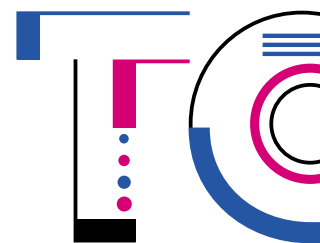


JUNE 2000

02/2000

INTERACTIVE DISCUSSION MEDIUM



FORUM

**TECHNICAL
COMMUNICATORS'
FORUM**



IN THIS ISSUE:

INTECOM

**Readability / Quality /
Usability**

Special Aspects

Professional Events

TC-Forum is supported
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The International Council for
Technical Communication



Dear colleagues,

Welcome to Forum 2000 – in case you receive this copy as a delegate at the conference. As a subscriber you know already that the idea of TC-FORUM was born at Forum 95. TC-Forum has developed since then to be the only international worldwide "Forum" for technical communicators as individuals in 34 countries, other than the magazines of (national) societies.

The articles in this issue deal with technical communicators, their work and their education, as seen from different viewpoints – I'm glad and grateful for this spectrum of views. I hope that this issue will initiate further discussion on education of TCs and intensify international cooperation not only among the professional societies but among members of universities and individuals contributing their own ideas and proposals.

Living in Germany I monitor a very special situation at present: Although there are about 4 million unemployed, there is an urgent need for experienced Information Technology (IT) experts for more than 20 000 vacancies. Therefore the German government is searching foreign IT specialists to come to

Germany and work here – on the basis of something like the US Green Card (time restricted). Government and industry claim that the past and present lack of German IT students is to blame for that. Others claim that lacking necessary reforms of curricula and certificates at German universities have not made IT courses attractive. On the other hand, it is said that German students tend not to study abroad where they can collect international experience.

I'm not investigating the reasons for the present situation in Germany and whether it is a specific German or a world-wide phenomenon. But couldn't a similar situation come up world-wide in the field of technical communicators in the next few years?

I see two developments occurring concurrently:

- The activities of technical communicators widen from "handbook-design" to "media-design" in more than the pure technical fields (e.g. screen design, multi-media publishing).
- The exploding market in IT products and services will demand more highly qualified technical communicators.

But...where are internationally recognized certificates and syllabuses for technical communicators? (*They don't exist.*)

Which universities or other training/education organizations are prepared to offer a sufficient number of future-oriented (international?) recognized qualifications, designed specifically to meet the requirements of industry and the market for these specialists? (*Again, it isn't happening.*)

Shouldn't our professional organizations develop syllabuses, curricula and proposals for (international) certificates including cooperation among universities in this field, i.e. create a credit system? (*Little has been done so far.*)

Couldn't our international umbrella organization, INTECOM, the International Council for Technical Communication, trigger initiatives aiming at solutions of such problems?

TC-FORUM is offering its international network (paper, website and mailing lists) for that discussion.

Hans Trünzger.

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* Each Topic has a two-letter abbreviation,
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• RU for Readability / Quality / Usability
• TR for Translation Issues
• SA for Special Aspects

The contributions (articles or comments)
are numbered consecutively through
the different issues of TC-Forum. When
commenting to any of the contributions,
please refer to these "codes" for ease of
understanding.

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Introducing INTECOM: The International Council for Technical Communication

By Ron Blicq, President

Within the Technical Communication community, INTECOM is reasonably well-known. But outside our community, we are probably one of the world's best-kept secrets!

So I welcome the opportunity to introduce INTECOM to you, and particularly thank the publishers of TC-Forum for providing the space for readers to learn about the many societies that are part of INTECOM. This is to be the first of a series of articles, in which each society will introduce itself and describe its make-up and its aims to TC-FORUM readers.

*The members
of INTECOM
as of
June 2000.*

INTECOM was formed in 1972, in Sweden, and since then has grown to have 16 member societies: in Sweden, Norway, Finland, Denmark, The Netherlands, France, Germany, Switzerland, Great Britain, Australia, New Zealand, Canada, and the United States. Each society nominates one delegate to be its representative on the INTECOM Board, consequently every society has an equal voice among the 16 societies.

A five-member Executive Board is elected for a two-year term and currently comprises the

- President (myself, representing the IEEE Professional Communication Society, but resident in Canada),
- Vice President (Julie Fisher of the Australian Society for Technical Communication),
- Secretary General (Tove Østberg, of NFTI in Norway),
- Public Relations Officer (Johan Nässtrom, of FTI in Sweden), and
- Immediate Past President (Brigitte Beuttenmüller, of tekcom in Germany).

The 16 delegates meet at an Annual General Meeting once a year, in a different country each time. For example, the 1995 meeting was held in

Dortmund, Germany, the 1996 meeting in Saratoga Springs, New York, the 1997 meeting in Paris, France, the 1998 meeting in Oslo, Norway, and the 1999 meeting in Melbourne, Australia. The next meeting will be held in London, England, on 16 June 2000.

What does INTECOM do? It provides a platform for the different societies to meet and learn about each other and the similarities and differences that exist among the 16 societies (TC-Forum also provides an excellent medium for doing this); it helps individual technical communicators, in countries where a technical society does not yet exist, to form their own society; it conducts research, on a worldwide basis, on topics of interest to all societies, and it holds a conference every five years, for technical communicators from around the world to meet and exchange ideas.

INTECOM conferences are called "Forums". The first was held in 1975 in Sweden. The most recent (Forum 95) was held in Dortmund, Germany. And this year Forum 2000 will be held in London, England (from 12-14 June), shortly after this issue of TC-Forum is to be published.

