience Department, which designs the user interface and develops comprehensive user support plans for new and significantly modified software applications.
- One (1) Special Projects Department, which works on a wide array of projects on an as-needed basis, from white papers about the applications documented by the Technical Information departments to displays and presentation materials needed by programmers and other technical staff attending conferences and business shows.
- Four (4) Product Information Departments. Three (3) of those departments develop the user assistance designed by the user experience department. The fourth develops user assistance for a different division of the company.
- One (1) Maintenance Department, which maintains documentation for older products.
- One (1) department known as “The Press,” which produces after-market books and other materials for sale to end users and other parties.

The temporary workers include five consultants working for a user experience firm and assist the User Experience Department with special projects, as well as 13 contractors working for an agency that helps the Maintenance department when the workload exceeds the capacity of the department (which is often).

Other directors have noted to Vicki that they have had different experiences—and perceptions of—the different departments in her group. When discussing the situation with some of them, Vicki casually mentioned that the departments reporting to her receive funding in different ways. One of the directors picked up on this and suggested that Vicki “follow the money.”

That’s because the central proposition of business models is that organizations optimize their internal processes to maximize their revenue. An analysis of previous research suggests that, like the six categories of departments in the group the Vicki directs, most technical communication groups can be described by one of six common business models. Figure 1 names these six models. The following sections individually describe each of them. Each discussion specifically considers the implications of the seven issues named in the Methodology section and illustrates the model by relating it one of the categories of departments in the group that Vicki leads.

![Figure 1. The Most Common Business Models for Technical Communication Departments](image)

Model 1: Venture Capital Model

Groups that operate under the Venture Capital Model produce communication products for sale, such as books, magazines, DVDs, and websites that generate revenue either through subscriptions, advertising, or both. Although the revenue generated by the sales of the communication products eventually funds ongoing activities of the organization and future products, the first publications are usually funded by an up-front investment or loan. These investments often come from venture capitalists: hence, the name. But funding can come from within an organization as some organizations have the resources to do so. Publishers of third-party books, like the *Dummies* series, are examples of organizations operating under the venture capital model.

In the Technical Information group that Vicki leads, the Press department operates under the Venture Capital Model.

Groups like this are funded on a per-project basis and each project is usually funded separately. Furthermore, some projects might have several components that may be funded separately. To receive funding, the project...
leader must present a compelling business case to a funder. The case not only describes the content to be published, but must also describe and estimate the size of the market for the project, as well as realistically forecast the revenue and expenses for the project. If funders agree that the project is worthy and that the forecasts of expenses and revenues seem realistic, they approve funding. In some instances, the funder provides all of the funding at one time. More realistically, funds are paid as the organization successfully passes certain milestones. Should projects fail to meet their milestones, venture capitalists might terminate the funding and end the project (Hellman, 1994).

The communication products published by organizations working under the Venture Capital Model are strategic to the organization. That is, the success or failure of the organization rides on the sales of the communication products. For example, if fewer people purchase the *Dummies* books than is needed to cover the costs of preparing, publishing, distributing, and marketing those books, the publisher could go bankrupt.

Technical communication groups operating under the Venture Capital Model are ultimately accountable to their investors. Some investors take an active role in managing the organization, suggesting strategies for management and marketing and, sometimes, for which technical information to publish and how to publish it. Other investors take a hands-off approach, and let communicators make all of the key business decisions.

A technical communication group operating under the Venture Capital Model emphasizes these skills:

- Financial management: Minimizing expenses without sacrificing quality while maximizing income.
- Business leadership: Successfully capitalizing on market trends; demonstrating a willingness to take calculated risks to retain existing customers and appeal to new ones; and nurturing the “brand” (that is, recognizing the key components of the intangible value in a brand name—like “TechComm Press”—and taking advantage of that value) (Keller, 1993).
- Project management: Identifying and securing all of the resources needed for a project; setting a realistic schedule and using it to create a realistic budget; and managing resources so that the product is produced on time and within budget (Hackos, 1994).
- Information architecture and design: Defining the audience and purpose for a communication product; linking the product to the business objectives of the organization; establishing objectives for the content; establishing quality guidelines for the content; designing one or more products that meets those objectives; choosing the most appropriate formats and media in which to publish that content; and evaluating the extent to which the published products actually meet their objectives (Carliner, 2003).
- Interface, information and experience design: Designing and developing user interfaces, related components of software, content, and similar types of materials so that users are delighted with the experience (Cooper, 1999).
- Technical communication skills: Effectively communicating content, such as instructions for using an application or device, policies for using internal computer networks, and safety training (Lanier, 2009).
- Customer service skills: Effectively interacting with sponsors and other members of the team producing a communication product, including the venture capitalists, executives of the organization publishing the content, other sponsors, and members of the team working on the product (Fredrickson, 1993).

The time frame for projects funded under the Venture Capital Model is medium- to long-term, usually 12 to 30 months.

Groups operating under the Venture Capital Model usually generate respect for their work through three sources of power:

- *Leadership* power: The ideas for projects come from the technical communication group, as does the initiative to secure funding. As a result, all people in the organization look to the technical communication group for intellectual leadership on a project.
- *Referent* power: Other people in the organization defer to the expertise of the technical communication group. The term referent comes
from the term “refer,” because people see the technical communication group as the source of reference on projects.

- Financial power: Groups operating under the Venture Capital Model have control of their own finances on a project, and can determine how much to fund activities such as research, writing, and production. Note, however, that the technical communication group is still accountable to the funders for the ultimate use of funds, and some venture capitalists might seek final approval, but the technical communication group generally determines how to allocate funds on a project.

In a technical communication group funded under the Venture Capital Model, investors assess the success of their investment by the return it offers. The return is the amount of money that is paid back on the investment. At the simplest, investors consider the profit earned, and their share of that profit. But most take a more complex view, focused not only on dollars received in income, but the percentage of return on profit compared with other possible investments, including interest on a bank account.

The Press department in the example of MegaCorp generates revenue by publishing books, e-learning programs, how-to videos, and similar materials, and selling them to customers directly and through major retail outlets, such as Amazon, book stores, and technology retailers. The majority of its authors are freelance writers who earn some or all of their income from royalties on the books, although the Press does publish some materials by company employees. Because it has responsibility for generating its own revenue and must meet both revenue and project targets established by the company, the Press prepares a business case for each project it considers publishing. The business case not only estimates the total cost of writing, editing, producing, publishing, inventorying, supporting, and marketing the materials, but also estimates the numbers of copies to be sold, including best and worst case scenarios. The Press only publishes content that can generate at least 19 percent profit under a worst case scenario. The Press thrives or suffers based on its sales; failing to meet sales projections in one year has a negative effect on the budget in the coming year.

Furthermore, although the Press provides freelance authors with access to Subject Matter Experts in the company, authors have full responsibility for the accuracy of the content published and bear full liability for errors in publication. The Press does not make Subject Matter Experts available for technical reviews of the content. That liability concerns some of the technical communicators in Vicki’s group; these information developers only feel comfortable when Subject Matter Experts verify the accuracy of content.

Model 2: Design Model

This model describes technical communication groups that are part of a larger organization, and who play the leadership role in designing and developing the products produced by the organization. For example, a group operating under the Design Model might not only document the web-based travel application that the organization produces, but also design the entire user experience associated with that application.

In the Technical Information group that Vicki leads, the User Experience department operates under the Design Model, as do the five consultants working for the independent consultancy on user experience design. The Design Model is often recommended in the literature (for example, Albers 2002, Ames 2001, Dykstra 2001). In many ways, the Design Model is like the Venture Capital Model. The primary difference is that groups operating under the Venture Capital Model are typically independent and the projects on which they work are self-contained. Groups funded under the Design Model are typically part of a larger organization, work on projects that are part of larger product development efforts, and usually engage in the business of software development. In some instances, these workers might work for consulting firms.

Like technical communication groups funded under the Venture Capital Model, technical communication groups operating under the Design Model are funded on a per-project basis. The funding may be phased, as might happen on a project funded under the Venture Capital Model. That is, at key milestones, senior executives determine whether to continue funding the project.

Projects funded under the Design Model are strategic to their organization, and typically include:
Business Models of Technical Communication Groups

- Web sites (designing the architecture and branding for the site, as well as overseeing the implementation of the plans)
- User interfaces
- Designed-in information (such as all of the on-screen content for an application and the keytop names on specialized keyboards)
- Information that’s external to the software, such as help, manuals, sales materials, and training

Technical communication groups operating under this model typically report to a software or product development executive. In a few organizations, technical communication groups operating under the Design Model have their own executive, who reports to the president or CEO of the organization.

Technical communication groups operating under the Design Model emphasize the same skills as groups operating the Venture Capital model—business leadership; project management; information architecture and design; interface design; experience design; technical communication; and customer service. But technical communication groups operating under the Venture Capital typically emphasize business management skills more than those operating under the Design Model. Those operating under the Design Model, in turn, probably emphasize information architecture and interface design, information design, and experience design skills more than those operating under the Venture Capital model.

The time frame for projects funded under the Design Model is medium- to long-term (6 to 36 months). That is because many of these groups are internal to an organization and already have access to confidential information about the organization.

Groups operating under the Design Model derive respect through leadership and referent power. To a small extent, they also have financial power, because the technical communication group prepares and justifies the budget for a project to the senior executives before it commences. But the technical communication group often does not have final authority over allocations of budgets.

In a technical communication group operating under the Design Model, the value of the technical communication effort is assessed in several ways. When feasible, organizations track the revenue generated by the communication products. But in many instances, that is not feasible, so organizations assess the value added by the technical communication group; its ability to respond to input from others inside and outside of the organization and the results of surveys of satisfaction with the product and project, and usability tests (if conducted).

The User Experience Department that reports to Vicki has had responsibility for designing the user interfaces of all software designed by the division for the past five years. The Vice-President for Research and Development, to whom Vicki reports, typically involves a member of the department during the product definition phases. When the market planners successfully receive initial funding for their projects, the Vice-President for Research and Development turns over the project to the User Experience Department to lead the design and initial prototyping of the user interface for the project. Typically, the User Experience Department prepares a detailed beginning-to-end description of the entire user experience with the software, related support, and any relevant off-screen interactions that might affect use of the software. The department then prototypes the software and, once it has a viable prototype, oversees the development of detailed specifications by software development groups.

The User Experience Department receives funding by the project. These budgets often provide the department with considerable purchasing power and include funds to interact extensively with customers, conduct competitive research, and receive assistance from outside consultants. But the department must justify these expenditures up-front. For example, because it does not have full-time researchers, the User Experience Department typically hires the consulting firm to conduct focus groups about new products and to oversee the testing of prototypes and a usability analysis of competitive products. Budget also comes with additional responsibility; when the price tag for its plans exceeds the budget available for the project, the department must determine which aspects of usability to pursue and which to shelve.

The User Experience Department has primary responsibility for the usability of the products. As a result, the Vice President for Research and Development uses independent product reviews as well as customer
perceptions of products as measured by surveys conducted by industry analysts and the marketing department to evaluate the department. Product sales are also used to assess the department.

**Model 3: Agency Model**

This model describes technical communication groups that work on special projects, such as proposals for external clients, white papers for new products, PowerPoint slides and related handouts for senior engineers giving speeches at conferences, and displays and posters for trade shows and conferences. Usually these projects are short-term and have high-visibility. This model receives its name because technical communication groups typically manage these projects as if the group operated like an independent agency, whether or not they actually work as one. Whether the engineers hire an outside communications firm or assign the work to an internal technical communication group, the projects just described is an “agency” project.

In the Technical Information group that Vicki leads, the Special Projects Department operates under the Agency Model.

Organizations operating under the Agency Model are funded by the service or project by sponsors, who either use the communication product themselves, or re-sell it. Fees usually cover *time and materials*—the actual number of hours worked plus other project-related expenses like printing and purchasing specialized equipment and software for a project. For example, if a PowerPoint presentation requires 50 hours to produce and involves travel to another site to meet with an engineer, then the technical communication group would charge the client for 50 hours of work plus travel expenses. But fees are occasionally paid on a project basis, as is typical of funding for groups operating under the Venture Capital and Design Models. For example, the technical communication group would provide a single price quote to the customer for preparing a PowerPoint slide presentation, then manage the project to make sure that the number of hours and expenses do not exceed estimates.

In contrast to the strategic nature of information published by groups operating under the Venture Capital and Design Models, technical communication products published by organizations working under the Agency Model, while highly visible, are usually not strategic. Rather, the information usually supports another effort. In some cases, the technical communication products are merely *cosmetic*, produced to appease the person who requested them. Although the person requesting the work might believe that the communication product is strategic, others in the organization might not agree.

Projects developed under the Agency Model typically include communication products used in marketing, employee communication, and other high profile uses. Examples include proposals, employee handbooks, white papers, marketing collateral (brochures), sales-promotion materials (flyers), short online demonstrations, materials for trade shows, video presentations, and interactive media presentations.

Internal organizations operating under the Agency Model report to a communication manager. Many external agencies also operate under this model.

Technical communication groups operating under the Agency Model emphasize these skills:

- **Project management**: Ensuring projects are completed on the often tight schedules and budgets imposed by sponsors. Because many groups have the expertise to produce these types of materials, many groups operating under the Agency Model emphasize that they follow a unique and proven methodology that allows them to use time most efficiently and produce materials at the level of quality sought by the client.
- **Creative problem solving**: Offering creative ideas that work within the budget and schedule constraints, and other limits set by the sponsor. In fact, the ability to do this often builds a loyal following to groups operating under the Agency Model.
- **Relationship marketing**: Matching the sponsor’s needs with the services offered by the group; overselling (providing more services than a client really needs) could ultimately destroy trust, as could under-selling (providing fewer than the client really needs).
- **Production**: Preparing materials for print or for publication online. For printed materials, clients expect technical communication groups operating under the Agency model to manage the printing
or duplication process, as well as the subsequent shipping and inventory management processes. For those materials being published online, clients expect technical communication groups operating under the Agency model to manage all of the various tests that precede publication and manage the tracking that occurs afterwards (such as click tracking for websites and learning management for e-learning programs).

- Technical writing: Writing clear, concise, and accurate informational materials (Lanier, 2009).
- Instructional design: Preparing clear, concise, and accurate materials for learning and that meet the needs of both learners and the organization (Villachica, Marker, & Taylor, 2010).
- Graphic design: Preparing clear, concise, and accurate images.

