To the Graduate Council:

I am submitting herewith a thesis written by Karen Downing entitled "Employment Opportunities for Technical Communicators in East Tennessee, 2001." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in English.

Michael L. Keene, Major Professor

We have read this thesis and recommend its acceptance:

Russel Hirst

Mary E. Papke

Accepted for the Council:

Vice Provost and Dean of Graduate Studies

EMPLOYMENT OPPORTUNITIES FOR TECHNICAL COMMUNICATORS IN EAST TENNESSEE, 2001

A Thesis
Presented for the
Master of Arts
Degree
The University of Tennessee, Knoxville

Karen H. Downing
August 2001

DEDICATION

This thesis is dedicated to my husband, Mark Downing,
who patiently encouraged me
to persist through many setbacks,

and to our children, Whitney and Evan, because they are
the best reasons in the world for undertaking anything
worthwhile,

and finally, to my parents, Ron and Peg Huber,
who have shown me by their actions
two excellent examples of lifetime learning.

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Finally, I would like to thank Tom Fugate, who patiently extracted database information from my computer's C-drive for an entire Sunday afternoon, and who replaced the motherboard and microprocessor in my computer for the cost of the new parts.

ABSTRACT

This study was initiated to reveal employment opportunities for technical communicators in the Knoxville-Oak Ridge, Tennessee area. Two methods were used to accomplish this goal: a telephone survey of area businesses to determine whether or not they hired or currently employed technical communicators; and an e-mail survey of practitioners to identify workplace realities for technical communicators in our geographic area.

The results of the telephone survey suggest that there are fewer companies that employ technical communicators on a permanent basis when compared to a similar survey conducted ten years earlier, but more companies willing to hire technical communicators on a contract basis. The companies that do employ technical communicators tend to be scientifically or technologically based.

Results from the e-mail survey indicate that technical communicators still need strong writing and editing skills, along with the ability to communicate effectively in group or task meetings to perform well in their positions. Technical communicators also perform well in their jobs if they have strong organizational skills and some background in science, technology or business.

From the findings shown above, technical communicators in our area need to be able to fashion themselves as contract employees if necessary, and need to have strong writing, editing, and communication skills to thrive in the current business climate.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

Introduction

East Tennessee, which is an area that encompasses Knoxville, Oak Ridge, and surrounding communities, contains a wide variety of scientific and communication firms. The reasons that technology-based businesses proliferate here are many:

- The University of Tennessee is a major research center for agriculture, engineering, and life science disciplines;
- Oak Ridge National Laboratory (ORNL) offers research and support for many federal government initiatives, especially energy, environmental, and biological programs;
- ORNL subcontracts much of its remedial environmental and engineering work to outside companies;
- With the support of high-speed transmission lines, communication companies, such as Home and Garden Television and IPIX, find it advantageous to locate here;
- The cost of living is substantially lower in East Tennessee when compared to other high-tech communities, such as Silicone Valley in California;
- The area is geographically diverse and beautiful and has a relatively mild climate.

These factors all contribute to make East Tennessee a premier location for companies with scientific and communication applications. Because of East Tennessee's strong infrastructure and geographic appeal, local firms can easily attract talented individuals to their ranks.

With the preponderance of technological companies in East Tennessee, technical communicators in this area might expect a plethora of employment opportunities. However, this expectation often goes unfulfilled due to the variable nature of the business climate for scientific and communication firms. The ground on which technology firms rest is at times unstable; the business climate changes quickly, along with firm ownership and direction. For example, ORNL recently changed managing contractors from Lockheed Martin to UT-Battelle in fiscal year 2000. Not only did this change affect the structure and direction of ORNL, but it also affected the subcontracting businesses that had to negotiate with the new managing company . Technology firms are often adversely affected by a volatile stock market; many area companies have been forced to make large workforce cutbacks to survive the latest economic downturn. All of these factors create a questionable employment environment for both practicing technical communicators and for students who are graduating with a degree in technical communication and who hope to find work in East Tennessee.

An employment survey is a useful way to address this difficulty; a poll of area businesses could identify which ones hire technical communicators and under what circumstances they do so. A survey would allow job searchers in the

field of technical communication to focus their efforts and craft their applications to fit the needs of particular businesses that are hiring technical communicators.

As a soon-to-be graduate of the University of Tennessee with a Master of Arts in English and emphasis in Technical Communication, I find the idea of an employment survey in East Tennessee particularly useful and compelling. I look forward to practicing the skills that I have learned in the technical communication program, and I have a desire to stay in East Tennessee. My thesis project, therefore, is to survey area businesses. Although my area of concentration is English with an emphasis in Technical Communication, I have organized my project as a quasi-scientific study, with the following sections:

- **Introduction**;
- **Literature Review** divided into three sections entitled Literature About Survey Design, Surveys of Technical Communicators, and Surveys of Other Professions That Require Some Technical Writing;
- **Methods**;
- **Results and Discussion**;
- **Submission to *Technical Communication***;
- **Appendices**;
- **Vita.**

At the close of 1991 and beginning of 1992, Victoria Cherie Johns conducted a survey of businesses in the East Tennessee Region as her thesis project. With this survey, she sought to answer two questions about technical communication in this geographic area: first, which regional businesses hired

technical communicators, and second, what was the education and training of practicing technical communicators employed by those businesses? Many freelance technical writers and graduating seniors who majored in technical communication have used this author's important study as a reference for their job search in East Tennessee. In nine years, the business climate in East Tennessee has expanded to include many new technologically and scientifically based firms; many existing companies have also changed their focus to web design and software development. These changes bring renewed possibilities for employment in the field of technical communication.

My goal, therefore, is to learn about the nature of the technical communication profession as it exists in May 2001 in the East Tennessee area. I am expanding on Johns' good work by updating the information on companies that she has already surveyed and by identifying new area firms with the potential for hiring technical communicators. To achieve this goal, I am carrying out the following objectives:

Objective 1: Identify all businesses that hire technical communicators in Knoxville, Oak Ridge, and surrounding area;

Objective 2: Identify what the technical communicators who are employed by these businesses do in their jobs;

Objective 3: Determine what skills technical communicators wished they had before they were hired and what they see as necessary skills for technical communicators in the future.

Johns points to questions that might be answered in further research on this topic at the end of her thesis. In addition to renewing the information about firms that hire technical communicators and determining the job tasks, education experience, and skills requirements of practitioners, I will focus on the following questions:

1. How do executives from different types of companies see the role of technical communicators, and what training do they feel would be most desirable?
2. Do different types of companies require different job skills, and are there certain job skill requirements common to all technical communicators in this area?
3. What social skills do technical communicators need on the job?

Finally, I am taking advantage of the now pervasive use of e-mail for my survey distribution, with the expectation that this method will generate a greater response rate from busy managers and practitioners than would regular mail or phone interview methods.

CHAPTER II

Literature Review

A natural place to begin a literature review for this paper would be Victoria Johns' thesis, written in 1992 and entitled "Technical Communication Employment Opportunities in the Knoxville-Oak Ridge Area: A Survey." Johns, in response to the challenge of finding all of the technical communicators within a 50-mile radius of McClung Tower, polled 425 businesses in both the Knoxville-Oak Ridge area and in surrounding communities in Anderson, Blount, Hamblen, Jefferson, Loudon, and Sevier Counties. She had two goals in mind for her survey: (1) to identify businesses in this region that hire technical communicators, and (2) to identify the necessary skills for competency in technical communication positions within those companies. To create a list of companies in this region, she first consulted the Society for Technical Communication/ East Tennessee Chapter's (STC/ETC) list of companies known to hire technical communicators. She then moved to the Tennessee Technology Foundation list of 231 technology-based companies in the East Tennessee area. She checked the Chambers of Commerce listings for Knoxville and Oak Ridge, as well as for Anderson, Blount, Grainger, Hamblen, Jefferson, Knox, Loudon, and Sevier counties. She also looked at the *Dun and Bradstreet Regional Business Directory* and *Industrial Land Inventory* to identify businesses that might have been missed in the other listings. Finally, she searched newspaper databases for articles about technological firms to finish her list of 425 businesses.

Next, Johns chose to poll companies by both mail and telephone surveys. She first conducted her phone survey, which involved calling all 425 businesses to ascertain if they hired technical communicators. If the answer was yes, she asked what was the training and educational background of those employees. She followed up her phone survey with a mailed questionnaire sent to a sample of 80 businesses with technical communicators as employees. In order to avoid issues of human subject research, she kept her surveys anonymous and assured privacy protection in her cover letter. Her mailed survey consisted of nine questions grouped in three categories: company data, educational background, and current job skills and tasks. The questions were a mix of multiple choice and open-ended, fill-in-the-blank. What she found was that technical communicators employed by these businesses exhibited the following characteristics:

- Most technical communicators used "Technical Writer" or "Technical Editor" as their job title.
- The description of their company's industry was "Other."
- Most respondents were college educated with a four-year degree, majoring in English or Journalism/Communication.
- Most had one year of undergraduate science courses and had not needed additional science courses to help them in their career.
- The most common weekly tasks of these individuals were writing and editing.
- All needed computer skills to perform their jobs.

- Most produced training and user manuals, brochures, newsletters, marketing material, and procedures.

Johns pointed to the need for further research at the end of her thesis to determine other skills needed in the changing business climate. Some of these include specific software knowledge, and well-developed interpersonal skills. She also suggested a poll to determine what technical communicators "wished" they had done to prepare them for their current jobs.

The remainder of this literature review is divided into three sections: **Literature About Survey Design**, which details how to design and implement a research survey, **Surveys of Technical Communicators,** which highlights employment and education polls of technical communicators, and **Surveys of Other Professions That Require Some Technical Writing**. By combining information from these three categories, I intend to design and distribute an effective survey of technical communication in the Knoxville business area.

Literature About Survey Design

Any discussion of survey design must include researcher **Don Dillman**, who has studied survey methodology for most of his career. His most recent article, written with **David Schaefer**, is entitled "Development of a Standard E-mail Methodology: Results of an Experiment" for *Public Opinion Quarterly*. Schaefer and Dillman divide their test population into four groups: one group receives all paper contacts; a second group receives all e-mail contacts; the third group receives a paper "pre-notice" and then subsequent e-mail contacts; and

the fourth group receives a paper reminder notice. All groups receive four contacts: pre-notice, questionnaire, follow-up thank you with a reminder, and replacement questionnaire. Schaefer and Dillman determine that the all e-mail group is the most effective and low-cost survey method.

These authors also find that the following characteristics are important for a high response rate:

1. **Researchers must make multiple contacts.** To ensure a higher return rate, survey administrators should attempt several contacts with non-respondents. Because most of the participants return the e-mail surveys within four days, the authors suggest a compressed schedule of mailings. Researchers could send the questionnaire two to three days after sending the pre-notice, then send the reminder after another two to three days, and finally send the replacement after one week.
2. **Personalization is important.** If the e-mail is addressed to a specific individual, that individual is less likely to feel like an item on a list and will be more willing to respond.
3. **For the best coverage, use a mixed mode.** E-mail is still emerging as a communication tool, and it may be a mistake to assume that everyone in the survey population has e-mail capability. Researchers should design the survey to adapt to a paper method.
4. **Make the data high quality.** The format must be easy to understand and convenient to use. For their survey, Dillman and Schaefer placed brackets where the respondents could type the letter x to reduce the cognitive load.

Respondents type open-ended questions into a box format because this form is familiar to most people. The directions for responding are straightforward; the participant only needs to create a reply, answer the questions, and then push "Send." Dillman and Schaefer find that the survey should be short, simple, and contain few skip patterns for best results.

5. **Assure the respondents of confidentiality.** Since it is almost impossible to erase identifying marks from incoming e-mail, researchers must include a strong disclaimer that assures anonymity for sensitive issues.

In his paper entitled "Best Practices in Interviewing via the Internet," **Karlan J. Witt** describes the best practices currently used by internet surveyors, which can be applied to e-mail surveys as well. He recommends the following characteristics be considered when researchers design an electronic survey:

- Make sure that the subject is salient to the respondent.
- Advise the respondent about the expected length of time it will take to complete the survey.
- Make responding to the survey convenient.
- Identify your target population.
- Disclose who sponsors the survey.
- Guarantee anonymity or confidentiality.
- Offer an incentive for completing and sending the survey.
- Present the materials in a professional form.
- Time the survey to avoid holidays and the month of December.

- Prescreen respondents by phone or e-mail to legitimize and introduce the survey.
- Keep the time between pre-notification and receipt of the actual survey to three to seven days for phone and five to ten days for written pre-notification.
- Include a follow-up reminder that can also function as a "thank you" for participating.

As an Intelliquest, Inc. representative, Witt reports substantial experience with electronic survey responses. He advises researchers to expect response rates between 35 to 80%.

Another important article that defines recent techniques in technical communication surveys is written by **Chien Chou** and entitled "Computer Networks in Communication Survey Research." The author explores the feasibility of using network survey techniques compared to standard mail, fax, and phone surveys. Chou lists the following as advantages of using network surveys over traditional styles:

- The survey cost is reduced.
- The delivery and response time is faster.
- Delivery can be confirmed.
- Time constraints on the researcher are relieved.
- Respondents are allowed a more flexible response time.
- Researchers can easily identify target audiences.
- Network surveys save paper.

The same researcher also identifies disadvantages of network surveys:

- Target respondents must be network users.
- Networks can be plagued by technical problems.
- Respondents must have some technical skill in order to respond.
- Lurkers and hackers can interfere with the survey.
- Researchers must have adequate knowledge of computer systems not only for distribution but for data collection as well.

Despite the disadvantages, Chou feels that network surveying can be a viable way to collect information about technical communication in both business and academe. She also discusses the best ways to develop network surveys. As stated in other articles on surveys in general, the researcher must set study objectives clearly and create unambiguous questions based on those objectives. The next task is to choose the method of network distribution, which can be via e-mail, news systems, electronic bulletin boards, and the World Wide Web. Since the target of my own research will need to be strictly identified by geographic area and business type, I am most interested in the e-mail method because it offers the only way to limit and identify the sample population out of the four distribution methods.

Some important aspects to consider when using e-mail survey methods are explored by Chou. The researcher must have the exact e-mail address for the target respondent, which may have to be obtained using traditional communication methods. Respondents should be able to "reply" or "edit outgoing message" to fill in the blanks and return the form. Some respondents may have

to download and import the files into their own systems in order to fill out the forms. While the questionnaire can be sent as an attachment in Microsoft Word or WordPerfect, the user must have the appropriate software to open it up. The researcher also needs to be aware of the limitations of his or her own e-mail server; often, these systems have quotas for incoming e-mail, and once that quota is filled, the system rejects all other incoming mail. Perhaps the researcher could send the questionnaire in batches at different times to avoid exceeding the quota.

Chou emphasizes the importance of pilot testing in the network questionnaire process. Researchers can test the effectiveness of distribution and target character or formatting errors using a small sample of the intended test population. Pilot testing also can identify incompatible systems, slow transmission problems, and line limits in text files.

Once the data is returned, it must be examined for correctness and consistency. Researchers should send non-responders a follow-up letter that encourages participation and includes a copy of the questionnaire. Follow-ups of this nature should be conducted at one- and two-week intervals due to the quick turnaround nature of e-mail surveys. To avoid duplication of surveys, the researcher can ask if the subjects would please not respond if they have already done so. If the questionnaire is incomplete, the researcher can send back only those sections that need to be filled out, thus saving time for the respondent.

Some ethical issues arise when researchers conduct a network survey. The respondents need to be assured of confidentiality, and they also need to be

assured that their participation is completely voluntary. Further, the design of the questionnaire needs to be as free of all bias as is possible to get the most accurate information. Taking all of these aspects into account, e-mail surveys can be an extremely viable method to sample a finite and representative population.

Another article of interest is **Raymond LaGarce's** and **Judith Washburn's** "An Investigation into the Effects of Questionnaire Format and Color Variations on Mail Survey Response Rates." The investigators in this paper want to explore how color and format influence the response rate to mailed questionnaires. They identify "a user-friendly format" (59) as being the most significant influence in the rate of response. A user-friendly format includes the following:

- The questions should not be precoded, boxed, or numbered because these give a technical and therefore less inviting appearance to the questionnaire.
- The questionnaire should contain significant white space and use large and bold fonts to make it easy to read.
- The questionnaire should be pilot-tested on a small sample of the intended test population to ascertain visual appeal.

LaGarce and Washburn also find that color serves as a unifying element, but its use is not as strongly correlated with the rate of response as is the questionnaire format.

Carolyn Plumb and **Jan H. Spyridakis** contribute another significant article about surveys in technical communication, entitled "Survey Research in Technical Communication: Designing and Administering Questionnaires." In this article Plumb and Spyridakis instruct technical communicators on the design and application of questionnaires. They outline a step-by-step process for survey development to help technical communicators who are unfamiliar with but interested in this type of research method. By administering surveys, researchers can understand what happens in the "real" workplace; surveys are also relatively inexpensive and have no geographic constraints. Some disadvantages to survey questionnaires are that the respondents must "know and remember" their true thoughts and opinions about the questions posited by the researcher. Also, there is limited control over who actually answers the survey. Despite these difficulties, survey questionnaires remain a viable way of collecting information.

Researchers must first answer the question "What am I going to do with the information I collect?" or, more concisely, "What is my goal?" Next, researchers must identify the test population by setting out criteria such as education level, activity involvement, age group, gender, geographic area, experience, income, or whatever characteristics apply to the researchers' purpose. To reach the target population effectively, investigators must carefully construct the questionnaire format. With an open-ended, unstructured format, researchers can receive unexpected and insightful answers; with a closed and structured format, researchers can quickly interpret and analyze the answers. People can respond easily using checklists or rating scales in these types of

surveys; a disadvantage to consider is the primacy effect (when respondents tend to choose the first answer they see). Another aspect to consider is the placing of global and specific questions, which can foster self-generated validity and affect results if the respondent answers global questions as a reflection of his or her answers on specific questions. Finally, when researchers design a questionnaire, they should do so with questions that reflect reliability and validity. By restating some questions, researchers can test whether the chosen questions elicit the same response, thereby showing reliability. Validity "refers to the degree to which the survey actually measures what it is designed to measure (internal validity)" and also refers to "the extent to which the results from the survey are generalizable to the population sampled (external validity)" (635). The researcher can determine validity by checking responses with other similar sources or factual data and calculating the "percentage of agreement" (635) between the two.

If the researcher chooses to mail the survey, it would be wise to include a cover letter with the questionnaire. The cover letter should include the following: the purpose of the study, an appeal for cooperation, a reassurance of anonymity, an identification of the authors and sponsorship, and a way that the respondents can obtain the results of the survey. Researchers should follow up with non-respondents after an appropriate amount of time, and they may also offer incentives to encourage participation.

Once the data arrives, the researcher can choose to analyze it using descriptive statistics, which describe data trends, or by using inferential statistics,

which point to the cause of those trends. Tests, including Chi square, variance, mean, median, mode, t-test and correlation coefficient, can be used after the researcher evaluates what test types will present the data most effectively. A final step in survey research is evaluation: what goes well, what does not, and what are the suggested improvements that would point the way for the next researchers who want to conduct their own survey.

