Shaping Texts that Transform: Toward a Rhetoric of Objects, Relationships and Views

Abstract
This article introduces concepts and strategies from human-computer interaction that technical communicators may find valuable when designing dynamic and/or customizable information for the World Wide Web. The article explains key concepts useful in object-oriented, distributed publishing to model the content of a given document by specifying object boundaries and relationships in order to construct "views" of these objects. When matched up with users' goals in a task-oriented or decision-making context, views can be tailored to support users by giving them the information they need, when they need it, in the most convenient display formats. I analyze a state tax document aimed at two distinct audience groups in order to provide concrete examples of the concepts and techniques discussed. The article concludes with a discussion of course and program-level implications of these concepts for the field of technical communication.

Introduction: Ancient Goals, New Technologies
More and more often, the texts we see on the web double as interfaces with which we can interact. By clicking links, by specifying preferences stored in a cookie, or even by simply visiting a page at different times during the day, we can expect if not explicitly cause texts on the web to change. Often we are able to change them so that they better serve our needs. And occasionally we can personalize them to such a degree as to ensure that they will work better for us in future situations. In fact, users have come to expect content on the web to be dynamic and customized, hence the terms to describe content that is not ("stale," "canned") or whole sites that don't change ("brochureware").

The feature that enables dynamic content is one of the most exciting, yet under-heralded qualities of the World Wide Web: its ability to serve as an object-oriented, distributed publishing environment. Technical communicators have become involved in the development of websites on a routine basis, often translating or repurposing hard-copy
documents for delivery on the web. As documents move to the web, we've seen a corresponding rise in technical communication's attention to some of the pivotal issues in web design, including integration of visual and verbal information and information architecture/navigation. The next step, some argue, is to bring more value to these online formats by making them more responsive to users’ needs (Van der Geest & Spyridakis, 2000).

As technologies and standards such as Cascading Style Sheets (CSS) and eXtensible Markup Language (XML) have surfaced to make the web more amenable to distributed publishing, the field of technical communication has turned its attention to object-oriented models of content delivery, especially "single-sourcing," or the practice of creating a central repository of information from which several target formats, genres, and display conditions may be generated (Rockley, 2002; Albers, 2002). Single-sourcing as a concept, though, is not new. Standard General Markup Language (SGML), an older publishing standard developed for the express purpose of single sourcing and cross-format delivery, is the parent of XML, in fact. And, not surprisingly, single sourcing is not widely used outside of large firms that can benefit from the process efficiencies of generating multiple formats by reusing blocks of content. So while single-sourcing is on the rise as the web's capability to support object-oriented distributed publishing grows, technical communication curricula have for the most part left the teaching of single-sourcing largely who deploy the technique. This means that a few important and more fundamental concepts which drive single-sourcing are also missing from technical communication courses.

This chapter will argue that, apart from single-sourcing, there is another way technical communicators can begin to see the benefits of object-oriented distributed publishing on the web, and it has everything to do with an important goal all writers share: optimizing the value of a document for its audience. Technical communicators can now create documents that are able to transform to meet the needs of their users. Some of the concepts and techniques we employ to do this are familiar, even ancient, strategies for multiple-audience adaptation. Other valuable concepts, however, come to us from the
field of human-computer interaction, specifically related to the design of object-oriented user interfaces. One of the most important of these concepts involves defining information objects that represent the key resources with which a user interacts. Further defining the relationships that exist among objects enables the designer of a user interface or dynamic document to specify specific conditions for displaying objects in order to support user needs. These displays, or views, frame the user experience and, as a result, greatly affect the value of a given document.

This chapter will explain how technical communicators can use the basic concepts which enable object-oriented modeling of user interfaces – objects, object relationships, and views – in conjunction with rhetorical strategies for audience adaptation to shape texts that transform.

**Five Qualities of Valuable Web Content**

The motivation for shaping texts that transform is related to five basic qualities of valuable information, information often referred to as “content” in the era of the World Wide Web. Technical communicators must understand and exploit these five qualities in order to maximize their value to the organizations in which they work. Indeed, technical communicators might well read these five descriptions as explicit “charges,” indicating the expectations of both users and employers:

- **Content is dynamic** - The value, validity, and credibility of information produced in our networked age is tied to its ability to stay fresh, and to be subject to ongoing revision; there is a growing distrust of the static page not based so much on our traditional notions of editorial authority, but on our preference for a more recently produced, more thoroughly or diversely reviewed/published version.