I am eagerly looking forward to meeting many technical communicators from around the world in London, and in future months to welcoming further technical communication societies into INTECOM. I'm also looking forward to reading about the many INTECOM societies in future issues of TC-FORUM.



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Facilitate Reading · RU 22

The Paperless Society, Where Did You Go?

by Åke Rullgård

Despite the fantastic development of computers and software, the paperless society seems to be far from implementation. On the contrary, the consumption of paper for documents has increased over the recent years. How come?

One reason seems to be that most people prefer reading documents from paper, and so print most documents that have been produced and stored electronically before they read them. Why?

One explanation is that we are used to reading from paper. To break this habit we need to find a way to make reading from screen more attractive. More attention should be paid to **Readability!** True, modern word processors offer good possibilities for improvement without much effort on our part. My idea is that writers should, as a sign of respect for their readers, make every effort in preparing their texts so they have good readability on screen.

How to Proceed

Here are some suggestions on how to facilitate reading from the screen. These suggestions, except for number 6, also apply to paper documents.

1. Stop using hyphens for breaking words at the end of a line! Using hyphens for this purpose is an anachronism from the old days, when the writing techniques needed a means for handling a word that had already been partly typed but could not be finished before the end of the line. For users of word processors this is no problem, because the word will be moved to the next line unbroken. Unbroken words are easier to comprehend.
Using hyphens also encouraged writers to make the right edge of the text straight, which we recognize today as a completely unnecessary and even harmful principle. Scientific investigations have shown that the reading speed for text with a straight right edge, obtained by means of software for so

called *computer-fill-out*, is reduced by 10-15 % as compared to the same text with random shape of the right edge.

Use text without syllabifications, which is rather common nowadays. TC-FORUM is almost free from this filth.

2. Use the so called *hard spaces* and *hard hyphens* to ensure that words and other sequences of characters (i.e. article numbers or other codes containing hyphens), are kept unbroken.

The *hard space* is also recommended to avoid breaking between the numeric value and the following unit of measurement, i.e. *12 V DC*. Keeping all these characters from 1 to C unbroken contributes very much to avoidance of misunderstanding. Also phrases like *not more than USD 10 000 000* should be saved from being broken at line ends. A possible break after *not* will easily make the reader see and remember only the start of next line *more than USD 10 000 000* which is quite something else. A possible break between groups of zeroes could also give way to a wrong impression.

Use of *hard spaces* avoids all these problems once and for all regardless of any composing at printing.

The use of *hard spaces* is also an excellent technique for preventing names of persons and companies from being broken. In this case, the technique will serve the double purpose of facilitating understanding as well as showing politeness; it is considered impolite to split a person's first, middle and surname at line ends. Even worse would be to allow split of a name by a hyphen!

3. Apply the principle of „chunking, i.e. *combining text items into meaningful units of information by breaking the lines according to the content...*“ as pointed by Sabine Wolf in an article in TC-FORUM 3 August 1997. The quotation above is from said article as well as the applied breaking of lines.

Six suggestions to improve readability.



Facilitate Reading (cont.)

4. Use quotation marks only to cite a sentence, said or written. In the old days, i.e. when word processors were not available, quotation marks were often used to mark also special words or phrases. Nowadays, such marking should be performed by differing style. Doing so also avoids mistakes in instructions like ENTER „1“, often occurring in manuals. Does that mean that one should enter the digit 1 or „1“? The alternative is to write ENTER 1 if only the digit is to be entered.

Today we often see frequent use of quotation marks to indicate that the meaning of the quoted word or phrase is not exactly what it says literally. This use of quotation marks is often a sign of a sloppy author who does not bother finding the exact wording and is an insult to the readers who are left with making their own interpretation, and perhaps misunderstanding, of the weak expression. A page polluted with this type of quotation marks announces sloppy contents.

5. Use readability indices to get an indication of possible improvements in every text produced! There are many methods, intrinsically language dependent, developed for this purpose, although not very much applied by technical writers.

I suggest that the use and improvement of such indices should be promoted by INTECOM. The department on READABILITY/USABILITY/QUALITY in TC-FORUM is a good arena for presentation of ideas and experience. Analysis by means of a readability index does not, of course, grant good quality of the contents of the text. But it does give the author valuable hints about potential difficulties for the reader, and identifies sentences which might need improvement. An example of a very useful readability analysis method is the *KIX-method*, developed and applicable for the Swedish language. This method is a development of the so-called *LIX index*, which is defined as:

$$LIX = (\text{Number of words} / \text{Number of sentences}) + 100 \times (\text{Number of long words} / \text{Number of words})$$

Long words are words longer than 6 characters. (Applicable for the Swedish language)

Books, in Swedish, for children should have a LIX of around 20-25. Heavy bureaucratic text shows a LIX of around 80.

Similar methods are available for other languages. I suggest that it is an important task for INTECOM and TC-FORUM to inform technical communicators about development in this field of communication techniques.

6. Apply *hypertext* technique to make the basic document short and thereby attractive for reading from the screen. Details, if required, can be retrieved via hyperlinks. This is a possibility available only via the screen. The main text and the hyperlink texts should, however, show good readability, for instance by means suggested in this article.
7. Writers must produce linguistically good products! In the struggle for this goal, analysis of readability index obtained for the text is helpful, (most methods punish long sentences, which are a potential sources of misunderstanding). In technical communication it is further of the utmost importance that the nomenclature complies with standards and is used consistently throughout the entire document.

The suggestions presented above can help us reach linguistically good products. TC-FORUM, in particular, is an ideal place for presentation of new ideas and the results of research about readability, especially results which facilitate reading from screen. The goal is to make the paperless society come through. There is still a long way to go.

