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"It's a strange little business" – issues in technical communication

The quality of technical communication products, for example user guides, is often criticized. The structure or the contents may be confusing, or the information presented does not answer the questions we have about the device or software program we are trying to use. Technical communication as a profession is facing issues such as outsourcing and offshoring. In this paper, the field of technical communication is outlined and some of the main problems in the field are analyzed. Ethnographic data and literary sources are used as tools in the analysis.

Keywords: technical communication, technical writing

1   Introduction

Technical communication – the creation of technical documents aimed at various target groups (Suojanen 2000: 1) – does not have a very good reputation. The user guide or on-line help is probably the most visible part of technical communication to most people, and many of us have had negative experiences with it: we cannot find the information we are looking for, or we do find it but cannot understand the instructions or carry out the procedure (e.g. Price & Korman 1993: 6). The effects of poor customer documentation are quite well known: it results in human errors, rejection of technology, wasted time, increased training costs and even possible legal proceedings (Brockmann 1986: 15). It also prevents us from making sense of the products as well as their documentation, and influences the way we feel about ourselves: incompetent both as readers and as users of technology (Schriver 1997: 211, 222).

We also already know a variety of indicators of good documentation: in short, a good user guide is accurate, complete and consistent (van Laan & Julian 2001: 47). However, in the case of user guides – written for doing instead of reading (e.g. Steehouder, Karreman & Ummelen 2000: 11) – analyzing the text alone is not enough to determine quality. User guides can be seen as an interface between us and technology, both inside the technology and outside it (Mårdsjö 1994: 188). In other words, a user guide is part of the functionality of the product it describes, and should not be looked at as a separate entity. If the user of a device or software program is not consulted or appreciated in the technical communication process, is it possible to create a truly useful user guide? According to Spinuzzi (1999: 21), when designing new documentation, one should be aware of the user's activities and the resources at their disposal for the documentation to fit into its intended environment – its *ecology of genres* – and for it to be truly useful. Spinuzzi goes on to emphasize the need for *coauthoring*, the technical communicator as a collaborator and facilitator for the user (ibid.). There is a common understanding in technical communication literature that the most important aspect of technical communication is knowing your audience and tailoring the information according to your audience's needs (e.g. Price & Korman 1993: 30; van Laan & Julian 2001: 55; Jayaprakash 2008: 3). However, according to the interview data of this paper, the current work practices of the field and the outsourcing trend are making any efforts in this direction particularly difficult.

This paper is part of a larger study that investigates technical communication as an activity.[1] In this paper, the field of technical communication is outlined and some of the

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1   The larger study is based on activity theory (Engeström 1995; Nardi 1996) and its possible applications
      in technical communication.

central problems in the field are discussed. The possible roots of these problems are then explored using literary sources as well as ethnographic data. Technical communication literature has often concentrated on improving the quality of the end product, but it is suggested in this paper that there are fundamental problems in the current work processes of the profession. The research question this paper attempts to answer is how these problems may affect the quality of the end product.

2   Data and methods

I have interviewed eight technical communicators so far as part of my research. I have been working as a technical communicator since 1998 and used my own professional networks to find the interviewees. Since this is an autoethnographic study – I am researching a group I belong to (Ngunjiri, Hernandez & Chang 2010: 2) – my own experiences and the interview data will be augmented with previous research in the field to provide a fuller account of the issues technical communicators are facing and a more comprehensive answer to the research question.

The interviewees are based in three different Finnish cities. The interviews were originally conducted in Finnish and have been translated into English by me. Six of the interviewees (A, B, D, F, G and H) have been working both as in-house and as outsourced technical communicators, two (C and E) as subcontractors only. The interviews were face-to-face and semi-structured (di Cicco-Bloom & Crabtree 2006: 315), with questions ranging from professional and educational backgrounds to future visions and aspirations. None of the interviewees had a degree in technical communication, but three of them (A, B and C) had completed a technical communication minor or other studies in the field. All had a background in English studies and a minimum of 10 years of work experience.

In sections 3, 4 and 5 of this paper, the interview data will be utilized to illustrate the issues discussed. The aim is to provide concrete examples of the work of a technical communicator as it is today.

3   What is technical communication?

The introduction of this paper offered a very simple definition of technical communication. According to a broader definition, technical communication is "any effort that makes it possible for people to get most from the technology in their lives" (Rainey 2005: 200). This definition covers such diverse fields as instructional design, marketing communications and usability, to mention but a few from Rainey's exhaustive list.