- **Content is customized** - Recalling familiar advice, a bit more emphatically stated: know your audience, intimately, and make your information subject to change based on their specific needs, preferences, environment, or some combination of all of these.
• **Content is linked and distributed** - The link, that is, the relationship between one piece of content and another, is often more valuable as a unit of information than what is on either side of that connection. Building relationships among existing pieces of information is as valuable for content providers as it is for users since the strategy of reusing information to ensure consistency of experience and/or trust in the validity of content is a way to both preserve and enhance the value of information.

• **Content is granular** - We’ve often faced what appears to be a paradox as technical communicators: we aim to both maximize our ability to reuse information and make it as customized for each individual as possible. While difficult, this dilemma is resolvable if we are careful to understand the macro and micro structures of the content we want to deliver. The grain size of content delivered on-line is getting smaller and smaller as we seek to understand both the semantics and the purpose of information down to the individual word or symbol, in some cases.

• **Content is interactive** - We’ve long seen our efforts as technical communicators as supporting the tasks of users with functional documents and information; content and tasks begin to merge at the level of the user-interface such that we must consistently ask how the words and images, along with objects such as buttons and sliders, we specify for an on-screen display will provide the support a user is looking for.

This list above is all the more powerful a description of content on the web when we consider that it is the combination of all of these features, not simply the emergence of one or two, that truly characterizes user expectations for information on the web. This list echoes a more specific list of dimensions articulated by Bernhardt (1993) well before the widespread growth of the World Wide Web in an article entitled “The Shape of Texts to Come.” In that piece, Bernhardt begins his list by emphasizing that texts are “situationally embedded,” a quality that speaks to the way users access, view, and interact with a physical document as well as the information the document makes available. To put it simply, users or readers of a document are typically engaged in some task that
influences the way they use that document. Of course, understanding what kinds of task situations users are likely to be involved in doing has always been an important step for authors of technical documents. Usability testing often aims to ensure that documents are well-suited to support users’ tasks, in fact. But there is an implication in the more simple statement “texts are situationally embedded” that bears further consideration early in the authoring process, during the development of interactive documents.

**Interacting with Documents**

People who use texts in the context of some activity – e.g. to make a decision, to look up a reference, or to guide physical performance of a task – interact with and, in some respects, alter the physical structure of the text to suit their purposes. In the context of hypertext systems such as the World Wide Web, it is easy to see how this sort of interaction happens: users click on some links and avoid others; they scroll down or across, or avoid scrolling altogether. As a result, readers may opt out of sections the author felt were important. They may also disrupt complex structures meant to sequence a task (e.g. by coming in at the “middle” of a set of pages via a search engine) or short circuit rhetorical moves made by the author by skipping long passages, turning off the feature that allows the browser to display images, etc.

Even with print documents, users make decisions about what to physically and cognitively access in a document. If all of these decisions are taken together, they create a kind of alternative structure applied “over” a document that reflects logics and/or desires related more to the task at hand, perhaps, than the author’s intended organization of the document. How many of us have skipped to the end of a novel to read the ending first, perhaps to help us decide if the book was worth purchasing or not? I have, without even thinking about it. Effectively, I rearranged the book to suit the task at hand – determining if it was worth buying – a decision that apparently calls for some information about the “payoff” the book provides before I, myself, pay off the cashier.

In the next section, I will call the pieces of information which users find useful in a given task situation “objects.” I will also talk about relationships among objects and how these
form the structure of a text as we understand it from the author’s point of view. But understanding objects and relations is not sufficient if we want to create texts that transform to meet the needs of specific users. To do this, we need to also consider the concept of a “view.” A view comprises the task circumstances and display conditions under which users of a document actually encounter text objects.

**Seeing the Text, Differently: Objects & Views**

The term “object-oriented” is a popular one in the area of software engineering, as it refers to a powerful and efficient modular approach to building complex applications. Object-oriented (OO) programming languages provide for the definition of chunks or modules of code, “objects,” which have certain features and functionality associated with them. Applications are built by combining objects together, a process which allows both the computer and, ultimately, the machine running the application to reuse objects when it is appropriate to do so. Developers take further advantage of the possibilities for reuse by exploiting the ability to create generic objects which can be used in many different situations and applications, such as a “window.” Each time a developer needs to create a window, she can call upon the generic window object for all of the basic features (in OO terms, we say that the new window “inherits” the qualities of the object which is its “parent”) and, if necessary, she can define further specific features and functions as well. The new window object can then be defined as a specific type, or “class” of the generic window object and, if necessary, called again.