The ideas above have been criticized because they increase the amount of paper required to print texts. This is, however, irrelevant in the case of on-screen presentation. Good readability is, however, so important that it is worth the price of somewhat more printing space on our way to the paperless society.



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Measuring How You Add Value · SA 12

By Julie Fisher, Australia

Introduction

As a technical communicator you know that the work you do adds value to the final product, but how do you demonstrate this to management? Research that I have undertaken recently focused on how technical communicators add value to the development of software, particularly information systems. What is presented here are some examples of how I found technical communicators added value and how I measured the value.

Like their counterparts in the United States, Australian technical communicators work in a wide range of industries, performing many and varied roles in the information technology area. Their contribution to the development and use of technology is often subtle and frequently goes unrecognized. In the case of information technology, where many technical communicators are employed, the literature reports a number of activities that technical communicators are involved in. However, there is little reported research on the specific roles performed and the value of this work.

Skill Set of Technical Communicators

A look at a number of major studies of technical communicators and technical communication courses provides a picture of the skill set of a technical communicator. The key skills can be broadly classified as: writing, interpersonal and audience analysis, and communication skills. Apart from the actual writing, technical communicators must also have the following skills:

- Subject knowledge.
- The ability to select the appropriate detail to communicate.
- The ability to organise the information.
- The ability to design and layout the document
- graphics and illustrating
- the ability to edit and revise documents (STC-Manitoba 1994; Green and Nolan 1995).
- Roles Technical Communicators Perform

During 1997 I conducted a survey of Australian technical communicators. The results showed that:

- 58% make some contribution to the design of the interface
- 46% perform the role of user advocate / understanding the users' perspective
- 45% spend some time writing online help
- 44% are part of the development team
- 24% are writing system / error messages

Technical Communicators' Perception of the Quality of Systems

Technical communicators were asked to indicate the level to which they agreed with a number of statements on a five point scale of "Strongly Agree" to "Strongly Disagree". The statements related to the different aspects of systems where technical communicators can make a contribution. The results indicated that:

- 50% of respondents believed the online help provided with the system was effective for users
- 28% are consulted by developers on the system and error message text
- 39% believed the error message text was effective for users
- 25% are consulted by the developers on the design of the interface
- 58% are prepared to tell the developers if they believe the interface design is not appropriate for users.

Case study results

Further case study work was conducted based on the survey results, the aim was to quantify the contribution technical communicators made to the development of systems from the perspective of developers and users. Twenty systems were investigated and developers, users and technical communicators were interviewed. Ten systems used a technical communicator and ten did not. I was therefore able to contrast what users and developers thought of the systems where a technical communicator had been involved compared with systems where there was no technical communicator.



Measuring How You Add Value (cont.)

The data collected for the case study confirmed these results. Developers and technical communicators were presented with a number of roles and asked to indicate if they believed these were roles a technical communicator could perform. Not surprising, all ten technical communicators believed these were roles they could perform.

Table 1
Developers' views on the role of a technical communicator

Role	
Writer of user documentation	20
Communicates with users	16
Writer of online help	15
Interface design consultant	12
Writer of system and error messages	10

Role	
Business analyst	8
Trainer	5
System tester	3
Change facilitator	3
Other – marketing, user advocate	4

What is disturbing about these results is that, although all developers believe technical communicators can write user documentation, they do not all believe this extends to writing online help or writing system and error messages.

Developers' Rating of the Technical Communicators' Contribution

Developers were asked questions relating to the technical communicator's contribution to the design of the user interface and writing online

help and error messages. They were asked to indicate how valuable that contribution was using a 10 point scale, where 1 was 'No contribution' and 10 was a 'Significant contribution'.

Table 2 presents the mean results for both questions for the ten systems that used a technical communicator.

Developers generally believe technical communicators do contribute to the development of the system and their contribution adds value, particularly in the areas of interface design and online help. Only in the area of the design of system and error messages was their contribution rated as less than significant (i.e. less than 5); however, few technical communicators were in fact invited to comment on system and error messages and so it is unlikely their contribution would be significant.

Where Technical Communicators Added Value

In the key areas of interface design, online help, and understanding the users' perspective, technical communicators do add value.

The user interface

With the exception of only two respondents, developers said the technical communicator had contributed significantly to the design of the interface; yet only one technical communicator was specifically responsible for the interface design. One developer reasoned that a technical communicator should participate in interface design because: "A lot of the interface elements are verbally based. It was decided that we really should have someone who could do the writing and do it well."

Table 2 Developers rating of the technical communicators' contribution

Question	Interface design	Online help	System and error messages
To what extent was the technical communicator asked to comment?	5.1	6.7	4.6
How valuable were the comments made by the technical communicator?	6.1	6.3	4.5

The technical communicator for another system was consulted frequently on the user interface; this was possible because she was a full time employee. The developer described how her input was managed: the developers would sketch out a screen and then ask for her input. The developer believed that this increased the effectiveness of the system.

The developer of a web-based system used other experts, along with the technical communicator, to design the Web site interface. His reason for doing this was: "It is a particular skill designing Web pages and kiosk type of pages because it is a public interface. The programmers don't have that skill nor should they have; we don't expect them to be in that sort of league at this stage."

The users agreed, when they were asked to rate the quality of their interfaces, that systems where a technical communicator had contributed to the interface were rated more highly by the users than the other systems.

Understanding the user's perspective

All the developers believed that the technical communicator did understand the users' perspective. A point made by five of the developers was that this was because the technical communicator was not a 'technical' person.