Duane Bachmann, **John Elfrink**, and **Gary Vanzanna**, in their comparison study of survey methods entitled "Tracking the Progress of E-mail Vs. Snail-Mail", note that e-mail survey response increases when the subjects are interested and knowledgeable about the subject of the survey. They also note that the flexibility and instant feedback capability of e-mail make it attractive as a research tool. For their research, e-mail pretesting of the survey shows an increase in survey viability. Along with these attributes, **Joan Palmquist** and **Andrea Stueve** find that simple straightforward formats encourage the highest e-mail responses in their study entitled "Stay Plugged Into New Opportunities." **Martin Oppermann** writes in his article "E-mail Surveys–Potentials and Pitfalls" that the ease of sending follow-up questionnaires, as well as the instant notification of undelivered mail and the "semi-interactive"(32) nature of e-mail surveys, makes them attractive as research tools. **Ray Mehta** and **Eugene Sivadas** look at both response rates and content between mail and electronic mail surveys in their article entitled "Comparing Response Rates and Response Content in Mail Versus Electronic Mail Surveys." They find that e-mail generates a quicker and more inexpensive response rate, while at the same time producing

higher quality answers to closed-ended questions because of the respondents' willingness to clarify questions and propensity to give more detailed answers. Some of the drawbacks of e-mail are that middle and upper class people tend to be the only ones who use it, and people tend to be concerned about access to their e-mail accounts. The authors suggest seeking permission to send the survey so that respondents have the option to reject participation.

Paul Rosenfield, **Stephanie Booth-Kewley**, and **Jack E. Edwards** claim that their comparison of computer-based and paper surveys, entitled "Computer Administered Surveys in Organizational Settings", shows similar results for the two methods. In addition, computer-based surveys offer a distinct advantage over paper-based surveys in that people are often more interested in using the computer as a response tool and thus give more valid responses.

Lorraine Parker finds in her worldwide data collecting effort for AT&T that e-mail surveys allow her to avoid problems associated with distant time zones. E-mail also eliminates paper usage, and generates quick response results. In their article entitled "Self-selected and Randomly Selected Respondents in a Computer Network Survey," **John P. Walsh**, **Sara Kielser**, **Lee S. Sproull** and **Bradford W. Hesse** report that unsolicited and self-selected respondents to their web survey "participated because the survey was on-line, easy to access, and easy to answer" (244). They report that best results occur when the questions are relevant to a particular, competent discussion community. During their research efforts, **Sara Keisler** and **Lee S. Sproull** examine electronic surveys in "Response Effects in the Electronic Survey" and find that respondents of e-mail

polls make fewer errors and generate faster returns. The authors suggest that electronic surveys produce more "self-absorbed and uninhibited" responses than conventional paper methods. Their findings echo earlier research by **Thomas A. Heberlein** and **Robert Baumgartner**, who note in their article entitled "Factors Affecting Response Rates to Mailed Questionnaires: A Quantitative Analysis of the Published Literature" that high rates of return on mail surveys correspond directly to the "perceived importance"(458) of those surveys by respondents.

Some researchers, however, have had less than stellar results using e-mail survey methods. **Christine Smith** writes a useful article, entitled "Casting the Net: Surveying an Internet Population" because it highlights the mistakes and pitfalls that can happen when a researcher designs an electronic survey. Smith's original plan is to compare the response rate between e-mail and web-based surveys. Unfortunately, her questions are too many (over 40) and too detailed, and she has real difficulty adapting her web-based survey to the various operating systems, servers, and browsers. She also uses a very small pilot survey sample (four people) and finds that the suspicion rate for "cold call" e-mail surveys prevents almost 70% of the possible respondents from participating.

Don Dillman, in an earlier study entitled "The Design and Administration of Mail Surveys," offers several methods for error reduction in surveys. He identifies four errors that can mar survey results:

1) Sampling error, when a population is not uniform;
2) Noncoverage error, when a population cannot possibly respond within the framework of the survey;

3) Nonresponse error, when some members do not respond to the survey;

4) Measurement error, when the results are interpreted incorrectly.

Researchers can have more successful survey results when they are aware of and try to avoid making these types of errors.

Alan Tse et al. find in their comparison of mailed versus e-mailed surveys, entitled "Comparing Two Methods of Sending Out Questionnaires: E-mail versus Mail," that the response is greater for regularly mailed versions. The authors surmise that this is because e-mail methods offer no assurance of confidentiality. Perhaps this finding is related to the fact that at that time (1995) computer technology was not widespread in the target population, which comprised university students in Hong Kong. **Mark J. Kittleson** compares the response rate of e-mailed versus postal delivery methods for various government and university officials in his study entitled "An Assessment of the Response Rate Via the Postal service and E-Mail." The results for e-mail response are strong for the first few days after sending the survey but then drop rapidly when compared to conventional mail methods. Kittleson recommends that researchers wait a small amount of time between the survey and the follow-up e-mail. When comparing response rates between conventional mail and e-mail surveys, **Barbara A. Schuldt** and **Jeff W. Totten** find major drawbacks in the e-mail method due to sample size, questionnaire design limitations, and timing (they sent out their surveys when most of the respondents were on Spring Break).

Surveys of Technical Communicators

The Society for Technical Communication (STC) conducts a member survey each year to determine salary levels and demographic realities of its members. In its *2000 United States Survey*, STC reports that the mean salary for all 842 U.S. respondents is $51,850, which seems to be a stable and attractive figure. However, Tennessee is grouped with Mississippi, Alabama, Georgia, and Florida as a one-digit zip code region (3), and this region reflects a median salary of $48,000. What is not reflected is the cost of living for each of the nine regions listed in the United States. It is possible that $48,000 in Tennessee's region might be comparable to $60,000 in California's region. Most of STC's members hold non-supervisory positions, with 33% at a middle employment level and 38% at a senior level. One-half of the members hold Bachelor's Degrees, while the remainder hold graduate degrees, and two-thirds are female. Most members are middle-aged, with 31% falling in the 30 to 39-year-old category and another 31% in the 40 to 49-year-old range. Approximately 37% of STC members have more than eleven years experience, with 26% having six to ten years and 30% having two to five years experience. This data indicates stability in the field of technical communication and that technical communication is a viable career choice for people who choose writing as their profession.

The Occupational Outlook Handbook 2000 lists the job description for technical communicators as follows:

> *Technical Writers* put scientific and technical information into easily understandable language. They prepare operating and maintenance

> manuals, catalogs, parts list, assembly instructions, sales promotion materials, and project proposals. They also plan and edit technical reports and oversee preparation of illustrations, photographs, diagrams, and charts. (243-5)

In their article entitled "Does the Curriculum Fit the Career? Some Conclusions From a Survey of Graduates of a Degree Program in Professional and Technical Communication," **Anne Coon** and **Patrick M. Scanlon** attempt to answer questions about how well prepared technical communicators feel when they exit a degree program in technical communication and enter the job arena. The authors survey recent graduates of Rochester Institutes of Technology (RIT) who have earned their Bachelor of Science degree in technical communication. The researchers want to find out what coursework the graduates would recommend to strengthen the program and better prepare RIT graduates for the world of work. The two strongest suggestions are to place greater emphasis on computer skills, including desktop publishing and layout and design, and to develop strong grammar and spelling abilities. Technical writers are expected to be highly skilled in grammar and mechanics. Respondents also suggest more practice and less theory; they emphasize the importance of internships and hands-on experience, which would point to the importance of re-acculturation for technical communication graduates as well.

In her article entitled "Business Communication Competencies Needed by Employees as Perceived by Business Faculty and Business Professionals," **Karen K. Warner** surveys both business professionals and educators to

determine the competencies that business students need in technical communication. Business professionals emphasize writing and oral skills, as well as interpersonal ability, more than does the business faculty. Specifically, proper interview techniques and telephone use, as well as basic English skills, such as spelling and grammar, are important to business professionals. Also important are ethics application, principles of time management, and leadership gained by influence and persuasion, as well as the ability to plan and conduct meetings. These skills may be under-emphasized in academic programs. They suggest that writing instruction be organized in an outcome-based mode, much like Total Quality Management, which structures writing in a problem-solving framework.

Alice I. Philbin, **Ann Marie Ryan**, and **Lisa Friedel** explore how technical communicators feel about their jobs in their article entitled "How Technical Communicators Feel About Their Occupation: Facets, Attitudes, and Implications For the Future of the Profession." They poll 1,000 STC members in addition to roughly 100 graduates of Bowling Green State University's program in technical communication. The study focuses on three questions:

(1) How satisfied are the technical communicators with the "facets" or aspects of job satisfaction?

(2) Are there perceived differences in job satisfaction between male and female technical communicators?

(3) Are there influences on job satisfaction unique to the technical communication profession such as working alone or credit for authorship?

What these researchers find is that technical communicators are more dissatisfied with their work than workers in other professions and that there are not significant differences between males and females in job satisfaction. They point to several factors that, if addressed, could improve the satisfaction level of technical communicators on the job. One factor is that technical communicators want more responsibility; another factor is that they want credit for authorship; and finally, technical communicators want better interaction with their co-workers who might not value documentation as highly as would the technical communicators.

These findings echo another study conducted by **Julie Fisher**, who compares surveys of technical communicators in the United States and Australia. She finds the most pressing challenge for Australian technical communicators is recognition and validation of their profession. She suggests promoting greater awareness in industry and offering more tertiary level courses in academia.

Nimira Harjee and **Morgan White**, in turn, poll technical communicators in greater Toronto. They find that the majority of respondents work for software developers, and most report being happy with their salaries and benefits. Most of their working effort is spent on writing and editing, with lesser amounts spent on designing and managing. An earlier study conducted by **Sherry Burgus Little** and **Margaret C. McLaren** profiles technical writers in San Diego County. In this article, Little and McLaren find that practicing technical writers spend more than one-fifth of their workweek editing the material of other workers. Predictably,

those same technical writers value grammar and mechanics skills as being the most important tools for job performance.

In a survey of technical communication graduates from Michigan Technological University, **James R. Kalmbach**, **Jack W. Jobst**, and **George P. E. Meese** identify six skills that practicing technical communicators need to perform their jobs successfully. These skills include writing, working in small groups, researching, editing, designing documents, and field-testing. The survey also reveals the types of writing that these graduates are doing. Most spend their writing time on proposals, oral presentations, and computer projects. The authors recommend that university programs emphasize these aspects in their curricula to produce graduates who are prepared for the realities of the workplace.

Marcus M. Green and **Timothy D. Nolan** describe the role of the professional communicator in the workplace by "analyzing a profession into all the significant tasks performed by people who work in it" (9) in their article entitled "A Systematic Analysis of the Technical Communicator's Job: A Guide for Educators." They find that the technical writer in the workplace is heavily involved with multiple forms of communication and recommend that the job be re-titled "technical communicator" (10). They also note that while senior technical communicators are involved in project management, most entry-level workers concentrate on writing and editing. The authors suggest that technical communicators develop strong composition skills and an ability to understand technical expertise.

Surveys of Other Professions That Require Some Technical Writing

Thomas Pinelli et al. examine the communication competencies needed for engineering graduates to make a smooth transition to the work force in "From Student to Entry-Level Professional: Examining the Role of Language and Written Communications in the Reacculturation of Aerospace Engineering Students." Although professional engineers rate communication as the second most important ability behind design and development, communication instruction within the core curricula for engineering students is limited or non-existent. Students who enter the workplace must learn to adjust to the new communication requirements of their environment; in other words, they must, as Kenneth Bruffee proposes in his social construction of knowledge model, "reacculturate" (qtd. in Pinelli et al., 1995: 493). This process "enables students to join communities in which understanding may differ from that of the community to which they presently belong" (493). This process of transition proceeds when entry-level engineers work on collaborative projects and share the same goals for the future of the profession. The most important communication skills that engineers can develop are "assessing the reader's needs, organizing information, and defining the communication's purpose" (498-99). Paradoxically, students report feeling unprepared to demonstrate these skills due to an absence of technical communication in their college curricula.

Earlier, Pinelli et al. authors another article entitled "The Technical Communication Practices of Russian and U.S. Aerospace Engineers and Scientists." While polling in an international setting is beyond the scope of this

paper, the information about U.S. engineers in this research can inform the technical communication profession about workplace realities as well. The authors in this study find that 91% of the aerospace engineers polled "indicated that the ability to communicate technical information effectively is important" (96). Further, these respondents claim an astounding 77% of their time is spent communicating, even though they are engineers by profession. Communication of this type includes group work, writing business and technical documents, and making oral presentations.

Similarly, **Rebecca O. Barclay** et al. explore the problems associated with academic training and workplace realities for technical communicators in their article entitled "Technical Communication in the International Workplace: Some Implications, for Curriculum Development." The research team polls both European and U.S. engineers and scientists in the aerospace industry to identify what communication tools they use in the workplace. The team then compares their findings to course curricula in the academic environment. Barclay and her colleagues advocate "building bridges" (325) between the two communities by conducting frequent surveys, offering internships, and maintaining a fruitful dialogue. The survey results offered by this paper indicate that academic programs should focus on the following skills to better prepare graduates for U.S. work place exigencies: making oral presentations, using information sources effectively, and composing memos, letters, and abstracts. European workplace environments emphasize making oral presentations and using information

sources effectively as well but focus more on composing skills for abstracts, technical reports, letters, and instructions.

As a professor of technical writing at Miami University of Ohio, **Paul Anderson** is most interested in finding out how well his academic program fits working graduates. In his chapter entitled "What Survey Research Tells Us About Writing at Work," he polls graduates of the university from seven departments about the kinds of writing they do for their jobs. Anderson wants to find out how much writing these graduates do, how important writing is for performance of their jobs, and what rhetorical situations surround their writing, i.e. to whom do they write, what forms do they use, and why do they write. After analyzing his own survey research, and the results of fifty studies authored by other researchers, Anderson comes to five conclusions, two of which are most important to the present report:

1) Writing consumes a substantial portion of the working day for almost all college-educated workers;
2) As much time as college-educated workers spend writing, they generally spend more in oral communication.

Since his work was conducted in 1985, Anderson would not have had the benefit of testing the effect of electronic methods and media on job performance for college graduates. However, his findings may reveal what universal writing skills college graduates value the most in their work. He finds that graduates rank the following attributes for good workplace writing, in the order of most important to least important: clarity, conciseness, organization, grammar, and spelling. Other

questions that Anderson raises, which would be worthwhile investigating in today's workplace, are as follows: what composing processes do working writers use; what audiences must writers address; and what kinds of documents and communication do writers prepare in the workplace. To this end, **Earl E. McDowell** advises educators in his article entitled "Surveys of Undergraduate and Graduate Technical Communication Programs and Courses in the United States," to develop courses in technical writing, technical editing, document design, and graphics that will prepare graduates for workplace exigencies.

This review of literature from a wide variety of experts has informed and strengthened my research effort. Armed with the astute observations and suggestions from these learned authors, I can now proceed to develop my own survey and interpret the results for technical communicators in the Knoxville-Oak Ridge area.

CHAPTER III

Methods

After reviewing the most recent literature, I decided to conduct a poll in order to accomplish my goal of learning about the nature of the technical communication profession as it exists in May/June 2001 in the East Tennessee area. As I stated in my introduction, I wanted to satisfy my goal by achieving the following objectives:

Objective 1: Identify all businesses that hire technical communicators in Knoxville, Oak Ridge, and the surrounding area;

Objective 2: Identify what the technical communicators who are employed by these businesses do in their jobs;

Objective 3: Determine what skills technical communicators wished they had before they were hired and what they see as necessary skills for technical communicators in the future.

I fulfilled the first objective by implementing a **telephone survey**; the second and third objectives were achieved by initiating an **e-mail survey**. The following section details the survey methods I used, which were informed by my literature review.

Telephone Survey

Although I set out to conduct my survey exclusively by e-mail, I found that approach had several drawbacks. First, I was using lists from Vickie Johns'

thesis, and since her survey was conducted nearly ten years ago, it did not include e-mail addresses. Even the businesses listed with the Chambers of Commerce often included web sites only or offered no electronic contact media at all. Second, since most of these businesses would not have known me, I was concerned that they would choose to ignore my initial request. With the advent of businesses using e-mail for unsolicited commercial communication, it was possible that my intentions would be mistrusted, despite my introductory letter that reassured the respondents about anonymity. Finally, I could not be assured of making my initial contact with a technical communicator. Most e-mail addresses that were available to me were for company executives, and even if they agreed to let me poll their technical communicator, the survey package that I was using did not support a forwarding function. Therefore, executives would have to reply back with an e-mail address and I would have to re-send the survey, which seemed to be too complicated.

For making my initial contact with the companies, I decided to use the telephone. The telephone offered me the advantage of being able to address immediately each respondent's individual questions or concerns. Telephone numbers were readily available for all lists, and directory assistance helped with changes that had undoubtedly occurred after ten years. It was also more difficult to ignore a phone request since the communication was immediate. I was often directed to the human resources departments or to the receptionist.

If the business had an answering system, I navigated to the Human Resources (HR) department to the operator if the company had no HR

department. If no one answered and I was diverted to a voice mail system, I always left a message that stated my identity, number, and purpose for my call. If the number was busy, I dialed it again after calling two more businesses. If I received no answer, I called directory assistance; often numbers had been changed or disconnected, or the company had merged with another company and was identified by a different name.

I had several lists to deal with as I proceeded with my telephone survey. First were the original lists from Vickie Johns' thesis, both the list of firms that hired technical communicators at that time and the list of firms that did not. I also used lists of scientific and communication companies from the Chambers of Commerce of both Knoxville and Oak Ridge.

The Knoxville Chamber of Commerce directed me to the Technology 2020 group, which "is a public-private partnership, leveraging East Tennessee's information resources for creating an entrepreneurial environment, developing high-speed information infrastructure, and establishing a pipeline of qualified IT professionals" (Technology 2020). Technology 2020 was formed in 1993 by a group of technically based businesses that wanted to decrease the area's dependence on federal funding and develop the region's potential as a technology center. This group published a list of its members on its Technology 2020 web site, which I downloaded and used for my survey.

Next, I contacted the University Publications unit entitled "Creative Services" to determine where the departmental publishing units were on campus, and how I might contact the writers and editors who worked in those units.

Finally, one of the telephone respondents faxed me a list of businesses that belonged to the East Tennessee Environmental Business Association (ETEBA). While there was some overlap with the Technology 2020 and Chambers of Commerce businesses, this list was also useful in pinpointing technical firms that might require the services of a technical communicator.

I found that the best time to call area businesses was between 9:00 and 11:30 A.M. and between 1:30 and 4:30 P.M., Monday through Friday. Monday morning and Friday afternoon yielded the most hurried answers, so I tried to avoid those times as much as possible. I called each firm and initiated the following dialogue:

1. Hello, my name is Karen Downing, and I'm a University of Tennessee Graduate Student seeking my Master's Degree in English with an emphasis in Technical Communication. For my thesis project, I am conducting a survey of businesses in the Knoxville-Oak Ridge area to determine who hires technical communicators. Would you be willing to answer five questions?
2. Do you hire technical writers or communicators? If so, how many? (I found that if I just said "technical communicators," sometimes the respondents did not understand what I meant.)
3. If I guarantee confidentiality, would you be willing to give me the e-mail address of your technical communicator(s) so that I can send a 15-question survey about their job tasks and status of our profession?

4. May I include your company on a list of firms that hire Technical Communicators in our area (or of firms that do not hire Technical Communicators in our area)?
5. How many total employees do you have?

After I collected the information from each business, I assigned them to one of three lists: Companies That Employ Technical Communicators, Companies That Employ Technical Communicators on Contract, and Companies That Do Not Employ Technical Communicators. I also had a separate listing for Staffing Agencies that placed technical communicators in East Tennessee jobs. If the company employed technical communicators and was willing to divulge the e-mail address of those employees, then I sent them e-mail surveys on that day or the next, depending on the time of day. I kept a separate list of persons and/or e-mail addresses that received an e-mail survey from me.