The re-use benefits developers enjoy from OO programming languages are fairly easy to understand. Developing in an OO environment saves the development team time and permits them to focus much of their resources on solving the unique problems of a given application rather than creating and recreating the more familiar features. Users benefit as well, though, because applications that reuse the same generic objects – especially those associated with the user-interface or “externals” of the application – look, feel, and operate like one another. A consistent user experience within and across applications is much easier to achieve, therefore, with OO development methods than it might otherwise be. And it is precisely this goal, that of achieving a consistent user experience, with
which technical communicators can relate. To that end, we can apply many of the basic concepts behind object-oriented development to the design of documents, including the notion that a text is, itself, a collection of “objects.”

The idea that a text can be understood as a collection of objects related to one another in various ways is made most obvious, perhaps, when we simply look at a document as a physical artifact in the world. Squint your eyes and peer at a printed page, for example, or better yet view a document page shrunken down to a thumbnail image and you can quickly begin to understand how we might say that texts are made up of “objects” that we can discern, name, point to, and relate with various tasks that the document supports. The document thumbnail image below, for example, shows what appears to be a list. Even without knowing the specific contents of the list, we can identify a few objects that are visible, giving them names that correspond to common text structures:

- List items
- List item symbol (e.g. bullet)
- Name of item
- Description of item

If we knew what kind of document this was and could thereby infer more information about its function, we could give these objects semantic names indicating their purpose and/or meaning. For example, if we knew the document to the left was a “lunch menu,” we might assume that the “name of item” object is a “lunch entrée name.” Why do I guess entrée? Other lists items that might appear on a lunch menu – appetizers, side dishes, beverages, etc. – would not likely warrant such lengthy “descriptions.” Descriptions, then, are another type of object I can see and guess the function of simply by looking at the thumbnail. I can also tell, based on their proximity to the “lunch entrée name” object, that these are somehow related to that object. Taking this a step further, entrées at most casual restaurants would not likely be accompanied by descriptions this long, which perhaps indicates something about the context in which we...
could expect to see a menu like this one. All of this information comes from simply seeing the text.

Stephen Bernhardt offers a detailed analysis of the ways users interact visually with texts in his 1986 article “Seeing the Text.” Bernhardt shows how authors enact complex rhetorical strategies not only by making careful word choices, but also by making compelling visual choices such as where to locate items in physical proximity to one another. These visual arrangement decisions influence whether and how users of a document will see various objects as related to one another. Kaufer & Butler (1999) adopt a linguistic perspective from which to understand documents, or any bit of written or spoken discourse for that matter, as a set of objects and relations among those objects (100). Seen from this point of view, every time a writer or speaker constructs an utterance, she does so by selecting linguistic objects and placing them in relation to one another. By combining simple objects such as words and phrases, more complex objects are created such as sentences, paragraphs, and whole texts (101).

As the discussion of the thumbnail image above illustrates, there are different ways to characterize the objects that make up a text. Describing structure using syntactic or genre-related units is one approach. Another is to describe semantic units, giving them names that correspond to their purpose. Text analysis usually includes both types of naming, in fact, because while a text’s physical structure is fixed, the semantic structure is fluid (Colomb & Williams; Brown & Duguid). The combination of these two features account for texts’ ability to cross contexts and accommodate multiple audiences, purposes, and instances of use.

Despite the apparent complexity of this layered structure, users or readers of documents are remarkably good at making sense of a text, especially if they encounter the document within a particular use context for which it is well-suited. How do users do this? Visually, at least in part. That is, readers access and understand the structure of a document by viewing it. Even very high-level views can be meaningful, as the example of the document thumbnail image shows, especially within a specific context.
Even for texts encountered in print, a “view” is perhaps the term preferable to “page” for indicating the basic building blocks of a text from a user’s point of view. Facing page layouts, for example, regularly take advantage of a user’s ability to see more than one page at a time in order to enhance the usefulness of a display. Conceiving of a document as a series of views -- each of which is made up of objects which are related to one another in ways made evident in the structure of the view itself -- is the beginning point of shaping texts that transform. In fact, when texts are conceived of as a series of views in this way, “using a text” becomes a matter of interacting with the document in order to access existing views and to produce new views as a given task may require. Have you ever taken the staple out of a photocopied document so that you could bring together two non-sequential pages, say, to help make a comparison? If so, you constructed a new view using the objects the text made available. For the remainder of this chapter, I’ll examine a specific document in order to show how technical communicators might manipulate objects, object relationships, and views in an effort to create more user-appropriate information on the World Wide Web.