The time frame for projects funded under the Agency Model is short-term (3 or fewer months). Groups operating under the Agency Model primarily have referent power within an organization. In groups operating under the Agency Model, the value of the technical communication effort is assessed by word-of-mouth: how internal customers talk about the experience of working with the technical communicators and customers’ feelings about the products produced by the technical communicators. Specific issues considered often include timeliness of service, perceived utility of the final product, perceived appearance of the final product, and cost (Carliner, 2012).

Groups operating under the Agency Model assess the value of the technical communication effort by the amount of repeat business they receive from customers. In addition, some sponsors who request that technical communicators develop marketing materials for them might have in place systems for measuring customer response to the materials.

The Special Projects Department that reports to Vicki works on a wide a variety of projects. Some recur regularly, such as preparing white papers for the Marketing department, research reports that engineers and computer scientists submit to peer reviewed journals, and preparing presentation slides and handouts (and occasionally scripts) for staff giving presentations at business shows, conferences, and user conferences. Some occur once or twice a year, such as preparing the annual report of the Research and Development group and the semi-annual newsletter for the Research and Development staff. “Short” describes the lead times for most of these projects. For example, some programmers submit requests to the Special Projects staff as few as three days before a presentation. Then again, the programmers usually submit a first draft of the slides with these late requests. The drafts are usually “dreadful;” through its “magic,” the Special Projects staff “transforms” these drafts into “professional-looking” slide shows. The visual transformations on such short deadlines earn the appreciation of the Research and Development staff, and the fast pace and wide variety of assignments appeals to the staff of the Special Projects Department. Unlike the Press and User Experience Departments, however, the Special Projects Department does not select the content presented in any of the projects on which it works, much less has responsibility for the accuracy of the content. In fact, the department has no full-time technical writers on staff. Although all staff can write, two primarily work as editors, six primarily work as production specialists, and three primarily work as project managers.

The work itself is precarious. Because the department is funded by the project, many of the projects are considered expendable in a budget crisis, so the manager and his staff regularly worry about long-term prospects for the group. Although the staff of the Special Projects Department has strong knowledge of the products and services of MegaCorporation, the manager knows that, in a pinch, that knowledge offers only a limited competitive advantage and the company could outsource the work.

Model 4: Development Shop Model

This model describes organizations in which the technical communication group prepares communication products to support a strategic software or hardware project, or a new initiative in the organization. A fundamental characteristic of the Development Shop model is that technical communicators do not have approval rights for the design of the project or service on which they work (Dykstra, 2001; Kove & Drexler, 1998; Storey &
Hartman, 2000), although they might have an opportunity to comment on these designs.

In the Technical Information group that Vicki leads, three of the Product Information Departments operate under the Development Shop Model.

Groups operating under the Development Shop Model are funded on an *apportionment* basis. As noted earlier, under an apportionment system, the technical communication group typically receives its funding as a lump sum at the beginning of the fiscal year following a budgeting process. In some instances, however, the budget comes on a project basis and is calculated as a percentage of the larger budget for the project that the technical communication effort supports. Although the percentage varies by organization, it usually ranges from 5 to 20 percent (Thomson, 1998).

The technical communication products published by groups working under the Development Shop Model typically support a strategic effort in the organization. On its own, however, the technical information is not considered strategic. These technical communication products typically include:

- Help, user’s guides, reference manuals, and similar product information (both printed and online)
- Tutorials
- Project documentation
- Special projects, such as technical support websites, and materials for user group meetings

Technical communication groups operating under the Development Shop Model usually report to a manager or director of technical of product development or of technical or customer support rather than the top executive in software development (except in the smallest organizations). Groups operating under this model are usually kept informed of product development plans and may receive opportunities to comment on the plans. But these groups usually do not have the right to approve or disapprove of product development plans.

A technical communication group operating under the Development Shop Model emphasizes these skills:

- Production skills
- Technical writing (both for print and online)
- Inventory control: Managing the quantity of the inventory of information (both printed and online) to minimize costs to the organization. For printed materials, this means keeping an adequate supply while minimizing storage and scrapping of outdated materials. For online materials, this means re-using content whenever feasible
- Project management. Like groups operating under the Agency Model, groups operating under the Development Shop Model emphasize that they follow a proven methodology that allows them to use time most efficiently and produce materials at the level of quality sought by the client

The time frame for projects funded under the Development Shop Model is short- to medium-term (2 to 18 months, depending on the project).

Groups operating under the Development Shop Model have *position* power within the organization. Position power refers to the “authority and influence bestowed by a position or office on whoever is filling or occupying it” (Business Dictionary.com) (Viewed at http://www.businessdictionary.com/definition/position-power.html, visited July 11, 2009). In other words, technical communicators in groups operating under the Development Shop Model merely have influence because they publish the technical communication products; others in the organization may or may not see additional inherent expertise in those activities.

In groups operating under the Development Shop Model, the value of the technical communication effort is primarily assessed in terms of word-of-mouth from their client organizations. Of particular importance to these clients is the ability of technical communicators to “get” the technical content (that is, the extent to which subject matter experts trust technical communicators to accurately report the technical material) (Carliner, 2012), and the ability of technical communicators to manage projects (more specifically, to bring in the project on schedule and within budget) (Carliner, Qayyum, & Sanchez Lozano, 2012). Other attempts to more substantially measure the value of technical communication products and services are ultimately seen as secondary measures, even though the people who make these attempts take these activities seriously.
The three Product Information Departments that report to Vicki develop the online help, user guides, references, and other content identified in the designs of the User Experience Department. The designs usually state the objectives that the content should achieve, and identify the format and medium used to deliver the content, as well as the guidelines that the content must follow, such as standard sections in help and user guides, and layouts for web content.

The majority of Product Information staffs are technical writers. Each of the three departments also has its own editor and project manager. Technical writers conduct additional research on the content, and prepare detailed outlines. Technical writers develop as many as three drafts of content for review and approval by the same groups before producing the content, publishing it, and providing ongoing maintenance for it. As a result of a new content management system installed in the company, all published topics have an “expiration date,” and technical communicators must review the content, update it, and receive approvals for the updates before republishing the content.

Although the technical writers and editors working in Product Information Departments receive strong training on company products and underlying technologies, the Vice President for Research and Development requires that all content produced by the Product Information Departments be reviewed and approved by the User Experience staff and software developers—software engineers, product developers, and similar technical experts. That is, Product Information Departments do not “own” the content they produce.

When the company decides to develop a new product or service, the approval covers funding needed by Product Information. Rather than the managers of the Product Information departments submitting requests for funds, Vicki does so on their behalf. Typically, the Product Information groups receive 10 percent of a project budget. When she first assumed her job, Vicki argued for a higher percentage on some projects but Research and Development executives always balked at the additional expense so she has not tried for the past three years. Vicki also learned that these executives do not approve funding for great ideas that emerge while the project is under development, so she encourages Product Information staffs to do “innovative thinking” as early as possible on a project so she can include it in initial budget requests.

**Model 5: Technical Support Model**

This model describes organizations in which technical communicators work with groups that provide technical services to their organizations, such as Information Systems (IS) and Information Technology (IT) groups. Typically, technical communicators working under the Technical Support Model provide ongoing training to users, prepare documentation about all internal applications (whether or not those applications are strategic), maintain an internal knowledge base for the help-line desk, and prepare specifications and other internal documents (Hovde, 2010). Although groups operating under this model usually support an IT/IS group, sometimes, they support other groups, like repair teams (Carliner, 2012).

In the Technical Information group that Vicki leads, the fourth Product Information Department operates under the Technical Support Model. This is the department that reports to Vicki but works on contract to another division of the company.

Organizations operating under the Technical Support Model are funded on an apportionment basis. Like information produced by groups operating under the Development Shop Model, technical communication products published by organizations working under the Technical Support Model typically support a strategic effort in the organization, although the technical information on its own is not considered strategic. Communication products published by groups operating under the Technical Support Model typically include:

- Help
- Training materials (often self-study)
- User guides
- Reference materials, especially for use by internal technical experts
- Newsletters for frequent users
- Lists of frequently asked questions

These groups also publish design specifications, although they typically do not write the original.
content—they edit the work of others. The content published by groups operating under the Technical Support Model is typically intended for internal audiences.

Groups operating under the Technical Support Model usually report to the manager or director of technical support, or directly to the manager or director of IT/IS.

A technical communication group operating under the Technical Support Model emphasizes these skills:

- Writing
- Instructional design
- Facilitation: Leading live and webcast training classes and similar presentations (Hovde, 2010)
- Production
- Marketing
- Customer service

The time frame for projects funded under the Technical Support Model is short-term (three or fewer months) or ongoing, such as training classes that might be offered once a quarter and newsletters (although producing an individual issue of a newsletter is a short-term project, responsibility for a newsletter is ongoing). Groups operating under the Technical Support Model usually complete a high volume of projects.

These groups typically have position and, occasionally, referent power within their organizations. Although they usually do not participate in the design or customization of information systems used within the organization, they usually serve as the face of the IT/IS organization as these technical communicators help users navigate through systems.

In organizations operating under the Technical Support Model, the value of the technical communication effort is primarily assessed by word-of-mouth, the number of products and services published, and the number of people served.

The Technical Support Department that reports to Vicki supports the corporate Information Technology (IT) group. The IT department originally used outside contractors for its technical communication needs. But when told four years ago by the Vice President for Research and Development that she would have to lay off 10 percent of her staff, Vicki asked if she could retain them if she could find work and, knowing about the situation in IT, she immediately proposed that the Chief Information Officer contract with her team rather than outside companies. In that the workload of this fourth Product Information Department involves a wide variety of short-term projects, some of which occur on an ongoing basis and others occur only once or twice a year, if that frequently, it shares much in common with the Special Projects team that operates under the Agency model.

But the nature of those assignments and the skills needed sharply differ. This department has responsibility for all of the user guides, online help, references, and training for all applications supported by the IT group. This Product Information Department customizes documentation for commercial applications used in the company and creates original content for custom applications developed by the IT staff. Although the IT staff is large, its workload exceeds capacity so the IT staff cannot promise to review all of the documentation produced by the fourth Product Information Department. The technical communicators must take full responsibility for the technical accuracy of their content.

Similarly, because the fourth Product Information Department works on contract to the IT group—and that work might need to be outsourced to independent companies again in the future—these technical writers must use standard, off-the-shelf authoring tools that require little or no additional training. As a result, this Product Information Department does not use the content management system used by the rest of Vicki’s staff.

This fourth Product Information Department has a long-term (five-year) contract with the IT group, but the IT group wrote the contract so that they have the option each October to cancel the contract with three months’ notice. The long-term contract provides some job security for the department, but not so much that the staff feels comfortable. Furthermore, because the commercial software developed by MegaCorporation is significantly more complex than the custom applications and commercial software used by the IT group, technical writers working in this Product Information Department have faced barriers transferring to one of the other three Product Information departments.
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In addition, because outside contractors continue to compete for the work, competitive pressures limit what Vicki can charge for this service. But her group does generate a profit, which provides a financial cushion if the IT Department cancels the contract and the group needs to seek out new customers, as the department manager is currently recommending.

Model 6: Contractor Model
This model describes organizations in which technical communicators either maintain large libraries of existing technical content, or prepare new technical communication products that primarily require production work—and little else—before they are ready for publication. Sometimes, these groups work internally but, just as frequently, they work as external contractors. On most projects operating under the Contractor Model, technical communicators serve as a “scribe” (that is, they record the proceedings without making substantive contributions) or oversee production.

Groups operating under the Contractor Model offer few if any original contributions to the content; rather, they ensure its ongoing completeness and accuracy. Projects conducted under the Contractor Model also are usually ongoing, yet not full-time jobs, so organizations usually hire someone to handle the work part-time for an indefinite period of time (as described by Glick-Smith 1999 and like the Editing and Production group described in Kove & Drexler 1998). The typical practice of hiring contractors to perform this work provides the name for this model.

In the Technical Information group that Vicki leads, the Maintenance Department operates under the Contractor model. So does the agency that supplies 13 contractors to Vicki’s group.

Organizations operating under the Contractor Model are funded in one of two ways: for time and materials (that is, time worked plus reimbursement of exceptional business expenses) or apportionment (internally; external organizations would receive a project payment, usually paid in installments after completing agreed-upon milestones). In either funding scheme, organizations paying for the service seek to minimize costs by controlling hourly rates or limiting the total number of hours that technical communicators work.

In some instances, the technical information published by organizations working under the Contractor Model is intended for compliance with a governmental, corporate, or industry rule or standard. In other instances, technical information published by organizations working under this model supports customers who have not upgraded to newer and more strategic products. Although this ongoing support is required, the content that is published is not viewed as strategic within organizations.

Groups operating under the Contractor Model typically work in the manufacture of heavy equipment and military and space technology as well as the development of mainframe computer systems. These products and services have long life cycles (some lasting decades) and have much documentation requiring ongoing maintenance. Specific types of content produced include:

- Minor revisions to existing documentation (in which technical content is updated without substantive changes to its presentation)
- Documentation of product specifications devised by subject matter experts
- Programming documentation, especially that which is intended to be used internally to the organization or by highly expert users
- Production services for documentation written and assured by others (copyediting, transfer to a publishing system such as FrameMaker or CMS, and publishing oversight)

Organizations operating under the Contractor Model typically report to an operations manager, publications manager, or head of a contracting agency.

A technical communication group operating under the Contractor Model emphasizes these skills:

- Production
- Copyediting: Identifying and correcting typographical and stylistic errors (within the framework of an agreed-upon style guide and dictionary) and marking a draft for production
- Understanding of the technology that’s the topic of the communication products being developed
Most significantly, a technical communication group operating under the Contractor Model emphasizes the importance of in-depth knowledge of the structure of the library of content so that all of the affected content can be revised when needed. Because this in-depth knowledge of the library structure is needed, many organizations often hire back their retired workers on contract to perform this work.

Projects funded under the Contractor Model have two time frames. For funding purposes, they are long-term projects, because they require ongoing work. For actual project management, projects are short-term or ongoing. That is, the technical communication group usually begins work as the product update effort nears completion, and clients need revisions quickly.