E-mail Survey

As the literature suggested, I initiated a pilot survey before soliciting the entire population of technical communicators. I chose a group of eleven practitioners, who happened to be board members of the local Society for Technical Communication chapter, as my pilot study participants. Since I was a board member, I asked for their help during a meeting, and all were happy to lend their expertise. I sent the pilot participants the first draft of my survey accompanied by the letter that I intended to send with my main survey, preceded by a short note that personally asked them for their help. (See APPENDICES A

and B). I received 100% return on my e-mail pilot survey, primarily because I spoke with the recipients in person and because they knew who I was and what I was trying to accomplish. Their input was extremely useful; because of their "real world" experience in the workplace, I was able to improve the quality of my questionnaire. The following details the questions that I modified because of the pilot study participants' good suggestions:

- Question 4. How would you classify your position?

  To the choices of salaried, full time, full benefits; salaried, full time, limited or no benefits; hourly wage, full time; hourly wage, part time; contract or consultant; and other, I added weekly, full time, full benefits; weekly, part time, full benefits; weekly part time, limited or no benefits; and self-employed.

- Question 5. What is your job title?

  To the choices of technical writer, technical editor, technical communicator, documentation manager or specialist, information manager, and other, I added web designer, writer, or master.

- Question 6. What tasks occupy your workday? Choose all that apply.

  To the choices of writing, editing your own work, editing the work of others, group or task meetings, oral presentations, managing people, budgeting, and other, I added web design, web publishing, desktop publishing, making production decisions, authoring on-line help, producing graphics, developing multimedia applications, and mentoring.

- Question 7. What types of materials do you produce? Choose all that apply.

  To the choices of training or user manuals; procedures; proposals; brochures, newsletters, marketing material; and other, I added web site/pages; web documents; on-line help; multimedia applications; and graphics. The pilot test respondents advised that I remove desktop publishing and web publishing from my original list because they defined these as tasks and not materials.

- Question 16. May I include your name and e-mail address on a separate list of technical communicators in the Knoxville-Oak Ridge area?

  The pilot test respondents advised me to remove this question. Even though my intentions were completely honorable, they did not want to risk having their e-mail accounts accessed by unwanted commercial solicitation.

After I made the modifications suggested by the pilot test respondents, I sent out my survey to the larger technical communicator population. Along with the technical communicators that were identified by specific companies, I e-mailed all of the technical communicators listed with the Society for Technical Communication/ East Tennessee Chapter (STC/ETC) making sure to crosscheck my lists to avoid sending duplicates. In response to the most recent research information on survey design, I included a letter of introduction and a link that led directly to my e-mail survey.

The letter of introduction included information about me, my purpose for sending the survey, and a pledge of confidentiality, which assured the respondents that I would not report their names with their survey results. I also informed the respondents that their participation was completely voluntary, and that by returning the survey, they consented to participation. Finally, I informed the participants that the survey took less than five minutes to complete; I felt this was an important incentive for busy practitioners. (See APPENDIX C for a copy of the introductory letter.)

Included in that letter was a link to an HTML-formatted e-mail survey that I designed by using Perseus SurveySolutions, a survey software program from the Perseus Development Corporation. This program allowed me to develop a survey with a variety of response types, as suggested by the literature. Since the format was in HTML, respondents could take advantage of web-like properties such as check boxes and multiple answer formats, while still using an e-mail system. When the respondent was finished, he or she clicked the submit button, and the survey was sent anonymously and directly to my e-mail account. A "Thank You" message appeared after the respondent completed and submitted the survey.

My reason for choosing e-mail rather than convert to a completely web-based system was that I feared that some firms would not have access to the Internet. I also wanted to target a specific audience, namely technical communicators, and would have been more at risk for receiving unusable or skewed results had the survey been open to the entire web population. The only

risk I faced in using an e-mail survey was that some very old e-mail systems were ASCI-based and could not support the HTML format. I discounted this risk as small, and I assumed that most companies would necessarily have up-to-date systems. In fact, this guess turned out to be correct, as I encountered only one system that could not handle my survey format.

The first eight questions of the survey focused on the workplace experience for the respondents. For the first question, I included one fill-in-the-blank question that asked for their company's name and address. Questions two through five were one-answer-only questions that identified the company type, length of the respondents' employment, job classification, and job title. Questions six and seven were multiple-answer questions that asked what tasks they performed and what types of materials they produced. Question eight was a yes-or-no answer about whether or not specific software knowledge was required as a condition of their hiring.

Questions nine through eleven focused on the respondents' opinion of their profession. I included a Likert Scale of specific skills for question nine and asked the respondents to rate those skills as very important, important, or of less importance. Questions ten and eleven were open-ended responses that asked participants to identify other important skills not listed in question nine, and specific social skills that are necessary for technical communicators to be successful on the job.

The final four questions centered on the education of the respondents. Questions twelve was a single-answer question about the highest degree that the

respondents had attained, and thirteen was a yes-or-no that asked if their degree was in Technical Communication. Question fourteen was a fill-in-the-blank format for the respondents to identify what their degree was in if it was not in Technical Communication. Question fifteen was an open-ended question that asked the respondents to identify what skills they wished they had acquired before they began their current jobs. (See APPENDIX D for a copy of the e-mail survey.)

Within three business days of the original survey mailing, I sent a follow-up letter to the same e-mail addresses. The message expressed thanks to the respondents that had sent the completed survey back to me, followed by some gentle urging of those people who had not gotten around to responding. I included a fresh copy of the original letter and the attached survey, so the participants would not have to look through their mailboxes to find the first message. (See APPENDIX E for a copy of the reminder letter.)

One advantage of using the Perseus SurveySolutions survey software was that it allowed me to design a database for the e-mail survey results. I could import those results from my Inbox in the Eudora mail system directly into the Perseus survey database; this way I did not have to enter the results by hand. Each response was organized by question number in the database.

By using both the telephone and e-mail survey methods, I was able to contact a large number of both businesses and people. My aim was not only to maximize the number of responses I received with this method but to generate good will and trust in me personally, since I would soon be looking for employment in the East Tennessee region.

CHAPTER IV

Results and Discussion

Because of the dual nature of my survey effort, I will report the results in two sections: results from the telephone survey and results from the e-mail survey. Further, I offer discussion along with each corresponding results section and sub-section to reinforce the understanding of the reader. Following the Results and Discussion Chapter is a Summary chapter and Suggestions for Further Research.

Telephone Survey Results and Discussion

I began my query of local firms with Vickie Johns' original list, which encompassed 313 businesses in Knoxville and Oak Ridge. I called businesses from the combination of the following five subdivisions of her survey: Knoxville-Oak Ridge Businesses That Employ Technical Communicators, Employers of Non-technical Communicators, Contract Only, Temporary Agencies, and Knoxville-Oak Ridge Businesses That Do Not Employ Technical Communicators. For my own survey, I eliminated the category of "Employers of Non-technical Communicators" because I found the distinction confusing.

This action highlights a semantics problem in our profession: How do we define "technical communicator"? Since a complete exploration of that topic is beyond the scope of this project, I decided to apply the following rubric: if the employed writers or editors produced documents that highlighted information of a

technical or scientific nature, I counted them as technical communicators. If the employed writers or editors produced materials that were only marketing oriented (that is, promotional with no technical information being communicated), then I listed their firm with "Firms That Do Not Employ Technical Communicators." Therefore, writers who produced brochures or newsletters only were still counted as technical communicators as long as the information that they presented was of a technical nature or of scientific interest.

To the list of 313 businesses that were originally surveyed, I added the Technology 2020 firms, and the lists of businesses from the Knoxville and Oak Ridge Chambers of Commerce. Of those 313 businesses surveyed in 1991-92, only 205 firms still existed. It is not surprising that the business and employment climate is much changed from ten years ago, in view of the recent large reduction of workforce at the Oak Ridge National Laboratory and the subsequent reduced need for subcontractors. The retreat of the Tennessee Valley Authority's corporate offices from Knoxville to Nashville has also impacted area employment as well.

Very few of the remaining firms retained exactly the same form as they had in 1991-92. Most had changed locations within the area, had gotten new telephone numbers, or had combined with other firms and functioned under a new name. Additionally, firms had often changed their focus; for example, instead of describing their products as "software" or "computers," companies were offering "systems integration" and "information technology."

Many of the firms from the original list had changed positions; some that had employed technical communicators in the past no longer needed them at present. Conversely, some businesses had found a need for technical communicators in the ten years that had gone by. To stay competitive, many small businesses had merged with larger corporations, and technical communicators were employed at the corporate offices only, which usually were not located in this area. I sensed a "pulling in of resources" mode for at least half of the businesses that I polled. I was often told that the engineers or specialists were required to do their own writing.

Another phenomenon I encountered was automatic answering systems that directed me to a menu of several options. This aspect made it challenging to find the right person with enough time to talk to me. Sometimes I could choose "Human Resources Department" as an option, and other times I was required to know the employee's last name (which I almost never knew) and ended up with the company operator. At least half of the time, I was asked to leave a voice mail message; the return rate of those messages was fairly low, so I re-called non-respondents after three or four days.

I noticed that if I said "technical communicators," the respondents often did not know what I meant. Their reply might be "We don't have any communications officers in our company." I found that if I said "technical writers or technical communicators," the respondents understood more clearly the type of employee I was looking for. Table 1 shows the results from my telephone survey of 409

Table 1. Telephone Survey Results

Firms in East Tennessee	Number of Firms
Employ Technical Communicators	45
Employ Technical Communicators on Contract	28
Provide Staffing and Placement for Technical Communicators	8
Do Not Employ Technical Communicators	220
No Longer in Business	108

Table 2. Comparison of Survey Results between 1991 and 2001

Percentage of Polled Businesses	1991 (%)	2001 (%)
Employ Technical Communicators	17	13
Employ Technical Communicators on Contract	4	11
Provide Staffing for Technical Communicators	2	3
Do Not Employ Technical Communicators	77	80

firms. (For a complete listing of businesses in the first four categories, see APPENDICES F, G, H, AND I).

If I compare my results to those obtained in 1991, as shown in Table 2, I can see a trend toward employing fewer full time employees and using more technical communicators on a contract basis. These findings are consistent with the idea of "belt-tightening" in technical, industrial, and scientific firms; it is much less expensive to hire someone temporarily to do a particular job, than it is to offer company benefits that increase "overhead" costs to that person.

Yet, this current employment environment does not have to spell doom for the technical communicator in our area. What technical communicators must do is fashion themselves as contract employees. The skills set required to become that type of worker must include a readiness to adapt to new work situations, the

willingness to respond to individual company needs, and an ability to learn new systems and standards quickly. Technical communicators must also work well with many different personality types in this employment climate. One disadvantage of performing contract work only is that technical communicators will not have standard company benefits available to them, such as medical coverage or retirement compensation; therefore, technical communicators should also know how to budget their resources for these necessities as well. Finally, technical communicators working in a contract employment environment should know how to market themselves. Companies will need to know who the available technical communicators are, what skills they have, and how to reach them. To that end, technical communicators would be wise to register with local staffing agencies, because companies often do not have the time or resources to launch a full-scale talent search and may look to these agencies for help. The increase in numbers of staffing agencies that place technical communicators from six to eight over the last ten years reflects this trend; there are simply more contract jobs available now than were in the past.

Pilot E-mail Survey Results and Discussion

Out of **11** possible responses for the pilot survey, I received **11**; this was because the respondents previously agreed to help me with my pilot survey effort. Most of the respondents returned the survey one or two days following receipt of the reminder letter. The following is a presentation of the results, listed by question.

Question #1: For whom do you work? (Please include address and phone number if possible.)

Several respondents work for larger firms in our area such as SAIC, UT/Battelle, and the University of Tennessee. Most of the respondents work for scientific, technological, or research-focused organizations. (For a complete listing of business names and addresses from the pilot survey, see APPENDIX J.)

Question #2: What kind of company is your employer?

From eleven respondents, the pilot survey yielded the results shown in Table 3 for this question. None of the respondents works for businesses under the categories of computer hardware development, manufacturing, medical or pharmaceutical, or aerospace.

Question #3: How long have you worked for your employer?

As presented in Table 4, the majority of respondents have worked for their employers for at least six years, with the largest category response in the "Over 10 years" classification. Perhaps this shows that once technical communicators establish themselves in a particular employment niche, they become valuable assets to their companies. Two respondents have worked for their companies for only six months; this may indicate that the respondents are working on contract basis, or that there is limited hiring in this region at present.

Table 3. Business Classification

Business Type	Percentage
Scientific or Technological	63.6
Computer Software Development	18.2
Waste Management or Removal	9.1
Other	9.1

Table 4. Length of Employment for Pilot Survey Respondents

Length of Employment	Percent
6 months or less	18.2
7 months to 2 years	9.1
3 to 5 years	9.1
6 to 10 years	27.3
Over 10 years	36.4

Question #4: How would you classify your position?

Most of the respondents (8 out of 11) are salaried, full time, with full benefits. There is one response each for "hourly, part time," "contract or consultant," and "other." This data supports the participants' long employment tenures with their companies.

Question #5: What is your job title?

The largest response occurred in the "Other" category; unfortunately, I did not include a write-in box to find out what titles these respondents use. Two respondents are classified as technical writers, and there is one response each for "technical editor," "technical communicator," "document manager," and "information manager."

Question #6: What tasks occupy your workday?

Figure 1 represents the tasks that technical communicators from the pilot survey typically perform during their workday. While it is not surprising that writing and editing tasks represent the bulk of their working efforts, the strong showing for "group or task meetings" is revealing. Technical communicators probably find themselves in situations where working closely with a group constitutes an important part of their job function.

Question #7: What types of materials do you produce?

The largest number of category responses in this section are for "brochures, newsletters, and marketing materials," "desktop publishing," "web publishing," and "other." I modified this question in response to suggestions made by pilot respondents, as I mention in the METHODS section, and a full discussion of those results is found in the main e-mail survey section.

Question #8: Were specific computer skills or software competencies required as a condition of your employment?

Two-thirds of the pilot respondents answered yes to this question.

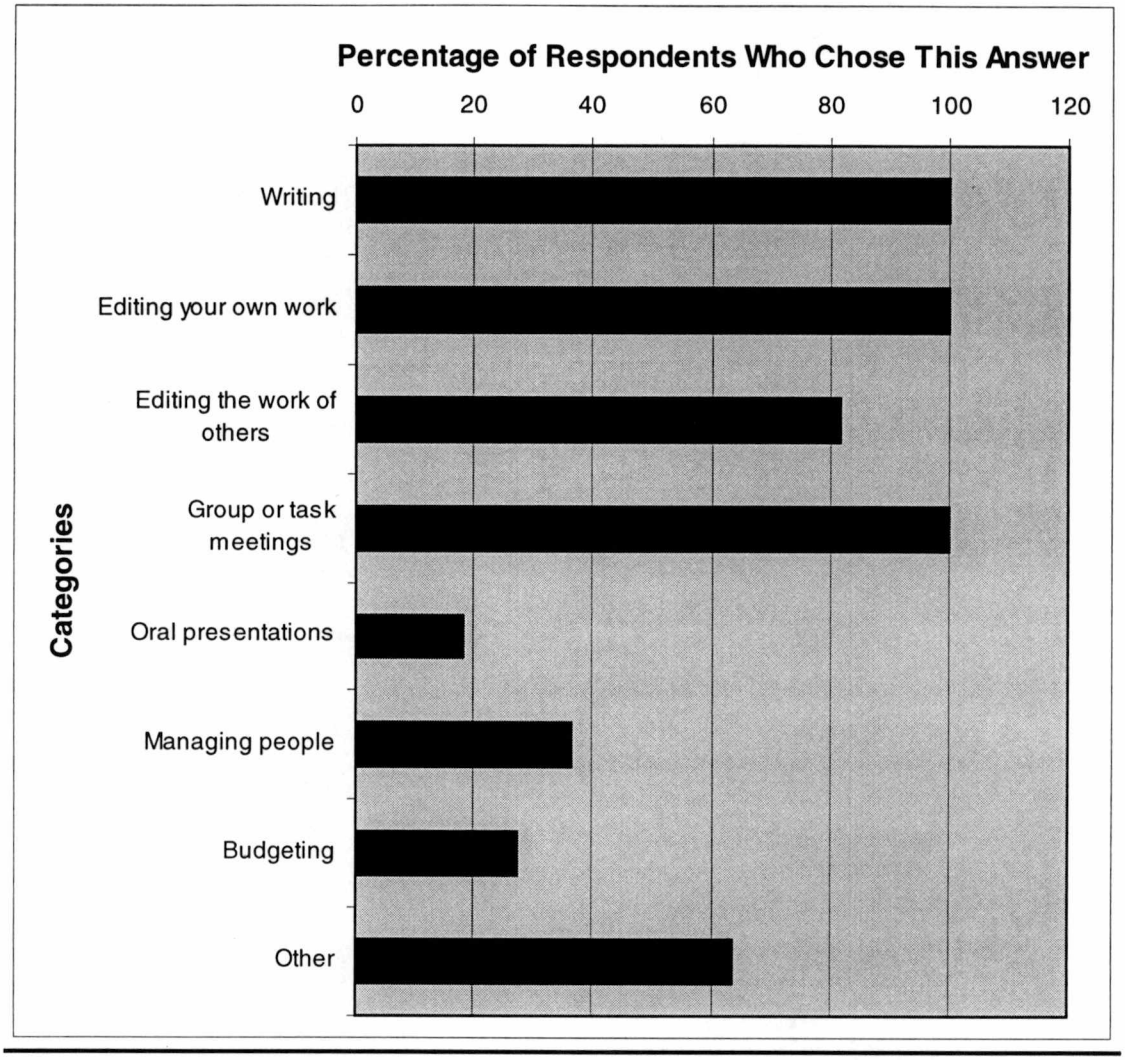

Figure 1. Workday Tasks for Pilot Respondents

Question #9: How would you rate the following skills for technical communicators?

Pilot test respondents rate the following skills categories as "Very Important":

- General computer skills
- Writing and editing skills
- Social interaction skills
- Communication skills
- Teamwork skills

These results differ only by one category, which is "Social interaction," when compared to the general e-mail survey. (See Question 9 in the E-mail Survey Results and Discussion section.)

The category of "Managerial skills" is "Important," and both "Specific computer skills" and "Product knowledge" score half of the responses in "Very important," with the other half evenly divided between "Important" and "Less important." "Presentation skills" nets an evenly divided response between "Very Important," "Important," and "Less Important." Again, although there are minor differences, the results of the pilot test match the main e-mail survey results.

Question #10: Is there another skill not listed that is important for your particular job function?

The responses to this question vary widely. Some of the suggested skills

are budgeting, document management, good powers of observation, multitasking, organization, time management, and having a sense of humor. One respondent says that knowing legislative requirements is important to his or her job task; another emphasizes workflow and project management design as being very important skills for technical communicators as well.

Question #11: In your opinion, what social skills do technical communicators need on the job?

Most responses fall into two general distinctions. The first is the ability to be tactful and responsive to coworkers and clients, which necessitates flexibility and openness. Having excellent communications ability is the other important social skill; technical communicators must inspire confidence in both clients and co-workers by being experts in giving and receiving information.

Question #12: What is the highest level of education that you have completed?

Six out of eleven respondents have Bachelor's degrees; four have Master's degrees; and one has a Doctorate degree. There are no responses for two-year Associate's Degree or High School Diploma.

Question #13: Is your degree in Technical Communication?

Over 90% answered no to this question.

Question #14: If not, what was your major?

Most of the respondents majored in English, but their programs did not emphasize technical communication.

Question #15: What skills do you wish you would have developed before you began your current employment?

The responses to this question fall into three main categories. The first is more computer training. As one respondent reports,

> Being computer literate is not enough. Adequate computer background includes a working knowledge of basic software applications such as word processing, spread sheets, page layout, and presentation. Also important is a working knowledge of web development and design, including basic HTML and web software (e.g., DreamWeaver). (Anonymous)

The second response category can be summed up as "Be willing to continue learning on the job." Most respondents say that they could not possibly have been prepared for every aspect of the job that they have. One respondent claims, "It seems like I am developing skills ALL THE TIME." The third response category can be described as "strengthened writing skills." Respondents emphasize how important basic writing and editing skills are for any job in technical communication.

