

Technical Communication Development in China

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ABSTRACT

This study explores the development of technical communication in China in both industry and education. Using survey data and interviews with six research participants from both industry and educational institutions, this paper explains how China has made huge progress in the development of technical communication since 2000. However, the current development of technical communication in China remains problematic. Specifically, this paper examines four aspects worth further consideration. Several suggestions and potential future research topics are presented that address these problems and how to continue developing technical communication in China.

KEYWORDS

Technical communication; China; Development; Documentation; Information design

INTRODUCTION

According to the International Monetary Fund, China became the world's largest economy in 2014. Its huge population and economic potential have made China one of the most important markets in the world. Today, the economic potential of China is attracting a growing number of world-class foreign enterprises, including SAP, HP, and Microsoft, which have started to specifically tailor products and services for Chinese users and customers. The Chinese Academy of Science forecasts that total exports in 2015 will grow by 6.4% over 2014. With booming international business, this also bolsters the need for technical communication locally within China. Technical communication in China is currently experiencing a period of rapid growth in order to

accommodate the expansion of both local and international businesses. The number of people contributing to the field of technical communication is also increasing. Technical communication communities are also beginning to appear within industry. In order to meet the potential needs of various products, large technical companies are starting to launch independent departments or teams that specialize in technical documentation.

In response to this large increase in business, China has also realized the need to develop skillsets in young technical communicators. For instance, many Chinese universities—such as Peking University, Nankai University, and Jiangsu University—have systematically developed technical communication courses, and some universities have obtained authorization to offer degrees in this area. Duan and Gu (2005) pointed out that two universities in China had developed their own technical communication courses in 2005. Two years later, Peking University—one of the pioneers in technical communication education—launched the first technical communication master’s program in computer-aided translation. In the fall of 2013, the course “Principles and Practice of Computer-Aided Translation” became available to the public via a Massive Open Online Course (MOOC) platform, and more than 2600 students attended the two-month online course.

In my review, I have located little if any recent research on the development of technical communication in China. In order to understand the situation and develop solutions that benefit the technical communication community, better understanding of the current climate is necessary. The aims of this research are to provide an updated overview of the development of technical communication in China and report responses that were directly obtained from Chinese practitioners and educators.

In this investigation, literature for technical communication in China was reviewed. Technical communicators in China were also surveyed, and the results were presented. Interview results—which focused on various topics such as technical writers’ responsibilities, workloads, and communication styles—are also reported.

According to the initial feedback I received from individuals in both academia and industry. I heard the following comments from technical communicators in China:

“I sometimes feel lost in my workplace because my manager is usually unwilling to pay for the professional technical communication training for us.”

-A technical writer working at a medical device company

“Most of the technical writers in my company are coming [into] this field with a language background. However, their writing skills vary [within] a wide range especially when they are dealing with technical content.”

-A technical communicator at a hardware company

“From my experience, only 10% of [technical communicators] work in this field for more than five years, although we have new people coming, this field still faces huge talent loss.”

-A technical writer working from a Swedish company

The purpose of this article is to serve as a reference for local and international technical communication communities, so they can better contribute to the continued development of technical communication in China, as well as address the needs of both industry and education. This goal of this paper is to prompt more collaboration and communication among China’s technical communication field in order to achieve common goals.

RELATED RESEARCH

The previous research I have found on technical communication in China focuses on several areas. Ding (2003) traced the history of technical communication in China, and argues that *I Ching*—a 3,000-year-old document on Chinese philosophy—is the earliest example of technical communication in China because it points out the unity between context and objects. Ding states that *I Ching* has been helping Chinese people perform various tasks for about 3,000 years, and covers topics on agriculture, fishery, marriage, ethics, etc. However, Tegtmeier et al. (1999) stated that technical communication in

China is still “at its earliest stages” since few universities provide such courses and no separate profession or academic technical communication discipline existed in 1999. Duan and Gu (2005) centered their attention on industrial manufacturers and stated that effective technical communicators are needed to communicate with Western customers because of the growing needs of international businesses in China.