Another developer reflected that he had not used the technical communicator enough, in this case the technical communicator was called in late in the development process. He said the technical communicator had successfully explained very complex concepts to a non-technical audience.

This was also the view of another developer who did not use a technical communicator, he commented on the need for someone to take the users' perspective. He reflected that during the development process the users did not really understand what the developers were designing.

Writing Online Help

Most of the developers said that technical communicators should write online help. However, of the 20 systems, 15 had online help; yet only 5

developers used a technical communicator to write the Help. Of those developers who did not use a technical communicator, three indicated that in the future they would and one said that a technical communicator was currently rewriting the Help system.

New technologies require particular skills

Again, the users agreed when they were asked how often they used online help and what did they think of the quality. If the online help was written by a technical communicator the users were more inclined to use the online help and rated it more highly than when it was written by someone such as a developer.

Would Developers Use a Technical Communicator Again?

If developers say they would use a technical communicator again, this is a clear indication that developers think technical communicators do add value to the development process. Five of the 20 systems have a technical communicator as a permanent employee, which is a clear acknowledgment, by the developers, of the need for the role. In the other cases

- the developers who had used a technical communicator in the past said they would do so again.
- the developers of two systems where a technical communicator was not involved, both said they saw a need for such a skill.

Early Involvement of Technical Communicators

The point at which the technical communicators became involved in the development process is strongly linked to the contribution they were able to make. Seven of the ten technical communicators were involved early, that is at or before the design stage. Table 3 presents the mean ratings given by the developers of those seven systems where the technical communicator was involved early.



Measuring How You Add Value (cont.)

Table 3
Developers rating of technical communicators
when involved early

Question (Seven systems with early involvement)	Interface design	Online help	System and error messages
To what extent was the technical communicator asked to comment?	6.3	8.7	6
How valuable were the comments made by the technical communicator?	7.8	8.3	6.5

Conclusions

The results from this research clearly demonstrate that technical communicators can and do add value to the development of information systems, possibly more than has been previously recognized. Technical communicators

- spend significant amounts of time talking with users and helping them understand the new system,
- convey the needs and views of the users back to the developers,
- contribute to the design of the user interface and thereby assist with usability aspects of systems,
- write online help, and
- write error messages (but also assist in editing those messages to ensure they are meaningful for users).

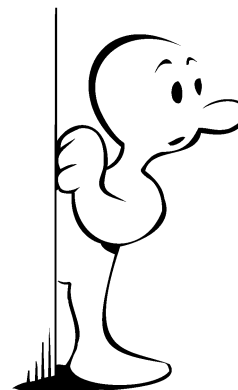
Use the results of our study for your benefit.

The earlier the technical communicators are brought into the process the more effective their contribution can be. Anyone can build a system, but the one that is going to succeed is the one that can be used and understood by users with a minimum of training. Technical communicators should, therefore, be integral and early contributors to the teams that build our best systems for the future.



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Converting Paper Mountains to Data Highlands · SA 13

*By Wolfram W. Pichler and
Claudia Kirschte, Germany*

Big producers of equipment and systems of all branches often have piled up enormous volumes of product documentation in various formats on different media over long periods. How does one deal with that in the Internet age? How will brochure-like product catalogs be converted to type-specific clickable web pages, and printed price lists to present-day worldwide retrievable tables? Experiences with a large converting project show the process to achieve such document management.

Who would not like to feed various media like print, CD and WWW from a single source? Cross Media Publishing (CMP) is the name of the wizard. Young dynamic CMP enterprises erect new documentation platforms for the immediate creation of new document files. However, this process does not cover the gap to the old volumes of the past. The following practical example shows one of several different solutions to this problem.

The Converting Project

A renowned producer of industrial control and measuring equipment and systems had decided to distribute their exclusively printed technical documentation, data sheets and price lists via different channels through the Internet. First the entire data supply of the existing archives had to be converted to a convenient type-setting and layout system. Then these data had to be processed to pdf files for a layout consistent with distribution via the Internet. Finally, the document structures had to be prepared for coding into a producer-neutral product information by means of SGML.

Because the existing files did not cover the needs mentioned for an immediate conversion, Adobe's FrameMaker was chosen as the future exclusive basis for type-setting and layout. Only the data sheets with price lists had to be typeset in MS Excel instead of FrameMaker, to allow certain calculations. Additionally, the present-day maintenance of the ordering information had to be

available in various departments and without a FrameMaker license at each site.

The Excel data tables were linked with the FrameMaker files by OLE so that the FrameMaker files would display the present-day data. The equipment producer employed an external service company to convert their complete archive. They provided the following raw material:

- more than 1,000 pages of printed documentation and catalogs
- the necessary graphic files (.tif and .eps)
- corresponding Acrobat files
- price lists, partly in print, partly as Excel files
- a FrameMaker sample file with type-setting and layout rules
- a terminology list: German/English

The Process Steps

The producer not only intended to convert their old supplies but also wanted to have the texts reviewed. They also wanted to relaunch their corporate identity. In the meantime, new standards demanded a change in terminology. So the first thing we had to do was to check and correct the old documents.

The next steps were performed at the same time:

1. Production of the Excel files as well as type-setting and mounting of the FrameMaker files, according to the new corporate design.
2. Because Acrobat processes text paragraphs with hard carriage returns, and because of the false display of most of the special characters, in most cases the copying of text strings in the Acrobat files with subsequent pasting in the FrameMaker file would not have offered a time benefit. Consequently most texts and all tables had to be typed anew.
3. Complex and individual page structures prevented scanning with subsequent automatic OCR (optical character recognition)

*How to
adapt
documents
to Internet
use.*



Converting Paper Mountains to Data Highlands (cont.)