Identifying Objects and Views for Two Distinct Audiences in a Guide to Electronic Tax Filing

About the Electronic Filing Guide

In 2001, the Indiana Department of Revenue (IDR) published a document entitled “Electronic Filing for Retail Sales Tax and Employer Withholding Tax: Program Information Guide,” which, hereafter, I’ll refer to simply as the “Electronic Filing Guide” or simply “the guide.” The purpose of the guide is to
provide information about electronic tax filing programs which “allow Retail Sales & Use Tax and Employer Withholding Tax return and payment data to be electronically filed” (1). Electronic filing, in this case, is typically an automatic feature built into a taxpayer’s (here, a business entity rather than an individual) financial accounting system. Through a freely distributed software program that IDR provides called IN-S.I.T.E. (INdiana department of revenue System for Interchanging Tax data Electronically), taxpayers may transmit filing data and payments via electronic funds transfer directly to IDR. The Electronic Filing Guide, a nineteen-page document distributed in Adobe PDF format on the IDR website, gives both procedural and conceptual information about IN-S.I.T.E. and the associated IDR programs.

It is readily apparent that there are at least two distinct audiences for the guide whose information needs vary substantially. One audience consists of in-house tax professionals or third party tax consultants who perform the kind of reporting and payment tasks that the new IDR programs are geared towards. A second audience consists of in-house or third party information-technology personnel who would be involved in the setup and operation of the electronic filing system and protocols. While the guide is not a step-by-step technical implementation manual (there is, in fact, a separate document which serves this purpose), it nonetheless contains important information for software developers, network administrators, and IT managers as well as accounting and legal personnel who we might typically associate with tax departments.

**The Content of the Electronic Filing Guide: Just the FAQ’s, Ma’am**

The overall organization of the document follows, for the most part, a familiar formula for information published on the web: Frequently Asked Questions. Or, as some have come to call them, “Fabricated and Answered Questions.” This tongue-in-cheek reference alludes to what is missing from many FAQ lists that makes FAQ a popular and potentially valuable format for the Web: information is audience and task-oriented (if it is a genuine FAQ, that is) and it is typically chunked, labeled, and grouped in a way that makes its purpose and structure (i.e. Question/Answer) readily apparent. The proliferation of FAQ lists on the web is no accident, then, as the genre seems very well-
suited to the kinds of reading that web users typically do. You can scan a list of questions quickly, locate and click on the one that most closely matches your own query. In most FAQ layouts, you needn’t scroll or click through pages of information to get to the answer either. A click on the question takes you right to the answer.

The FAQ list that makes up the majority of the table of contents in the Electronic Filing Guide, however, is probably not the best choice for an overall structure for several reasons. First, the PDF document is not formatted with hyperlinks to allow for the kind of scan-and-click navigation discussed above. As with most PDF’s, the guide is essentially presented as a print document. Second, and more importantly, the document’s questions turn out to be an amalgam of concerns that both distinct audience groups might have. Here are the sections listed in the table of contents (p. 2):

<table>
<thead>
<tr>
<th>WHAT IS ELECTRONIC FILING AND WHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHOULD I USE IT? . . . . . . . . . 3</td>
</tr>
<tr>
<td>WHAT IS EFT and ITS RELATIONSHIP TO</td>
</tr>
<tr>
<td>ELECTRONIC FILING? . . . . . . . . . 3</td>
</tr>
<tr>
<td>HOW DOES ELECTRONIC FILING WORK? . . 4</td>
</tr>
<tr>
<td>HOW WILL DUE DATES BE EFFECTED BY</td>
</tr>
<tr>
<td>ELECTRONIC FILING ? . . . . . . . . . 5</td>
</tr>
<tr>
<td>HOW WILL MY INFORMATION BE SECURED? . . 7</td>
</tr>
<tr>
<td>REGISTRATION and SIGNATURES. . . . . 8</td>
</tr>
<tr>
<td>IN-S.I.T.E. OVERVIEW . . . . . . . . 10</td>
</tr>
<tr>
<td>IS IN-S.I.T.E. THE ONLY WAY? . . . . 13</td>
</tr>
<tr>
<td>GETTING STARTED . . . . . . . . . . 14</td>
</tr>
<tr>
<td>A WORD ABOUT COUPONS . . . . . . . . 15</td>
</tr>
<tr>
<td>CONTACTS . . . . . . . . . . . . . . 16</td>
</tr>
<tr>
<td>ELECTRONIC FILING APPLICATION</td>
</tr>
<tr>
<td>(Form EF-APP-1) . . . . . . . . . 17</td>
</tr>
</tbody>
</table>