Culture plays a crucial role in technical communication in China. Barnum and Li (2006) compared Chinese and American cultural values and discuss the ways technical documentation is viewed, created, and used in these different cultural settings. They argued that Chinese technical communication is more inductive than deductive. Ding (2006) addressed the crucial role of Confucianism, and argued that Confucianism was the driving force of the indirect style that defines Chinese technical communication. Specifically, she pointed out that *ren* (human heartedness), *yi* (righteousness) and *li* (proper conduct code) are the three core principles in document design within Chinese culture that influence this indirect style.

Practitioners also discuss how technical communication is taught in China. Daniel (2011) conducted focus-group interviews with five technical communication instructors and surveyed 300 students. He found that a vocabulary-centered writing course—English for Specific Purpose (ESP), which focused mainly on teaching professional terms—was the earliest technical communication course offered in China. Students were unfamiliar with the subject and generally thought that technical communication was solely done by scientists. Barnum et al. (2001) addressed the different language learning methods used in Chinese and Western classrooms, stating that rote learning is helpful for learning language and building relationships with teachers in China. Dautermann (2005) discussed her personal experiences with training Chinese business writers in a two-week program and, based on the problems she encountered when teaching environment and politics, she reported that the difficulty of bringing Western technical communication teaching methods to China is mainly due to China’s “authoritarian culture”. However, these research results are questionable because China is now a huge part of the world’s economy and politics. Western concepts and culture are relatively familiar to people in

China. Chinese university students use the same textbook as students in foreign countries. Moreover, Chinese students have equal access to online resources. Although political restrictions—such as The Great Firewall and strict censorship schema—do have their influence, teaching technical communication using Western methods is not as hard as Dautermann described in her article. Moreover, Golemon (2008) examined how Chinese culture affects power distance, uncertainty avoidance, and individualism/collectivism, pointing out that technical communication courses should also be based on those three factors because Chinese culture embraces long power distance, high uncertainty avoidance, and collectivism. Considering cultural influences, Barnum and Li (2006) discussed the different rhetorical strategies in different cultures, and argued that “the term technical communication cannot be translated easily into Chinese.” Ding (2010) also reinforced this argument and stated that Chinese technical communication courses should be based on Chinese history and culture.

RESEARCH METHODS

A short questionnaire was devised using Qualtrics and distributed online to a Chinese group of technical communication practitioners using social media (e.g., LinkedIn and Wechat). In two weeks, 32 responses were received. The purpose of the questionnaire was to collect data about types of jobs, tool usage, practitioners’ backgrounds, etc. Eleven participants agreed to participate in second-round interviews. In order to develop a more comprehensive research perspective, six participants from various backgrounds participated in contextual interviews. The interviewees consisted of one technical communication educator from a leading Chinese university and five practitioners in the field. These participants work for medical device, computer software, hardware, mechanical engineering, and biotechnology companies, respectively. Finally, quotes were translated from Chinese to English in order to better understand the qualitative data. Open coding was used to cluster the observations, issues, and quotes.

Background Questionnaire

The background questionnaire was designed with two purposes in mind. First, the questionnaire helped form a general idea about the development of technical

communication in China by accounting for the variety of possible demographic characteristics, such as career, tool usage, salary, etc. Second, the questionnaire helped select participants for inclusion in contextual interviews.

This background questionnaire included 10 questions. All questions were worded as simply as possible. Participants were expected to be familiar with the content so that they could give their responses according to their first impressions. The questions covered the participants' personal information (e.g., gender, background, job title, etc.), as well as basic information about their employers. The questionnaire was created using Qualtrics and distributed through social media and technical communication groups using regular online chat forums. Participants could simply click the link and directly view the questionnaire via an intuitive digital format, which also helped me efficiently gather information.

Contextual Interviews

Six participants were selected from those who showed willingness to participate in extended interviews on the quick questionnaire. Each interview was conducted using a one-on-one video call, which lasted about 60–90 minutes in total length but was split into two sessions. The first 30–40 minutes were focused on understanding technical communication in their workplace (e.g., What are your daily responsibilities as a technical writer? How does this work relate to your previous experience?), and going through their responses in the questionnaire. For the remainder of the time, participants discussed their needs and expectations about technical communication in China. In addition, in order to understand the personal experiences and perspectives of any changes in technical communication in China that have occurred over the years, extra questions were presented to the participants who have worked in the field for more than five years. All responses were recorded and transcribed.