According to Rainey (ibid.), this diversity can be seen as both the strength and the problem of the field. Terms such as technical documentation, technical writing and information development are often used interchangeably even by the people in the field (Balakrishna 2005: 173).

According to Abdallah, Haanpää, Hill, Ilveskallio, Orispää and Suojanen (2005: 77), technical documentation professionals design, create and communicate information to users. This information may be in a variety of forms and the companies these professionals work for are also diverse. Abdallah et al. (2005: 85) and Rainey (2005: 208) also point out that the division of labor in technical communication varies. This shows in the interviews, too: for example, one of the interviewed technical communicators created mainly marketing materials, while the user guides for the company's products were created by software professionals.

The user guide, however, is often seen as something that stands in the way of us and the task we want to accomplish (Nielsen 1993: 149; Carroll 1994: 69). It is often said that it is best if a technical device can be used without the help of documentation (Nielsen 1993: 148). One of the interviewees believes this is the direction we are heading:

> (1)   Interviewee C: In the future, the user documentation for simple devices will be maybe just a sticker attached to the device, showing you how to switch it on.

However, many consumer and business products are very versatile and increasingly complex, and their user guides mirror this development (Nielsen 1993: 148; Westendorp 1994: 42). Despite the increase in the technical communication products available to us, there is no common understanding about the best concept for them: they come in a variety of designs (Westendorp 1994: 42). In addition, the ways user guides are utilized are diverse: for example, to gain troubleshooting information, an overview of the product, or step-by-step instructions for completing a specific task (Price & Korman 1993: 7; Wright 1994: 7–8).

In short, technical documents are created for diverse products, and they are used for very different tasks. However, their aims are homogeneous:

1. to give instructions
2. to describe the technology
3. to create motivation for use (Mårdsjö 1994: 191–192).

In addition, customer documentation makes it possible for the users of these products to achieve a higher level of expertise (Nielsen 1993: 148). In that sense, technical documents

are closely linked with training materials, although the technical communicators I interviewed did not create training materials at all.

3.1   Readability as an aspect of technical communication products

Technical communicators were originally called technical writers or authors, and according to Giammona (2011: 52), writing is still a core task of the profession. Technical writing handbooks stress the importance of certain commonly agreed readability factors, such as clear, consistent language, using the active tense and avoiding jargon (Price & Korman 1993: 361–376). Clear language, in this context, means that the reader does not have to guess what a term or sentence means, or how the ideas relate (van Laan & Julian 2001: 211). Readability research has a long history, and a variety of readability indexes exist for measuring the readability of a text (for a review of the research in this field, see Virtaluoto & Väyrynen 2000). To summarize, a text is seen as readable if it makes use of concrete, everyday vocabulary, has a clear structure and cohesive ties – words such as *consequently* which indicate the relationships between the different parts of text – and is presented with the optimal sentence and paragraph length for the intended audience. However, readability research may not be directly applicable in the case of instructional text, which involves working with a device simultaneously (Steehouder et al. 2000: 11).

According to Karreman, Ummelen and Steehouder (2005: 1–2), procedural information is naturally the central information type in user instructions, but additional declarative information may result in a more refined mental picture of the device. They also mention that the users of instructions spontaneously read declarative information, even if the instructions allowed them to skip it. While it has been discovered that generic declarative information is not the most efficient information type for procedures – procedural documentation is more effective when active-voice sentences make users the agents of action (Krull 2007: 2) – detailed procedures for active learners and visual models for difficult tasks increase the effectiveness of documentation (Mirel 1991:1).

3.2   Ease of use as an aspect of technical communication products

In short, the ease with which users can attain their goals is one of the most important quality criteria for customer documentation (Wright 1994: 12). When we turn to the user guide for help, we usually need immediate and specific instruction: this makes the search functionality provided a key factor (Nielsen 1993: 149). In addition to the table of contents, indexes are an important reference tool – they should contain the main topics, tasks and concepts, and provide synonyms so that users can find what they are looking for without knowing the exact term (Price & Korman 1993: 274–276).

It is often stated that the starting point of writing a user guide should be the actual tasks of the future user; access to this information, however, is a more complicated matter (van der Geest 1994: 54). In addition, there is no universally correct way to present information: what may be favorable in general is not necessarily favorable for a specific user guide and a specific group of users (de Jong & van der Poort 1994: 232–233). In addition, the user's characteristics, such as their beliefs about the quality of documentation, also have an effect (Schriver 1997: 389).