A few problem areas jump out right away when we examine the table of contents. Why is “Getting Started” on pg. 14? Why is the Application Form part of the Guide and not a
Electronic filing, simply defined; is the computer-to-computer exchange of information between two entities. Business documents - including tax returns and payments - are communicated in formats understandable by all parties involved in the exchange. Exchange formats generally fall into one of two categories - proprietary and standard. A proprietary format is one designed and agreed upon by a finite universe. Non-proprietary standards, particularly national and international are formats preestablished by organizations such as Accredited Standards Committees (ASC) appointed by the American National Standards Institute (ANSI) and others. IN-S.I.T.E. exchanges data with the Department of Revenue utilizing ANSI ASC X12 standards (p. 3).

In this paragraph, we start to see the dual-audience issue emerge right away. There are answers here to the overarching question “What is Electronic Filing” for both, and perhaps a generic third audience of readers. The first two or three sentences seem to be addressing a general, non-technical audience of people we might classify as “decision-makers” in an organization. We know this because we are given a very basic, yet subtly persuasive treatment of electronic filing as a seamless process of data exchange made possible by an agreed-upon standard. But beginning with the sentence that starts “a proprietary format is…” we can detect an audience shift…especially when we encounter the phrase “a finite universe.” Universe!?! This is a technical term understood, perhaps, by network administrators but an odd choice, it would seem, for tax accountants or financial managers.

The most perplexing sentence in the first paragraph, though, is the very last sentence wherein the first mention of IN-S.I.T.E marks the beginning of a recurrent pattern in the document: mixing broad conceptual and procedural explanations with more technical
explanations without explaining how (or if) the two types of information are related. In the paragraph above, for example, the first appearance of the IN-S.I.T.E acronym in the document does not include an explication of it, nor is it clear that the term refers to a software application rather than a policy or program initiative. In fact, the acronym appears twenty times in the document before it is finally spelled out on page 10 in the section entitled “IN-S.I.T.E. Overview.” The question is, why? The answer, I believe, goes a bit deeper than just “bad writing.” It has to do with difficulty in creating audience-appropriate objects and views for several different audiences in a document that adheres to print format conventions.

**Identifying Audience Appropriate Information Objects in the Electronic Filing Guide**

Why is the Electronic Filing Guide such a confused document? I will submit that while the execution of the FAQ as an overall organizational strategy for a print document is a bit shaky, it is nonetheless a sound approach, overall, for arranging information accessed on screen. It certainly seems likely that the guide will be used by both groups to answer questions that arise, for example, when considering whether to use the IN-S.I.T.E. software or in determining how best to use it. The trouble comes when we realize that both groups might be using it to answer both types of questions! For example, IT managers might want to know how the system works before deciding to adopt the software rather than develop their own in-house system. Tax preparers may want to see what kinds of routine reporting tasks will be automated by the system before deciding if it is a worthwhile solution to adopt, etc. In short, both groups are likely to bring a set of questions to this document and both are likely to think of new questions as they learn about the system. A FAQ, then, seems like a natural fit, if only because the two basic objects that make up a FAQ list – questions and answers – seem to correspond to the information needs of users of the guide.

With this idea in mind, we might revisit the Electronic Filing Guide and ask a different kind of question to determine how useful or successful it is. If it is truly aimed at both tax and IT professionals, we ought to be able to consistently identify “question” and
“answer” objects that exist in the document which seem appropriate for each one. And, as we have seen from the examination of the first paragraph above, while it takes some searching, we can in fact do this. Consider another example, this one consisting of a question and an answer. In this example, notice that the implications of both the question and answer are very different depending on which audience group the reader belongs to.