Open Coding

To generate better research findings, I used the open coding technique, which is widely used in user experience (UX) research. Lofland et al. (2006) stated that “the essence of

coding is the process of sorting your data into various categories that organize it and render it meaningful from the vantage point of one or more frameworks or sets of ideas” (p.X) Charmaz (2001) argued that open coding is the process of defining what the data is all about. In this research, I first organized the qualitative data I gathered from interviews, and then broke these data into several meaningful words or phrase and wrote them on stickers. I put the stickers on a whiteboard according to their similarities. Specifically, notes with similar meanings were placed together so they could be clustered into same group, and vice versa. Finally, based on the content, I clustered them into seven problems.

RESEARCH RESULTS

The results of this research are presented in two sections: survey results and interview results.

Survey Results

In two weeks, 32 responses were received. First, I found that most technical communicators in China are female, and the gender ratio (male: female) among my participants is 1:7.

Second, the individuals who work in technical communication in China are generally very young. Technical communicators between the ages of 26–30 years comprise 42% of the research sample, while technical communicators between 31–35 years of age comprise 33% of the sample. While there are a few participants between 20–25 (17%) and 36–40 years of age (8%), none of the identified participants are older than 41 years.

Third, regarding their educational backgrounds, 75% of the participants had at least some technical background in either science or engineering, and 25% of the participants had a general language (English) background. Although the ratio is almost 4:1, I found totally different results in the interview, which will be discussed later. Meanwhile, I noticed that the technical communicators’ titles varied depending on the participants’ workplaces.

“Technical communicator” and “technical documentation engineer” ranked as the top two

most prestigious titles based on the responses of participants, and they comprise 42% and 25% of the research sample, respectively. Some other titles include IT support, brand planner, etc. Although the technical communicators demonstrate great variance in their workplaces, none work as a UX designer/engineer or information designer.

Moreover, according to the survey data, over half (58%) of the participants reported that they do not have a specific technical documentation team or department, and the size of the team varies dramatically between 3–60. This uneven distribution also appears when looking at software choices and work objectives. Regarding software, 50% of the research participants responded that they use Microsoft Word as the main document development tool. On the other hand, among participants who use more professional tools, 17% use Adobe Technical Communication Suite and 33% use tools such as Oxygen, Skribenta, PTC Arbortext Suite and DITA. In addition, documentation management, information design, and translation rank as the top three working objectives, comprising 58%, 25%, and 8% of the research participants, respectively. Participants also responded that they would use a cloud-based documentation development tool in the future.

Last, according to the responses and demographic data, I selected six participants from various fields to participate in contextual interviews. The backgrounds of these participants are reported here:

Interview Participants	
Name	Background
S	S is a technical writer who works for a Swedish mechanical engineering company located in Shanghai. She has worked for some large companies in Shenzhen, and now she is the only technical communicator in her current company. Her job responsibilities mainly focus on creating manuals and documentation specifically for European users.

Ruo	Ruo is a technical communicator who works for a well-known US software company in Shanghai. She received master's degrees in technical communication in both China and the Netherlands. Her main tasks include writing application program interface (API) documentation for software that is currently under development. She is also responsible for updating technical documents for various system environments.
Xing	Xing is a technical writer who works for the largest local medical device company in Shenzhen. She used to work in the IT department of a large international company, and she is now the leader of the documentation team. Her tasks mainly include writing manuals and quick repair instructions for the company's products.
Jia	Jia is a technical writer who works for an electronic engineering company in Shenzhen. He has an engineering background and started to work as a technical writer in 2009. His tasks include writing manuals for hardware operation and maintenance.
Wu	Wu is a technical communicator who works for a biotechnology company in Shanghai. She also is new to this field and has a background in English. Her job responsibilities mainly include translating documents as well as designing documentation for easy use.
Duan	Duan is a professor in technical communication at a leading university. He teaches technical communication and has worked in the industry for several years.

Interview Results

After looking for clustering problems in the other interview notes, the findings from my observations and contextual interviews with these six participants were summarized into the following seven problems.