Groups operating under the Contractor Model have position power. The value of the technical communication products produced under the Contractor Model is primarily assessed in terms of word-of-mouth, speed (the quicker the turn around, the more effective the service is perceived), and cost (the lower the cost, the higher the perceived benefit of information design and development) (Carliner, 2012; Carliner, Qayyum, & Sanchez Lozano, 2012).

The Maintenance Department that reports to Vicki and the contractors who work with them maintain all of the legacy documentation (the user guides, references, and other technical content about discontinued and older software that the company still markets to satisfy the needs of long-time customers but in which it invests limited effort). Most of the work involves making specific changes to words or paragraphs within content; most maintenance rarely involves adding full topics much less entire sections. Technical writers who work on maintenance projects need a strong familiarity with the content they maintain so they can quickly and easily find all passages requiring changes. Because the company wants to minimize maintenance costs, Subject Matter Experts do not closely review revisions and technical writers working must have sufficient technical knowledge of the software that they can validate their content. Technical writers are also responsible for producing final copy and publishing it online. (Very little “maintenance” content is printed.)

Partly because legacy products are no longer strategic to the company so budgets for maintenance are minimal, and partly because revisions respond to unanticipated problems rather than planned updates to the applications, the manager of the Maintenance Department seems especially focused on controlling costs. Similarly, because the projects maintained no longer have strategic value for MegaCorporation, most of Vicki’s staff perceives of maintenance assignments as “dead-end.” In fact, many of the contractors working on these projects are retired members of Vicki’s staff.

Table 1 summarizes the key characteristics of this, and the five other common business models for technical communication groups.

What Are the Most Common Business Models for Technical Communicators?

To read the literature on technical communication, especially the literature on usability and information design, one might get the impression that information designers and developers operate under the Design Model (such as Albers 2002, Ames 2001, and Dykstra 2001). But case studies (such as Hovde, 2010 and Kain, 2006) and surveys of actual management practice (such as Carliner 2004; Carliner, Qayyum, & Sanchez Lozano, 2012) suggest that, in reality, most information design and development groups operate under the Development, Technical Support, and Contracting Models.

Many technical communication groups actually operate under mixed models. That is, some parts of the group operate under one model while other parts of the group operate under another. The example used to illustrate the six business models is based on an actual case of a director who, after reflecting on the differing natures of the departments in her group, concluded that “I essentially manage many different businesses.”

Applications Of Business Models to the Theory and Practice of Technical Communication

Practicing professionals in the field might wonder how they can apply business models in their work. As this is not a prescriptive theory—that is, a series of recommended actions intended to achieve a particular outcome—it comes with no recipe for technical communicators to follow to change their positions within their organizations.
Table 1: Summary of the Key Characteristics of the Dominant Business Models for Technical Communication Groups

<table>
<thead>
<tr>
<th>Model</th>
<th>Types of projects</th>
<th>How the group receives funding</th>
<th>Role of information</th>
<th>Typically reports to</th>
<th>Skills</th>
<th>Time frame for projects</th>
<th>Type of power</th>
<th>Measures of success</th>
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<tr>
<td>Venture Capital Model</td>
<td>Content published for sale</td>
<td>Per project</td>
<td>Strategic</td>
<td>Venture Capitalists</td>
<td>Financial management Business leadership Project management Information architecture Interface, information, and experience design Technical communication skills Customer service</td>
<td>Medium- to long-term (12 to 30 months)</td>
<td>Leadership Referent Financial</td>
<td>Return on investment</td>
</tr>
<tr>
<td>Design Model</td>
<td>Websites (designing the architecture and overseeing the implementation)</td>
<td>Per project</td>
<td>Software development executive</td>
<td>Software or product executive (and, in a few cases, CEO)</td>
<td>Business leadership Project management Information architecture Interface, information, and experience design Technical communication skills Customer service</td>
<td>Medium- to long-term (12 to 36 months)</td>
<td>Leadership Referent</td>
<td>Revenue generated Ability to respond to input from others inside and outside of the organization Results of surveys and usability tests</td>
</tr>
<tr>
<td>Agency Model</td>
<td>Marketing communication (white papers, marketing collateral (brochures), sales-promotion materials (flyers)) Employee communication (like employee handbooks) Other high profile content (short online demonstrations, materials for trade shows, video presentations, and interactive media presentations)</td>
<td>Fee for service (either time and materials or project basis)</td>
<td>Support or cosmetic</td>
<td>Communications manager</td>
<td>Project management Creative problem solving Relationship marketing Production Techniical writing Instructional design Graphic design</td>
<td>Short-term (3 or fewer months)</td>
<td>Referent</td>
<td>Word-of-mouth Repeat customers</td>
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</tbody>
</table>


Table 1 (Continued): Summary of the Key Characteristics of the Dominant Business Models for Technical Communication Groups

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<th>Time frame for projects</th>
<th>Type of power</th>
<th>Measures of success</th>
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</thead>
<tbody>
<tr>
<td>Development Shop Model</td>
<td>Supports a strategic effort Help, user's guides, reference manuals, and similar product information (printed and online) Tutorials Project documentation Special projects, such as technical support websites, and materials for user group meetings</td>
<td>Apportionment</td>
<td>Support</td>
<td>Manager or director of product development (rather than the top executive in software development), or of technical support</td>
<td>Production skills Writing for print and online Inventory control Management</td>
<td>Short-term to medium-term (2 to 18 months)</td>
<td>Position</td>
<td>Word-of-mouth Ability to manage projects Ability to “get” technical content</td>
</tr>
<tr>
<td>Technical Support Model</td>
<td>Help Training materials (usually self-study) User guides Reference materials, especially for use by internal technical experts Newsletters for frequent users Lists of frequently asked questions Design specifications</td>
<td>Apportionment</td>
<td>Support</td>
<td>Manager or director of technical support Manager or director of IT/IS</td>
<td>Writing Instructional design Facilitation Production Marketing Customer service</td>
<td>Short-term (3 or fewer months) Ongoing</td>
<td>Referent</td>
<td>Word-of-mouth Number of products and services published Number of people served</td>
</tr>
<tr>
<td>Contractor Model</td>
<td>Products and services have long life cycles (often lasting for decades) and have documentation requiring ongoing maintenance Minor revisions to existing documentation Product specifications Programming documentation Production services</td>
<td>Time and materials Apportionment</td>
<td>Compliance</td>
<td>Operations manager, publications manager, or head of a contracting agency</td>
<td>Production Copyediting Understanding of the technology that’s the topic of the communication products being developed In-depth knowledge of the structure of the library in which the content being revised is published</td>
<td>For funding purposes, long-term. For actual project management, short-term or ongoing</td>
<td>Position</td>
<td>Word-of-mouth Speed Cost</td>
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</table>
Applied Theory

Business Models of Technical Communication Groups

Rather, the theory of business models is a descriptive one, which provides insights into the situations in which technical communicators find themselves working. At the least, the new perspectives provided by this description might help technical communicators better understand why their organizations operate in the ways they do. At the most, technical communicators might see opportunities in the description that are unique to their work environments and that they can exploit for their benefits.

More specifically, as a descriptive theory, business models provide an alternative view of the management and operations of technical communication groups, and provide an alternate means of classifying technical communication groups on the nature of their funding, rather than to whom they report, their size, or the industry in which they work. More fundamentally, this alternative description of technical communication groups provides a theoretical explanation for the differences among groups, explaining not only the different type of projects on which technical communicators work vary among groups, but also explaining why different skills are valued in different situations and, more significantly, why some technical communication groups seem to have more influence than others. This section explores each of these and related implications, as well as limitations of the business models.

Implication 1: Different Models Suggest Differences in Assignments among Technical Communication Groups

The first implication of business models is that they suggest the types of projects on which technical communicators work—and the ones from which they will be excluded. Although business needs determine whether an organization needs minor maintenance to existing content, new user interfaces and related information, or something in-between, business models suggest what might drive an organization to choose one over the other.

For example, if an organization wants to control costs and they have typically hired technical communicators under the Development Shop Model, then they are not likely to consider technical communicators the next time a new user experience is designed. Consider the three Product Information departments reporting to Vicki. They received all of their funding at the beginning of a project; Vicki could neither change the timing of the funding nor its scope.

Implication 2: Different Models Place Differing Value on Particular Skills

As a result of the differences in projects among business models, different types of skills are needed in organizations operating under different types of business models. This is the second implication of business models.

Several studies using different methodologies have attempted to identify a common set of competencies needed by technical communicators (Hart & Conklin, 2006; Lanier 2009; Rainey, Turner, & Dayton, 2005; STC Certification Committee, 2011), often for the purpose of designing an academic curriculum in technical communication. By nature, these studies have emphasized the similarity of work across organizations. Practicing technical communicators often object to these studies because, in their personal experiences, they see more variation than similarity. For example, practicing technical communicators notice that some organizations place a greater emphasis on production skills, others place a greater emphasis on subject matter expertise, and others emphasize user interface design skills as demonstrated in the examples of departments in Vicki’s group.

Business models provide a theoretical explanation for the variation, and a basis for further exploration of those differences.

Implication 3: Departments Operating Under Different Models Benefit from Different Placements within Organizational Structures

As the skills needed vary, placement of technical communication groups within an organizational structure also varies. This is the third implication of business models. Placement of technical communication groups within an organizational structure generates strong interest among technical communicators (Wishbow, 1999), many seeking an “ideal” placement: Marketing? Product Development? Operations? Something else?

Business models have the potential to refocus of such conversations from the “ideal” placement to placement best suited to the business model under which the technical communication group operates. Appropriate placement of a group operating under the
Applied Theory

Saul Carliner

Design Model differs from a group operating under the Technical Support Model.

Implication 4: Different Business Models Place Differing Levels of Value on Technical Communication Products and Services

Given the different nature of work underlying each of them, business models also suggest the type of value that organizations might place on technical communicators products and services, the fourth implication of business models. Although this issue has received more empirical focus than some of the others, and methodologies have been developed and replicated (Carliner, Qayyum, & Sanchez Lozano, 2012; Mead, 1998), that authors continue to lament the limited value that organizations place on technical communication (Hovde, 2010; Spilka, 2000) suggests that technical communicators still lack a theoretical basis for describing how organizations place a value their products or services.

Business models fill that theoretical gap. Consider the differing levels of influence of the departments reporting to Vicki. The Press and User Experience Departments have extensive influence, and seem to have extensive control over their own destinies. In contrast, the Agency, fourth Product Information, and Maintenance Departments have the least influence and control over their destinies. These departments also have limited control over their work and face greater threats of losing their jobs to outsourcing. These situations reflect the business models under which these three departments work.

Implication 5: Different Business Models Provide Technical Communication Groups with Differing Levels of Control over Their Destinies

This difference in control over destinies suggests the fifth—and perhaps most significant—implication of business models. Some researchers who observe technical communicators in their work settings express concern about their “second-class status” (Hovde, 2010) and that “technical communicators are often undervalued and perceived as grammarians only” (Spilka, 2000, p. 219). Even Hovde’s empirical evidence suggests that the status of technical communicators actually varies among organizations.

Business models provide an explanation of why. The source and nature of power (referent in some models, position in others) partially explains differences in status among technical communicators working in different organizations, as does the different nature of skills needed on projects. For example, models like the Venture Capital and Design Models, let technical communicators demonstrate leadership, others, like the Development and Contractor Models, don’t.

Limitations of This Theory

Although the concept of business models suggests explanations for several key concerns of practicing technical communicators, it has limits. First, it is a theoretical construct and, as such, essentializes the many complex environments in which technical communicators work into six broad categories. The six business models help technical communicators see broad differences among groups but these models might oversimplify the actual working environments of technical communication groups. As noted earlier, some technical communication groups might exhibit characteristics of two or more models at any given time.

A second limitation is that the descriptions of work performed by different types of technical communication groups, the skills these groups need, as well as their placement and influence within organizations, are propositions that represent one interpretation of empirical data. Other interpretations may exist.

That, in turn, suggests the third limitation of the concept of business models. Not only have the relationships within specific models not been empirically validated, the relationships among the specific models have not been validated. In practical terms, that means that the concept of business models only explains what technical communication groups might experience under a given business model, it does not suggest how technical communication groups try to might change the model under which they operate and the types of challenges that might arise should they choose to do so.

These limitations suggest, in turn, two paths of future research. One would attempt to validate these models. These models could be validated qualitatively by observing the inner workings of several technical communication groups and determining the extent to which these models describe their operations. The models could also be validated quantitatively, through an instrument that contains constructs for each of the characteristics and links scores on these indexes with specific business models. Assuming the research validates business models, the
second path of research would explore the challenges that technical communication groups experience when moving from one model to another. Such research could ultimately result in models to describe the transitions of technical communication groups.

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Business Models of Technical Communication Groups


About the Author

Saul Carliner is Director of the Education Doctoral Program and an associate professor in the Department of Education at Concordia University. A two-time recipient of the Best of Show Award in the Frank R. Smith Outstanding Article competition, he also serves as editor-in-chief of the *IEEE Transactions on Professional Communication* and a board member of the STC Certification Commission and the Canadian Society for Training and Development. Contact: saulcarliner@hotmail.com.

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## Appendix: Applying the Models

**Instructions:** To consider the applications of the six business models in practice, try the following activity:

- Read each situation.
- For each, determine which of the six models applies. (Hint: for simplicity, each model applies once and only once in this exercise.)
- Compare your responses with those in the “answers.”

### Situations:

1. Your software development organization is preparing release 3 of its main software application. Your group developed the help and documentation that accompanied the first release. As the market planners and system architects complete the list of features for the release, the software development organization invites you to a kick-off meeting to begin development and seek your ideas for improving the user assistance. Because it’s early in the release, the software development team welcomes your ideas (though that’s not any guarantee they’ll do anything about them). What they expect, however, is that you’ll update the help, produce some new “show-me help” videos, and provide other user assistance that they deem necessary for this new release.

2. You have an idea for a book about solar power. You receive money to develop the general book from an investor. After you complete development, you print the book and sell individual copies to the public. You published 1,500 and need to sell 793 to recover all of your up-front expenses. You split the profit on the remaining copies 50-50 with the investor. By the end of the first year, you have sold 1,188 copies.