**Will Due Dates and Timeliness Be Effected \[text sic\] by Electronic Filing?**

Filing returns electronically will not change due dates for tax payments or returns. Taxpayers who remit by EFT via IN-S.I.T.E. initiate the EFT transaction in sufficient time to have funds in the Department's receiving account on or before the due date. ACH debit taxpayers have a warehousing capability that allows them to arrange as much as 30 days in advance for funds to be debited from their account on the due date. The final cutoff for ACH debit taxpayers is 11:00 am. E.S.T. the last legal business day before the due date. Returns without payments may be transmitted as late as 11:00 E.S.T. on the due date. (p. 5).

The answer to the basic question, from a tax professional’s point of view, is “No, due dates and timeliness are not affected by electronic filing?” For IT professionals reading this paragraph, the answer is something closer to “They shouldn’t be, and here’s how we ensure that they are not.” Effectively, we have two answers here to what appears to be the same question…or perhaps we have two different questions? We can begin to unravel this problem by considering the object structure of this FAQ item. At the most generic level, the object structure of an item in a FAQ list, expressed in a markup syntax often used for this purpose such as XML, might look like this:

```xml
<faq>
  <topic>
    <question>
      Will Due Dates and Timeliness Be Effected [sic] by Electronic Filing?
      Filing returns electronically will not change due dates for tax payments or returns. Taxpayers who remit by EFT via IN-S.I.T.E. initiate the EFT transaction in sufficient time to have funds in the Department's receiving account on or before the due date. ACH debit taxpayers have a warehousing capability that allows them to arrange as much as 30 days in advance for funds to be debited from their account on the due date. The final cutoff for ACH debit taxpayers is 11:00 am. E.S.T. the last legal business day before the due date. Returns without payments may be transmitted as late as 11:00 E.S.T. on the due date. (p. 5).
    </question>
  </topic>
</faq>
```
In this structure, the basic FAQ entry consists of a “topic” with a “question” and an “answer.” We could further assume that a FAQ list contains more than one topic, each with a question and answer…hence we know something about the structure of a FAQ “object” itself.

But what is the purpose of the structure above called a “topic”? Why not just have a FAQ made up of Questions and Answers? In the example above, having a container object called a “topic” allows us to expand the types of questions and answers we might give to a set of related questions based on the types of information that we could expect our users to ask for. Two types we have already mentioned are “conceptual” and “procedural” information, a pair familiar to most technical communicators concerned with developing task-oriented documentation. Another distinction we might make is “technical” vs. “policy.” So, in theory, we could have an object structure for a FAQ item called IN.S.I.T.E. that looked something like this:

<topic>
  <name>INS.I.T.E</name>
  <question class="conceptual">What is IN.S.I.T.E?</question>
    <answer class="technical"></answer>
    <answer class="policy"></answer>
  <question class="procedural">How will payments be made?</question>
</topic>
This structure takes advantage of a key feature of object-oriented modeling, the idea that an object can have a virtual or potential structure that varies from any one specific “instance” of that object which a user actually sees or interacts with. In this way, objects can have a baseline structure that defines the most basic elements for all objects of that type, and it can also have more specific “classes” which inherit the basic structure as well as having a more specific structure indicative of the sub-type (Olsen, 1998 pp.8-10).

In the example above, the “topic” container object’s virtual structure permits the modeling of information related to topics that are of common interest to both target audiences. We’ve identified question and answer classes that both characterize the type of information that the document contains (e.g. conceptual and procedural) and correspond to our user groups’ information needs. With this structure in place, for any specific “question” or “answer” that appears in the document, we might choose to display only some of the information available in the given topic structure so that we can customize the “view” of the object for our target audiences: tax preparers or IT managers.

We can imagine, for example, an IT manager who has identified herself as such by clicking on a link or, perhaps, by logging in to establish a customized view of the information in the document. For this user, the answer to the question “what is IN.S.I.T.E?” might be, by default, the “conceptual” version with the default answer being the policy-oriented one. For this user, we might include a link at the bottom of the answer which asks, “Need a more technical description of IN.S.I.T.E? Clicking on that question could display a different instance of the same object, this time with the “conceptual” and “technical” flavors of question/answer showing. By modeling the whole document in this way, we can create a flexible underlying structure for the information that facilitates the tailoring of information via the actions and choices of users.
Defining Objects and Relationships and Designing Views: New Basic Skills for Technical Communication Students?