Question #16: May I include your name and e-mail address on a separate list of technical communicators in the Knoxville-Oak Ridge area?

Most respondents feel uncomfortable with this idea because such a list could fall into the hands of e-commerce marketers. Therefore most choose "No."

Question #17: For Pilot Survey Participants: What suggestions or comments do you have about this survey?

In the METHODS section of this thesis, I detail the questions that I had modified as a result of the suggestions I had received from the pilot survey respondents. In addition, responses to the open-ended questions yielded some very clear pictures about the kinds of experiences that technical communicators have in the working world. The following respondent offers one such example:

> I spend a lot of time deciding what my department will produce and HOW we will produce it. This means choosing what word processing tool, print output or online, if online web-based or online help, if we use a special help tool like Doc2Help or RoboHelp, if we use a next level approach like MIF2GO (frame + web-works), etc. For the last several jobs, I've had the most experience and have decided these questions (in line with corporate goals, of course). THIS IS HARD! There are a lot of tools and technologies out there and meeting all the deliverables on schedule and on budget takes a well-thought-out approach. (Anonymous)

Other respondents make two additional points that are important to the pilot survey. One participant says that mentoring other writers about specific tools

was a big part of his or her job description; another says that it is also very important to know how to print a document correctly from various software platforms.

Because of these responses, I conclude that the skill sets for technical communicators need to be broad based. Not only do we, as technical communicators, need to be well-trained writers and editors, but we also need strong analytical, teaching, and tool-using skills if we are going to be successful in the current workplace environment. We may find ourselves in the position of being the senior member or most experienced on our team, and having developed strong decision-making skills will prepare us for these employment possibilities.

E-mail Survey Results and Discussion

The pilot survey results informed my e-mail survey design, and I sent that design to all of the e-mail addresses that were made available to me for technical communicators. Out of the 97 surveys that I sent out (this number excludes the 11 pilot surveys), I received 44 responses. What follows are the results and accompanying discussion for each survey question.

Table 5. Where Respondents Work

Company Name	Number of Respondents
UT/Battelle/Oak Ridge National Laboratory	9
CTI/Siemens	5
BWXT/Y-12	4
Pacific Western	4
SAIC	3
University of Tennessee (under various departmental grants)	3

Question #1: For whom do you work? (Please include address and phone number if possible.)

Most of the respondents work for large companies in our area or they work for themselves. Twenty-eight out of forty-four participants are employed by six businesses as shown in Table 5.

One respondent is employed by each of the following: Aspen Systems, Barber & McMurray, CDI Technical Services, CH2MHILL, Data Research & Applications, Forum Publications, IT Corporation, Jenzabar, Philips Consumer Electronics, TEC-COM, TechScribes, and URS. One response is from Thomas Nelson Publishing in Nashville, because that person happens to be on the STC/ETC list. I include the Siemens employees with the CTI Technical Services because the two divisions are part of the same company, and they travel and communicate back and forth between the Knoxville and Johnson City locations.

Finally, three of the respondents indicate that they are self-employed or work on contract. (For a complete listing of each company and its corresponding address, see APPENDIX K). Again, I think this result typifies the "pulling in" of

resources by companies in our area. Technical communicators who have the ability to respond to this survey generally work for companies that have large departments and centralized resources. The fact that roughly 10% of the respondents are self-employed shows that technical communicators in our area can be successful as contract workers, even if their first preference may be to work as a full-time employee for an established firm.

Question #2: What kind of company is your employer?

Table 6 shows that the largest category for company type is "Other," with 18 out of 44 responses or 40.9%. Unfortunately, the Perseus survey package does not support multiple formats within the questions. I could not include a write-in line next to "Other," because the rest of the questions are a "Click One" format, nor did I make it a separate question. Therefore, I cannot report what the other business types are, although, from the list of names and addresses, I can surmise that other categories might have been education, electronics, and Internet Service Providers. Additionally, it may be difficult to categorize companies into one or two descriptions; in a marketplace that rewards flexibility, companies may want to keep their focus broad and adaptable.

Another aspect about this data is that there seems to be more need for technical communicators in the information and science industries than in the heavy manufacturing or durable goods sectors in our geographic area. One possible explanation for this finding reflects what I found in my telephone survey:

technical communicators for these sectors are often centralized at corporate offices.

Question #3: How long have you worked for you employer?

As shown in Figure 2, most of the respondents have worked for their particular firms for over 10 years, with 19 out of 44 or 43.2% of the responses coming from this category.

These results could indicate that companies hired technical communicators more frequently 10 years ago, and it may be more difficult now for technical communicators to find permanent employment in our area. On the other hand, these results might also reveal that once technical communicators reach a certain level of competency within their companies, they are less likely to be fired or laid off because they have become valuable resources for their firms.

Question #4: How would you classify your position?

Since the majority of respondents have worked for their company for over five years, it is not surprising that most are also salaried, full time, and with full benefits. This category netted 28 out of 44 respondents, or 65.1%. The next highest category, although far behind the full-time-salaried category, was "Contract or Consultant," with 5 responses or 11.6%. Table 7 includes the complete job classification listings for the respondents.

Table 6. Business Classification

Business Type	Percentage
Scientific or Technological	43.2
Other	40.9
Computer Software Development	6.8
Computer Hardware Development	6.8
Medical or Pharmaceutical	2.8
Waste Management or Removal	0
Manufacturing (other than computer hardware)	0
Aerospace or Aircraft Research or Manufacturing	0

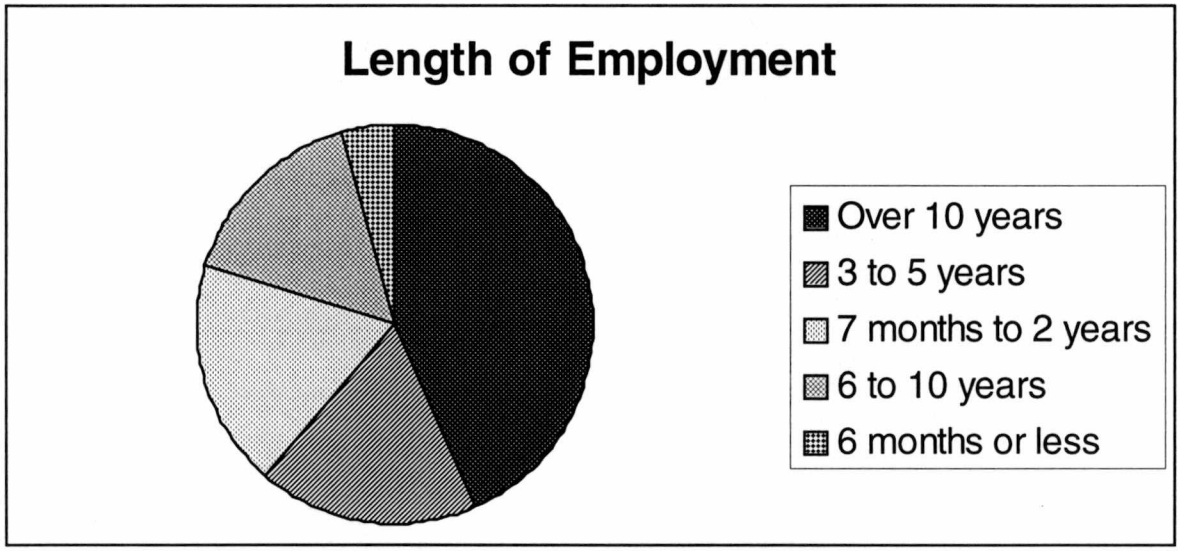

Figure 2. Length of Employment for Respondents

Table 7. Job Classification of Respondents

Job Classification	Percent
Salaried, full time, with full benefits	65.1
Contract or Consultant	11.6
Weekly, part time, with limited or no benefits	4.7
Weekly, full time, with full benefits	2.3
Salaried, full time, with limited or no benefits	2.3
Hourly wage, full time	2.3
Hourly wage, part time	2.3
Self-employed	2.3
Other	0.7
Weekly, part time, with full benefits	0

Two observations come to mind when viewing this result. With the advent of more available contract work, technical communicators may be adapting their working mode to accommodate a contract environment. Additionally, there may not be much of a distinction between "Contract" and "Self-employed," as both offer the same working exigencies.

Question #5: What is your job title?

The results for this question, as shown in Figure 3, demonstrate again how the category "Other" should always include a backup write-in category.

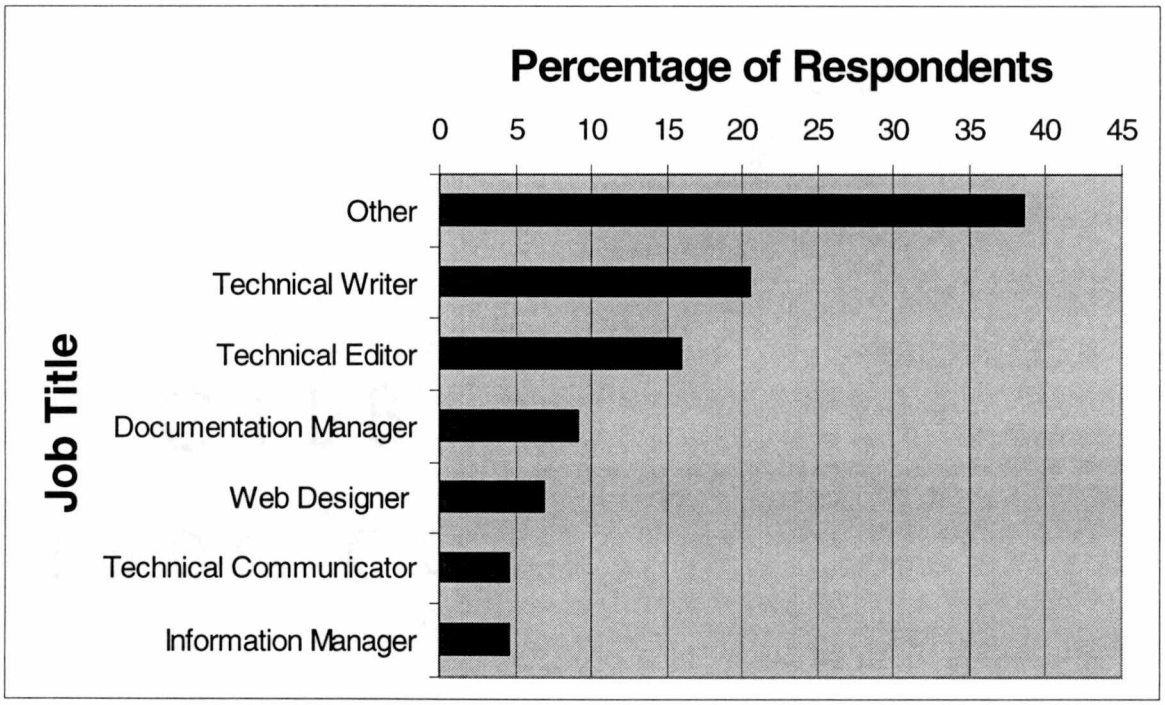

Figure 3. Job Titles of Respondents

Because "Other" netted the highest response, it leads me to speculate whether or not respondents are hired under different job titles but find themselves functioning as technical communicators, or there may be unidentified categories arising in the workplace environment. Certainly, it is advantageous for employees to keep a broad definition of their skills and abilities, which allows them to adjust to a quickly changing workplace environment.

Question #6: What tasks occupy your workday? Choose all that apply.

As shown in Figure 4, editing and writing tasks occupy at least 80% of the respondents' work effort. While these results are not startling, in view of the fact that we are trained as writers and editors, what is surprising is that group or task meetings take up the next largest amount of time and effort. Perhaps this result points to how important communication tasks are for our profession; we must continually connect with our co-workers as we produce electronic and paper documents to ensure that our product is exactly what is needed for our firm. Therefore, knowing how to express and present what we have done and what we intend to do next must be integral skills in a technical communicator's job performance.

Question #7: What types of materials do you produce? Choose all that apply.

As is evident by the data in Figure 5, web pages, procedures, and brochures, newsletters, and marketing materials make up the bulk of materials produced by technical communicators for their companies. Training manuals

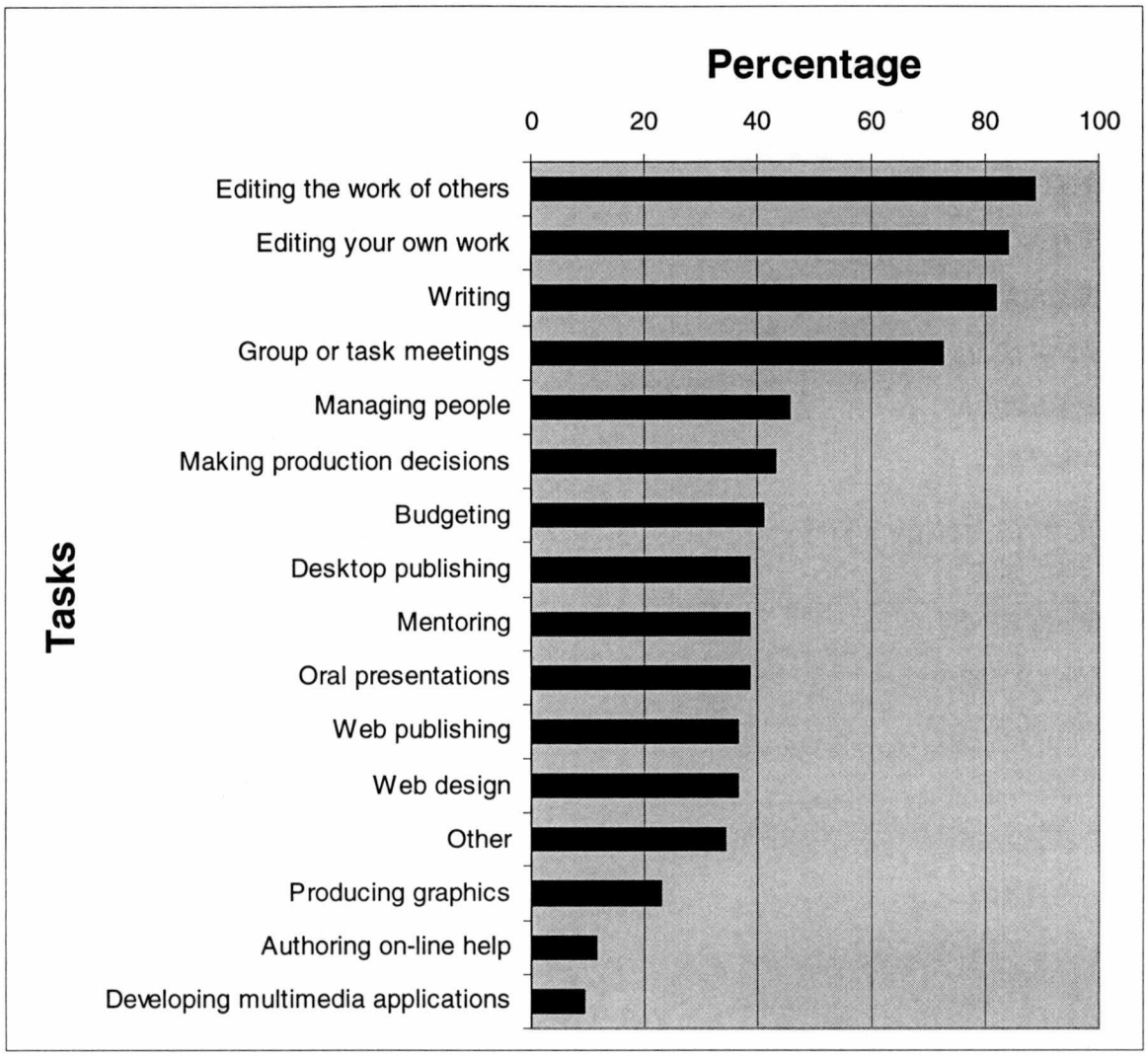

Figure 4. Workday Tasks of the Respondents

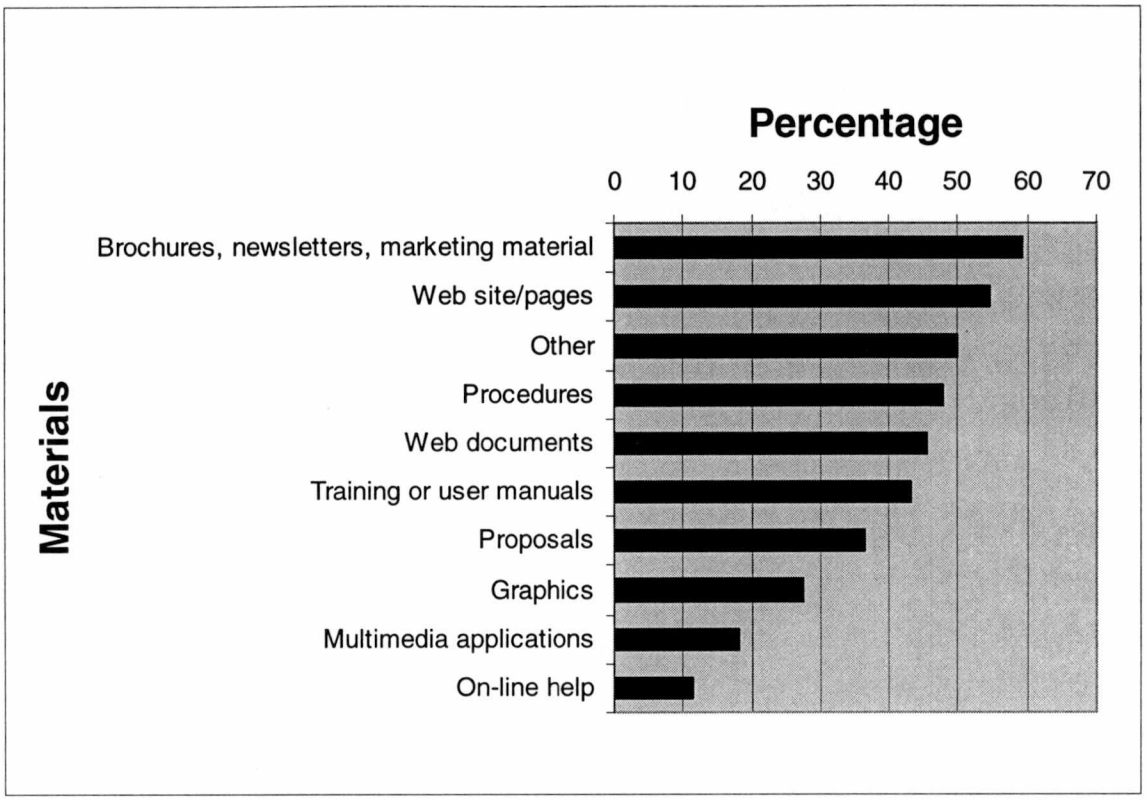

Figure 5. Materials Produced by Respondents

and web documents also comprise a large portion of the products of technical communicators. While there are differences in the amounts of each category, the percentage only ranges from 11 to 59, showing that many of the technical communicators work on products in multiple categories. I suspect with continued emphasis on electronic media, the on-line help and multimedia applications categories will continue to increase as technical communication products. Again, knowing what constitutes "Other" would also be instructive and may point to future trends.

Question #8: Were specific computer skills or software competencies required as a condition of your employment?

The results of this question were divided evenly between "Yes" and "No" responses. It would be interesting to know if this represents a trend toward or away from specific software knowledge. On one hand, companies want as little "ramp up" time as possible when they hire a new employee; on the other hand, software competencies are short-term skills. It is unlikely that companies would stick to a particular software program for the long term, because products are always improving and offering competitive advantages, and because operating systems change. It seems to me that this sort of environment would require someone who could learn new software products and computer tools easily, not someone who had skills in specific software packages only.