3. Your company produces a military system, which was first deployed a decade ago. These days, your company updates the military system twice annually to keep up with changes in technology, the political landscape, and staffing. Each time the system is updated, so is the documentation. On the one hand, the task is not a particularly complex one because it merely involves technical updates (usability improvements at this point are few because the documentation is old and the user base is stable). The work requires an in-depth knowledge of the content and library structure so that all of the affected content can be changed.

4. You have been asked by the hardware engineers in your organization to prepare a display, white paper, flyer, and “a cute give-away” for a trade show that they’re attending in six weeks. The engineers have already drafted copy for the white paper and flyer, and have definite ideas about the booth. But they need editorial assistance in “whipping those papers into shape,” graphics assistance with the booth, white paper and flyer so they all become “standouts;” and need your creative ideas about the give-away. None of these projects were in any budget for the year, but now that the engineers have deemed them necessary, budget is not a problem. Schedule is. All you need to prepare is a proposal, and it’s likely the work will be yours (if you can find someone to handle the tight schedule, that is).

5. You work in a software development organization for an office supplies chain that is developing an app for e-commerce. Although your company owns brick-and-mortar stores, the app provides an alternate means of selling products to the public. Your technical communication group will lead the development of this app in the company. Your group will identify all of the needs, develop objectives, plan the designs and choose the technologies, oversee development of the content as well as the programming, conduct usability and functional tests of the app, oversee its launch, and ensure timely and effective maintenance after the launch.

6. You are one of two technical communicators working for the Help Desk of your Information Systems (IS) group. Others in the IS group manage and staff the Help Desk, or produce and support internal software. You two technical communicators try to help users develop their self-sufficiency, which should reduce future calls to the Help Desk. So you two produce newsletters and specialized user’s guides (the ones telling the “real” story that the manufacturer’s guides never tell). You teach 1- and 2-hour mini-seminars on specific topics. You occasionally produce online tutorials. You maintain the list of Frequently Asked Questions. And you organize the three-times-a-year open houses for the department.

Answers: 1-Development Shop. 2-Venture Capital. 3-Contractor. 4-Agency. 5-Design. 6-Technical Support.
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Handling Qualitative Data: A Practical Guide


Handling Qualitative Data: A Practical Guide serves a vital function for people who do qualitative research. While many books are available about methods of conducting qualitative research, it can be hard to find instruction on effectively processing, coding, and understanding qualitative data. True to its subtitle, this book provides practical guidance on handling the data generated in a project.

Richards points out that even those who typically generate quantitative data in their research will sometimes find themselves facing a set of qualitative data—words—through an open-ended “comments” section at the end of a questionnaire, or perhaps a set of documents stored in an archive.

Richards knows qualitative methods well, having coauthored a textbook on them. Handling Qualitative Data is not a replacement for traditional research methods texts, but a complement to them. Richards also helped develop two well-known software applications for coding qualitative data, NUD*IST and NVivo. Throughout the book, she provides guidance on using software for qualitative data, but Richards does not promote a specific program. In fact, some example projects she shares were completed without data software.

Handling Qualitative Data has three parts. Part I describes setting up the research project. I like her advice on keeping a detailed “log trail” to retrace steps in the process, rather than simply an “audit trail” to guard against mistakes. Part II discusses working with the data. Richards cautions against coding data “ad nauseum”; coding should always serve a purpose. Part III is about making sense of your data. Richards advocates “telling” what you have learned as opposed to “writing it up”;
careful and thoughtful handling of your data in earlier stages will help you do this.

Each chapter begins with a graphic showing how its concepts relate to each other, and how they relate to other concepts discussed in the book. Each chapter concludes with a helpful list of resources for further reading and a handful of exercises for applying key concepts. These features will benefit students and instructors alike.

The companion Website is one new feature for this second edition, which increases the book’s value. It provides summaries of 10 qualitative research projects. Some projects were completed by teams; others by individuals. Each summary describes the project set-up, data collection (such as ethnographic observations, interviews, radio/TV stories), data management, data analysis, and reporting of results. Each chapter refers readers to specific projects on the Website to give examples of concepts in use.

As Richards resides in Australia, some phrases used in the book and on the Website differ from their counterparts in American English—you’ll see “ethics committee” instead of “institutional review board” or “human subjects committee”, for example. Nevertheless, it is clear that researchers in any culture face similar challenges and opportunities when conducting qualitative research.

I recommend this book for students and professors working on qualitative research. I am pleased to have it on my own bookshelf.

Russell Willerton

Russell Willerton is a senior member of the STC and an associate professor at Boise State University.
**I Live in the Future & Here’s How It Works: Why Your World, Work, and Brain Are Being Creatively Disrupted**


By using new technologies, media consumers are finding innovative ways of replacing traditional methods for getting their news and entertainment. In many instances, they belong to digital communities that take on the same kind of filtering role that newspapers, TV stations, movie theaters, record producers, and bookstores have played in the past. In writing *I Live in the Future & Here’s How It Works: Why Your World, Work, and Brain Are Being Creatively Disrupted*, Nick Bilton is trying to convince his audience for this book, the “CEO, publisher, producer, editor, author, journalist, advertising director, filmmaker” that “traditional consumers aren’t coming back” (p. 263). He believes they urgently need to revamp entire industries to advance with consumers. Bilton has written the book to offer a “new framework for looking at these difficult issues and making sense of the radical trends” (p. 15).

The author likes to tell stories and he’s good at it. He is a journalist and technology innovator himself who writes the “Bits Blog” for *The New York Times*. To get his point across, Bilton tells lots of stories: about the poor reception of new technology in the past and how smart people said it wouldn’t last; about the decline in the public’s trust of news media; and about the success of the porn industry in adapting technology for its entertainment business model. He believes in storytelling and that, no matter what the new format is, “good content will rise to the top” (p. 131). As a writer, I have to agree with Bilton, but, ironically, I found myself impatient with his style of storytelling, wanting to know where all his words were taking me and often skipping over them to find the point of the narrative.

Within Bilton’s stories, however, you will find interesting science related to brain studies on multitasking as well as a compelling analysis of the influence of online communities on community members, and descriptions of cyborgs who already live among us. The author produces evidence to support the “creative disruption” in the book’s title. For example, he quotes study results that show the added mental stimulation involved in web searching. Bilton also emphasizes the need to creatively fashion layers of interactive media for the new era of storytelling.

Even readers who are not CEOs of newspapers come into contact with many of the issues in *I Live in the Future & Here’s How It Works* on a daily basis and will be interested in the information Bilton has to offer. The author has provided QR Codes for each chapter for additional material on each topic.

**Linda M. Davis**

Linda M. Davis is an independent communications practitioner in the Los Angeles area. She holds an MS in Communication Management and has specialized in strategic communication planning, publication management, writing, and editing for more than 20 years. Linda is active in the STC Los Angeles chapter.
The Agile Samurai: How Agile Masters Deliver Great Software


The Agile Samurai: How Agile Masters Deliver Great Software is an excellent book about agile software development that is filled with valuable knowledge. Anyone new to agile or who wants to improve their practice of agile, will learn much from this book. Rasmusson has many years of real-world agile experience, which he reflects in his book.

Rasmusson starts The Agile Samurai by introducing agile in a nutshell and then the characteristics of a typical agile team. He describes concepts of agile project inception, agile project planning, and agile project execution. Rasmusson provides the necessary insight under the agile inception topic that depicts how to see the big picture and make it real. With the agile planning process, he provides in-depth knowledge about gathering user stories and estimating those as point-based systems, a fine art of guessing.

The pictures, graphs, and illustrations presented in this book make the agile concepts very clear and unambiguous. Later Rasmusson provides immense details about creating agile software based on strong practices such as unit testing, refactoring, test-driven development, and continuous integration.

Each chapter ends with a dialog between Master Sensei and an aspiring warrior. This is amusing because it brings topical highlights, and clearly defines each chapter’s essence that a reader should grasp.

Rasmusson didn’t cover other project management topics such as procurement, vendor, risk, cost, and schedule, and does not describe project monitoring, control, and closure. These missing topics do not detract from the book’s concept since Rasmusson’s audience is agile software developers and he tells how agile masters deliver great software. The Agile Samurai is exactly the book you and your agile team need to understand to deliver great software using agile methods.

This book is relevant to the technical communicators, especially to advanced IT technical communicators involved in adapting the agile manifesto and agile principles in their agile software development practices. Technical communicators will benefit by understanding the new agile way of delivering great software, since agile practices are generating more interest and also gaining popularity as one of the best methodologies in IT industry. The Agile Samurai helps technical communicators communicate more effectively with agile project managers, scrum masters, product owners, and the agile team members themselves.

I strongly recommend The Agile Samurai to all development teams practicing agile methods. I used this book to prepare for my Project Management Institute Agile Certified Practitioner (PMI ACP) certification examination. I won’t hesitate to proudly say that the book covers many important agile concepts and is an excellent reference book for all those taking the PMI ACP certification. It helped me to understand and obtain clarification on agile concepts mainly in areas of actual software development using agile methods.

Vivek Vaishampayan

Vivek Vaishampayan is an experienced project manager with more than 20 years in the information technology industry. He has been involved in all phases of software development life cycles in traditional waterfall, iterative unified and recently with agile methodologies along with process improvement practices.
WIKI: Grow Your Own for Fun and Profit

When you think about wikis, chances are you think about Wikipedia. However, companies are learning to develop their own wikis for managing product knowledge and better serving both their clients and the public. Alan J. Porter has written a useful, worthwhile book about developing wikis.

Porter defines a wiki as a “website that anyone can edit directly in a web browser without any special editing tools or applications” (p. 2). WIKI: Grow Your Own for Fun and Profit demystifies certain myths surrounding wikis, such as the accuracy of their content. A popular misperception is that because everyone can edit the content on a wiki, inaccuracies can easily be missed and appear. However, according to Porter, wikis, because they are attended to by so many people, tend to have more accurate content because more people are involved in creating and editing that content.

Porter provides an easy, ten-point checklist of things to consider when planning a wiki. Creating a wiki is similar to creating a technical document. You must visualize who would use it, what content must be included in it, how the content must be organized, and so forth. The beauty of a wiki is not only how many people are helping to create it, but “who” is involved in creating it. Among the case studies Porter includes is a situation where a company’s clients can offer their feedback on documentation.

One intriguing case study described how Porter and his publishers at XML Press created a wiki in which Porter, his editors, and the graphic artist could all contribute and therefore strengthen the final product. As an author of a forthcoming history book, I wonder how things might have been easier had I done something similar for my book.

The one shortcoming, if you can call it that, is in the title. When I saw the words “for profit,” I was hoping that Porter would include case studies where return on investment (ROI) was actually measured and we could see in financial terms how a wiki could help build profit or at least minimize loss. Such case studies aren’t in the book, and it’s up to us, as we consider our own situations, to determine how we can measure the financial value a wiki brings.

George Slaughter
George Slaughter is a senior technical writer with The Integrity Group and a past Houston STC chapter president.

Communicating Rocks: Writing, Speaking, and Thinking about Geology

Communicating Rocks: Writing, Speaking, and Thinking about Geology is a concise handbook and style guide tailored to meet the geologist’s specialized communication needs. It should prove valuable both to students and young scientists launching their careers and to seasoned professionals who want to become even more effective by honing their written and oral presentation skills.

Peter Copeland is a fellow of the Geological Society of America (GSA), and has been a professor in the Department of Earth Sciences at the University of Houston since 1990. During 2000–2004 he was editor of the GSA bulletin. Drawing on his experience working, teaching, and editing, Copeland argues that good scientific work requires not just asking questions and gathering data, but effectively communicating data and conclusions to others. Unfortunately, he says, “too many people who love rocks don’t love writing about them or never learned the best way to do so” (p. 1).

Useful both as a handbook and as a reference, Communicating Rocks lays out what one needs to know, and makes the case for why it is important. In brief,
Copeland argues, “communication equals thinking” (p. 1). If poorly done, you may not only hurt your reputation for knowing what you are talking about, but may even become less able to think clearly about your subject.

Copeland opens with practical advice for handling the main types of communication geologists must master for professional success. He covers writing abstracts, research proposals, and research results reports. Under proposal writing, he discusses the major proposal types—investigation (something needs a closer look), tool and technique development and testing, and hypothesis testing. For each writing task, he discusses pitfalls to avoid and how to improve your chances of success.

As a style guide, Communicating Rocks includes a comprehensive alphabetized collection of short articles. While many of the usual English language usage issues are included, the coverage is heavily weighted toward topics and terms important to earth science writing. One finds entries explaining terms and abbreviations, clarifying confusable terms (“crevice” vs. “crevasse,” “terrane” vs. “terrain”), discussing commonly misused technical language, and explicating special interest topics such as the systems used to denote geologic time.

Copeland covers manuscript preparation issues and the etiquette of acknowledging professional affiliations and sources.

Moving beyond the “dos and don’ts” (p. 96), Copeland critiques an extensive set of examples of prose taken from the geological literature, showing how they could be improved.

Because geological communication often takes the form of oral presentations—either PowerPoint talks or poster presentations—Copeland gives practical advice on organizing talks and speaking in public. He also gives nuts-and-bolts advice on such things as handling slides, picking fonts, and deciding when to distribute handouts.

An interesting, eclectic reference section points the reader to geology papers, useful articles and books, and to a number of excellent guides to grammar, usage, and style.

**Patrick Lufkin**

Patrick Lufkin is an STC Associate Fellow with experience in computer documentation, magazine and newsletter production, and public relations. He reads widely in science, history, current affairs, and on writing and editing. He chairs the Gordon Scholarship in Technical Communication, and cochairs the Northern California technical communication competition.

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**Speech Technology: Theory and Application**


This new collection of essays on the technology and design of voice interaction systems makes an important addition to company and individual libraries for those with significant voice interaction interests.

There are three sets of articles—on History, on Theory and Design, and on Speech Applications—with one final chapter touching on all three of these categories, which is something of an outlier.

Four history articles chart the inceptions and growth of the critical technologies: speech recognition, speech synthesis, and dialogue management. Recognition and synthesis get one article each while dialogue systems get two chapters, a clear signal of how crucial artificial intelligence has become for voice interaction. Recognition and synthesis have made their strides almost exclusively in “physical” engineering, replicating human perception and production almost exclusively through massively increasing processor speed and storage capacity. As indispensable as brute recognition is, as comforting as natural synthesis is, they remain only the input/output of speech systems. Aside from very limited applications, speech systems need to be interactive, and in speech “interactivity” means “dialogue.” In short, the future of speech systems relies on “cognitive” engineering, replicating not perception and production but thought processes and social routines.