Carroll (1994: 68–69) found that people in general have a preference for learning by doing, and user guides should ensure that it is possible to start using the product straight away with real-life goals; the aim should be doing the work, not reading the instructions. Carroll called this approach *the minimal manual*, and there are various other types of job aids and quick guides available designed to fit the context of use (Price & Korman 1993: 294). This, however, requires that the writer knows what the context of use is going to be. According to van Laan and Julian (2001: 55), it is impossible to design a usable document without knowing what the intended users' needs are. The structure of the document, the complexity of the language, the contents and the general approach can be correctly decided only when the audience is known (van Laan & Julian 2001: 93). However, the current technical communication processes do not allow for this type of user-centered work to take place: none of the technical communicators I interviewed had regular access to users or the possibility to conduct usability testing on the documents they produced.

In general, the interviewed technical communicators were aware of the above readability and usability issues. However, most of them said they had learned the basics of technical communication "on the job" (Interviewee E) and "case by case" (Interviewee A) rather than a complete package of formal education; this was also true for those who had completed studies in the field. Company-specific styles and conventions are therefore bound to affect their view of high-quality technical communication.

Subcontractors, in general, seem to have less say in readability and usability issues than in-house technical communicators.

(2)   Interviewee C: The technical communication course taught us the 'ideal' of the field: having the peace to concentrate on writing, having access to all the necessary information and so on. The required layout and style always come from the customer, however, so for me there was no point in studying those.

Subcontracted technical communicators usually utilize the customer's company-wide style guide and document templates, leaving little room for individual development efforts. According to another interviewee, their input on usability issues is not greatly appreciated:

(3)   Interviewee E: We try to give advice when we can, but usually the customers are reluctant to take it.

In my own experience, in-house technical communicators have more say in these matters, and the general feeling in the field seems to correspond:

(4)   Interviewee H: Nobody is a subcontractor by choice: in-house and subcontractor jobs are like night and day.

(5)   Interviewee A: As an in-house technical writer, you have more influence; an optimal job would be in-house in a small company that has its own products.

4   Reasons behind the quality issues in customer documentation

As mentioned in the Introduction, there are problems in technical communication. There is a wide variety of reasons behind these problems – ranging from superficial issues such as typography, to problems in the technical communication process itself. Technical communicators have traditionally adopted a text-based view of document quality: the aim is to include all the necessary information, and it is then the responsibility of the reader to make use of it (Wright 1994: 13). Wright (1994: 15) goes on to say that technical communicators do not always pay attention to the ways in which their document will be used, so those design features which would improve the usability of the document are overlooked, even though many text-based usability criteria, such as clear vocabulary, are met. However, some of the main quality criteria in technical communication – for example, be succinct vs. be clear – are conflicting and context-specific, and leave a lot of room for individual decision-making (ibid.). It seems, however, that this text-based view is the result of current work practices: most of the interviewees reported having no time for planning and design issues and struggling just to include all the updated information on time. When I asked an interviewee what they would concentrate on if they did have the time, they had a clear answer:

(6)   Interviewee D: I would go through the whole document set. There's so much there that hasn't been touched in years, I'm sure we could cut down 30% of the stuff if we ever had the time to really concentrate on this.

Technical communication as an activity is heavily dependent on the surrounding community: technical communicators rely on SMEs (Subject Matter Experts) for background information, revision resources, user information and so on. The contradiction arises from the general attitude among SMEs that documentation is

not important and not worthy of their time (see e.g. Brockmann 1986: 18–19; Schriver 1997: 492). According to the interview data, access to SMEs and their attitude towards technical communication continues to be a major quality issue:

> (7)   Interviewee C: The people [SMEs] around you must be willing and able to cooperate – their attitude towards documentation is the key factor in my work. Good team spirit helps a lot.

In general, however, the interviewees felt that their work was not valued in the companies they work for:

> (8)   Interviewee G: Our SMEs do not care about documentation – they should see the information as part of the product and not just a necessary evil.

> (9)   Interviewee C: Documentation in general is undervalued, people only notice it when there are mistakes in it.

The interviewees also mention that the background information that should be available to them – hardware and software specifications, white papers, etc. – is often hard to come by, either because they have no access to it, or because it does not exist yet at the point where it would be needed. This is especially true for outsourced technical communicators, who have problems with basic database and intranet access. One interviewee recalls a project where there was very little information to go by:

> (10)   Interviewee E: There were no product specifications and we were not allowed to contact any of the customer's SMEs for information; in another project, we had to document a hardware device without ever seeing it in real life.