Turning over some of the rhetorical work associated with customizing information for a particular audience to individual readers is an exciting proposition. Both critics and proponents of object-oriented document modeling point out that creating effective structures requires the kinds of rhetorical expertise that technical communicators bring to the table (Albers, 2000; Clark, 2002; Hackos, 2002; Rockley, 2002). I would add that an even more sophisticated task is constructing effective views of information, an art that spans all five of the canons of rhetoric which have traditionally described the scope of rhetorical performance: invention, arrangement, style, memory, and delivery. I use an exercise in my own classes that illustrates this point. I ask students to design a new “top-level” view for the Electronic Filing Guide. Here is the assignment prompt:

*Design 2 “information boxes” to sit on the intro page for a new web-optimized version of the Electronic Filing Guide which links to important information the document contains. Your audiences for the two boxes are:*

- Financial software solutions providers
- Tax preparation professionals

*You can assume, for the sake of the exercise, that this document is the single source from which to draw information and that it is complete. You are only “pointing” to objects (which you will need to define) that already exist in the document. You may notice that additional material is needed; if so, you should simply note this rather than creating new content. Your task, here, is to design two different “views” of the objects the document contains, one tailored for each of the two target audiences.*

The deliverable for the exercise above is fairly straightforward, consisting of two boxes with links in each. The difficulty, of course, comes in determining the answer to questions such as: what should the links link to? (memory/storage and retrieval), what the labels for the links should be (invention, style), how the links should be spatially arranged and laid out on the screen (arrangement, style), and how much or how little overlap
should exist between the content and style of the two boxes (delivery)… just to name a few. Despite the complexities of these questions, the task itself is a perfectly reasonable one to ask students in technical communication to engage because it so closely mirrors a process that many organizations are initiating and/or struggling to complete: namely, the conversion of materials from print to web-appropriate formats. As we noticed upon close examination of the Electronic Filing Guide, solving the “delivery” problem by publishing print-formatted files in PDF is not the same as providing a web-appropriate format for displaying information effectively. This exercise begins to show just how challenging such a task can be, particularly when we consider that it only asks students to deal with one relatively straightforward document that is already well-structured for its intended tasks in many ways. And we are only asking them to consider two of many potential audience groups. What might a conversion of an even more complex document – the whole tax code, for example, – be like? Or perhaps the more important question to ask is “How can we best prepare the technical communicators who will face a task like this?”

Rhetoric and Web Content: *Topoi for a Technical Communication Curriculum*

The answer to this last question, I believe is one which will require considerable thought and, to be certain, further research. I hope that this chapter can serve as one beginning point for such work along with other pieces such as Johnson (1998) and Carliner (2001) just to name two. By combining the rhetorical performance skills suggested by the five canons of rhetoric and the emergent qualities of web content, we can perhaps begin to imagine many of the critical concepts, skills, and, indeed even courses we might expect to include in a new technical communication curriculum for the information age. In short, we can develop a rhetoric of web content development that is informed, on the one hand, by the traditional canons and on the other by the features which define quality content on the web. We could start by drawing straight lines on a chart like this:

<table>
<thead>
<tr>
<th>Content Qualities</th>
<th>Rhetorical Canons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic</td>
<td>Invention</td>
</tr>
<tr>
<td>Customized</td>
<td>Arrangement</td>
</tr>
</tbody>
</table>

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This would give us a list that includes combinations which sound like courses, for example, such as “Dynamic Invention” or “Interactive Delivery.” Other combinations point to trends in the field that could be topics in a course, such as “Linked and Distributed Style,” suggesting an overview of Cascading Style Sheets or, perhaps, XML Style Transformations. Still others seem to represent means to an end that are still very much in dispute. If we provide a way for users to have “customized arrangement” for their intranet or Internet site, will it really lead to more effective sites?

If we venture to draw diagonal lines or engage in a Burkean experiment with ratio-pairs, triads, or other combinations, we can come up with even more compelling items for our curriculum. Research issues such as how to measure the quality of online documentation are related to the arrangement of granular content in a linked and distributed environment. Reducing the cognitive load on users engaged in complex decision making activity involves achieving a delicate and interactive balance between memory and delivery, helping them to manage dynamic information.

It is my hope that technical communication instructors and program directors will engage in this type of inventional work aimed at developing a rhetoric of web content. In addition to talking to partners in industry and comparing curricula with our colleagues, and paying attention to the recommendations of standards organizations, we need to revisit the list of “basics” that we teach students in technical communication. I have argued here that “preparing texts that transform” belongs on such a list. And I am confident that there are other important new fundamentals that we will discover.

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