Question #9: How would you rate the following skills for technical communicators?

By having the respondents rate specific skills, I can illuminate the competencies necessary for their workplace environment. The skills that technical communicators agree upon as "Very Important" are listed below:

- General computing skills
- Writing and editing skills
- Communications skills
- Teamwork skills.

These results reinforce the responses to Question 6, in which the tasks that occupy a practicing technical communicator's time are writing, editing, and attending group or task meetings. Also, the emphasis on general over specific computing skills reflects the changing software exigencies in the modern workplace environment.

Skills rated as "Important" are the following:

- Specific computer skills
- Managerial skills
- Product knowledge.

The category of "Social interaction skills" is divided evenly between "Very Important" and "Important," and "Presentation skills" splits equally between "Important" and "Of Less Importance." This last result indicates that while technical communicators may produce materials for presentations, they are not necessarily the people who give the presentations. It is also interesting to note

the distinction between "Communication skills" and "Social interaction skills." Perhaps this result points to the need for technical communicators to emphasize effective communication first and then to reinforce that effort with social skills that enable them to interact with different types of people.

Question #10: Is there another skill not listed that is important for your particular job functions?

While I received 43 usable responses out of 44 for this question; the answers tended toward the following categories:

1. **Knowledge of Science and Technology.** Many respondents said that understanding concepts and terminology in scientific and technical fields is a real advantage for a writer who is trained outside those particular fields. According to one respondent, "While no one can be an expert in all technical areas, it would be helpful to have taken a few basic science, engineering, or programming classes so that the writer has a better understanding of the context of technical documents." Also important is the ability to learn about an employer's specific product offerings; one participant says, "This is something that can be grown--you don't have to start with it, but you do have to be interested in learning everything you can!" Research skills are also identified as important supports to technical communicators who are striving to learn more about the scientific and technological environment that they find themselves in.

2. **Organization.** Many respondents highlighted this particular skill because they find themselves working on multiple projects at once. The ability to prioritize tasks, produce deliverables on time, and adjust to changing schedules goes along with organizational functions as well. One respondent described the process this way: "Multi-tasking: being able to juggle up to six chain saws without getting cut, without becoming anxious, and without losing emotional composure. 'One writer, one project' has gone the ways of the dinosaur." Clearly, the working pressures are such that strong organizational skills will allow the technical communicator to remain flexible and effective.
3. **Creativity.** Included in this category are illustrative skills, ability to work with color, and graphics talents. Companies are always looking for fresh approaches and looks for their documents that will highlight their own uniqueness. As one participant explained, a technical communicator needs to "Think visually (as opposed to "making graphics or pictures")...be able to create concrete images to describe concepts or relationships."
   Creativity is also important for problem-solving, because many new situations arise in the competitive market that technical communicators may not be prepared for.

Other suggested skills are having some business acumen, being able to ask clear questions, being determined to finish the job, developing journalistic talent, and being able to train and mentor people.

Question #11: In your opinion, what social skills do technical communicators need on the job?

The responses for this question separate into two groups: the first, and by far the largest contingent believes that social skills are an important facet of technical communication; the second group believes that socials skills are not of great importance.

From the first group, most responses included "teamwork, tact, and persuasion." Technical communicators must have the ability to work and communicate with all of the members of their work team, regardless of the particular personality types of those people. They also must know how to disagree or correct tactfully, so they can maintain respect and trust with their co-workers. Finally, technical communicators must know how to present and put forth their opinions, especially since they will not be the subject experts, but will be the experts for documentation. One respondent highlighted these ideas with the following statement: "Having personal relationships with people, being able to persuade them, being able to give them reasons and negotiate mutually beneficial outcomes -- all are vital to my job."

The second group of respondents did not seem to value specific social skills as a job requirement. One respondent described social skills needs as "average"; another said, "In my opinion, it's a mistake to be self-conscious about your social identity." Another respondent viewed social acumen as an ability "to chit-chat with geeks who don't have many social skills." Perhaps these statements reflect the particular working environments of these respondents.

They may not have a great deal of interaction with their co-workers, or they may be put in the position of having to "defend" their ideas in their particular working atmosphere. Regardless, this disparity of opinion on required social skills probably reflects major differences in workplace realities for technical communicators.

Question #12: What is the highest level of education that you have completed?

Figure 6 shows that the field is almost evenly divided between technical communicators with Bachelor's Degrees and those with Master's Degrees. A surprising outcome was that 3 out of 43, or 7%, of the respondents had earned Doctorate Degrees, and 1 out of 43, or less than 3%, had attained the level of Two-year Technical Degree or High School diploma. These statistics may change as more community colleges add Technical Communication to their curriculum. Based on this data, technical communicators appear to be highly educated professionals.

Question #13: Is your degree in Technical Communication?

The astonishing result for this question is that 86.4% of the respondents do not have degrees in technical communication. From this data, we can assume that technical communicators received degrees in other fields and became technical communicators after they were on the job. This data supports the findings from Question 3; long-term employees are often adaptable and can

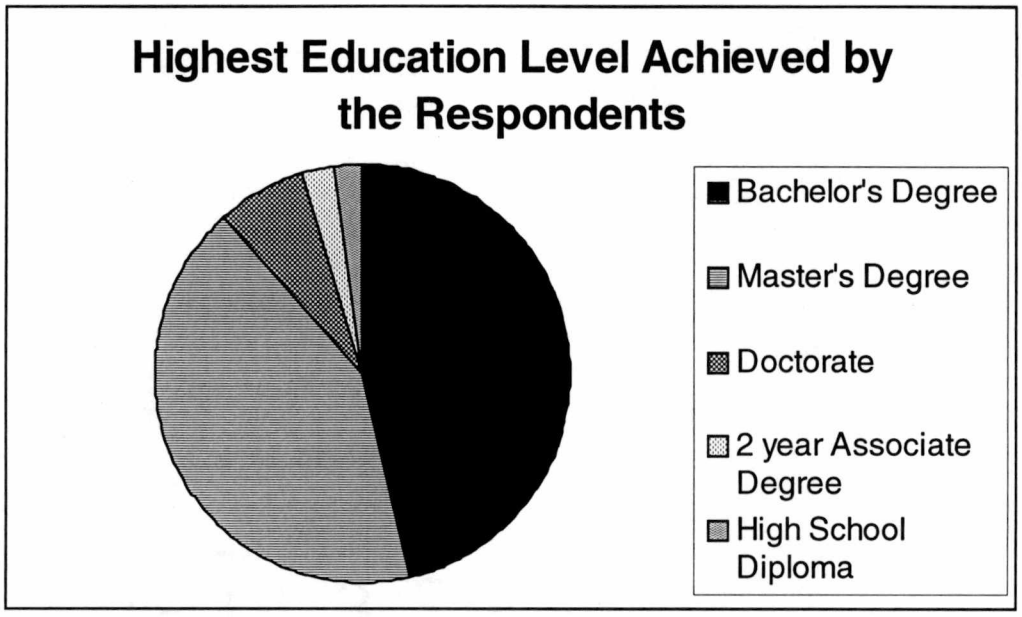

Figure 6. Education Level of Respondents

re-position themselves according to the changing needs of their companies. Answers to Question 14 will help us pinpoint the backgrounds of these practicing technical communicators.

Question #14: If not, what was your major?

The majority, or twenty-two out of forty respondents to this question have Bachelor's Degrees in English, Journalism, or Mass Communications, without an emphasis in Technical Communication. Eleven respondents have either a Bachelor's or Master's degree in science or engineering. Two respondents have math degrees in combination with social science or arts degrees as well.

Most respondents have at least some English or writing background, and many have degrees in science. This sort of background has probably served

them well, as they can grasp both the technical concepts and the requirements for competent writing.

Question #15: What skills do you wish you would have developed before you began your current employment?

Of the 30 usable responses to this question, the vast majority are business-related; respondents chose budgeting, marketing, and managing as skills that they lacked but needed for their current jobs. The following is a particular example of the need for business acumen given by one respondent: "Grant writing was not part of the job description for either of my positions, but I fell into it because of my writing abilities. If I would have known that I would come into grant writing, I would have appreciated knowing more about developing budgets. Good writing skills don't help much there!" Two respondents highlighted project management skills, such as "resource allocation, scheduling, configuration management, quality assurance," as being important skills to bring to their jobs. One very interesting observation was about file management; since technical communicators must work on several projects at once, it becomes imperative to organize electronic files effectively. The respondent comments, "The ability to keep track of many versions of many files (and the versions of their "builds," too) seems integral to all my projects. Yet that is something I rarely see in a class title or see discussed among tech writers." Two participants wished for more science background, and two wanted more writing skills. Only one

participant mentioned web design, and no one mentioned graphics, which is something that I did not expect.

Perhaps these results reflect that technical communication is built on basics, such as writing, science, and business knowledge. Armed with these concepts, technical communicators can become web designers or graphics artists because they have a solid foundation to build upon. Basic organization and management skills seem to be an integral requirement for busy technical communicators in a fast-paced and ever-changing environment.

CHAPTER V

Summary and Suggestions for Further Research

As these survey results suggest, the employment arena for technical communicators is much changed from ten years ago in the Knoxville-Oak Ridge area. Many firms have disappeared or have consolidated into bigger companies. Technical communicators who work for these larger corporations often find themselves being utilized as a resource from a corporate office location. Fewer area firms employ full time technical communicators than in 1991, but more temporary agencies staff or place technical communicators as contract employees. Technical communicators must therefore be willing to fashion themselves as contract employees if the need arises. This means that they should acquire budgeting and self-marketing skills to ensure themselves of constant work.

Most technical communicators who are employed in our area work for companies that produce scientific or technological products, and those same technical communicators have worked for their firms as full time employees for over six years. The second largest job classification is as a contract worker or consultant; I expect that this group will grow in numbers over the next few years if the trend from the previous ten years continues.

Technical communicators still need strong writing and editing skills to perform their jobs; in addition, technical communicators should develop effective social and group work skills because technical communicators must constantly

communicate with subject experts as they produce documents and other materials. Practicing technical communicators also suggest having some background in science and technology, having strong organizational skills, especially for electronic files, and having a good measure of creativity, both in problem solving and in illustrative skills.

Most technical communicators in our area have earned a Bachelor's or Master's Degree; however, most of those degrees were not in technical communication specifically, but in English or Communications. Many technical communicators have had some sort of scientific training as well. The majority of respondents suggest that technical communicators obtain some business training, especially in the areas of budgeting and marketing, in order to become well-qualified and educated in their field.

I suggest for further research that a survey of area businesses should be conducted on a smaller time interval than every ten years. Because the business climate changes quickly and will probably continue to do so, I recommend a new survey be conducted every three years. Researchers can use my list, which includes the still-existing businesses from Vickie Johns' survey in 1991 and which also has been preserved on a CD given to Dr. Michael Keene to save re-entering the data. To this listing, researchers should check with Technology 2020 and the Chambers of Commerce for Knoxville and Oak Ridge to see if there are new listings. Finally, in order to poll practicing technical communicators, researchers should again check the STC/ETC member listing, which will be updated yearly.

For survey design, my strongest recommendation is that if researchers include an "Other" category, they should always follow with an open-ended question about what defines a respondent's "Other" selection. I modeled my survey design after the national STC salary survey that is conducted yearly, so I was confident that there would not be many "Other" selections. However, the results of my survey have taught me that I can not necessarily predict a local scenario based on a national one. "Other" garnered the largest response for the Job Title category, and I have no way of knowing what those job classifications are for our area. "Other" was the third largest selection behind "Brochures, newsletters, and marketing materials" and "Web sites/pages" for the "Materials Produced" question. Understanding what "Other" means in both of these scenarios would have been very instructive.

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APPENDICES

APPENDIX A

Pilot Survey Letter

(Name of the participant),

Would you be willing to help me with your valuable advice? I will be sending the attached survey (minus question 17) to technical communicators in our area as part of my thesis project. I would greatly appreciate any suggestions you make on question 17...just click the submit button when you are finished with the survey. I will send the following letter to explain my assurance of confidentiality. Thanks so much for sharing your time and expertise!

Karen

Dear Technical Communicator,

I am a graduate student at the University of Tennessee who is working on my Master of Arts in English with an emphasis in Technical Communication. I am conducting a survey that will become the basis for my thesis, entitled *Employment Opportunities for Technical Communicators in East Tennessee, May 2001.*

By completing the attached survey instrument, you will help me identify the companies that hire technical communicators in our area. You will also help me to define what technical communicators do in their jobs, as well as identify what skills are necessary to performing those tasks.

Please note that while it would be difficult to keep an email response anonymous, I will not be associating your name with your response in any way. I

will only be looking at the combined answers from all respondents to make my evaluations. I will be the only person with access to the individual responses. Only the overall statistical results of the research will be used for the study.

Your participation in this study is voluntary; the return of the completed survey will serve as your consent to participate. If you have questions or concerns, you may contact me at kdowning@utk.edu, or (865) 481-3112. You may also contact the Office of Research at the University of Tennessee at (865) 974-3466.

I would like permission to list your employer with those companies that hire technical communicators; I would also like to include your name on a separate list that identifies all of the known Technical Communicators in the Knoxville-Oak Ridge area. Participation in either or both of the above is completely optional...just indicate your preference on the survey form.

The survey takes an average of only five minutes to fill out. Click on the link below, fill out the form by typing in answers or by selecting the appropriate boxes and then click "Submit."

Thank you so much for your assistance.

Sincerely,

Karen Downing

University of Tennessee

APPENDIX B

Pilot Survey

1. For whom do you work? (Please include address and phone number if possible.)

_____

_____

_____

2. What kind of company is your employer?
   - O Computer Software Development
   - O Computer Hardware Development
   - O Scientific or Technological
   - O Waste Management or Removal
   - O Manufacturing (other than computer hardware)
   - O Medical or Pharmaceutical
   - O Aerospace or Aircraft Research or Manufacturing
   - O Other

3. How long have you worked for your employer?
   - O 6 months or less
   - O 7 months to 2 years
   - O 3 to 5 years
   - O 6 to 10 years
   - O Over 10 years

4. How would you classify your position?
   - O Salaried, full time, full benefits
   - O Salaried full time limited or no benefits
   - O Hourly wage, full time
   - O Hourly wage, part time
   - O Contract or Consultant
   - O Other

5. What is your job title?
   - O Technical Writer
   - O Technical Editor
   - O Technical Communicator
   - O Documentation Manager or Specialist
   - O Information Manager
   - O Other

6. What tasks occupy your workday? Choose all that apply.
   - ❑ Writing
   - ❑ Editing your own work
   - ❑ Editing the work of others
   - ❑ Group or task meetings
   - ❑ Oral presentations
   - ❑ Managing people
   - ❑ Budgeting
   - ❑ Other

7. What types of materials do you produce? Choose all that apply.
   - ❑ Training or user manuals
   - ❑ Desktop publishing
   - ❑ Web publishing
   - ❑ Procedures
   - ❑ Proposals
   - ❑ Brochures, newsletters, marketing material
   - ❑ Other

8. Were specific computer skills or software competencies required as a condition of your employment?
   - ○ Yes
   - ○ No

9. How would you rate the following skills for technical communicators?

	Very Important	Important	Of Less Importance
Specific computer skills	☐	☐	☐
General computer skills	☐	☐	☐
Writing and Editing skills	☐	☐	☐
Managerial skills	☐	☐	☐
Social interaction skills	☐	☐	☐
Communication skills	☐	☐	☐
Teamwork skills	☐	☐	☐
Presentation skills	☐	☐	☐
Product knowledge	☐	☐	☐

10. Is there another skill not listed that is important for your particular job function? If so, please type what that skill is.

_____

_____

_____

11. In your opinion, what social skills do technical communicators need on the job?

_____

_____

_____

12. What is the highest level of education that you have completed?

- O Doctorate
- O Master's Degree
- O Bachelor's Degree
- O 2 year Associate Degree
- O High School Diploma

13. Is your degree in Technical Communication?

- O Yes
- O No

14. If not, what was your major?

_____

_____

_____

15. What skills do you wish you would have developed before you began your current employment?

_____

_____

_____

16. May I include your name and email address on a separate list of technical communicators in the Knoxville-Oak Ridge area?

- O Yes
- O No

17. For Pilot Survey Participants: What suggestions or comments do you have about this survey? Thanks for your help!

_____

_____

_____

APPENDIX C

Introductory Survey Letter

Dear Technical Communicator,

I am a graduate student at the University of Tennessee who is working on my Master of Arts in English with an emphasis in Technical Communication. I am conducting a survey that will become the basis for my thesis, entitled *Employment Opportunities for Technical Communicators in East Tennessee, 2001.*

By completing the attached survey instrument, you will help me identify the companies that hire technical communicators in our area. You will also help me to define what technical communicators do in their jobs, as well as identify what skills are necessary to performing those tasks.

I would like to list your employer with those companies that hire technical communicators. Please note that while it would be difficult to keep an e-mail response anonymous, I will not be associating your name with your response in any way. I will only be looking at the combined answers from all respondents to make my evaluations. I will be the only person with access to the individual responses. Only the overall statistical results of the research will be used for the study.

Your participation in this study is voluntary; the return of the completed survey will serve as your consent to participate. If you have questions or concerns, you may contact me at kdowning@utk.edu, or (865) 481-3112. You

may also contact the Office of Research at the University of Tennessee at (865) 974-3466.

The survey takes only an average of five minutes to fill out. Click on the link below, fill out the form by typing in answers or by selecting the appropriate boxes and then click "Submit."

Thank you so much for your assistance.

Sincerely,

Karen Downing

University of Tennessee

APPENDIX D

E-mail Survey

1. For whom do you work? (Please include address and phone number if possible.)

_____

_____

_____

2. What kind of company is your employer?
   - O Computer Software Development
   - O Computer Hardware Development
   - O Scientific or Technological
   - O Waste Management or Removal
   - O Manufacturing (other than computer hardware)
   - O Medical or Pharmaceutical
   - O Aerospace or Aircraft Research or Manufacturing
   - O Other

3. How long have you worked for your employer?
   - O 6 months or less
   - O 7 months to 2 years
   - O 3 to 5 years
   - O 6 to 10 years
   - O Over 10 years

4. How would you classify your position?
   - O Salaried, full time, with full benefits
   - O Salaried, full time, with limited or no benefits
   - O Weekly, full time, with full benefits
   - O Weekly, part time, with full benefits
   - O Weekly, part time, with limited or no benefits
   - O Hourly wage, full time
   - O Hourly wage, part time
   - O Contract or Consultant
   - O Self-employed
   - O Other

5. What is your job title?

- ○ Technical Writer
- ○ Technical Editor
- ○ Technical Communicator
- ○ Documentation Manager or Specialist
- ○ Information Manager
- ○ Web Designer (or Writer; or Master)
- ○ Other

6. What tasks occupy your workday? Choose all that apply.

- ❑ Writing
- ❑ Editing your own work
- ❑ Editing the work of others
- ❑ Group or task meetings
- ❑ Oral presentations
- ❑ Managing people
- ❑ Budgeting
- ❑ Web design
- ❑ Web publishing
- ❑ Desktop publishing
- ❑ Making production decisions
- ❑ Authoring on-line help
- ❑ Producing graphics
- ❑ Developing multimedia applications
- ❑ Mentoring
- ❑ Other

7. What types of materials do you produce? Choose all that apply.

- ❑ Training or user manuals
- ❑ Web site/pages
- ❑ Web documents
- ❑ On-line help
- ❑ Multimedia applications
- ❑ Graphics
- ❑ Procedures
- ❑ Proposals
- ❑ Brochures, newsletters, marketing material
- ❑ Other

8. Were specific computer skills or software competencies required as a condition of your employment?

- ○ Yes
- ○ No

9. How would you rate the following skills for technical communicators?

	Very Important	Important	Of Less Importance
Specific computer skills	O	O	O
General computer skills	O	O	O
Writing and Editing skills	O	O	O
Managerial skills	O	O	O
Social interaction skills	O	O	O
Communication skills	O	O	O
Teamwork skills	O	O	O
Presentation skills	O	O	O
Product knowledge	O	O	O

10. Is there another skill not listed that is important for your particular job function? If so, please type what that skill is.