4. Finally, the Excel files were linked into the FrameMaker files.

Every fortnight, a new CD ROM with more product sheets was delivered to the equipment producer. The data processing department of the equipment producer transferred the data into the Internet and maintained them with their data base.

Upshot

Converting of existing data creates more and more problems for many producers of technical products. The various reasons are:

- It is realised (and this applies to many companies today) that the former text processing applications for creation and maintenance become more uneconomical. We strongly recommend changing to professional documentation software like FrameMaker and InDesign.
- It becomes more and more necessary for companies to distribute data in various media-neutral and platform-neutral file formats. This applies especially to older text and type-setting systems that do not cover the demands of PDF, HTML and SGML.
- Outdated data volume technology and space consuming paper archives demand quick activities if they are to guarantee the readability of future legally prescribed documents.

*New
specialists offer
document
conversions.*

Singular conversion projects normally are very time consuming and have to be performed in parallel with the everyday business of the faculty departments. In many cases it will be more economical and will occur with less friction if companies engage external service companies to handle this task.

Nowadays, documentation companies that have specialized in conversion projects offer profound knowledge of various (even obsolete) applications that have specific problems in converting to up-to-date type-setting and layout systems. They

can even work with old DOS machines that allow the reading of 5 1/4" floppy disks with files from the ancient days of MS Word!

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Technical Communicators for the Global Marketplace · SA 14

By *Susanne Göpferich, Germany*

Summary

Today, the translation of technical documentation is no longer a process which can be ignored until the source text has been produced. Translation issues need to be taken into account both prior to and during source-text production, and thus, to some extent, they become tasks of the technical communicator. This article gives an overview of current developments in the workflow patterns leading to multilingual technical documentation and outlines the consequences these developments should have for degree programmes in technical communication and translation.

Integrated Workflow

An examination of workflow in companies which produce multilingual technical documentation reveals that, in the course of time, the goal of multilingualism has been taken into account at an ever earlier point in the production cycle. A decade ago, technical documentation and translations were produced one after the other in separate departments. Since then these departments have started to merge. Hartley/Paris (1997: 113) have reported on companies in which the production of technical documentation and its subsequent translation have been replaced by the parallel production of technical documentation in different languages by technical communicators with different mother tongues.

Pre-editing Instead of Post-editing

When producing technical documentation without taking translation issues into account at an early stage, one runs the risk of ambiguities, inconsistencies and other problems which make the use of translation memory systems (TMS) and machine translation (MT) systems inefficient or call for substantial post-editing measures. This, however, contradicts the emerging trend towards reducing the amount of post-editing necessary, or to circumvent it, by pre-editing texts for translation. This pre-editing may comprise the use of

controlled languages in controlled language authoring environments with conformance checkers and interactive disambiguation tools as well as the compilation of new texts from segments of existing text versions which have already been translated.

Multilingual Text Generation Instead of Translation

The most recent developments shift the consideration of multilinguality to an even earlier stage in the authoring process. The idea lies in automatic multilingual text generation starting from a language-independent knowledge base (cf. Hartley/Paris 1997).

Shift in the Qualification Profiles and Range of Tasks

Shifting attention from post-editing to pre-editing, and finally to the creation of knowledge bases and the definition of composition strategies that automatic text generation tools use, necessarily results in a shift in the qualifications needed for multilingual text production. A text which is principally suitable for MT and has been written or pre-edited accordingly makes linguistic and translation competence unnecessary for the actual process of translation. This 'competence' is taken over by the MT system. This does not mean, however, that we can do without translators and degree programs in translating! The translator's linguistic and translation competence is, and will still be, needed for the following tasks:

- the translation of texts, such as marketing brochures, which are not suited for MT;
- the preparation of computer-aided translation (CAT) projects (including computer-aided terminology, management of translation memories, etc.);
- the development and improvement of CAT tools (e.g. TMS and MT systems);
- the development and improvement of controlled languages and the corresponding authoring tools (e.g. conformance checkers); and
- sophisticated localization.

Multilingualism must be considered early in production cycle.



Technical Communicators for the Global Marketplace (cont.)

Not only does the linguistic and translation competence of translators become unnecessary for some steps in multilingual documentation development, even part of the text production competence of technical communicators can be taken over by programmes such as multilingual text generation tools. However, the human contribution of technical communicators and translators that an automatic text generation system cannot do without is the supply of domain knowledge which flows into the creation of the language-independent product representations for the knowledge base, and the genre-specific composition strategies such systems draw on. Thus, humans develop the rules, and the system applies them. In this way, a "duplication of competence across system and human user" is avoided leading to "complementarity rather than overlap of expertise" (Hartley/Paris 1997: 113).