Jokinen’s chapter may be the most interesting. It explicates the defining role that research into conversation and pragmatics has played in developing dialogue systems, and the challenges of making such research computationally tractable. Peraccini’s article rounds out the history chapters, focusing on the most recent industrial developments and the projected emergence of “third generation” systems, characterized by sophisticated “problem-solving procedures often requiring much sustained user interaction” (p. 74).
This focus on cognitive engineering continues unabated in the (unmarked) theory and design section with Moore’s chapter. Without adopting Peraccini’s third-generation terminology, Moore lays out the necessary contributions of psychology, neuroscience, linguistics, and artificial intelligence for achieving the complex interaction systems Peraccini foresees. Other gems include Herschberg’s fascinating chapter on deceptive speech (and its possible automated detection) as well as André and Pelachaud’s treatment of embodied conversational agents. Embodiment and affect are dominant themes here.

The third sequence of chapters discusses specific application domains, often concentrating on particular systems within those domains: translation, automobiles, space travel, military, and assistive communication. The final paper in the book, Moller’s “Assessment and Evaluation,” is the outlier. It is historical, in its survey of evaluation strategies; theoretical and design oriented, in its modular approach to the assessment of individual components, and in its advocacy of new principles; and applied, in the range of domains and specific systems it considers.

Speech Technology is a valuable book: comprehensive enough to serve as a reference manual, fluid, and enough to serve as a high-level introduction. Chen and Jokinen’s book provides a historical framework for speech technology, plots the crucial research and design themes, especially the defining roles of cognitive engineering and knowledge representation, and illustrates the place of speech technologies in a wide spectrum of domains and specific applications.

Randy Harris

Randy Harris is professor of Rhetoric and Communication Design at the University of Waterloo, with interests in linguistics, usability, argumentation theory, and interaction design. His publications include Voice interaction design (Morgan Kaufmann, 2005), Rhetoric and incommensurability (Parlour, 2005), and Linguistic wars (Oxford, 1993; 2e, 2012).

Communicating Design: Developing Web Site Documentation for Design and Planning


At my job, most of my microsites and new pages are proscribed in design and layout. So when I first received Communicating Design, I did not think I would personally find it very useful.

I need not have worried. Dan Brown’s 300-page book covers territory that, it turns out, I find useful. If you design Web sites, this book will give you tremendous insights into tools and processes you can use to document your development process. If you participate on a development team, Communicating Design will give you knowledge that will make working with your designer smoother and more efficient. Says Brown in the Preface: “This book is written for people who make deliverables, use deliverables, and approve deliverables as part of the web design process” (p. vii).

Communicating Design has 12 chapters including a terrific introduction to “the whole story” of designing a Web site that explains that documents are not objectives in and of themselves, but are artifacts of the development process. Part 1 has chapters devoted to the five basic design diagrams that Web site designers use: personas, concept models, site maps, flowcharts, and wireframes. If you are a Web designer, you will likely use several of these diagrams during development. If you are a team member, these chapters are a terrific summary of why a type of diagram is used and the value it serves.

Part 2 has chapters that discuss design deliverables: design briefs, competitive reviews, usability plans, and usability reports. For each chapter, Brown offers the hallmarks of a good deliverable, an “anatomy” lesson, and some words to the wise about when and how to use each.

Brown writes with the confidence of a designer who has been down the collaborative road with many
a company, acknowledging the challenges a Web site designer faces when working with others who do not work in his world fulltime. He also has a pleasant light touch to his writing, calling, for example, wireflows “the terrifyingly beautiful love-child of flowcharts and wireframes” (p. 136). The landscape layout of the book allows for examples on virtually every spread, increasing its utility. A bonus: Topical experts offer their insights throughout.

Even if you do not work on Web sites (ever), you might still find the information in Communicating Design useful. When this book arrived, I was working on a process flowchart and found Brown’s insights quite helpful in clarifying my thoughts and streamlining my chart.

Ginny Hudak-David
Ginny Hudak-David is the senior associate director in the Office for University Relations at the University of Illinois, the largest public university in Illinois with campuses in Urbana-Champaign, Chicago, and Springfield. She works on a variety of communications projects.

Of the ten chapters in the book, three chapters relate to analyzing Twitter data (chapters 1, 4, and 5). I use Twitter more than any other type of social media, so that might explain why I found the book applicable without using any of the sample code.

The “Introduction: Hacking on Twitter Data” chapter introduces the Python development tools and then follows this with an overview of Twitter’s application programming interface (API) that you can use to analyze data. The samples tend to be generic; for example, the sample code that Russell uses to answer the question “What are people talking about right now?” (p. 9), you can find on Web sites that provide this information.

In chapter 2, Russell explains that microformats are “… an effective mechanism for embedding ‘smarter data’ into web pages…” (p. 19). The author does provide an adequate explanation and analysis of this technology followed by an example of how you can gather and use geographic data. I find the information new and interesting, yet I did try to apply the information. Instead, I considered how this information, along with the content from chapter 3 about mailboxes, might transition to the next two chapters about Twitter. I couldn’t find any reason to delay chapters 4 and 5 as I think Russell could have grouped the three chapters together.

Chapter 4 “Twitter: Friends, Followers, and Setwise Operations” explains how you can collect data about friends and followers. While a good introduction, I think Russell leaves the door open for another book with the things you could try in the Summary (p. 117).

The positives that I found that Mining the Social Web offers are Russell’s enthusiasm about the subject, the chapter summaries, and the index. I did, however, find too many negatives: I don’t write Python code. I don’t believe the sample code is useful without extrapolating the scenarios and the code to fit your own needs. I find the lack of transitions disheartening and the information outdated. I love O’Reilly books, yet it bothers me to write a negative review. I don’t recommend buying this book unless you can overcome the hurdles that slowed me down.
Words and Rules: The Ingredients of Language


Steven Pinker has gained considerable success explaining complex cognitive and linguistic concepts to non-academics. From The Language Instinct (1994) to How the Mind Works (1997) to Words and Rules (1999) and beyond, his books have helped people understand cognition and language.

Words and Rules re-issued in 2011 adds what Harper calls a “P.S. Insights, Interviews, and More.” The P.S. section adds who Pinker is, why he wrote the book, and provides an update from the current research. The main text, however, is as originally published in 1999.

While Pinker addresses the relationship between cognition and language in previous books, Words and Rules tackles the difficult question of why we have irregular verbs—especially why the past tense forms. English has thousands of regular verbs and a little over 160 irregular ones. We create most past tense forms by adding a suffix, usually “–ed.” But irregulars are different. You could form the past tense by substituting a vowel in the stem: get becomes got. Or, undergo a more radical change: bring becomes brought. There are even cases where the stem disappears: go becomes went.

So, why do these changes happen? Do they appear in English from a memorized list of words? Or do they appear because of rules?

Pinker goes through a number of theories ranging from the late 1880s to recent times as to why irregular verbs appear. He analyzes each theory and finds all lacking. Then, he addresses the words-and-rules theories, which he also finds defective.

Pinker establishes his own version of words-and-rules theory: The brain has a list of memorized stems that are associated with other forms and rules that make association possible. He then devotes the rest of the book to “how words are used in conversation and in reading, how new words are created, how children learn their mother tongue, how language is organized in the brain, and whether languages of the world conform to a universal design” (p. 119)—any one of which could merit its own book. But, given that his audience is not academic linguists, he makes each accessible and understandable.

As for the added sections, the most interesting is the one where he updates his theory. In it, he discusses the great past-tense debate; reviews the history and speculates on the future of regular and irregular forms; presents new, physiological evidence of how the brain works with language; adds more wordplay, solecisms, and other nuggets; and closes with how irregular verbs can change your life. In the last case, citing irregular verb usage from a novel he had read led to his marrying the author.

If you have read the 1999 version of Words and Rules, the added P.S. section is nice to have, but not vital to your understanding of irregular verbs. Otherwise, this reissued edition is well worth the money. It will prove valuable, especially if you edit authors whose first language is not English and who have problems with the irregular verbs.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he serves as guest professor at the University of Paderborn, Germany.
Book Reviews

Out of Sorts: On Typography and Print Culture

Out of Sorts: On Typography and Print Culture is an example of a truly specialized book for a unique, narrow audience. A critique on the history of print and typography, and a critique of others’ theories and assertions on this subject, Out of Sorts is written for those who have advanced knowledge of and interest in this topic.

Dane makes a supposition that readers are already familiar with experts in this field as he uses their names casually and does not explain who they are or provide any background information about their theories or work. And while in most cases, foreign language passages are translated into English, times occur when they are not. This is certainly a sign of a writer addressing an audience that he knows and feels confident that they have the same knowledge base that he does. But, for someone like me, who has a working and practical knowledge of print and typography, such passages are meaningless and make the reading frustrating to comprehend because I feel left out and as if I might be missing something important that will put the whole book into perspective for me.

There are moments of clarity and hope for the novice on this subject, such as when Dane mentions the purpose of chapter 1 which is to discuss how little is really known about type and how this “ignorance challenges larger cultural narratives generated by modern studies in the History of the Book” (p. 17). However, the chapter’s promise of providing such insight is shattered within a short time as readers are inundated with details about type that would, I imagine, make sense to only those who are versed in the history of the book. A very simple example is that Dane mentions DK type throughout the first chapter, but does not define it until the second chapter. The reason this is important is that he constantly refers to this type in making his argument in chapter 1, yet without having any knowledge of this type and its history, the argument and critique are lost on me.

Out of Sorts has some interesting historical and cultural commentary, such as in the “Editorial and Typographical Diplomacy in the Piers Plowman Archive” chapter which discusses style sheets and the various types that have evolved from their first use. Unfortunately, a great deal of this knowledge is hidden in the highly academic language and underneath the thick layer of assumed knowledge. If you are looking for something practical and utilitarian on this subject of print and typography, then Out of Sorts will not meet your needs. However, if you are someone who has an in-depth knowledge of this subject, then Dane’s critiques may be worth the time it takes to read this book.

Diane Martinez
Diane Martinez is a writing specialist for Kaplan University’s online Writing Center and a PhD student at Utah State University. Her technical writing experience has been mostly in higher education, engineering, and government contracting. She has been with Kaplan since 2004 and a member of STC since 2005.

Handbook of Research on Discourse Behavior and Digital Communication: Language Structures and Social Interaction

Increasingly, language scholars from a variety of disciplines are using the Internet for data collection and the exploration of questions related to computer-mediated communication (CMC). This hefty handbook serves as a guide for academics and scholars interested in discourse behavior in digital spaces. Linguists, psychologists, sociologists, and
communication scholars can all find something of interest in this handbook from the various media discussed, to the research methods used, to the theoretical approaches to analyze CMC.

The handbook is divided into two volumes, five sections, and over 56 different chapters from scholars located on five different continents including Africa, America, Asia, Europe, and the Oceanic. There are two major strengths to this text: the authors’ global perspective and the various kinds of CMC analyzed. Having a global perspective from scholars located across the world on five different continents provides an interesting take on the English language especially as English as a lingua franca. Also, not only are there various theoretical perspectives and research methods used but the authors investigate a variety of CMC to include email, instant message, chat, discussion forum, blog, video conferencing, YouTube, Web-based learning, and SMS, as well as issues regarding online discourse such as flaming, scamming, trolling, cyberbullying, language mixing, repelling, and creativity.

The first section contains 14 chapters that broadly discuss the relationship between discourse behavior and social interaction. The second section, with 10 chapters, moves to a more focused discussion on formal and structural language characteristics in digital discourses. Language characteristics discussed include “predicator-argument structure of frequently used lexical verbs, prosodies and spelling forms, first person pronoun usage, orthographic forms, stylistic features and information structure” (p. xxxvii). The third section contains 12 chapters that approach the study of discourse from the perspectives of semantics and pragmatics, and addresses themes such as politeness, relevance, and inference. Section four addresses discourse behavior in virtual learning environments. The final section takes a broader approach to digital discourse and reviews earlier approaches to digital discourses and proposes newer ones “that will help in the study of relational communication in mediated contexts” (p. xlii).

Overall, this handbook achieves the goal of a reference book—to provide substantial information on a particular topic that can be read at any part of the book, not necessarily from beginning to end. Strengths include the diverse backgrounds of the scholars, the CMC researched, and the various approaches to the research. As the editor noted “the diverse, but related disciplinary perspectives presented in this book further establish how modern communication technologies are shaping discourse and social interaction all over the world” (p. xliiv). While the book serves as a great handbook for academics, I would not recommend this book for the technical communication practitioner who may not be as interested in the academic approaches to digital discourse.

**J.A. Dawson**

J.A. Dawson is a PhD candidate in Technical & Professional Discourse at East Carolina University. His research interests include professional communication and social change within a global context.

### Writing for Conferences: A Handbook for Graduate Students and Faculty


Though the title suggests that the book is intended for faculty and graduate students alike, *Writing for Conferences: A Handbook for Graduate Students and Faculty* seems to be primarily aimed at new graduate students.

The book is roughly organized by the conference timeline itself, beginning with the justifications for presenting at conferences in Section I. The strongest points that Mallette and Berger make in this early section involve conference presentations as a branding strategy, a point that can be useful no matter the level (new graduate student, tenure-track faculty member, etc.). The authors also include some excellent practical advice about the hidden costs of conferencing and how to address those costs. Section II asks readers to locate conferences and calls for proposals that fit their current research, a process that may seem familiar to experienced presenters.

Many, if not most, readers will find the discussion in the later chapters to be valuable. In Section III, Mallette and Berger guide the reader through the process
of writing the abstract with an excellent “thought experiment.” This activity generates the basic elements of an abstract from the reader's current research. Section IV takes readers through perhaps the most difficult part: writing the paper itself, presenting the paper, and networking at the conference.

Despite this helpful information, *Writing for Conferences* has some odd details that might confuse the new presenter. The authors conflate writing conference presentations with publications. Though many conferences publish proceedings that include paper versions of the best presentations, and many other conference presentations are later turned into journal articles, it's important to clarify that conference activities are not publications in the same way as a journal article or book chapter publication.