Lee and Mehlenbacher (2000) conducted an internet survey in which they explored the ways technical communicators interact with SMEs. They found that the two main problems technical communicators had in working with SMEs were 1) SME time and accessibility and 2) the SMEs' respect for the documentation process (Lee & Mehlenbacher 2000: 546). This corresponds to the interview data in the present study: as mentioned above, some SMEs do not see documentation as part of the product, and are not interested in offering their input. Sometimes, however, the problems are partly caused by the technical communication process: in Lee and Mehlenbacher's study, one technical communicator notes that SMEs "won't return review copies of documents or answer questions in a timely fashion, and don't seem to realize that this is something they need to do because the writer's needs are just as real as everyone else's" (Lee & Mehlenbacher 2000: 546). In my experience, technical communication relies too heavily

on e-mail correspondence, partly because the technical communicators are not part of the SME team and feel it is easier to communicate in writing.

In the interview data, nearly all document reviews were said to be e-mail reviews because there is never enough time for conducting reviews face-to-face. van Laan and Julian (2001: 130) mention that face-to-face reviews are "exhaustive and exhausting", but helpful because they make sure everyone has a say and knows how the documents are progressing. They go on to suggest that the technical communicator should prepare the drafts well and clearly indicate which section they want each reviewer to read (van Laan & Julian 2001: 132). If an SME gets a 300-page document as an e-mail appendix without clearly marked sections and details on what has been changed, is it any wonder they ignore the task? Schriver (1997: 472–473) also emphasizes the importance of a review process, suggesting that all reader groups would benefit from user-focused revisions. According to the interview data, this type of process is very seldom in place:

> (11)   Interviewee C: There is no time for revisions, we conduct the mandatory reviews but in a shorter time and as e-mail reviews only.

In addition, technical communication is often a compromise, where it is not the technical communicator who has the final say – for example, making the product seem more marketable may overshadow the need for usability (cf. Price & Korman 1993: 331–332; Wright 1994: 10).

Incomplete troubleshooting information is listed as a quality issue e.g. by Schriver (1997: 245), but the reason why the information is incomplete may be political: the company may not want it to seem that there are a lot of things that frequently go wrong with the product. Typically, this is the type of information that is only available after the release of the product; if there is not a subsequent re-release of the user guide, the information will not get updated.

> (12)   Interviewee H: We don't really get direct feedback, but even if we did, we couldn't utilize it unless the user guide was updated. Guides are only updated if the product changes.

In addition, it is often the case that the overall responsibility for the information created is not allocated to a technical communicator but a *document owner*, an SME or team leader who belongs to, for example, the R&D department. This may reduce the technical communicator's work to simply typing up information passed to him/her, and problems often arise when opinions clash on what information to include and in which format.

(13) Interviewee C: Sometimes the products are so technically difficult that we can't find a single document owner for them – how would it be possible for a technical communicator to provide good documentation in cases like these?

Usability testing is seen as important for the quality of customer documentation, but there is a gap between this ideal and the number of documents actually tested for usability (de Jong & van der Poort 1994: 229). None of the technical communicators I interviewed were involved with usability testing, although some of them did receive feedback from usability tests done by other departments. In these tests, however, the focus was on the product rather than the user guide. Interviewees A, B, C, D, E, F and H mentioned that they do not arrange usability testing for documentation but that they sometimes get feedback from R&D testing that affects their documents; Interviewee G, who is an in-house technical communicator, has sporadic contact to customers at trade fairs, but does not arrange documentation tests either.

In my experience, technical communication takes place towards the end of the product development process, usually between testing and implementation. At this point, it is too late to introduce any significant usability enhancements to the user interface of the product, although the technical communicator may be the first user-oriented person to see it (cf. Price & Korman 1993: 31; van Laan & Julian 2001: 20–21). In addition, schedules are especially tight at this point, with increasing pressure to get the product to market. There is very little time for reviewing or usability testing of documentation, which is bound to result in quality issues. As one interviewee put it:

(14) Interviewee C: Documentation cannot be the thing holding back the product; it has to be ready when the product is ready for the market.

According to another interviewee, there is no formal usability plan or strategy:

(15) Interviewee D: There is no proactive usability development, we react to individual customer feedback. The comments of individual [customer] engineers are taken too seriously without properly investigating the issues ourselves.