_____

_____

_____

11. In your opinion, what social skills do technical communicators need on the job?

_____

_____

_____

12. What is the highest level of education that you have completed?

- O Doctorate
- O Master's Degree
- O Bachelor's Degree
- O 2 year Associate Degree
- O High School Diploma

13. Is your degree in Technical Communication?

- O Yes
- O No

14. If not, what was your major?

_____

_____

_____

15. What skills do you wish you would have developed before you began your current employment?

_____

_____

APPENDIX E

Reminder Letter

The Dear Technical Communicator,

A few days ago, I sent you a survey of technical communicators in the Knoxville-Oak Ridge area. If you completed the survey, I thank you very much for your help. If you did not get a chance to complete the survey and send it back, I have attached the original letter and survey. If you would take a few moments to complete the survey and send it back, I would be very appreciative. Your input means a great deal to the work that I am doing.

Thank you very much.

Sincerely,

Karen Downing

APPENDIX F

Companies That Employ Technical Communicators (45)

Access Systems, Inc.
9724 Kingston Pike, #702
Knoxville, TN 37922
219-9112
Description: Information technology, accounting, human resources, and networking services.
Comments: Access Systems will be looking for a full-time technical writer soon.

AniMEDIA, Inc.
11736 North Williamsburg Drive
Knoxville, TN 37922
966-8868
Description: Audio/Video Multimedia and Graphic Art and Design/CADCAM
Technical Communicators: 1
Comments: The technical communicator develops content for a multimedia web site.

Aspen Systems Corp
573 Oak Ridge Turnpike, #205
Oak Ridge, TN 37830
482-2721
Description: Contract work for the laboratory that is energy-efficiency related.
Employees: 3
Technical Communicators: 1
Comments: The technical writer produces documents about case studies in energy efficiency designed to convince organizations to save energy.

Barber and McMurry, Inc.
623 Lindsay Place
Knoxville, TN 37919
546-7441
Description: Architectural planners and consultants.
Employees: 32
Technical Communicators: 1
Comments: The technical communicator writes specifications and manuals for construction projects.

Bechtel National Inc.
100 Union Valley Road
Oak Ridge, TN 37830
220-2000
Description: Services for the design, engineering, procurement, and construction of all types of facilities in the nuclear fuel cycle, decontamination of nuclear facilities, and toxic or hazardous chemical facilities.
Employees: 200
Technical communicators: 30
Year Started: Oak Ridge office, 1981
Comments: The company has between 8 and 10 technical editors at any time. They fall under the administrative section of the company and are assigned to different projects.

BitWise, Inc.
9051 Executive Park Drive, Suite 200
Knoxville, TN 37923-4642
292-1000
Fax: 292-1001
Employees: 4
Technical Communicators: 1
Description: Graphic Art and Design/CADCAM, Network Design and development, software design and development, systems integration, and telecommunication.

BWXT Y-12
P.O. Box 2009
Oak Ridge, TN 37831
574-2166
Technical Communicators: 4
Comments: I was unable to contact this office by phone, but through other technical communicators, I received responses to my e-mail survey from technical communicators at BWXT.

CDI
710 S. Illinois Avenue, Suite A-103
Oak Ridge, TN 37830
483-3131
Description: Offers search and recruitment, staffing, outsourcing and engineering services. Serves the Department of Energy and smaller software companies.
Employees: 700 (company-wide)
Technical Communicators: 10
Year Started: 1979 (in Oak Ridge)
Comments: There are 10 technical writer/editors on staff.

CDM (Camp Dresser and McKee) Federal Programs Corp.
101 Rutgers, Suite 202
Oak Ridge, TN 37830
482-1065
Description: Environmental consulting
Employees: 25
Technical Communicators: 5
Year Started: 1988
Comments: One technical editor as needed, others are technical writers.

CH2M Hill
599 Oak Ridge Turnpike
Oak Ridge, TN 37830
483-9032
Description: The company is working with waste management. It also subcontracts to Bechtel National, Inc., at the Oak Ridge National Laboratory.
Employees: 65
Technical Communicators: 1
Year Started: 1986
Comments: One technical editor

CTI /Siemens Gammasonics, Inc.
810 Innovation Drive
Knoxville, TN 37932
218-2000
Description: Manufacturing, design, and research and development in positron emission tomagraphy.
Employees: 520
Technical Communicators: 3
Year Started: 1983
Comments: Siemens and CTI are a joint venture. The technical writers produce manuals for the medical equipment that they manufacture.

Computational Systems, Inc.
835 Innovation Drive
Knoxville, TN 37932
675-2110
Description: Manufacturer of microprocessor-based instrumentation and software for vibration analysis.
Employees: 381
Technical Communicators: 4
Year Started: 1984
Comments: This company promotes technical writers from their technical support team. When they hire, they look for experience in writing technical manuals for software development. They often call their writers "Media Developers" because they write, desktop publish, and know software.

Data Research and Applications (DRA)
412 Cedar Bluff Road, #200
Knoxville, TN 37923
690-1345
Description: Development and support of software and hardware for Stratus and IBM System 88 computers.
Employees: 20
Technical Communicators: 2
Comments: The technical writers produce manuals, system administrator manuals, web sites, product briefs, and presentations.

DreamLogik
313 Oak Ridge Turnpike, Suite A
Oak Ridge, TN 37830
457-1032
Description: A marketing services company that develops multimedia, graphic art, public relations, publishing and printing, and telecommunications for area firms.
Employees: 10
Technical Communicators: 1
Comments: The technical writer produces employee manuals and product descriptions.

Environmental Systems/ RISC
200 Tech Center Drive
Knoxville, TN 37912
689-1395
Description: Chemical and waste management consulting company.
Employees: 200
Year Started: 1969
Technical Writers 3
Comments: The technical communicator edits engineering materials.

Infinite Options, Inc.
2019 Lovell Road
Knoxville, TN 37932
539-9977
Description: Optical laser and school administrative software development.
Technical communicators: Will hire one in a few months.
Comments: The technical communicator will produce technical manuals for software.

Information International Associates, Inc.
122 South Jefferson Circle
P.O. Box 4219
Oak Ridge, TN 37831-4219
481-0388
Description: Helps government and industrial clients manage information as a strategic resource.
Employees: 20 full time, 50-75 part time
Technical Communicator: 1
Comments: The technical communicator functions as an information scientist and document specialist.

International Technology Corporation
312 Directors Drive
Knoxville, TN 37923
690-3211
Description: Analytical testing services, which include collection of samples, response to emergency spill situations, hazardous waste cleanup, and the availability of a mobile analytical laboratory.
Employees: 400
Technical Communicators: 6
Year Started: 1968
Comments: There are three technical editors in the proposal group, two in the editing group, who coordinate proposal efforts, and one Management Information Specialist, who documents software.

Jacobs Engineering, Inc.
Broadway Ave.
Oak Ridge, TN 37830
220-4800
Description: Engineering consulting.
Employees: 470
Technical Writers: 1

Jenzabar
900 Hill Avenue, #205
Knoxville, TN 37915
523-4477, 523-9506
Description: Develops educational software.
Employees: 22
Technical Communicators: 6
Year Started: 1980
Comments: The technical writers produce documentation for educational software.

Kaatz, Binkley, Jones, and Morris Architects, Inc.
2128 Clinch Avenue
Knoxville, TN 37916
637-4156
Description: Architectural services.
Technical writer: 1
Comments: The technical communicator writes architectural specifications.

Oak Ridge Associated Universities (Tech 2020)
Badger Avenue
Oak Ridge, TN 37831
576-3300
Description: A non-profit association of more than 50 colleges and universities acting as prime contractor for research, training, education, and information activities.
Employees: 613
Technical Communicators: 5
Comments: There are 5 writer/editors who work in the communication, printing and design department. They produce press releases, company newsletters and documents for publication.

Pacific Western Technologies
575 Oak Ridge Turnpike, Suite B-4
Oak Ridge, TN 37830
483-0554
Description: Provides environmental engineering, information management, technical, and administrative services.
Technical Communicators: 3
Comments: The technical communicators help with quality assurance and health and safety documents.

PerkinElmer
100 Midland Road
Oak Ridge, TN 37830
482-4411
Description: Produces nuclear radiation detectors and associated electronic processing instrumentation.
Employees: 500
Technical Communicators: 1
Year Started: 1960
Comments: One technical editor.

PrSM Corporation
2210 Award Winning Way
Knoxville, TN 37932
693-7776
Description: Safety and health, regulatory compliance and training.
Comments: Technical writers perform technical editing of documents on contract, and sometimes on a full time employee basis.

SNMP Research International
3001 Kimberlin Heights Road
Knoxville, TN 37920-9716
579-3311
Description: Produce network management software.
Employees: 50
Technical Communicators: 1

Science Applications International, Inc. (SAIC)
P. O. Box 2501
Oak Ridge, TN 37831
482-9031
Description: Engineering services, nuclear fuel cycle and waste storage analysis, technical information services, information systems, environmental analysis and modeling, program management, document preparation, and information technology
Employees: 1200
Technical Communicators: 75
Year Started: 1975
Comments: Included in the 75 technical communicators are technical writer/editors (10), graphic designers, document coordinators who see the document through the whole process of development, computer-aided design drawing (CAD), Global Positioning System (GPS) mapping, and public outreach, which produces community relations materials for their clients (brochures, newsletters, and posters).

TEC-COM
Fairview Technology Center
11020 Solway School Road
Knoxville, TN 37932
691-0176
Description: Specializes in technical communication through publications and exhibits.
Employees: 3
Technical Communicators: 3
Technology 2020
1020 Commerce Park Drive
Oak Ridge, TN 37830
220-2020
Description: Non-profit public/private partnership for building an Information Technology cluster in East Tennessee.
Technical Communicators: 1

TechScribes, Inc.
448 N. Cedar Bluff, Suite 362
Knoxville, TN 37923
(865) 692-9515

Tetra Tech
800 Oak Ridge Turnpike, Suite C-200
Oak Ridge, TN 37830
483-9900
Description: Environmental engineering and waste management services.
Employees: 70
Technical Communicators: 1
Comments: The technical communicator provides technical editing of company documents.

URS Corporation
120 S. Jefferson Circle
Oak Ridge, TN 37830
483-9870
Description: Environmental engineering services.
Employees: 107
Technical Communicators: 1 technical editor
Year Started: 1978
Comments: The engineers do their own writing, and the technical editor reviews their work for technical formatting.

UT Battelle
Oak Ridge National Laboratory
P.O. Box 2008
Oak Ridge, TN 37831-6499
220-5101
Description: There are 12 divisions, and each division manages projects that include environmental restoration, materials science, biological research, and environmental management. Divisions sometimes work together on projects, so the technical communicators are not assigned to any one division. If the project contains long term or sensitive material, then a staff technical writer works on it; if the material is short-term and non-sensitive in nature, then UT Battelle hires technical writers on a contract basis.
Employees: 1500 technical workers; 4000 workers total
Technical Communicators: 10 full time staff.
Year Started: 2000
Comments: Some full time, some contract technical communicators.

APPENDIX G

Companies That Employ Technical Communicators on Contract

Advanced Integrated Management Systems
702 S. Illinois Avenue, Suite B203
Oak Ridge, TN 37830
482-9879
Description: Nuclear and environmental Services
Comments: Technical communicators are hired to produce documents related to the nuclear industry.

American Magnetics, Inc.
112 Flint Road
Oak Ridge, TN 37830
482-1056
Description: Superconducting magnets and cryogenic instrumentation.
Employees: 50
Technical Writers: 1
Comments: They hire technical communicators on contract to write Quality Management and procedure documents.

American Technologies, Inc.
142 Fairbanks Road
Oak Ridge, TN 37830
481-5352
Description: Engineering, technical, and remediation services.

Cogema Technologies, Inc.
687 Emory Valley Rd., Suite A
Oak Ridge, TN 37830
425-0551
Description: Waste and cylinder management and conversion.
Comments: Technical writers are hired to write proposals, procedures, and startup projects.

DJE & Associates
2009 Duck Cove Dr.
Knoxville, TN 37922
675-0354
Description: Proposal consulting, writing, presenting, and training.
Comments: Technical communicators are hired to write proposals.

DPRA, Inc.
151 Lafayette Drive
Oak Ridge, TN 37830
482-0400
Description: Helps firms with regulatory compliance, management information systems, and cost engineering.

Earth Technology Corp.
673 Emory Valley Road
Oak Ridge, TN 37830
483-9404
Description: Environmental and waste management consulting.
Employees: Cycles from 5-36, depending on the contracts.
Year Started: 1987
Comments: Hires technical editors on contract as needed.

Entech, Inc.
574-A Oak Ridge Turnpike
Oak Ridge, TN 37830
481-3231
Description: Architectural engineering design and environmental engineering.
Comments: They occasionally hire technical writers to produce job plans, Quality Assurance plans, and procedures.

Foster Wheeler Environmental
111 Union Valley Road
Oak Ridge, TN 37830
483-8622
Description: Provides general design and field support for the Watts Bar Nuclear Plant.
Employees: 70
Year Started: 1987
Comments: This firm hires one technical writer as needed.

Galbraith Laboratories, Inc.
2323 Sycamore Drive
Knoxville, TN 37921
546-1335
Description: Products and services in analytical testing of organic materials, wastewater, and metal.
Employees: 70
Year Started: 1950
Comments: This company hires technical communicators on a per project basis as temporary employees.

H & R Technical Associates
151 Lafayette Drive
Oak Ridge, TN 37830
483-0248
Description: Safety and systems analyses; nuclear safety analyses.
Employees: 15
Year Started: 1981
Comments: This company hires technical communicators on a per project basis as temporary employees.

Hampton-Tilley Associates, Inc.
111 Center Park Drive, Suite 100
Knoxville, TN 37922
769-0420
Description: Software design and systems integration.

Haselwood Enterprises, Inc.
1009 Commerce Park Dr., Suite 300A
Oak Ridge, TN 37830
483-7007
Description: Engineering technology and information services.
Comments: Two contract technical communicators write proposals.

Industrial Instruments, Inc.
379 Warehouse Road
Oak Ridge, TN 37830
483-6498
Description: Markets and manufactures quality control instruments for the electroplating industry.

MK Technologies Corporation
P.O. Box 30197
Knoxville, TN 37930-0197
531-0434
Description: Software development and systems analysts.
Comments: Depending on the contract, most technical writers produce quality management documents.

MS Technology, Inc.
118 Ridgeway Center
Oak Ridge, TN 37830
483-8095
Description: Offers information management services and facility engineering and construction project management.

Navarro Research and Engineering, Inc.
685 Emory Valley Road
Oak Ridge, TN 37830
220-9650
Employees: 5
Description: Designs Internet applications, develops software, and performs systems integration.
Comments: Most technical communicators are hired to write proposals.

Ntown Communications, Inc.
300 South Gay Street
Knoxville, TN 37902-1101
293-7000
Description: Provides a Web-based solution for localized Internet advertising.
Comments: Technical writers are hired to help write business plans for clients.

On-Site/Aerotech
8920 Executive Park Drive, Suite F-150
Knoxville, TN 37923
769-2900
Description: Technical contracting and staffing company that offers full time job placement, contract to hire arrangements, or contract only work for technical communicators.

PrSM Corporation
2210 Award Winning Way
Knoxville, TN 37932
693-7776
Description: Safety and health, regulatory compliance and training.
Comments: Technical writers perform technical editing of documents on contract, and sometimes on a full time employee basis.

Pro2Serve Professional Project Services, Inc.
1060 Commerce Park Drive, Suite 400
Oak Ridge, TN 37830
483-2030
Description: Offers management and consulting services to high tech companies.

Q Systems, Inc.
105 Mitchell Road, Suite 200
Oak Ridge, TN 37830
220-0300
Description: Systems engineering services
Comments: Technical writers are hired to develop proposals.

Technology for Energy Corp. (TEC)
10737 Lexington Drive
Knoxville, TN 37932
966-5856
Description: Supplier of high-tech engineering products and services for the energy production industry.
Employees: 45
Year Started: 1975
Comments: Employs technical writers on an as-needed, contract basis.

Townview Learning Center
320 Hall of Fame Drive
Knoxville, TN 37915
523-9309
Description: Community Center providing free computer training and unlimited computer use, Internet connections, job search assistance, and basic education.
Comments: Employs one technical writer on contract to write grants.

UT Battelle
Oak Ridge National Laboratory
P.O. Box 2008
Oak Ridge, TN 37831-6499
220-5101
Description: There are 12 divisions, and each division manages projects that include environmental restoration, materials science, biological research, and environmental management. Divisions sometimes work together on projects, so the technical communicators are not assigned to only one division. If the project contains long term or sensitive material, then a staff technical writer works on it; if the material is short-term and non-sensitive in nature, then UT Battelle hires technical writers on a contract basis.
Employees: 1500 technical workers; 4000 workers total
Technical Communicators: 10 full time staff.
Year Started: 2000
Comments: Some full time, some contract technical communicators.

Tennessee Tools, Inc.
741 Emory Valley Road
Oak Ridge, TN 37830
482-2700
Employees: 85
Description: Produce automotive tools and parts.
Comments: Contract technical writers produce policies and procedures.

WebCentric Development Group
8373 Kingston Pike, Suite 7000
Knoxville, TN 37919
692-5425
Description: Computer training and education.
Comments: Hires technical writers to conduct scientific research for web sites.

Zellweger Uster, Inc.
456 Troy Circle
Knoxville, TN 37919
588-9716
Description: Manufactures instruments for the textile industry.
Employees: 94
Year Started: 1949
Comments: They hire 2 technical writers on a contract basis; one is from an employment agency, and one is self-employed. Both write manuals for their products.

APPENDIX H

Companies That Staff or Place Technical Communicators (8)

American Technical Associates
525 Bearden Park Circle
Knoxville, TN 37919
588-5751
Description: Supplies technical specialists, including technical writers.

ITR
9111 Cross Park Drive, Suite D-200
Knoxville, TN 37923
470-4245
Description: Provides information/technology staffing for East Tennessee.

Kelly Services, Inc.
308 N. Peters Road, Suite 150
Knoxville, TN 37922
691-5552
Description: Temporary help agency that has placed technical writers in this area. Applicants should e-mail their resumes to ks5616@kellyservices.com.

Manpower Temporary Services
269 Cusick Road, Suite E
Alcoa, TN 37701
(865) 977-0472
Description: Their technical placement unit for the Knoxville area is actually located at their Alcoa office. Applicants should e-mail their resumes to knoxville.tn-professional@na.manpower.com.

Randstad NA
1151 Oak Ridge Turnpike, Manhattan Place
Oak Ridge, TN 37830
483-3864
Description: Has been able to place technical writers in contract positions.

RHI Consulting
1111 Northshore Drive, Suite N525
Knoxville, TN 37919
584-6700
Description: Can place technical writers and editors.

Staff I.T.
1020 Commerce Park Drive
Oak Ridge, TN 37830
425-0405
Description: Have placed four technical writers recently. Most of their placements are on a contract basis.