Other emphases detract from the practical information that is the book's strength. The book's sidebars include too much tangential information—on topics such as the “dreaded” conference chicken—for most readers. Mallette and Berger might also have been better off leaving out photos: the stock images included here frequently seem cheap and cheesily posed.

Despite these flaws, *Writing for Conferences* fills an important need: there are few book-length or even article-length discussions of the practical aspects of attending conferences. That's surprising, given how important conferences are to many fields. That leads to one of the difficulties with the book: in an attempt to offer something for many fields, and something for both graduate students and faculty, the book loses some of its clarity and power. At the same time, its breadth of information is such that it can serve as a valuable introduction to the overall conference process. Readers looking to develop or refine a compelling presentation style would do better to look elsewhere; new graduate students and others who have not presented at conferences before will find this book extremely valuable.

**Ashley Patriarca**  
Ashley Patriarca is a doctoral candidate in Rhetoric and Writing at Virginia Tech. She earned her master’s degree in English (technical and professional writing) at the University of North Carolina at Charlotte, where she also worked in the Department of Enrollment Management as a technical writer.

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**Designing Diagrams: Making Information Accessible through Design**


How do diagrams help make information more accessible? According to Ludwig Wittgenstein in the first page introduction of *Designing Diagrams*, diagrams are used to present facts clearly, visualize relations and matters that are not inherently visual, and present information without many words or figures. Jan Gaugin then shows us tools, techniques, and examples for creating diagrams effectively.

*Designing Diagrams*'s organization is somewhat eclectic, and useful as an inductive way to learn about diagrams. Its coffee-table design and square shape will make you refer to it often. The European focus is refreshing and forces this American to rethink standard ways of presenting diagrammatic information.

Section one, *The Tools—The Techniques—The Methods*, is the most intriguing. Gaugin introduces us to geometric shapes and their variations that can be used as the base for diagrams. His examples of grids, color, and projection types prepare the reader for ways to communicate business information creatively and effectively. Gaugin includes examples of how diagrams can take liberty with exact distances on maps to highlight important features.

Section two describes basic ways to present statistical information. Many examples are dramatic in 3D. I was disappointed that Gaugin didn't explain how 3D graphs can also distort data. I found his inclusion of International System of Typographic Picture Education (ISOTYPE) and American Institute of Graphic Art (AIGA) symbol signs and matrices and their application very challenging, and will add these to my inventory of ways to communicate business information.

Section three shows examples of ways to show business operations with dramatic graphs and diagrams, many of which are 3D. This section ends with the meat of the book: how to plan and execute creating and using diagrams.

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*Book Reviews of Writing the Abstract with an Excellent “Thought Experiment.” This activity generates the basic elements of an abstract from the reader’s current research. Section IV takes readers through perhaps the most difficult part: writing the paper itself, presenting the paper, and networking at the conference.*
In Section four, Gaugin concentrates on Geographic Information Systems (GIS), Global Positioning System (GPS), and PowerPoint. He clearly is intrigued by the use of GIS and GPS and how to merge map information with data to improve business processes. A brief chapter on how to make PowerPoint work for you is very general.

The Designer’s Gallery in section five includes a wealth of examples of diagram types. Gaugin shows how a college campus touch screen visitors guide was created. Wayfinding examples of London illustrate numerous types of diagrams. Corporate communication diagrams are shown, many quite dramatic, which illustrate ways to creatively show sales figures. Organization charts, interactions among departments, and two versions of a user-experience map are worth studying for application to many situations.

I expected food for thought for new ways to create diagrams: I got snacks and dessert, but not a full meal. I will keep this on my reference shelf for the different shapes that can be the basis of diagrams, the computer formats and program options. I was disappointed, however, that Gaugin includes so many graphs rather than a discussion of diagram types.

Beth Lisberg Najberg
Beth Lisberg Najberg has more than 20 years’ experience as an information and instructional design consultant, documenting systems, developing custom training solutions, and creating technical presentations for large corporations and public entities. She is principal of Beginnings (www.BeginningsDesign.com), an information design consulting firm.

Book Promoting 101: How to Tell the World about Your Book (Even if you’re not on Facebook yet)


With the rise of self-publishing, people who never would have considered writing books before are now becoming authors. Publishing a book and getting it into readers’ hands are two different things, though, and many who go to the trouble of writing and publishing books never see their work find an audience. Even authors who publish through the large, traditional publishers typically find that they have to do their own promotion if they want their books to sell. Kristen James, who runs a small, independent publishing company in the Pacific Northwest, has written Book Promoting 101 to help this new generation of authors take the final step by understanding that books are products that must be marketed if they are to succeed. “As a published author,” she says, “you are an entrepreneur” (p. 24).

James covers the process from the beginning, giving some tips for promoting the book even while it’s still in the manuscript stage. She continues through the book lifecycle, promoting during its launch and afterward, through the day when the book eventually becomes part of the author’s backlist. She supplements her own advice with a few chapters reprinted from other sources and includes samples of marketing plans and materials that were used for this and other books. James concludes with an overview of the publishing industry as it works today (emphasizing print-on-demand publishing), some author success stories, and a list of resources. If Book Promoting 101 goes to a second edition, James might want to have it copyedited first. The frequent typos and mechanical errors in the text detract from her credibility and will annoy careful readers.

This edition, however, includes ideas from the free (blogging) through the cheap (Facebook ads) to the
expensive (book tours), and the quixotic (winning a writing contest) to the creative (holding book signings in nontraditional venues). James includes useful tidbits such as the fact that different publications prefer to review books at different points during the book’s lifecycle. She covers what marketing materials writers should produce, how to arrange a book signing and how to behave while there, and which book promotion services to pass up. As the subtitle suggests, the information on promoting books on the Web is intended for less tech-savvy readers than the typical STC member. The tone is reassuring for Web newbies as she gives advice such as what information not to put on Facebook. The marketing advice is similarly beginner-friendly and not intended for an audience of marketing professionals.

James has written an engaging, encouraging, and easy-to-read introduction to do-it-yourself book promotion for first-time authors. Readers who study her advice, construct solid marketing plans, and follow through with the necessary effort throughout the lives of their books should find themselves rewarded with readers of their own.

Marilyn R.P. Morgan
Marilyn R. P. Morgan has an MA in English from the University of Tennessee. After serving as a technical writer and editor in academic and government research organizations, she now works as a freelance writer and teaches English at the college level. She has been an STC member since 1993.

Succeeding in the Project Management Jungle: How to Manage the People Side of Projects

With a focus on increasing the success rate of projects, author Doug Russell argues in this book that when it comes to priorities, a shift from process to people will help.

With nearly 30 years of project management experience, Russell explains how a system of TACTILE Management can increase the chance of project success while making the job of project management less stressful. The TACTILE approach is a people-based approach to project management with the following elements:

- **Transparency** is key to the project’s success. Everyone on the team should know the truth about decisions that affect them as well as the details of organizational policies and business climate.
- **Accountability** means that team members feel empowered and supported in their role with each member knowing the roles of other team members.
- **Communication** means keeping information flowing quickly and seamlessly.
- **Trust** refers to working toward a common goal. It also means that all team members promote the same agenda.
- **Integrity** is a key element involving the team relying on a consistent set of values to guide group efforts.
- **Leadership** is effective when motivating team members to meet technical goals and driving cultural change while promoting individual growth of team members.
- **Execution** results refer to blending the other characteristics to produce success.
With case studies from organizations such as Motorola, Textron, and the US Department of Defense, the book explains techniques that project managers can apply to their own projects. I found these case studies to be some of the more interesting parts of the book.

*Succeeding in the Project Management Jungle* addresses toxic management styles in sections that are especially noteworthy. Russell defines Country Club Management as “a lax, undisciplined project environment where project managers are not allowed to build the right culture for success” (p. 70). Take the Hill (At Any Costs) Management is one where failure occurs because the manager scrutinizes every detail of a project and treats team members as if they cannot be trusted.

While schedule, cost, and scope make up the traditional project management triple constraint triangle, Russell proposes an additional triangle of equal importance. This additional people triangle includes team members, management, and customers.

If you already are familiar with the triple constraint triangle, the book provides a good review of it and related project management basics. If you do not know the triangle and related concepts, the book provides a good introduction and food for thought.

Jeanette Evans
Jeanette Evans has more than 15 years in the field. An STC Associate Fellow, she is active in the NEO STC chapter where she serves as academic relations co-chair and newsletter coeditor. She has published in *Intercom* and presented at various STC functions including several national conferences.


Deltina Hay provides a step-by-step guide to creating and implementing a social media strategy for promoting a career or a small business. The introduction includes definitions of common social media terms, such as “RSS feeds”, while the initial chapters explain how to plan and prepare for an optimized social media presence. Subsequent chapters deal with a specific type of social media, such as RSS feeds, social bookmarking sites, and widget creators. The final chapters show how to update the tools automatically and how to measure the chosen strategy’s success. Appendices provide detailed instructions on installing WordPress and creating custom RSS feeds. *The Social Media Survival Guide* illustrates all its chapters with screen shots, while its companion CD includes additional resources and fillable forms.

While implementing a social media presence is helpful for freelance technical communicators, the tools Hay describes are geared more toward marketing to consumers rather than businesses. Her extensive explanation of the available Facebook features, for example, is more useful for authors selling their books than for technical writers marketing their skills in creating whitepapers. As a freelance technical translator, I market my services using some social media tools. *The Social Media Survival Guide* provided ideas on how I could better use these tools.

The forms on the companion CD require the full version of Adobe Acrobat (not Acrobat Reader) to complete online. Otherwise, you can print them out and complete by hand. The CD also includes lists of additional Web sites as PDFs, with clickable hyperlinks. *The Social Media Survival Guide* is intended to be worked through in sequence, although Hay states in
the introduction that the chapters can also stand alone. That is true to some extent, but the frequent references to prior chapters make it difficult to read only specific portions of the book. Few readers, however, are likely to implement every single tool covered here, so they may want to skip chapters not relevant to their particular strategy. Assuming a WordPress-powered Web site, in particular, seems not that helpful. Many small business owners probably already have a Web site and are picking up this book to build a more interactive Web presence.

The references to other sections in the book give it an interactive feel that makes me want to click links. Given the transitory nature of Web sites, the screens depicted in the illustrations will likely have changed long before the book is out of print. Both these facts suggest that the book might be more helpful as an interactive online tool rather than a static printed item. Yet, I like not having to sit at my computer to read a book. Maybe the answer would be an electronic book, with integrated links both to sections within the book and to the Web sites mentioned in the text.

Barbara Jungwirth
Barbara Jungwirth, an STC Senior Member, owns reliable translations LLC (www.reliable-translations.com) where she translates technical documents from German to English and codes for an HIV Web site. She also writes a blog, On Language and Translation (http://reliable-translations.blogspot.com) and posts updates on Twitter (@reliabletran).

The Secret Life of Pronouns: What Our Words Say about Us

When we think about the tools of the technical communication trade, it’s easy to focus on the technology. The Secret Life of Pronouns: What Our Words Say about Us reminds us that words are the real communication tools. Words on paper, words across a telephone line, words on a screen—each says something.

Pennebaker, a University of Texas professor of social psychology, is quick to admit that behind his interest in words is his desire to understand “the relationship between word use and people’s psychological states” (p. 9). Because of his decidedly humanistic interest, Pennebaker’s approach is not very “technical”, but he does say much about “communication”.

The author talks to the masses by analyzing with equal fascination tweets from Lady Gaga and Paris Hilton, speeches from American presidents, and lyrics from the Beatles. He talks about his research like one might converse at a dinner party with friends by offering this warning: “If you are a serious linguist, this book may disappoint or infuriate you” (p 17).

The book caused me to think about communication strategies in a new way, and made me aware of some tiny, seemingly inconsequential words that are loaded with meaning. Pennebaker focuses on stealth words, which are the smallest language tools that connect and shape our content words, but mean little on their own. His attention focuses on pronouns because his research suggests that they reveal the most about us, yet he also finds meaning in the most seemingly inconsequential words we use including articles, prepositions, and auxiliary verbs.

Pennebaker stumbled on the significance of pronouns while investigating why writing seemed to help people cope with traumatic experiences. He and his research team developed the Language Inquiry and
Word Count program (LIWC, pronounced “Luke”), a computer-based text analysis tool capable of sifting through thousands of writing samples in seconds, categorizing and counting various word types.

Pennebaker uses LIWC to look for and identify word use patterns in men and women, bosses and underlings, dating couples and lying witnesses. For example, he finds that women use more first-person, singular pronouns (“I,” “me”) than men, while men use more articles than women. Pennebaker explains that pronoun use reflects the writer’s focus of attention, and therefore women’s high usage of first-person pronouns, or “I”-words, indicates that they are more self-aware and self-focused than men. On the other hand, since articles are usually paired with nouns, and in particular concrete, highly specific nouns, men’s higher usage of articles points to the fact that “guys talk about objects and things more than women do” (p. 42).

Despite Pennebaker’s non-academic writing style, his extensive notes and bibliography confirm that he’s done his homework. He also provides a website, www.secretlifeofpronouns.com, where readers can engage in short online exercises and even analyze their own writing samples. The Secret Life of Pronouns is a pleasure to read and offers technical communicators and other language enthusiasts valuable insights into our communication tools.

Lynn Ponder
Lynn Ponder has more than 15 years of editorial/publishing experience and is currently pursuing an MA in Technical Communication and Rhetoric at Texas Tech University. Her interests include composition, document design, and online publishing. She is a member of the Houston and TTU chapters of STC.

Concise Oxford English Dictionary

This dictionary is the centenary edition of the one that came out in 1911. While Merriam-Webster may boast a similar history, American readers ignore Oxford dictionaries only at their peril. My favorite dictionaries are Merriam-Webster and American Heritage, and my preferred versions of those are their collegiate versions.

The Concise Oxford English Dictionary (OED) bills itself as a “handy, reliable resource for home, school, or office,” according to its promotional materials. I think that is a correct assessment. Slightly smaller than the collegiate dictionaries, it is handy. And based on the powerful Oxford English Corpus, it is reliable. The Oxford English Corpus is the database that has been painstakingly developed since the 19th century and which is the source of the magisterial and multivolumed Oxford English Dictionary, gold standard of all dictionaries.

From several months use of this dictionary, what might tempt technical communicators to add this dictionary to their shelf or computer? First off, it includes a new Usage section for many words, similar to what you find in the American Heritage Collegiate Dictionary. So that for example, if a word is used differently in standard American English and British standard English, you’ll find out how. We say “humor” and they say “humour,” but we both say “humorous.”