1. Lack of audience analysis

The concept of audience is a very crucial because technical communication is rooted in its users and audience groups. A manual written with tons of jargon cannot be distributed to general users because it would be hard for a general audience to understand.

All interview participants had worked as technical communicators for at least two companies. During the interviews, I asked each of them the same question about their ideas regarding the role of audience analysis in technical communication. All of them stated that they thought audience analysis would be useful; they also all mentioned that they do not perform audience analysis in their workplace. Two participants believe that they have the same perspective as their audience, so, if they can understand the document themselves, then their audience should have no trouble understanding it as well. As one participant from the medical technology industry said:

“I think audience analysis can be useful, but I don’t think it is necessary. Because in my work, the document I [write] is typically for engineers, so I believe they can understand the content if I can.”

On the other hand, some participants stated that they use general audience analyses prepared by other departments. Two participants said:

“We typically use audience [analyses] prepared by other departments, for example, [the] marketing team. It does help us understand our users at some level.”

“We do not conduct our audience analysis, but we [gain] some general understanding about users when we have meetings with colleagues from other departments.”

I also noticed that some participants mentioned that they receive no support from their companies for conducting audience analysis, and the conflict between minimizing costs and maximizing profit is the main reason. An experienced technical writer complained:

“I do hope we can conduct user analysis, but based [on] my own experience working with four companies, their technical writing departments [typically lack the support needed] to conduct analysis individually. “

Therefore, technical writers in China know the importance of audience analysis, but execution is poor. For technical writers, they either believe their users can understand the content if they understand it themselves, or they choose to skip detailed interactions with their users. Companies typically choose to ignore user analysis in order to minimize costs.

2. Talent Loss

During the interviews, participants often talked about talent loss. This is also strongly supported by the survey data, which shows that most technical writers in China are very young and very few work in technical communication for more than five years. The first reason for leaving is that technical communicators face huge pressure at work, especially those who work for large businesses. One participant, who previously worked for a leading Chinese IT company, said:

“I worked at H2 years ago before I came to my current company, I frequently saw my co-workers work after hours, and many of [them had hair that] was turning grey because of the pressure and heavy workload.”

The other reason for leaving is that many technical writers cannot see a clear future or long-term career objective in technical communication. Compared with the “core” departments such as software development, technical documentation is considered “affiliated.” As one technical writer said:

“I once talked with my colleague, who left my team after only 2 months, [and] he mentioned that he felt the documentation team was [ignored] compared to other

departments, especially in meetings. He always felt lost because their discussion usually focused more on the product development.”

Not only does technical documentation receive less attention in industry, but less funding is available to pay technical writers. Unlike Western countries, technical writers in China do not have high incomes. Moreover, this problem is exaggerated because most technical writers work in first-tier cities such as Shanghai, Beijing, and Shenzhen. These cities have higher standards of living than other cities in China. Technical writers who speak a second language can pursue better-paying jobs such as translator, teacher, or consultant. For technical writers with a technical background, they can also pursue better-paying choices such as engineer, product manager, designer, etc. One participant said:

“I am thinking about changing my job now, although my current position does not have a huge workload, I think my income is a little bit low, especially when you live in a city like Shenzhen. But I think this job is good, it at least helps [build] my resume.”

Thus, pressure, lack of attention in the workplace, and low salaries combine to result in talent loss within China’s technical communication community.

3. Development of Educational Curriculums

In 2000, no universities in China offered either courses or programs related to technical communication. After 15 years of development, China’s higher educational institutions now have programs that specialize in technical communication, such as Peking University, Nankai University, and Xidian University. Moreover, communication and cooperation between local and overseas educational institutions have developed. One of the most representative examples is Peking University, which launched a master’s program in technical communication, called Technical Communication and Translation, in 2007. The program closely collaborates with the University of Twente in the Netherlands. This cooperation certainly brings advanced technical communication concepts and experience, as mentioned by the educator in this field:

“Educators in this field are still exploring the right pattern to connect [academic] knowledge with practical needs. We currently offer courses [on] writing styles, writing tools, writing concepts, etc. in our program. ”