Westaff Technical Services
706 South Illinois Avenue, Suite D-105
Oak Ridge, TN 37830
482-8222

APPENDIX I

Companies That Do Not Employ Technical Communicators (220)

AMEC
725 Pellissippi Parkway
Knoxville, TN 37933-0879
687-7737
Description: Consulting and engineering firm offering environmental and technical energy services.
Year Started: 1954
Comments: Engineers who work for AMEC do their own writing.

AVISCO, Inc.
6621 Wilbanks Road
Knoxville, TN 37912
689-6383
Description: Remedial construction, demolition, and vertical barriers.

Access America
138 Fairbanks Road
Oak Ridge, TN 37830
482-2140
Description: Telecommunications services.

Ackermann Public Relations and Marketing
10305 Dutchtown Road, Suite 101
Knoxville, TN 37932
584-0550
Description: Public relations and marketing.
Comments: Writers produce advertising copy--no technical work.

Acraloc Corp.
113 Flint Road
Oak Ridge, TN 37830
483-1368
Description: Manufacturer of food processing equipment.

Adams, Craft, Herz, Walker
P.O. Box 1114
Oak Ridge, TN 37831-3114
482-4451
Description: Architecture, surveying, and engineering services.
Comments: The marketing manager writes all the required documents.

Advanced Technologies Systems
P.O. Box 22668
Knoxville, TN 37933
691-3668
Description: Environmental and hydrochemical engineering services.

Alexander and Associates Co.
307 New York Avenue
Oak Ridge, TN 37830
483-3314
Description: Engineering design and drafting for customized machinery.

Alignment Engineering Company
6000 Industrial Heights Drive
Knoxville, TN 37909
588-6551
Description: Tool and die shop.

Allen and Hoshall, Inc.
9041 Executive Park Drive
Knoxville, TN 37923
693-7881
Description: Environmental engineering services.
Comments: Engineers do the writing.

Allied Industrial Equipment
1640 Island Home Avenue
Knoxville, TN 37920
573-0995
Description: Industrial machinery and equipment.

AllMeds, Inc.
151 Lafayette Drive, Suite 401
Oak Ridge, TN 37830
482-1999
Description: Consulting in hardware/software integration and systems development.

Aluminum Company of America (ALCOA)
1250 Riverview Tower
Knoxville, TN 37902
594-4700
Description: Aluminum products.
Comments: No writers at this office.

American Aquatics
103-A Valley Court
Oak Ridge, TN 37830
483-0600
Description: Benthic, fisheries, and water quality studies.

American Auto and Machine
3925 Papermill Road
Knoxville, TN 37909
777-9400
Description: Repairs and rebuilds boat and automotive motors.

American Limestone, Inc.
2209 Blount Ave.
Knoxville, TN 37920
573-4501
Description: Supplier of crushed and broken limestone.

Analysis and Measurement Services
9111 Cross Park Drive
Knoxville, TN 37923
691-1756
Description: Field or laboratory qualifications testing for instruments, including nuclear power systems.

Android Networks
P.O. Box 27270
Knoxville, TN 37927
219-0719
Description: Software design and development.

Applied Computing Technology, Inc.
9051 Executive Park Drive, Suite 604
Knoxville, TN 37923
694-9099
Description: Hardware design, software design and development, and systems integration.
Comments: Engineers do all of the technical writing.

Aqua-Chem, Inc.
3001 John Sevier Hwy, SE
Knoxville, TN 37914
544-2065
Description: Water purification systems manufacturing.

Arcadis, Geraghty and Miller, Inc.
255 S. Tulane Avenue
Oak Ridge, TN 37830
481-3000
Description: Environmental consulting.
Comments: Geologists and engineers do the technical writing.

Arendt Associates, Inc., John W.
109 Caldwell Drive
Oak Ridge, TN 37830
483-1401
Description: Engineering and management consulting.

Atom Sciences, Inc.
114 Ridgeway Center
Oak Ridge, TN 37830
483-1113
Description: Trace element analysis, analytical measurement services, and contract research and development.

BAT Associates
255 S. Tulane Ave.
Oak Ridge, TN 37830
481-8105
Description: Engineering consulting.
Comments: Engineers do all of the technical writing.

Baer Resources
832 Crest Forest Road
Knoxville, TN 37923
531-9527
Description: Management consulting, waste management, and training.

BellSouth
620 Market Street, Suite 230
Knoxville, TN 37922
594-3000
Description: Telecommunication, Internet Service Provider, and web design and housing.
Comments: All of the technical writers are at the corporate office in Nashville.

Bridgeman Brookshire Communications & Graphics
P.O. Box 6702
232 Gum Hollow Road
Oak Ridge, TN 37831-6702
483-3295
Description: Marketing, public relations, publishing, and printing.

Briggs Division of JPI Plumbing Products
5040 South National Drive
Knoxville, TN 37914
523-1161
Description: Manufacturer of plumbing products and supplies.

C & A Control Systems, Inc.
7117 Halls Commercial Park Drive
Knoxville, TN 37918
922-2148
Description: Produces communications equipment (excluding broadcast).

CES Corporation
6529 Clinton Hwy.
Knoxville, TN 37912
938-2088
Description: Sales and service of electronic equipment.

CLC Corporation
9111 Cross Park Drive
Knoxville, TN 37923
691-1515
Description: Computer training and education.

CLC IT Solutions
9111 Cross Park Drive
Knoxville, TN 37923
692-0127
Description: Network and software design and development.

CROET
107 Lea Way Drive
Oak Ridge, TN 37830
482-9890
Description: Community development.
Comments: Stands for Community Reuse Organization of East Tennessee.

Campbell and Associates, Robert G.
Taggert Lane
Knoxville, TN 37912
947-5996
Description: Engineering services.
Comments: Engineers write their own specifications.

Cherokee Porcelain Enamel Corp.
5300 Homberg Drive
Knoxville, TN 37919
637-7833
Description: Produces ceramics for chemical and technical industries.

Commodore Advanced Sciences, Inc.
165 Mitchell Road
Oak Ridge, TN 37830
483-1274
Description: Civil and geotechnical engineering and hazardous waste management services.
Comments: Technical writing for the company is now done at another location.

Compaq Computer Corporation
11130 Kingston Pike, Suite #1-340
Knoxville, TN 37922
777-0765
Description: Hardware and software vendor.
Comments: Technical writing is done at their corporate office in Philadelphia.

Computer Products, Inc.
2100 Duck Cove Lane
Knoxville TN 37922
531-4646
Description: Computer-based system design and integration.

Computer Solutions of Tennessee
301-C Oak Ridge Turnpike
Oak Ridge, TN 37830
483-4373
Description: Microcomputer sales and support.

Computer Systems & Training (CST)
116 East Division Road
Oak Ridge, TN 37830
425-9800
Description: Computer training and education, hardware and software vendor, systems integration, and telecommunications.

Comstock, Inc.
1005 Alvin Weinberg Drive
Bethel Valley Industrial Park
Oak Ridge, TN 37830
483-7690
Description: Manufacturer of scientific instruments used in physical and chemical analyses.

Concoal Corporation
4710 Papermill Road
Knoxville, TN 37909
588-6233
Description: Supplier of coal and other minerals and ores.

Contemporary Technologies, Inc.
17 Presidential Drive
Oak Ridge, TN 37830
481-0110
Description: Engineers, markets, monitors, and controls WATT (Power) sensors.

Control Center, Inc.
3517 Sutherland Avenue
Knoxville, TN 37939
524-1112
Description: Manufacturer's representative and distributor of instrumentation and process controls.

Control Technology, Inc.
5734 Middlebrook Pike
Knoxville, TN 37921
584-0440
Description: Back-up support units for programmable controllers.

Coors Technical Ceramics, Inc.
1100 Commerce Park Drive
Oak Ridge, TN 37830
481-8021
Description: Manufactures technical ceramics for laser, semiconductor equipment, prototype and research ceramics industries.
Corporate Interiors, Inc.
318 West Depot Avenue
Knoxville, TN 37917
637-3214
Description: Interior design and furnishings for businesses.

Coulter and Justus
700 Riverview Towers
900 South Gay Street
Knoxville, TN 37902
637-4161
Description: Accounting, banking, and financial services.

Covenant Health (Fort Sanders Regional Medical Center, Thompson Cancer Survival Center, Methodist Medical Center)
1901 Clinch Avenue
Knoxville, TN 37916
546-2811
Description: Full service hospital.

Cross Technologies, Inc.
10202 Technology Drive
Knoxville, TN 37932
966-0969
Description: Manufacturer's representative for automatic control equipment for industrial applications.
Comments: Technical writing is done in their corporate offices in North Carolina.

Crossridge Precision
121 Flint Road
Oak Ridge, TN 37830
482-1704
Description: Precision machine shop specializing in high-technology applications.

Cryomagnetics, Inc.
782 Emory Valley Road
Oak Ridge, TN 37831
482-9551
Description: Design and fabrication of superconducting magnets and systems for physical science research.
Comments: Engineers write their own specifications.

Cummins Cumberland, Inc.
1211 Ault Road
Knoxville, TN 37914
523-0446
Description: Industrial machinery and equipment.

Dataman Information Services
3502 Overlook Circle
Knoxville, TN 37909
588-1863
Description: IBM network distributors that primarily sell printers.

Delta M Corporation
525-B Warehouse Road
Oak Ridge, TN 37830
483-1569
Description: Manufactures industrial-process-monitoring instrumentation for temperature, level, and flow.
Comments: Engineers write their own specifications.

Digital A. V.
9715 Truckers Lane
Knoxville, TN 37922
671-7500
Description: Interactive video research and development organization concentrating in training applications for industry and institutions.
Comments: Engineers write all of the technical documents.

Digital Connections, Inc.
9111 Cross Park Drive, D-200
Knoxville, TN 37923
470-4211
Description: Computer security services, hardware and software vendor, network design and development, systems integration, and telecommunications.

Digital Innovations, Inc.
725 Pellissippi Parkway, Suite 122
Knoxville, TN 37932-3300
671-3624
Description: Computer security services and software development.

Dunn and Associates, Lamar
6408 Papermill Road
Knoxville, TN 37919
573-7672
Description: Engineering consulting.
Comments: Engineers write their own specifications.

Duke Engineering and Services
151 Lafayette Drive, Suite 210
Oak Ridge, TN 37830
482-1355
Description: Architectural engineering and nuclear and energy services.
Comments: Technical writing is done at the corporate office in Charlotte.

Duratek, Inc.
P.O. Box 2530
1560 Bearcreek Road
Oak Ridge, TN 37830
481-0222
Description: Processes low-level radioactive waste.
Employees: 400
Comments: The engineers do their own technical writing.

ENPRO
11613 Channing Way
Knoxville, TN 37922
671-3690
Description: Environmental services, project management, and information systems.

ETE Consulting Engineering, Inc.
P.O Box 3471
Oak Ridge, TN 37831
482-4053
Description: Civil Engineering surveying, health physics, and hazardous waste.

East Tennessee Appraisals Group
31 E. Tennessee Avenue
Oak Ridge, TN 37830
483-3539
Description: Appraises personal and commercial property.

East Tennessee Baptist Hospital
Blount Professional Building
Knoxville, TN 37920
632-5011
Description: Full service hospital
Employees: 1400
Year Started: 1983
Comments: The Quality Assurance staff does most of the technical writing.

East Tennessee Children's Hospital/Oak Ridge Pediatrics
2018 W. Clinch Avenue
Knoxville, TN 37916
546-7711
Description: Children's health services and hospital.
Employees: 650
Year Started: 1937

East Tennessee Economic Development Agency (ETEDA)
P.O. Box 23184
Knoxville, TN 37933-1184
694-6772
Description: Encourages high-technology economic development in Tennessee.

Eberline
601 Scarboro Road
Oak Ridge, TN 37830
481-0683
Description: Health physics services, repairs and calibrates nuclear detection instrumentation.

Emory Valley Center
715 Emory Valley Road
Oak Ridge, TN 37830
483-4385
Description: Shelter for handicapped adults.

Emory Valley Corporation
677 Emory Valley Road
Oak Ridge, TN 37830
482-2630
Description: Bulk mailing services.

Enco Materials, Inc.
4615 Coster Road
Knoxville, TN 37912
687-7220
Description: Metals manufacturing service center.
Comments: Manuals are produced at corporate office in Nashville.

Engineering Services Group
2916 Tazewell Pike
Knoxville, TN 37918
522-0393
Description: Engineering consulting.

EnSafe, Inc.
162-D Marketplace Blvd.
Knoxville, TN 37922
693-3623
Description: Hazardous waste and materials management.

Environmental Safety & Health, Inc.
10732 Dutchtown Road
Knoxville, TN 37932
671-2374
Description: OSHA training and regulatory compliance.

FBF Nuclear Containers
1201 Hilton Road
Middlebrook Industrial Park
Knoxville, TN 37921
584-1868
Description: Manufactures type A and B nuclear containers.
Comments: Follow specifications set out by the Nuclear Regulatory Commission.

FI-Shock, Inc.
5360 National Drive
Knoxville, TN 37921
524-7380
Description: Produces electric fence controllers.

Flynt Engineering
2125 University Avenue
Knoxville, TN 37921
546-5800
Description: Engineering services.

Focus Environmental
9050 Executive Park Drive
Knoxville, TN 37923
694-7517
Description: Environmental engineering consulting.
Comments: Engineers produce their own documentation.

Friedlander Center for Leadership Development
6025 Brookvale Lane, Suite 120
Knoxville, TN 37919-4031
588-1007
Description: Provides management consulting services.

Fulton Bellows
2318 Kingston Pike
Knoxville, TN 37919
546-0550
Description: Manufactures temperature and pressure controls.

GE Polymer Shapes
918 Katherine Avenue
Knoxville, TN 37927
637-1000
Description: Supplies structural sealants.

Global Access Resources
125 West Jackson Avenue, Suite 203
Knoxville, TN 37902
523-1101
Description: Business to business Internet service provider.

Go Train.net
525 Warehouse Road
Oak Ridge, TN 37830
560-0354
Description: Offers training and support for Internet companies.
Employees: 48
Year Started: 1981
Comments: They do not employ technical communicators now, but they would like to hire technical communicators sometime in the future.

Goal Line Environmental Technologies
11141 Outlet Drive
Knoxville, TN 37932
671-4045
Description: Manufacturer of catalytic abatement technologies for control of Nox, CO, and VOC's from gas turbines, industrial boilers, and internal combustion engines.

Graphic Creations, Inc.
1809 Lake Avenue
Knoxville, TN 37916
522-6221
Description: Digital duplication.

Harding ESE, Inc.
1400 Centerpoint Blvd., Suite 158
Knoxville, TN 37932
531-1922
Description: Environmental engineering and consulting services.

Hart Graphics
215 Center Park Drive, Suite 800-B
Knoxville, TN 37923
675-1600
Description: Graphic arts services.

Hewlett Packard Company
Executive Park Drive
Knoxville, TN 37932
670-4254
Description: Sales and service of Hewlett-Packard equipment.

Hi Pro
5049 S. National Drive
Knoxville, TN 37912
637-1711
Description: Manufactures skylights.

I & I Industrial Sales
120 Westlook Circle
Oak Ridge, TN 37830
483-8581
Description: Sales of corrosion-resistant coatings.
Comments: This is a two-person organization, and each person writes.

ICX Online, Inc.
P.O. Box 6229
704 Illinois Avenue, Suite 102
Oak Ridge, TN 37831-6229
291-4434
Description: Networking and telecommunications.
Comment: The corporate office in Florida hires technical writers.

ImTek, Inc.
P. O. Box 10346
Knoxville, TN 37939
521-0607
Description: Offers a small animal x-ray computed tomotography service.

iPIX
1009 Commerce Park Drive
Oak Ridge, TN 37830
482-3000
Description: Develops multimedia and photography for the Internet.
Comments: They do not employ a technical writer at present, but may in the future.

Industrial Ceramic Solutions
1010 Commerce Park Drive, Suite I
Oak Ridge, TN 37830
482-7552
Description: Manufactures ceramic air filtration systems.
Comments: The engineers do their own technical writing.

InfoTEK, Inc.
1600 Downtown West Blvd., Suite D
Knoxville, TN 37919
450-9696
Description: Specializes in e-business solutions including document imaging systems, network fax systems, auto data entry systems, network consulting and software training.

Instrument and Technical Systems, Inc. (ITS)
501 Lafayette Drive, #402
Oak Ridge, TN 37831
483-5715
Description: Manufacturer's representative and distributor for control systems.

Intec-Integrated Networking Technologies
6700 Baum Drive, Suite 22
Knoxville, TN, 37919
966-2001
Description: Designs telecommunications systems.

Interactive Communications, Inc.
7217 Westhampton Place
Knoxville, TN 37919
558-9865
Description: Management consulting services.

JCL Clinical Research Corporation
5433 Strawberry Plains Pike
Knoxville, TN 37914
546-0654
Description: Manufacturer of in-vitro laboratory devices and immune diagnostic test kits for use in hospital and research facilities.

J. P. Hogan and Company, Inc.
109 W. 5th Avenue
Knoxville, TN 37917
546-7661
Description: Advertising agency.

KMDS Technical Associates
1020 Commerce Park Drive, Suite I
Oak Ridge, TN 37830
482-5933
Description: No information available.

Kapline Enterprises, Inc.
4121 Guinn Road
Knoxville, TN 37931
927-3784
Description: Technical market research studies.
Employees: 1
Year Started: 1988
Comments: This is a single-person company.

Knox Porcelain Corporation
2706 Mynderse Avenue
Knoxville, TN 37921
523-8157
Description: Porcelain electrical products.
Employees: 92
Year Started: 1923
Comments: The manuals and technical materials are produced at their corporate office in Ohio.

Knoxville News-Sentinel
208 West Church Avenue
Knoxville, TN 37950-9038
342-6650
Description: Publishes a daily newspaper and also offers telecommunications.

Krauter Consulting
11001 Farragut Hills Blvd.
Knoxville, TN 37922
966-4508
Description: Program management and remedial construction.

Laboratory Balance and Microscope Service
203 Scenic Drive
Oak Ridge, TN 37830
483-9652
Description: Maintains and cares for balances and microscopes.

LakeShore Mental Health Institute
5608 Lyons View Drive
Knoxville, TN 37919
584-1561
Description: State mental health facility.
Employees: 700
Year Started: 1886

Laser Precise, Inc.
127 Perimeter Park, Suite D
Knoxville, TN 37922
531-8016
Description: Application of laser technology to cut steel and other metals.

Lattimore, Black, Morgan, and Cain of Knoxville
301 Gallaher View Road
Knoxville, TN 37919
694-4008
Description: Accounting and staffing services, along with systems integration.

Law Engineering Environmental Services, Inc.
1725 Louisville Drive
Knoxville, TN 37921
588-8544
Description: Engineering services.

Lawson Services
255 S. Tulane Ave.
Oak Ridge, TN 37830
481-0662
Description: Heating and air conditioning.

Learning Technology System, Inc.
2030 Falling Water Road, Suite 160
Knoxville, TN 37915-2508
560-0261
Description: Produces educational software.

Lockwood Greene Engineers, Inc.
No. 3 Main Street
Oak Ridge, TN 37831
220-4300
Description: Engineering design management, construction management, and architectural and engineering design services.
Employees: 383
Year Started: 1981
Comments: The company expects its engineers to do their own writing.

MachineXpert
618 South Gay Street, Suite 100
Knoxville, TN 37922
637-1760
Description: Supplies continuous monitoring systems for manufacturing operations.

Mack-Tech
1400 Centerpoint Blvd., Suite 158
Knoxville, TN 37932
531-1922
Description: Engineering consulting, construction, and wastewater treatment.

Magnatron, Inc.
316 Nancy Lynn Dr., Suite 17-B
Knoxville, TN 37919
769-2622
Description: Re-markets IBM products.