What I discovered most about this dictionary had to do with the differences between the online and print versions. When you buy the dictionary, you get a one-year “free” subscription to Oxford Dictionaries Pro. Here are some of the things I found:

I love hearing how things are pronounced. The word “pannier” always vexes me. The pronunciation is not given in the paper version, but I can hear it online clean as a bell. And it is more fun to hear Homer Simpson’s “d’oh” with a British accent!
The online version has words that the paper version does not, such as “optimific” and “Terpsichore,” though “terpsichorean” is found in the latter. Though “fortnight” is primarily a British word, you will occasionally read it in literature. The paper version does not have a usage example, while the online version does: “In the last seven years at home there were regular fortnights in hospital: periodic detention, we called it.” These things being said, the paper version does not go down and force you to reboot. The paper version does not require a re-up every year. And the paper version will undoubtedly last for years, while the online version is only as good as the operating systems with which it’s compatible.

And as paper versions go, I intend to put the Concise OED next to my Merriam-Webster’s and American Heritage. You can never have enough good reference books.

Charles R. Crawley
Charles R. Crawley is a lead technical writer at Rockwell Collins, Inc., in Cedar Rapids, Iowa. He also teaches as an adjunct at Mount Mercy University in Cedar Rapids.

Visual Meetings: How Graphics, Sticky Notes, and Idea Mapping Can Transform Group Productivity

Technical communicators who are looking for new ideas and fresh approaches to holding workplace meetings should read Sibbet’s Visual Meetings: How Graphics, Sticky Notes, and Idea Mapping Can Transform Group Productivity. This book’s primary goal is to share accessible, powerful tools and apply them to visual meetings. No professional facilitation experience or serious drawing ability is required. The ideas presented are “all things you can suggest, jump in, and be pretty assured of getting a much more productive result than if you didn’t work visually” (p. 50).

With 23 chapters in just over 250 pages, Visual Meetings is not a quick read. It is divided into four sections that follow a progression—imagining, engaging, thinking, and enacting—to present the core ideas and practices involved in visual meetings. This same progression also mirrors how people work in the process of moving from ideas to action.

Sibbet argues there is a “visualization revolution going on now in business” (p. xiv) that is rooted in the tools themselves—draw and paint programs, layout and presentation software—which once were only for designers, but are now available to everyone. A second reason for interest in visual meetings is “the rising need and in many cases demands for more interesting and productive meetings” (p. xv).

I found the chapters that specifically focused on meetings to be most useful. In chapter 3, pre-designed graphic templates—big worksheets on a wall—are introduced as something to create before a meeting. Then during the meeting, the common practice is to fill out the template by using sticky notes. In chapter 5, Sibbet makes the convincing case that slide presentations in meetings are often a “push” type that creates resistance; the “pull” type alternative, which creates participation and attention, are the better choice for decision making, virtual teams, project kickoffs, and many other meetings.

It is important to mention that Visual Meetings was “not” written specifically for technical communicators, so sales-related topics (chapter 6 covers using visual meetings to successfully connect with customers), case studies (chapter 1 covers how Apple used visualization in meetings in the 1980s), and digital photography tips (chapter 14) may not be relevant to your job situation. Feel free to skip sections or even entire chapters.

Visual Meetings is very ambitious in scope; it is nearly impossible to think of a topic related to visual meetings that the author has left out. This book’s bibliography even includes all the mentioned print resources and a separate annotated list of online sources. I recommend Visual Meetings to anyone that is open to reading about alternatives to traditional meetings. Another visual thinking book to consider is Back of the Napkin (Portfolio, 2008, reviewed in the November 2009 issue of Technical Communication) where Dan
Roam argues for using simple visuals for problem solving and strategy.

**David Kowalsky**

David Kowalsky is a technical writer for NEC Corporation of America. He received his MA in East Asian studies from Washington University (St. Louis) and a certificate of technical writing and editing from the University of Washington. He is a senior member of STC’s Puget Sound chapter.

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**How to Write and Publish a Scientific Paper**


Day (Scientific English) and Gastel (Health Writer’s Handbook) team up for the second time on the seventh edition of How to Write and Publish a Scientific Paper. Keeping the eight-part structure of the previous version, the text has been updated and revised to better serve the international reader and to provide new information on electronic communication and publication. Although the book’s perennial popularity attests to its success as a tool for science writers, professional technical communicators may find the book light on detail. Nevertheless, Day and Gastel provide a clearly written and playfully humorous overview of scientific writing that is a valuable read for beginning scientists and a useful resource for technical communicators new to the field.

Day and Gastel follow their own advice for accommodating the international reader: using plain and consistent language, simplifying verb forms and sentence structure, and eliminating cultural references and idioms (for example, “a good deal easier” became “much easier”). The book only touches on more complex concepts of cross-cultural analysis (such as high/low context communication), but includes resources (www.authoraid.info) where writers can seek information on communicating science within specific cultures.

Although the book’s tongue-in-cheek humor adds to its charm, the choice not to revise earlier chapters, where the humor sometimes muddles important concepts, seems unfortunate. For example, in the “Use and Misuse of English” chapter, the authors opt for wry examples of dangling participles (“A large mass of literature has accumulated on the cell walls of staphylococci.”) rather than explaining how to identify and avoid them, which may leave international and US audiences confused.

Addressing advances in technology, the authors provide guidance on preparing and submitting papers electronically and on writing emails, Web sites, and blogs. Concepts like “chunking” for online content are introduced on a basic level (for example, there is no discussion regarding adjusting the coarseness or granularity of information chunks for specific contexts or audiences). A new appendix offering “Some Helpful Websites” contains useful resources, but could be more comprehensive than the nine sites listed.

Technical communicators may be a bit dissatisfied with the book’s lack of depth. They may also object to the limited view of scientific writing as the “the transmission of a clear signal to a recipient” (p. 4), a definition that does not reflect the rhetorical nature of scientific discourse or current theories in technical communication. Even so, the book offers an eminently readable introduction to scientific writing and publishing with some salient advice as well as references to more detailed resources.

Perhaps, the book’s greatest value comes from the authors’ words of encouragement to new scientists and science writers. Day and Gastel point out that journal editors and peer reviewers want you to succeed. Faced with the daunting task of getting published, the authors’ insights and encouragement should help beginning science writers gain enough confidence to tackle the writing task.

**George Bendele**

George Bendele is an STC member and a contract technical writer for Bolder BioPATH, Inc., which does pre-clinical pharmaceutical research. He is currently attending Texas Tech University’s online MA program in Technical Communication and Rhetoric. George is a member of the Austin, TX chapter of STC.
How to Write In-House Software User Manuals


Wanda Warren’s How to Write In-House Software User Manuals aims to provide a straightforward, sequential process for developing a software user manual. Despite its lack of novel ideas or approaches, this book offers entry-level business professionals an effective, though basic, cradle-to-grave overview for developing in-house software user manuals.

In addressing the fundamental aspects of software user manuals, Warren starts with the preparatory prewriting steps, wherein the reader is initially encouraged to gather information. This section is particularly valuable for entry-level professionals, as it advises scheduling a kick-off meeting, studying the software, and interviewing subject matter experts.

For the creation stage, Warren discusses the basics for developing a cover page, manual outline, headings, step-by-step instructions, and screen shots. In doing so, she provides useful tools for efficiently creating a user-friendly document, such as Microsoft Word Styles and Snagit, premium software for capturing and formatting images.

Though Warren maximizes user convenience by providing instructions that emulate the principles outlined within, she missteps concerning one significant aspect. Namely, while published in 2011, this guide provides instructions based on Word 2003. By solely accommodating readers who may not use current software, Warren limits users familiar with the revamped versions of Word. As such, Warren’s guide not only fails to accommodate a wider audience base, but also disregards the standards of its genre.

Despite this shortcoming, Warren’s introduction to Snagit may pacify readers disgruntled with the book’s adherence to an archaic version of Word. In addition, Warren also provides the thrifty reader with a free, though slightly tedious, alternative method for capturing screen shots using the Windows Print Screen key.

After discussing Snagit’s utility, Warren effectively transitions from the creation to the formatting stage, broadening her scope to comprehensive formatting conventions, including instructions for formatting body text, headers, and footers as well as creating an automatic table of contents and list of tables. Though perhaps monotonous for those familiar with Word, this section offers the novice useful steps for achieving an appealing layout.

Though well conceived, Warren’s tolerably executed guide is not without notable shortcomings. Besides its dated instructions, the guide’s appendix includes grammatical rules and punctuation tips that are remedial at best and thus may offend Warren’s intended audience of educated professionals. Moreover, Warren’s book possesses a few unwarranted flaws. In addition to easily rectified grammatical errors, Warren’s inconsistent use of parts of speech violates the rules of parallelism. By contradicting the very principle she advocates, Warren hinders her credibility.

In short, the book’s cons most likely outweigh the pros for many prospective buyers. Warren’s guide may be an ideal starter book upon which a novice can build their repertoire, as it is an excellent resource on the basics of preparing, creating, and formatting a user manual. However, for the intermediate or experienced professional, I recommend Dr. David Tuflley’s recently published book, Software User Documentation: A How to Guide for Project Staff, as it provides a more sufficient overview.

Tami Ullom

Tami Ullom is a technical writer for a defense contractor in Huntsville, AL. She holds a BA in English and is currently pursuing a graduate certificate in Technical Communication at the University of Alabama in Huntsville.
Virtually You: The Dangerous Powers of the E-Personality

Aboujaoude cites several studies that argue that the Internet has introduced physiological changes in humans. Various scans show that the same parts of the brain that are affected by drug and gambling addictions are also affected by Internet usage. He also discusses possible long-term changes on memory, the breakdown of language caused by the overuse of emoticons and texting, and the shallowness of knowledge that Web surfing has created. The chapter on privacy touches on the current fears that social networking Web sites are effectively redefining the meaning of human existence in the Internet age.

The underlying argument throughout Virtually You is that Aboujaoude believes Internet addiction should be added to a future DSM edition. While the book does well at introducing this subject to the general reader, its aim is not to build a complete argument for the APA board members. Several times Aboujaoude calls for more academic studies before such a change can occur. His anecdotal evidence and primary research, though, should serve to increase attention to this important aspect of human existence.

While the information in Virtually You may not be new to technical communicators, Aboujaoude does an admirable job in gathering the salient themes that are now influencing American society. His clear, accessible prose and contemporary examples make the case that persons who spend much time on the Internet should contemplate its effects on their actual and virtual lives.

Russell Kirkscey
Russell Kirkscey is a doctoral student in Technical Communication and Rhetoric at Texas Tech University. His research interests include health and medical rhetoric, traditionally marginalized persons, narrative theory, and power issues.
Technical Writing: A Practical Guide for Engineers and Scientists


It is often difficult to find a textbook that has a chapter on every topic you want to cover in a particular class. However, Laplante's text comes very close to what would be covered in a typical introduction to technical communication course geared specifically for engineers and scientists. Concisely written, fast-paced, comprehensive, and written with workplace expectations in mind, Laplante hits the mark when he says his book is intended to complement reference books or other technical communication books. It could also be used as a primary text if instructors are knowledgeable about working in an engineering environment and able to supplement with their own material.

Laplante briefly covers many of the usual topics associated with teaching technical communication, such as defining technical writing and distinguishing it from business communication, defining and describing various types of technical reports and scientific writing, using graphics, writing for electronic environments, and discussing the writing process. Yet, one of the unique aspects of Technical Writing: A Practical Guide for Engineers and Scientists, and probably one of the most enjoyable, is the abundant use of examples that engineering and science students can identify with. The examples are important for this text and the intended audience because engineering and science students many times do not foresee technical writing fitting into their job descriptions in their future.

While publication is desirable in any professional field and should be encouraged, the emphasis on writing for publication in Laplante’s book can be a bit overbearing for students who are being introduced to technical communication for the first time. Most recent graduates will likely write reports and other workplace correspondence in teams before they write for publication, so it might be more helpful if Laplante focused more on collaborative writing in the earlier chapters and ended with encouragement and discussion about the benefits and process of publication.

Technical Writing is definitely worth reviewing if you teach technical communication for engineers and scientists. The language is easy for students to understand; the design, graphics, and examples keep readers engaged; and it can be a great supplement or primary text depending on how much original material of your own you would like to provide to your students.

Diane Martinez

The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement


In this essay collection, John Ackerman and David Coogan catapult the tenets of New Rhetoric into the 21st century, along with 12 other citizen-scholars, by suggesting we look at scenes in our community where change is happening and engage in that change. These essays address both theory and practice, frequently building on case studies of engagement in public life, addressing real-life ideas and issues as opposed to mere service work or service courses as learning opportunities. The citizen-scholar authors are “community teachers, ethnographers, Web designers, mediators, consultants, writers, and organizers” (p. 11). These citizen-scholars are writing on topics such as democracy, disability studies, race, and conflict resolution, yet the controversial topics are identified in the themes of scene, the construction of power, and the role of education.

The scenes discussed in this volume break new ground in terms of how and where people might engage in public life. Thomas Benson, in the series editor’s preface, says some scenes include the street, technical
and professional world, and the Internet. Other scenes authors observe include the city; the university; specific classrooms; parks and teen centers; video conference, e-mail, and Web sites; and many others. Juergensmeyer and Miller describe these as places where, “Within their communities, individuals can collaborate in spaces where they can mutually discuss issues and create change” (p. 238). The citizen-scholars name these scenes “third space” (p. 9), the “middle space” (p. 159), and “free spaces” (p. 82) based on the purpose of relational and community transformation as opposed to mere agreement in public work.

The scenes that frame case studies and theories give rise to the question of power in civic engagement, because it is in these political spheres where power is transformed, according to Ackerman. Specifically, the citizen-scholars seek to address the issues of how and by whom power is held. In some situations, individuals and groups can empower themselves; whereas in other situations, it takes another individual as a mediator or authority to give others power; and in others, there is a combination of both.

This balance of power as social action is often stimulated by education in the theories and case studies with such topics as the Cherokee Nation, conflict resolution skills, cultural economies in universities, and the legitimate use of public texts and engagement in the classroom.