However, I also heard different opinions from technical communicators in industry. One research participant who works for a computer software company and closely work with interns from technical communication programs mentioned during the interview:

“My team mainly focuses on API documentations, and most work is done [using the] UNIX system. Interns in my team may perform better in their writing but lack technical knowledge. For example, the tools we use do cause problems in our practical work. I don’t think they have huge advantages over those people who do not have a technical communication background. ”

Another participant, who is currently enrolled in a technical communication program, also confirmed this in her comment:

“I think the knowledge I learned from the program is useful, but most of them heavily focus on writing and language. When I got my first internship, I felt that it was hard to adapt because the working content was quite different from what I learned in college. I had to spend extra time learning new things and concepts. ”

Also, she commented:

“During my study [at] University of Twente, I think there’s little difference in technical communication between China and Western countries. However, different cultures decide the different ways to communicate.”

The conflicts between education and industry are mainly about the focus and context of technical communication. Most of the students who studied technical communication had backgrounds in another language or literature. Academic training does offer opportunities

to help understand technical communication concepts, however they lack the technical training as well as the tools and platforms they will use in their workplace. This huge gap needs to be filled in the near future. In addition, we need to put more time and energy into adapting Western technical communication concepts for use in local environments.

4. Government Participation

Technical communication in China also has other important elements. In this section, I evaluate the contributions of the Chinese government and technical communication communities.

The most important contributions of the government can be categorized into two sections. First, they participate in developing local standards for Chinese technical documentation that technical writers must follow. Second, they invest money and time promoting collaboration between different technical communication resources.

The China Association For Standardization (CAS) plays the most important role in this process. CAS initiates and organizes several technical writing seminars for technical writers all over the country. They also encourage collaboration between local technical communicators and experienced technical writers from foreign countries. CAS also invites lecturers and technical communication communities to train technical communicators in China. This close collaboration between CAS, educational institutions, and industry highly influences the development of technical communication in China. However, some participants also report negative aspects:

“I think those meetings that CAS initiated were great, however, since we have been following European technical communication standards for quite a while, it is hard for us to change to the local technical documentation standards, which are still under development.”

“Most of the training programs are expensive, and they are usually offered in Beijing. I personally work in Shanghai, and it is almost impossible for my manager to approve money and time for me to participate in those training programs.”

From these responses, it's apparent that the standards built by CAS for local technical documentation remain poorly defined. Also, the offered opportunities are not evenly distributed. However, the Chinese government does contribute a lot to helping technical communication in China.

5. Role of Technical Communication Communities

The technical communication community is another crucial factor in the development of China's technical communication. In China, technical communicators have already built networks through social media, and they often initiate online meetings and discussions. These spontaneous technical communication communities vary in size, location, and objectives, but they also take responsibility for the majority of the communication between technical writers. As one participant addressed:

“I joined the QQ group last month, although I haven't participated in discussion[s] very often. They frequently talk [about problems] they [encounter] in their work.”

Professional technical communication communities governed by organizations also play an important role in promoting education in technical communication. They give lectures and presentations at universities, so more and more people in China are starting to become familiar with technical communication. These communities also volunteer to host discussion sessions for people who have an interest working in technical communication.

In China, European technical communities are the most widely accepted foreign technical communication communities because they are very closely tied to the industry. This year, TCWorld will offer training courses about digital writing tools for technical writers in order to help technical communicators in China work better in this field. Frequent

collaboration motivates China's technical communication community and also fosters development of the field.

6. Uneven Development in Industry

As previously mentioned, the research participants talked about uneven opportunities for professional training. Generally, this phenomenon is also reflected throughout the entire field of technical communication in China.

Beijing, Shanghai, and Shenzhen are the three most well-developed cities for technical communication. About 90% of technical writers work in these cities. Those who work in second- or third-tier cities have fewer opportunities to access training resources. Moreover, even among these three cities, technical writers in Shenzhen have fewer resources than writers in Shanghai and Beijing. As one participant who works in Shenzhen mentioned:

"I really look forward to [more] training programs in Shenzhen. There are lots of tech companies here. But I almost never saw any technical communication programs here."