Manufacturing Sciences Corp.
804 Kerr Hollow Road
Oak Ridge, TN 37830
481-0455
Description: Creates products from depleted uranium, beryllium, and other specialty metals.

Martella Associates
502 Union Avenue
Knoxville, TN 37902
525-2556
Description: Architecture and interior design firm.

Materials Chemistry Laboratory, Inc.
East Tennessee Technological Park, Bldg. K-1006
2010 Highway 58, Suite 1000
Oak Ridge, TN 37830
576-4138
Description: MCL is an applied research laboratory specializing in materials characterization, waste treatability studies, industrial forensics, particulate speciation, and chemical process optimization.

McCampbell and Young
2021 Plaza Tower
Knoxville, TN 37929
637-1440
Description: Attorneys at law.

McClure Development
118 Durwood Road
Knoxville, TN 37922
693-3004
Description: Software development company.
Comments: This is a one-person company.

Med Images
9050 Executive Park Drive, #C-110
Knoxville, TN 37923
694-7501
Description: Provides full color digital documentation to the medical field.

MediaPulse, Inc.
704 South Illinois Avenue, Suite C-201
Oak Ridge, TN 37830
482-4455x28
Description: Develops, manages and maintains web site applications for corporations.
Comments: This is a small firm.

Metso Paper
2200 Sutherland Ave.
Knoxville, TN 37919
525-6990
Description: Engineering services.

Modine Manufacturing Co.
505 S. National Drive
Knoxville, TN 37914
546-5920
Description: Manufacturer of auto air conditioning condensers and evaporators.
Comments: Technical communicators are hired through their corporate office.

Mor-Flo Industries, Inc.
5300 National Drive
Knoxville, TN 37914
525-7733
Description: Metals manufacturing service center.

NUKEM Nuclear Technologies
800 Oak Ridge Turnpike, Suite C-103
Oak Ridge, TN 37830
482-6601
Description: Nuclear waste treatment/processing and waste treatment technologies.
Employees: 500
Comments: Technical writing is done at the corporate office in Columbia, SC.

NetAccess
8044 Ray Mears Boulevard, Suite 119
Knoxville, TN 37919
291-4426
Description: Internet service provider.

NetGain Corporation
9041 Executive Park Drive, Suite 113
Knoxville, TN 37923
546-7500
Description: Information systems consultants.

NetLearning, Inc.
16 Emory Place, Suite 301
Knoxville, TN 37917
251-4335X28
Description: Provides hospitals with learning systems to train employees.

NetStar Communications, Inc.
201C Center Park Drive, Suite 1170
Knoxville, TN 37922
675-4200
Description: Internet Service Provider.

Newfields
10207 Technology Drive
Knoxville, TN 37932
777-0275
Description: Natural attenuation and bioremediation.

Nexware Corporation
1625 Capitol Blvd.
Knoxville, TN 37931
546-9998
Description: Provides customized Internet applications.

Nuclear Lead Co., Inc.
P.O. Box 532
Oak Ridge, TN 37831-0532
483-8718
Description: Offers lead products and radiation shielding.

NucSafe
11020 Solway School Road, Suite 102
Knoxville, TN 37931
945-1223
Description: Manufactures radiation measurement systems for the nuclear safeguards industry.
Comments: Engineers do their own technical writing.

One Point Services, Inc.
830 Corridor Park Blvd., Suite 400
Knoxville, TN 37932
671-7811
Description: Provides enterprise computer systems and network integration, software support, and hardware administration.

Ordela, Inc.
139 Valley Court
Oak Ridge, TN 37830
483-8675
Description: Manufacturer of radiation detection instrumentation.

PEER Consultants
575 Oak Ridge Turnpike
Oak Ridge, TN 37830
483-9191 483-3191
Description: Environmental engineering and hazardous waste management.

Parsons
Oak Ridge Tech Center I
1055 Commerce Park Drive, Suite 200
Oak Ridge, TN 37830
482-1434
Description: Engineering consulting and construction services.
Comments: Engineers do their own technical writing.

Patent Plastics
638 Maryville Pike
Knoxville, TN 37920
573-5411
Description: Manufactures plastic products.

Pellissippi State Technical Community College
10915 Hardin Valley Road
P.O. Box 22990
Knoxville, TN 37933-0990
539-7198
Description: Pellissippi is a two-year community college that supports and develops career and technical degrees.

Peninsula Hospital
Jones Bend Road
Louisville, TN 37777
970-9800
Description: Psychiatric hospital.
Employees: 547
Year Started: 1972

Performance Development Corporation
109 Jefferson Avenue
Oak Ridge, TN 37830
482-9004
Description; Procedures and training for handling storage and shipping of high-level waste; also low-level waste quality assurance.
Employees: 55
Year Started: 1987
Comments: This company currently does not need a technical communicator, but would hire one on a permanent basis if needed.

Performance Pipe
10420 Lexington Drive
Knoxville, TN 37933
966-5822
Description: Produces plastic piping.

Personnel Technology Group, Inc.
P. O. Box 4128
Oak Ridge, TN 37830
481-0596
Description: Human resource counseling, training, and management.

Pinkerton Government Services, Inc.
673 Emory Valley Road
Oak Ridge, TN 37830
481-0041
Description: Security consultations and investigations.

Pratt Computing Technologies, Inc.
117 Huxley Road, Suite D
Knoxville, TN 37922
693-0900
Description: Hardware and software vendor

Precision Disc
5055 S. National Drive
Knoxville, TN 37914
525-1111
Description: Machine tool and die shop.

Precision Instruments, Inc.
1900 N. Winston Road
Knoxville, TN 37939
690-5608
Description: Design and manufacturing of scientific instruments for research.

Professional Temporary Services
5410 Kingston Pike
Knoxville, TN 37919
584-1333
Description: Temporary help agency.

Process Engineering Associates
174 Randolph Road
Oak Ridge, TN 37830
220-8722
Description: Process design, safety, and engineering, and environmental compliance.

Pugh & Company Consulting
315 North Cedar Bluff Road
Knoxville, TN 37923
769-9405
Description: Information technology consulting firm.

QualPro, Inc.
3117 Pellissippi Parkway
Knoxville, TN 37931
927-0491
Description: Consulting and seminars to help companies improve quality and competitive position.
Employees: 40
Year Started: 1982

Resource Technologies
130 Fairbanks Road
Oak Ridge, TN 37830
483-3777
Description: Asbestos and lead abatement and under/above ground storage tank removal.

Roane State Community College
333 Main Street, Suite 205
Oak Ridge, TN 37830
483-8453
Description: Offers a wide range of technical degrees and non-credit information technology courses.

Robert McCleod & Associates, Inc.
130 Timbercrest Drive
Oak Ridge, TN 37830
482-9385
Description: Hydrogeology, remedial design, and construction quality assurace.

Rohm and Haas, Inc.
730 Dale Avenue
Knoxville, TN 37921
521-8200
Description: Plastics materials and resins.

Rotocast Plastics of Tennessee, Inc.
5061 S. National Drive
Knoxville, TN 37914
522-9902
Description: Fabricates plastics and hazardous waste transportation containers.

SENES Oak Ridge, Inc.
102 Donner Drive
Oak Ridge, TN 37830
483-6111
Description: Risk and environmental assessment.

Safety and Ecology Corporation
2800 Solway Road
Knoxville, TN 37931
690-0501
Description: Radiological and industrial hygiene services.
Comments: Company experts do their own writing.

St. Mary's Health System
900 E. Oak Hill Avenue
Knoxville, TN 37917
545-8247
Description: Full service hospital.

Sarcon Microsystems, Inc.
725 Pellissippi Parkway, Suite 110
Knoxville, TN 37932-3300
966-3506x13
Description: Produces infrared imaging for industry.

Schaffer Engineering
P.O. Box 10686
Knoxville, TN 37939-0686
531-1010
Description: Microprocessor consulting, software, design and fabrication of electronics components.
Comments: Small company of two employees.

Schassner Technologies
201 Sherlake Drive
Knoxville, TN 37923
691-3878
Description: Manufactures filtration devices for work places.
Comments: Engineers do the technical writing.

Scripps Networks/ Home and Garden Television
9721 Sherrill Boulevard
Knoxville, TN 37932
560-3933
Description: Television program production.
Comments: Home and Garden employs screenwriters only.

Sea Ray Boats, Inc.
2600 Sea Ray Blvd.
Knoxville, TN 37914
522-4181
Description: Boat manufacturer
Employees: 1000
Year Started: 1978
Comments: All of the technical writing is done at their production plant in Florida.

Senior Flexonics
115 Franklin Road
Oak Ridge, TN 37830
483-7444
Description: Design and fabrication of industrial expansion joints.

Shelton Communications Group
777 North Fifth Avenue
Knoxville, TN 37913
524-8385
Description: Advertising and market planning.

Sims Corporation
2542 Choto Road
Knoxville, TN 37922
671-1000
Description: Marketing consultant and new venture development for technology companies.

Southern Freight Logistics
East Tennessee Technology Park
2010 Hwy 58, Suite 2117
Oak Ridge, TN 37830
241-4814
Description: Transportation, warehousing, and distribution.

StaffingSolutions
193 South Tulane Road
Oak Ridge, TN 37830
425-0506
Description: Staffing and placement services.
Comments: This company closed their technical placement division.

Summitec Corporation
665 Emory Valley Road
Oak Ridge, TN 37830
482-6460
Description: Information technology support services.

Sun Coal Co.
4711 Kingston Pike
Knoxville, TN 37939
558-0300
Description: Supplier of sub-bituminous coal and lignite.

Sword and Shield Enterprise Security, Inc.
10301-A Technology Drive
Knoxville, TN 37932
777-5500x503
Description: Specializes in computer network security.

Techmer PM Tennessee
1 Quality Circle
Oak Ridge, TN 37830
457-6700
Description: Manufacturer of custom colorants and additives for plastics.

Tele-Optics, Inc.
431 Park Village Drive, Suite K
Knoxville, TN 37923
692-1410
Description: Telecommunications, system integration, software, hardware and programming company.

Telephone and Data Systems, Inc.
725 Pellissippi Pkwy., Suite 230
Knoxville, TN 37932
966-4700
Description: Telephone service and sales.

Tennelec/Nucleus, Inc.
601 Oak Ridge Turnpike
Oak Ridge, TN 37831
220-6312
Description: Manufactures electronic instrumentation used in radiation detection.
Employees: 30
Year Started: 1960
Comments: Engineers produce their own documentation.

Tennessee Institute of Electronics
3203 Tazewell Pike
Knoxville, TN 37918
688-9422
Description: Post-secondary trade school that provides training in electronics and information technology.

Tennessee Tool
741 Emory Valley Road
Oak Ridge, TN 37830
483-6334
Description: Precision machining of production parts.

The EC Corporation
10511 Hardin Valley Road
Knoxville, TN 37932
693-9800
Description: Construction bidding.
Employees: 25
Year Started: 1979, has been in Knoxville since 1987
Comments: This company used to employ technical writers when it was involved in writing for government grants and contracts. EC Corporation no longer does such work, and therefore does not need technical writers.

The Transition Team
9111 Cross Park Drive
Knoxville, TN 37923
694-3848
Description: Human resources and outplacement for professionals.

Thermocopy of Tennessee
P.O. Box 10655
Knoxville, TN 37939
524-1124
Description: Sales and service of Minolta and Ricoh copiers and 3M audio-visual products, and supplies and service for all products.

Theta Technologies, Inc.
101 E. Tennessee Ave.
Oak Ridge, TN 37830
482-0056
Description: Perform engineering subcontracting, project management support.
Employees: 150 (Oak Ridge)
Year Started: 1990 (Oak Ridge)
Comments: For roughly five years, they have not needed the services of a technical writer.

Tice Engineering and Sales
1808 North Cherry Street
Knoxville, TN 37917
524-1070
Description: Sewing machine industry machinery.

Tombras Group
630 Concord Street
Knoxville, TN 37919
524-5376
Description: Advertising agency.
Employees: 65
Year Started: 1946
Comments: This company is strictly an advertising agency now. In the past, it developed promotions for technical companies, but no longer does so.

Ultra Tech Extrusions of Tennessee
300 Industrial Park Drive
Oak Ridge, TN 37830
426-2862
Description: Plastic extrusion.

University of Tennessee, Knoxville
113 Aconda Court
Knoxville, TN 37996-0612
974-6642 974-5151 Lori 974-2456 Compensation office
Description: Research university.
Employees: 4,147
Year Started: 1794
Comments: There is a designated job description of "technical writer" in the compensation office, but no one is currently employed under that title. Most of the technical writers are hired as part of research grants, which are difficult to track down within various departments.

U. S. Department of Energy
Office of Scientific and Technical Information
175 Oak Ridge Turnpike
Oak Ridge, TN 37830
576-8615
Description: Government agency responsible for overseeing the National Laboratories.
Comments: Each subcontractor hires its own staff.

U. S. Ecology
109 Flint Road
Oak Ridge, TN 37830
482-5532
Description: Decontamination services and recycling of nuclear components and materials.
Comments: One technical writer works for the corporate office in Boise, Idaho.

VWR Scientific
72 Mitchell Road
Oak Ridge, TN 37830
481-0874
Description: Sales and distribution of lab supplies and chemicals for research and development.

Vacuum Technologies
1003 Alvin Weinberg Drive
Oak Ridge, TN 37830
482-1608
Description: Design and consulting, vacuum technology, and leak detection.
Comments: Engineers do the technical writing.

Vinylex Corp.
2636 Byington-Solway Road
Knoxville, TN 37931
690-2211
Description: Plastics materials and resins.

Virtual Interactive Center
8044 Ray Mears Blvd., #108
Knoxville, TN 37919
470-7851
Description: Internet service provider, web design, networks, and e-commerce.

Vreeland Engineers
200 Daylight Bldg.
Knoxville, TN 37902
637-4451
Description: Engineering services.

Wagner CNC, Inc.
4610 Coster Road
Knoxville, TN 37912
573-7793
Description: Heavy industrial machinery.

Washington Group
9111 Cross Park Drive
Knoxville, TN 37923
690-8610
Description: Full service engineering and design, serving chemical process, steel and metals, and nuclear and fossil power generation industries.
Comments: Engineers write own specifications. Technical writers are hired in other company locations.
West, Welch, and Reed Engineers
5417 Ball Camp Pike
Knoxville, TN 37921
588-2431
Description: Engineering services.
Comments: Engineers write their own specifications using a program called Masterspec.

Wilbur Smith Associates
5401 Kingston Pike
Knoxville, TN
584-8584
Description: Engineering services.

Wilson, M. K.
P.O. Box 391
Oak Ridge, TN 37831-0391
482-9442
Description: Resell scientific and laboratory supplies to government and subcontractors.

Xerox Corp.
320 N. Cedar Bluff Road
Knoxville, TN 37923
690-4071
Description: Sales and service of Xerox equipment.

Yahsgs
8516 Oxford Drive
Knoxville, TN 37922
604-2626
Description: Information management, life cycle management, and strategic environmental management.

ZYP Coatings, Inc.
120 Valley Court
Oak Ridge, TN 37831
482-5717
Description: Specialty high-temperature coatings for research and development and industrial users.
Employees: 16
Year Started: 1982

APPENDIX J

Pilot Test Respondents' Employers

Campus Information Systems
The University of Tennessee
200 Lake Avenue
Knoxville, TN 37919

CTI /Siemens Gammasonics, Inc.
810 Innovation Drive
Knoxville, TN 37932
218-2000

IT Corporation
312 Directors Drive
Knoxville, TN 37923

Oak Ridge National Laboratory
PO Box 2009
Oak Ridge, TN 37831
574-2200

PAI Corporation
116 Milan Way
Oak Ridge, TN 37830
483-0666

The University of Tennessee Institute of Agriculture Marketing and Communications Services
PO Box 1071
Knoxville, TN 37901
974-7375

Science Applications International Corp.
PO 2501
Oak Ridge, TN 37831
481-4736

APPENDIX K

Businesses That Employ E-mail Respondents

Aspen Systems Corporation
575 Oak Ridge Turnpike
Oak Ridge, TN 37830
(865) 482-2721

Barber and McMurry, Inc.
623 Lindsay Place
Knoxville, TN 37919
546-7441

BWXT Y-12
P.O. Box 2009
Oak Ridge, TN 37831
574-2166

CDI Technical Services
700 South Illinois Ave., Suite A-103
Oak Ridge, TN 37830
800-783-7252

CH2M HILL
151 LaFayette Dr., Suite 110
Oak Ridge, TN 37830

CTI PET Systems, Inc.
810 Innovation Drive
Oak Ridge, TN 37932
(865) 218-2000

Data Research & Applications, Inc. (DRA)
9041 Executive Park Dr., Suite 200
Knoxville, TN 37923
(865) 690-1345

FORUM for Applied Research and Public Policy Energy, Environment, and Resources Center
The University of Tennessee

IT Corporation
312 Directors Drive
Knoxville, TN 37923
865-690-3211

Jenzabar-Knoxville (formerly Campus America)
900 Hill Avenue, Suite 205
Knoxville, TN 37915
865-523-9506

Pacific Western Technologies, Ltd. (PWT)
575 Oak Ridge Turnpike, Suite B-4
Oak Ridge, Tennessee
865-483-0554

Philips Consumer Electronics
One Philips Drive
P.O. Box 14810 Knoxville TN 37914-1810
865-521-4316

Science Applications International Corporation (SAIC)
P. O. Box 2502
Oak Ridge, TN 37831
865-481-4634

Siemens Energy & Automation, Inc.
Strategic Machinery Division
One Internet Plaza
P.O. Box 4991
Johnson City, TN 37602-4991
423-461-2605

TEC-COM
Fairview Technology Center
11020 Solway School Road
Knoxville, TN 37932
691-0176

TechScribes, Inc.
448 N. Cedar Bluff, Suite 362
Knoxville, TN 37923
(865) 692-9515

Thomas Nelson Publishers
501 Nelson Place
Nashville, TN 37214
615-902-1899
University of Tennessee
Department of Civil and Environmental Engineering
Perkins Hall
Knoxville, TN 37999

University of Tennessee
Mathematics Department

University of Tennessee
Social Work Office of Research and Public Service
Henson Hall
1618 Cumberland Avenue
Knoxville, TN 37996
865-974-6015

URS Corporation
1093 Commerce Park Drive
Oak Ridge, TN 37830

UT-Battelle/ Oak Ridge National Laboratory
1060 Commerce Park Drive
Oak Ridge, TN 37830
865-574-9851

UT-Battelle/ Oak Ridge National Laboratory
1 Bethel Valley Road
Oak Ridge, TN 37831

Self-employed Respondents

KeyBoard Services
P.O. Box 819
Talbott, TN 37877
(423) 581-0245

F. M. O'Hara, Jr.
P.O. Box 4273
Oak Ridge, TN 37831
865-482-1447

VITA

Karen Huber Downing was born Karen Sue Huber in Mt. Kisco, New York on June 13, 1957, but spent most of her growing-up years in Pennsylvania. She attended the public school systems of Huntingdon, Doylestown, and Stroudsburg school districts. Karen attended the Pennsylvania State University at University Park for four years and graduated in March, 1979 with a Bachelor of Science in Horticulture. She worked for twelve years in the fields of foliage plant and plant tissue culture production and research. During that same time period, she was married to Mark Downing and had two children, Whitney and Evan.

When Karen was ready for a career change, she focused on writing and English studies. She decided to study technical communication because it offered a way to use both her science and writing backgrounds. She entered the technical communication program in the English Department at the University of Tennessee in August ,1999 and graduated in August, 2001 with a Master of Arts in English. Karen taught Freshmen English during her time as a graduate teaching assistant. She currently works for Campus Information Systems as a technical communicator.