Ideal Process vs. Everyday Practice

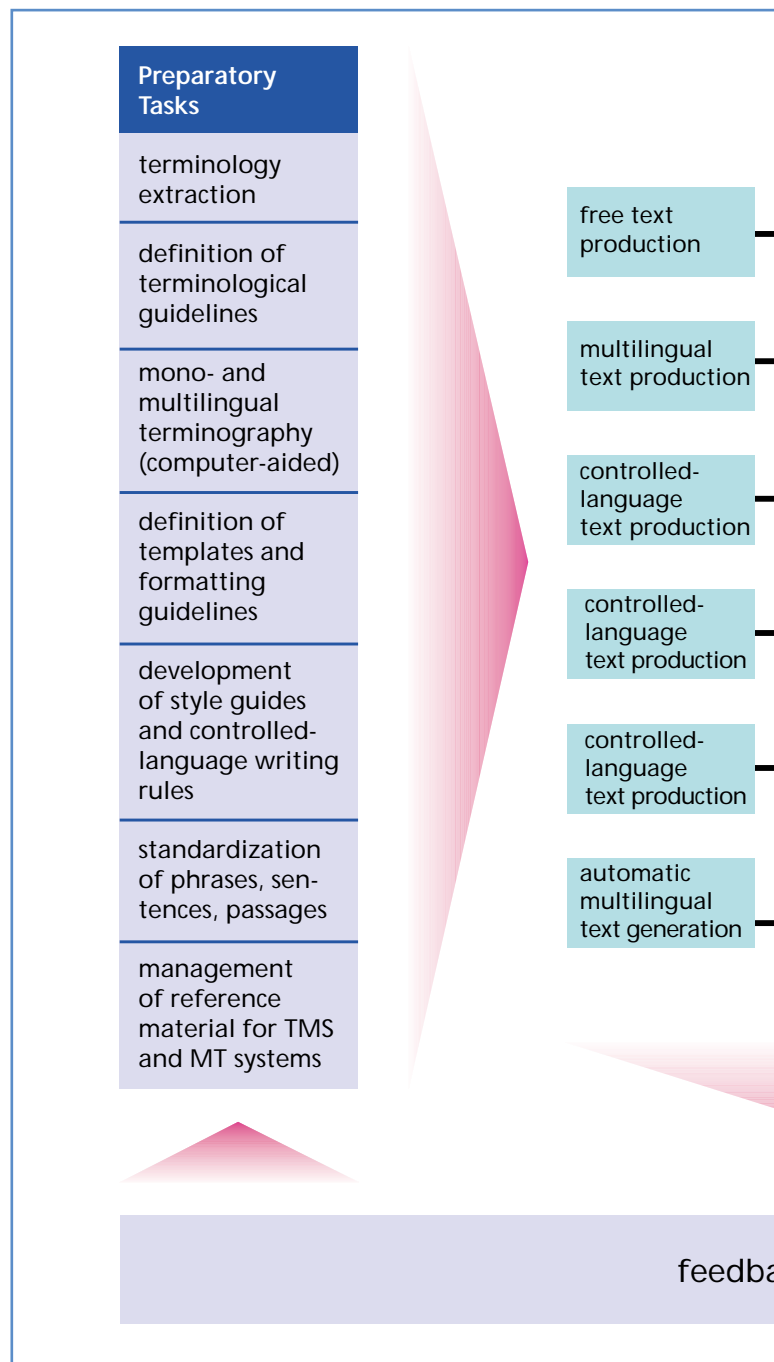
Today, automatic multilingual text generation, promising as it may seem, has not yet found its way into standard documentation processes. Even in future it will not replace the methods for the production of multilingual documentation used today, but become an additional option.

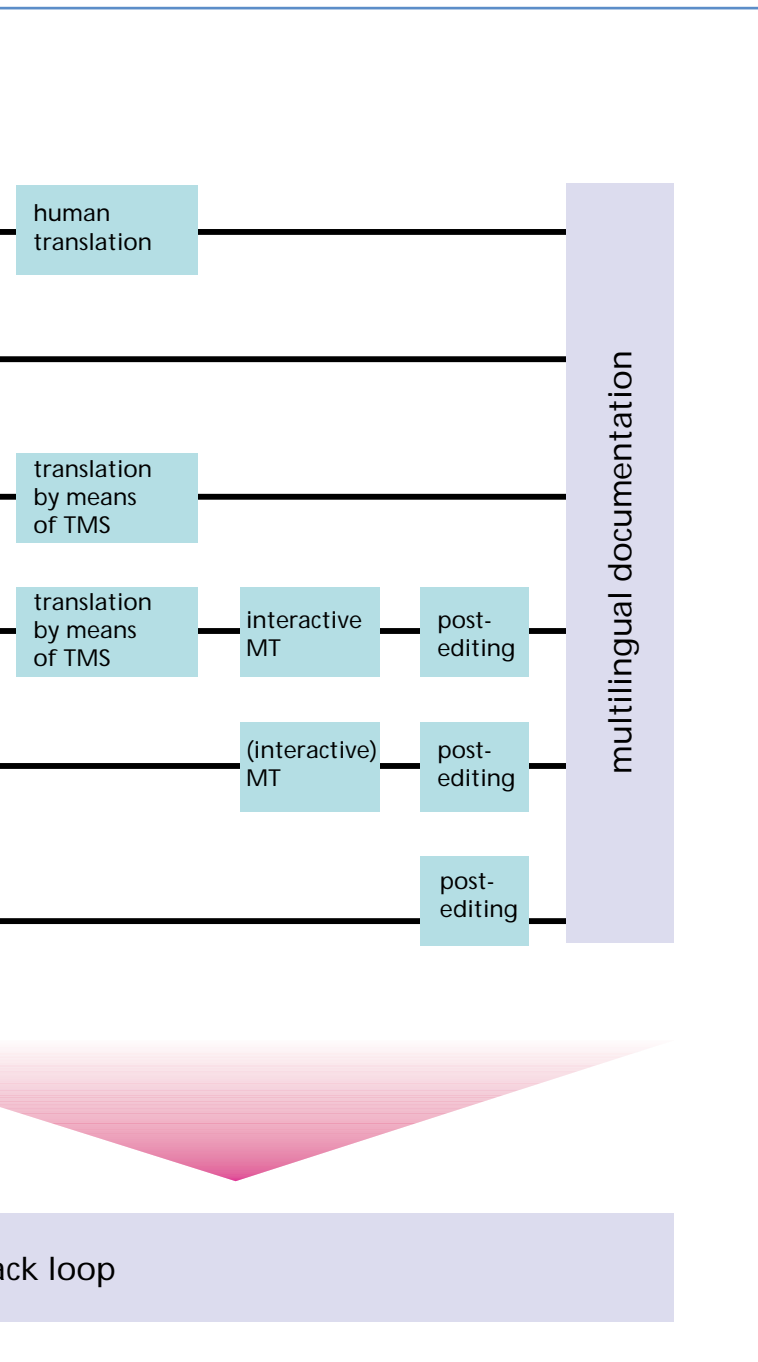
Multilingual text generation becomes an additional option.