_The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement_ volume is useful for citizen-scholars or citizen-scholar-educators who are looking for ways to engage themselves or students in the public work of rhetoric. Several of the essays on education include specific readings and assignments the authors have used with students, which could be helpful for other educators. In addition, citizen-scholars will find the balance of rhetorical and social theory and case studies to be enlightening for thinking through not only what constitutes public work, but why we should engage in it and how we can create change by empowering ourselves and others.

_Sarah K. Smith_
Sarah K. Smith is a PhD student in Technical Communication and Rhetoric at Texas Tech University, a lecturer of English at Chapman University, and a teacher of online English and communications courses through California Baptist University. Her areas of research include online pedagogy, rhetorical theory, and power and discourse.

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**Unbeatable Résumés: America’s Top Recruiter Reveals What REALLY Gets You Hired**


Everyone wants the perfect résumé, but even technical communicators need help producing one. I’ve reviewed hundreds of résumés and seen many mistakes that Tony Beshara discusses, like typos or irrelevant and personal information. _Unbeatable Résumés_ reviews what should and should not appear on your résumé, and contains hundreds of examples for fields like sales and marketing, banking, administration, and engineering.

While this book is general in scope and doesn’t cover specific examples for technical communicators, you can adapt the recommendations. Some key features to include on your résumé include company names, job titles, employment dates, and accomplishments. Omit things such as your photo, images, or marital status. Use a reverse-chronological structure rather than a functional résumé.

_Unbeatable Résumés_ starts with a top-ten list of mistakes, but then it digresses into reasons why you need this book and need to trust the author’s expertise. (Beshara isn’t shy about telling you how successful he is at recruiting, and sometimes that boasting is a distraction.) Skip the first chapter; skim the second one that says most résumés are “read in ten seconds” (p. 9). Start with chapters three and four, which contain the bulk of advice, like résumé length. If you can’t write concisely in your résumé, you probably won’t do it on the job. Beshara says 95% of hiring managers want a one- or two-page résumé. Later he covers nontraditional résumés such as the comprehensive curriculum vitae required in education and some scientific fields.

As a former manager, I disagree with some of Beshara’s advice. First, he says always include the year of your degree, but this can give an employer an idea of your age, which you may not want to do. Of course, this
information might be relevant in jobs that require up-to-date research or scholarship, yet once you have industry experience, the years of education matter less.

Beshara suggests some creative ways to get your résumé to the hiring manager, yet I would be uncomfortable if job seekers waited at my office just to hand-deliver their résumé. The same is true if they sent it with a bottle of my favorite wine. Beshara does caution readers about going “a little over the top,” such as having a résumé delivered with a singing telegram.

After a hundred sample pages, two useful chapters suggest how to distribute your résumé and how to job hunt. Some advice is amusing: for the subject line in your email use “200% performer” or “a Latin phrase . . . such as ‘non illegitimus carborundum’” (p. 252). Know your audience and what gets their attention. Most technical managers expect delivery through e-mail, Web form, recruiters, and colleagues. They also want clarity and concision, not long e-mails that restate the information in your attached résumé. Obviously, in the job-hunting process use your own best judgment.

Kelly A. Harrison
Kelly A. Harrison, MFA, works as a consultant, speaker, and writing instructor in San José, CA. For over 20 years, she has written technical materials and online content for various software companies. Currently, she teaches writing at San José State University and prefers short-term and part-time contracts.

The Non-Designer’s InDesign Book: Essential Design Techniques for Print Projects

It’s always a treat to open a book written by design guru Robin Williams. The Non-Designer’s InDesign Book, as expected, is an attractively designed book that’s easy to learn from. You should realize, however, that this book is unlike the author’s books on design that you might have read in earlier years. The subtitle’s mention of “design techniques” does “not” mean lots of detail about design principles, as we’ve found in other Williams books. Rather, you’re looking at Adobe InDesign techniques to apply when you design print projects.

Williams restricts her coverage to the InDesign techniques that she feels new InDesign professionals must know—the ones she uses constantly. Thus, the flow of her main chapters is not surprising: the InDesign interface, text formatting, spacing, tabs and indents, tables, style sheets, graphics, and color.

Come to this book prepared to work. Chapters give you tasks both short and long. Besides 118 (that’s no misprint) numbered tasks, there are other tasks, and most chapters end with a “Try This!” section that invites you to create a project using information used in the chapter. The “Try This” chapter graphically suggests tasks of intermediate complexity that you can do using what you’ve learned. Williams repeatedly encourages you to alter her examples so that you can see changes in your output.

You get many examples, close-ups of interface elements, and callouts. A designer’s insight shines in boxed notes: “The point [of kerning ] is not to tighten all the spacing—the point is to make it visually consistent so there appears to be the same amount of space between all the letters” (p. 44).
Williams's easy style and humor is comforting, as when she notes that one trick “has saved my boompah a number of times, including this very chapter file” (p. 217). In case you’re nervous about sending your work to a commercial printer, her tone works as she explains exactly what the printer needs to see in your file, even if—horror of InDesign horrors—the file is corrupt.

My cavils are few. I wish the book at least mentioned scripting on the “Things yet to know!” page (p. 219), if only to point out how it improves workflow. Also, the book at times seems over-designed where font choices make it difficult to read the figure callouts and index subtopics.

Williams mentions excellent resources, especially some Peachpit books. But I’d definitely add the detailed video courses available from Lynda.com, which as of early January 2012 offers 53 complete courses on InDesign and dozens of other courses on design.

The prolific author brings the same can-do spirit to two other recent books also written for Peachpit Press: *The Non-Designer’s Illustrator Book: Essential Vector Techniques for Design* (2012) and *The Non-Designer’s Photoshop Book: Essential Imaging Techniques for Design* (2012). Thoroughly work through all three books, and you’ll master the fundamentals of Adobe’s big three design programs required of today’s designers.

**Avon J. Murphy**

Avon J. Murphy is a technical editor in western Washington. A retired college professor and government writer, he is an STC Fellow, a contractor, and principal in Murphy Editing and Writing Services, specializing in computer and Web technologies. Avon served as Book Review Editor for *Technical Communication* for 17 years.

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### Technical Communication Strategies for Today


I have used Richard Johnson-Sheehan’s *Technical Communication Today* in several technical writing service courses, so I was excited to see how his new, shorter textbook, *Technical Communication Strategies for Today*, would compare. I was pleased to find that this book is just as well done as the original text.

Despite its brevity, *Technical Communication Strategies for Today* shares some of *Technical Communication Today’s* strongest characteristics. Like its predecessor, this book emphasizes audience awareness and adaptation over formula-driven communication, and the early chapters are particularly strong in this regard. Johnson-Sheehan has set up this book similar to the earlier editions of *Technical Communication Today*. The first section of the textbook introduces students to technical communication as a practice and as a profession, including becoming reader-focused and ethical in their communication. I particularly appreciate how much space the textbook devotes to collaborative writing in chapter 3, as it provides students with the knowledge to work through many of the pitfalls that come with collaboration.

The second section covers graphics, Web sites, and presentations. The biggest updates from the third edition of *Technical Communication Today* are in chapter 9, which focuses on Web sites and Web 2.0 (though similar updates will appear in the fourth edition of *Technical Communication Today*). Johnson-Sheehan has expanded the discussion of social networking and Web 2.0, giving the topics chapter-title billing alongside more traditional Web sites. Instructors will appreciate that this section is quite up-to-date, with discussions of how to use social networking to create professional and organizational communication. That being said, it’s
difficult to provide up-to-date information about topics that can change as dramatically as these, so this section of the text is at its best when it focuses on the theories and best practices behind communicating with technology.

The third and final section covers several important genres: letters, memos, and emails; technical descriptions; and documentation (including instructions). While it would be nice to see a broader range of genres represented, doing so would detract from the process and audience emphasis that is the textbook’s strength.

At 544 pages and a list price of $75, *Technical Communication Strategies for Today* is nearly 200 pages shorter and $30 less than the original *Technical Communication Today*. The differences in size and price, coupled with the updated content, make *Technical Communication Strategies for Today* an excellent textbook for service courses, in particular, as well as introductory courses for technical communication majors.

Ashley Patriarca

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### Never Use More Than Two Different Typefaces: And 50 Other Ridiculous Typography Rules


Almost every design book, or even a book on professional writing, attempts to lay down rules or guidelines that codify what you need to know to be a good designer or writer. That’s why this little book is so much fun: It tries to define those rules for typography, and then proceeds to break them.

The Dutch publisher BIS gives us 51 typographic rules, which are beautifully and often humorously illustrated, and are either backed up or disputed by quotes from well-known designers, typographers, and others.

Let’s look at a few of the rules that are pertinent to technical communicators. One that jumped out at me—because I hear it so often—is “Make it pretty” (pp. 110–111). I take this as an insult that minimizes my skills, but it does acknowledge the truth that if it doesn’t look good, it probably isn’t.

Another rule is “God is in the details” (p. 117). The backup quote I appreciate here is “Don’t let the computer make the decisions for you!” This is supported by another good quote: “My main concern about bad typography is being over-reliant on the computer to solve typological problems” (p. 16). Let me paraphrase the philosopher Immanuel Kant here: Have the courage to override the default.

Another rule ambiguously stated: “Stick with (sans) serif” (p. 35). One of the biggest and most basic decisions we have is whether to use serif or sans serif. The book stays, “To serif or not, that is the question. In general, serifs work well in long texts, while sans serif fonts best serve headings and captions” (p. 35).

This is good advice, but there are many good sans serif typefaces used as text typefaces today, and their ubiquity on the Internet is increasing their popularity rapidly. But heed the warning of humorist Stephen Colbert: “Hey Helvetica—you look disgusting. Have some dignity and put on some serifs” (p. 35).

This book will be useful to technical communicators who have to make typographical decisions in their daily work. It would probably also be helpful to teachers of writing who must teach design. Some of it may be aimed toward designers and typographers, and so not be as useful. But for those interested in type, it is a fun book.

Charles R. Crawley


Originally published in 1970, this second edition (released in July 2011) covers changes in design over the last 40 years. It also looks at design globally, which opens the door to considerations of how design in Europe and the US differs from that developing in the East and Middle East. Beginning with Victorian England and working through to the 21st century, this survey examines design in everything from architecture to the iPhone. Several hundred illustrations, most of which are in color, document the trends Ferebee covers, and she considers both design styles (Art Nouveau and post modernism, for example) as well as major figures.

This book’s value lies in its effort to match design milestones in interior design, photography, architecture, and consumer products with changes in cultural, social, technological, and aesthetic currents. One of the most interesting themes in Ferebee’s work is how technological innovations in materials and processes found their way into everything from photography to bridge building.

This isn’t a book most instructors would ask students to buy in a document design course because Ferebee doesn’t devote much space to topics about changes in the design of typography. However, graphic design instructors might find its international examples a useful addition. Many instructors and readers whose training in design is limited to one of the areas that Ferebee covers would find her broad overviews of design in many fields of use. In particular, the illustrations, which cover such a range of design examples in one place, are helpful.

Billie Wahlstrom

Billie Wahlstrom, PhD, is vice provost of Distributed Education and Instructional Technology at the University of Minnesota. She is an author, won a teaching award from the state of Michigan, and is a former coeditor of the Technical Communication Quarterly. Billie is an Associate of the Women’s Institute for Freedom of the Press and on the Executive Board of the American Distance Education Commission (ADEC).

Mobile First


Since Tim Berners-Lee created the first Web client (World Wide Web), the Internet has played host to designers and developers following the traditional pattern of producing Web sites. The Web tides are changing though with the increasing ubiquity of smartphones and mobile Internet availability. This is why Web workers today must alter old habits or face being left behind.

Luke Wroblewski’s Mobile First aims to gently, but quickly, transition Web workers into new mindsets for future Web building pursuits. He has spent the past five years focusing his design and communication talents toward tackling the “mobile web experience” (p. 3) with unassuming grace and thoroughly researched support data.

Mobile First’s audience includes anyone who must consider delivering mobile Web content. Wroblewski writes in easily digestible content chunks that help readers move swiftly through the book. The book is organized into two parts: Part 1 explains the reasons why designing mobile first matters; Part 2 discusses how to organize content, develop usable
interactions, craft inputs, and rethink effective layouts for mobile experiences.

Each chapter features images of mobile device screen captures, gesture charts, and graphs required for knowing the visual nature. Wroblewski provides readers with a brief overview of the topics covered in each chapter. This small gesture makes navigating his book incredibly easy.

The chapters explaining why designing mobile first matters offer detailed data about mobile growth, the mobile constraints, and the many capabilities of current devices. The first three chapters in this book help readers understand the significance of the mobile Web experience. Because the mobile Web experience is so different from its desktop predecessor, Wroblewski patiently, but systematically, explains how organization must be altered to align with mobile user needs.

Wroblewski’s final chapters detail the important aspects of the mobile Web experience. The chapter covering user actions in mobile is particularly relevant, as he explains the importance of touch gestures, enlarged touch targets, and natural user interfaces (NUIs). Wroblewski devotes an entire chapter to mobile HTML inputs, which he describes as being fundamental to content contribution via mobile.

Finally, Wroblewski completes his discussion by looking closely at mobile layout. Establishing that in mobile “the only thing you can count on is change” (p. 109), he teaches readers about mobile layout best practices, such as responsive and fluid designs, and the concept of reduction. Wroblewski uses screen captures to drive home his points, thus helping the readers to visualize what good mobile layouts can look like.

Overall, Mobile First provides readers with swiftly obtained, relevant, and usable knowledge. Anyone interested in delivering content for the mobile Web experience will benefit from this book. Wroblewski’s writing style, which he has expertly crafted to feel like a comfortable, intimate, and brief explanation from a friend, makes this an intriguing, delightful book to read.

Greg Gamel
Greg Gamel, an STC student member, is a user interface designer, focusing on no-fuss design, typography, and strong grids. He is currently pursuing an MA in Technical Communication and Rhetoric from Texas Tech University, as well as co-founding a startup aiming to deliver responsive, art-directed stories on the Web.
For over 10 years, Net-Translators has helped technology companies and medical-device manufacturers prepare their products for global markets. Our comprehensive localization services portfolio, experienced customer-focused project teams, and unique quality-centered approach help us consistently exceed customer expectations for deadline, budget, and accuracy. We have earned the trust of industry leaders worldwide, so you know your products are in good hands.

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