It was also mentioned that there is no systematic usability planning:

(16) Interviewee A: We practice 'armchair usability': there is no systematic testing or planning, but we try to use our common sense to fix issues as they come up, if we have the time.

In cases where usability testing is conducted, it usually takes place towards the end of the writing process, at which point it is difficult to correct fundamental problems with the documents. In addition, the documents may be too large to test entirely, and

when only specific sections are tested, the usability of the rest of the document is not improved. (de Jong & van der Poort 1994: 232.) In my experience, this is often the case with document reviews, too – only the updated sections are reviewed, which means that the usability and contents of the entire document library cannot be improved in the review process.

Outsourcing and offshoring continues to affect technical communication professionals, although it is not clear how persistent the trend is going to be (Rainey 2005: 217–218). Rainey's data is from the US, but the situation is probably roughly similar in all higher-cost countries. Not surprisingly, Balakrishna (2005: 181) sees the future of technical communication in India as very bright indeed. One of the interviewees had experience of recruiting overseas:

(17) Interviewee A: It is very difficult to find good employees. A guy that looks excellent on paper may not have done a day of actual work. There is also a lot of turnover, so there is no time for experience to grow.

He goes on to point out that there are issues with the price of offshoring:

(18) Interviewee A: It is not cheaper! The whole point of this offshoring thing was that it would be cheaper and somehow easier, but it is not. The only way for outsourcing to work would be bodyshopping – subcontractors physically in the customer's offices, as team members.

Outsourcing was originally seen as a positive phenomenon – the idea was that the subcontractors would be the technical communication experts and their customers would buy an end-to-end service – but it is often the case that the customers are not willing to pay for anything than basic updates for their product information. One of the outsourced interviewees described the situation like this:

(19) Interviewee E: We are asked to report our work very carefully, and all of it must be directly relevant to the updates in the project at hand; there is never time and money allocated to general documentation development or planning issues.

5   Conclusion

This paper explored some of the current problems in technical communication. It was discovered that technical communicators often have no access to users or user data and no time for quality planning or assurance – issues which are usually seen as central to producing high-quality technical communication.

In the next stage of the research, the tools offered by Developmental Work Research (Engeström 1995) will be used to find ways to tackle some of these problems and to suggest a new, more sustainable model for technical communication. Hart and Conklin (2011: 140–142) found that while technical communicators are still responsible for producing the traditional deliverables of the field, such as user guides, they are also involved in a variety of additional tasks, such as quality improvement projects. In their study, technical communicators were seen as the links between the different parts of networked organizations, facilitating communication processes that eventually benefit the users of the products. They saw technical communication as a "boundary-spanning discipline" (ibid.). The technical communicators interviewed as part of this study, however, have so far mainly focused on the end product: user guide, online help, and so on. Their work will not automatically evolve into a boundary-spanning activity.

Giammona (2011: 57, 70), on the other hand, suggests that technical communicators should adopt a product developer role. If technical communicators are unable to clearly show the value they add to a company, offshoring and outsourcing will become even more commonplace they are now (Giammona 2011: 75). Giammona (2011: 76) urges technical communicators to make the world aware of who they are and what they can do, but in my opinion, we need to present a united front to make any significant difference. The Finnish Technical Communications Society would seem like the obvious leader in defining the future role of technical communicators in Finland, but it does not seem to reach a sufficient number of practitioners to have true momentum. The interviewees in this study described the society as "too far removed from real life problems" (Interviewee D) and as having "minimal activity" (Interviewee C) but also as a source of "good information" (Interviewee G) and as being "an interesting background element" (Interviewee B). Maybe the society could take a clearer stand as an advocate of the profession?

In 2005, Abdallah et al (2005: 89) still saw the future of technical communication in Finland to be quite bright: they suggested that the field would continue to develop, and that the companies offering technical documentation services would also persist. However, the interviewees in the present study expressed serious concerns about the future:

(20)   Interviewee A: I don't see how this could go on in Finland for much longer. There may still be individual technical writers in individual, smaller companies, but the days of big writing teams in big companies are over.

(21)   Interviewee D: I remember when this was still a business in Finland, a proper profession. It's now almost gone, and the change happened really fast. I'm just happy to still have a job.

Similar concerns were already voiced by a group of technical communicators in 2004, as reported by Giammona (2011: 51): will our profession disappear, or will it be able to reinvent itself and survive?

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