What has already become working practice, however, can be described as follows: Documentation is produced in controlled languages by means of controlled language authoring tools such as conformance checkers. These texts are then imported into a TMS, which integrates the translations of segments found in its storage into the target-language text. The segments for which no matches have been found are then passed on to an MT system, whose

translation results are not integrated into the target-language text automatically but interactively by a human translator. Even this process, however, must be considered as advanced. Many companies still produce their multilingual documentation using more conventional methods. Fig. 1 gives an overview over the various workflow patterns leading to multilingual documentation.

Fig. 1: Workflow for multilingual documentation development





Consequences for Degree Programmes in Technical Communication and Translation

The fact that the tasks of technical communicators and translators are converging should be taken into account in the corresponding degree programmes. Today's programmes still qualify separately for each of these professional profiles. In future, the curricula of the separate programmes need to be interconnected to keep pace with the developments in companies operating at the cutting-edge of their business sector.

Bachelor and Master Degrees in Intercultural Technical Communication

The final consequence of the convergence of technical communication and translation should be a synthesis of the separate degree programmes in technical communication and translation to form a programme which could be called intercultural technical communication. The introduction of bachelor and master degree programmes at German universities with the aim of internationalization should create a favourable climate for the development of such programmes geared to the requirements of the global marketplace. The diagram on the following page shows how such programmes in intercultural technical communication could be structured:



Technical Communicators for the Global Marketplace (cont.)

Fig. 2: Bachelor and master degree programmes in the field of translation and technical communication

Master	9	• 2nd foreign language		
	8	• computational linguistics		
	7	• multi-media programming		
Bachelor	6	• socio-linguistics and cultural studies		
	5	traineeship		
	4	technical communication	foreign language/translation	domain-specific knowledge
	3			
	2			
	1	at home		
Sem.	40%	40%	20%	abroad

A six-semester bachelor programme should cover

- the fundamentals of technical communication (text production competence in the students' mother tongue, standardization of documents, practical application of the most common tools for the development of printed as well as on-line documentation),
- linguistic and translation competence in one foreign language, and
- domain-specific knowledge (in either engineering or information science including computational linguistics).

The students should spend the first three semesters at a university in their home country and the last three semesters at a partner university in a country where their first foreign language is spoken. One of the three semesters abroad should be a traineeship in a company.

Graduates in intercultural technical communication should have the option to extend their knowledge and expertise in a three-semester master programme concentrating on one of the following topics:

- a second foreign language
- computational linguistics
- multi-media programming
- socio-linguistics and cultural studies

Such master programmes should be offered both at the students' home universities as well as at their partner universities abroad.

So, why not meet the challenge!

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Formalism and its Impact on Technical Writing · SA 15

By Andreas Baumert, Germany

Preface by the Editor

At the end of a lecture ("Wittgenstein, Artificial Intelligence and Technical Communication") Andreas Baumert discusses briefly the work market for technical communicators and their careers. With his kind permission we reprint the last page of his paper.

When talking about technical communication I will concentrate on the program I work in. The technical writing program at the University of Applied Sciences in Hannover teaches a lot of techniques based on formal methods: Formal logics, programming languages, and other subjects in computer science.

Furthermore, students in technical writing need to know how a reader comprehends a text. Therefore, they also get familiar with some basics of cognitive science. In cognition and understanding it sometimes is hard to say which science came first, psychology, AI (computer science), or linguistics.

So, the heritage of formal reasoning and formal logics is part of the program as well as writing, graphic arts, and others.

When discussing the conflict between formalism and creativity I often feel like being in the mid of a debate started in the first quarter of the last century and is carrying on since more than forty years of AI. It is the opposition between formal methods on the one hand and creativity or feeling for language on the other hand.

This opposition will also have its impact on the work market in the years to come.

Formal Methods

Industry requires cost-saving solutions to provide documentation on different media for international markets. To meet at least some of the requirements there is no other choice than to use formal methods in technical communication. Writers nowadays are familiar with document management systems, translation workbenches, formalized methods to structure contents of documents as for example SGML, and others.

Even one of the most creative tasks in technical communication cannot be executed without knowledge in programming techniques and therewith of formal methods: multimedia. Multimedia development systems use their own programming languages.

In some branches formal methods are deeply interwoven within word selection and sentence structures. These companies or branches use controlled languages to reduce costs, to integrate suppliers worldwide, and to make it easier to maintain large amounts of texts.

Creativity and Feeling for Language

A lot of work done nowadays by technical writers will be made available by computer systems in the near future. Do we really need writers with an academic education to feed systems based on very narrow restrictions for language usage? Here's my prediction:

The market for technical writers or technical communicators will change. Only a few graduates of the future will work as technical writers. Some will manage the transition to computer based technical writing.