Other than location, it's apparent that large companies have more resources and regulations than medium- and small-sized companies. Job objectives vary greatly as well. While large companies focus more on information development, medium- and small-sized companies put more focus toward document translation.

7. Team Collaboration and Communication

From these interviews, I found that most technical communicators work for international companies. Consequently, international communication plays an important role in the technical communication departments of these companies. Other than Chinese, English is the official working language in most workplaces.

Employees usually work closely and remotely with technical communicators from different countries. The research participants stated that communication typically occurs

when there is a need to clarify technical details or during proofreading. All of the participants have experience working with foreign technical communicators. Also, the research participants from large companies stated that they have clearly defined workloads in their workplace, which greatly reduces the complexity of their communication practices.

Discussion

The development of technical communication in China has its advantages and disadvantages. In these interviews, most participants stated that they were optimistic about the potential development of technical communication in China; however, they also addressed their expectations and needs. I emphasize these in three points.

1. More Professional Guidance

Technical communication in China needs more professional guidance. The research participants all mentioned that the European technical documentation standards are the most widely used in their workplaces. Also, European technical communication communities play more important roles in the development of China's technical communication in comparison with the other technical communication communities of other countries. In recent years, these organizations started to organize and offer training programs on documentation concepts and tools for use by technical communicators in the industry. In terms of education, universities are expanding connections and seeking more collaboration with Western educational institutions. However, localized technical communication communities should also consider culture and history, and professional guidance is needed to better absorb the advanced experiences of Western countries.

2. Better distribution of resources

The majority of technical writers work in three cities, Shanghai, Beijing and Shenzhen. However, the demand for technical communication is increasing in other cities as local businesses develop. Most of the training programs and technical communication meetings are being held in Shanghai and Beijing. Although many technical

communicators also work in Shenzhen, they do not have the work opportunities that present in Shanghai and Beijing. As one participant stated:

“Shenzhen also has super-sized companies, like Huawei and ZTE. But we don’t have meetings and training programs. I hope TCWorld can also give lectures in Shenzhen.”

The uneven distribution is due to political reasons, but more communication between technical writers in different cities is expected to happen in the coming years. Technical communicators can take advantage of spontaneous online groups and share advanced ideas and experiences with each other in order to fill the gaps caused by unevenly distributed resources.

3. Proper Level of Government Participation

The huge contribution of the government toward promoting the development of China’s technical communication, as mentioned in the interview results, must also be acknowledged.

As noted in the research findings, salary is one of the most important reasons that causes talent loss. Technical communicators now expect more affordable training programs and opportunities. As one research participant stated:

“I’m very interested but I may not go to the program that TCWorld offered this April. It cost[s] too much and I have to travel to Beijing.”

Thus, the Chinese government is expected to help regulate the minimum wage in the field and improve benefits for technical writers in China. In addition, they should organize more activities in second-tier and third-tier cities in order to ensure technical communicators in those cities have equal access to training opportunities.

Second, the Chinese government is currently revising local technical documentation standards. This government participation has been implemented with the best intentions;

however, according to the research participants, the government both facilitates and limits the potential development of technical communication. The reason for this difference between intentions and actual implementation is that some local documentation regulations conflict with Western standards, which are widely used in the current field of technical communication. As long as China adapts to new rules and regulations, extra work will be needed.

Technical communication in China is rapidly catching up to developed countries. However, problems also exist in this fast-paced development. This paper presents the achievements and current issues that existing in technical communication development in China, and discusses the factors that current practitioners and educators believe are causing them. The suggestions for continued development that are proposed in this work are based on the voices of working technical communicators. I believe that technical communication in China still has the huge potential to keep making progress. However, many problems and issues must be addressed. I hope my observations, data analysis, and discussion will serve as a guide for practitioners and researchers who want to devote themselves to the development of technical communication in China.

This research serves as the initial exploration for further study and evaluation of technical communication in China. I will design a more detailed research topic such as difference of adapting Euro technical communication and US technical communication in China, how technical communication community can better serve local technical communication better, the help of online group in China's technical communication development, etc., to delve deeper into the specific problems listed here, and try to understand and analyze the specific reasons causing these phenomena, as well as how to facilitate and solve problems in both industry and education.

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