Others will start careers that require creativity and an extraordinary mastering of language. Currently the first graduates of our program start in marketing agencies, in multimedia companies, or as journalists in technical journals.

To these students the certificate program in technical writing is a mere starting position for a career in industry and the media market. Once they get their degree they find a fast and appropriate way to react on requirements given by the age of internet and global communication.



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Technical Communicators – Seen from Under a

by *Camille Johnson (USA) and Hans Springer (Germany)*

In early April, an email conversation arose between Camille Johnson (CJ) in the USA and the editor Hans Springer (HS) in Germany. We are presenting the outcome here because we feel that you will find the comments of both parties interesting.

First Camille Johnson's original statements and her own, sometimes provocative, answers:

From: Camille Johnson
To: editor@tc-forum.org
Sent: Wednesday, April 05, 2000 5:58 AM
Subject: Are you living under a rock?

1. Technical communicators must have a technical background before working in industry, business, or government.

NO! Absolutely not! Good interview skills are essential. The writing process requires an SME (Subject Matter Expert) to provide and review content issues. An outsider could never understand the nuances of a subject without a) working with an SME, and b) understanding the topic in a timely, cost effective manner.

The formal educational systems must supply that background as part of the degree programs. Let's see... I intern at a bank. Then I'm stuck with banking the rest of my career??? NOT!!!!

2. Professional societies must directly influence how technical communicators are educated.

Maybe, but, to my knowledge, they don't even provide a set of standards as of 2000. It's not going to happen in my lifetime.

3. The professional societies should control the technical communication certification process, including the decisions about what knowledge should be certified.

That would be nice. See above.

4. The professional technical communication societies should certify formal educational programs. Yeah! Right!

5. The professional societies should offer continuing education for the technical communicator rather than the formal educational system. What??? And you think the higher education system is going to voluntarily give up income from all those post grad courses??? Are you living under a rock? Oh, I'll bet I know. You teach at a university!

From this arose a stimulating discussion with the following outcome:

The Role, Qualifications and Self-understanding of Technical Communicators

HS: What about the background and education of technical communicators? Nobody has stated that programmers or engineers are good communicators (in general), even in their field. But communicators must have a good understanding of the fields they are writing in - at least more than the user of the documentation has. And they must have other capabilities as well.

CJ: My background is education. I have a Masters Degree in Adult Continuing Education. I worked as an Instructional Designer for about 10 years, then specialized in Technical Writing. I have always been an Independent Contractor – which presents a whole other set of issues. I really love Technical Writing, though, because I'm good at it. And the reason I'm good, is because (not in spite of) I'm NOT a techie! When I meet with prospective clients, I tell them, "I am not a techie. I speak for the user [of the documents I write]. I act as translator." They do appreciate my viewpoint – though they do act as if they had never heard it before.

CJ: I do, however, feel very strongly about having (or not having) a technical background. While some people may never be able to understand and communicate with engineering, programming machinery - that is the function of the inter-

Professional societies could do a lot more!

Rock? · SA 16

view process with the SME - it is well known that programmers can't write good user guides. Nor can engineers write usable manuals or even reference guides. That is OK. They are engineers and programmers. We are professional writers and part of our job is to "interpret" their technical jargon into English, or the native language. On the back of my business card I have the following: "Specialty translation - Geek to English." It always elicits a chuckle.

HS: Let me compare the technical communicator with an interpreter translating an engineer's output to make communication understandable. And the communicator needs to know much more than pure technology - you are right with that. I agree that the formal education of TCs is not always really up to the needs of future TCs - to illustrate that would need a longer discussion.

CJ: Yes, you've said it just right. It is my personal feeling that good writers are just a little bit smarter than engineers or programmers in that we can (and do) learn a lot about their fields (and in a very short time), while they seemingly cannot speak English (in my case) well enough to communicate with their fellow Americans in their own language! Ah ha! Perhaps we have hit upon the critical point. American techies cannot separate their "tech-speak" from standard American English. Tech-speak is language, both written and spoken, so laden with technical terminology that it cannot be understood by non-technical speakers. And, further, techies in one discipline cannot understand the tech-speak of techies in another discipline. In fact, each discipline seems to take a perverse pride in adding as many discipline-related terms as they can. Perhaps other nationalities don't have that problem. Americans are notoriously lazy in their use of English.

HS: Did I understand correctly that you, as an experienced writer, would prefer always to consult an SME when you write documentation on a subject in which you are not an SME yourself? And what about usability tests?

CJ: YES! I am NEVER an SME myself. The users conduct the tests, i.e. they use the document I have written to do the procedure I have written.

If they can't do it, the document does not pass the test and needs revision. Not the programmers. Not the writers. Who else has the right to decide what is right? Wrong? Good? Bad? What works?

HS: What about the technical updating of writers in technical fields, especially if there is no "technical basis"?

CJ: What about it? As I have stated before: The content is provided by the SME. Writers update their own writing skills. The technical experts update their technology knowledge.

American English – and Globalization?

HS: You will have realized: my native language is not English, so I fear I didn't understand completely the nuances of your comments. Could you help me by explaining some of your short "spots", and a little bit of your background?

CJ: Sorry Hans, I didn't realize English was your second language and further, that you were talking about education and certification other than in the USA. I have no doubt that the education and certification process is better in other countries.

HS: Knowing that my English is not that of an American you used terms which I didn't find in dictionaries, e.g. "under the rock", "Geek". What about your orientation towards the target person(s) of your writing?

CJ: Excellent point. Remember, I thought you were American. "Under a Rock" refers to somebody who is very out of date, as in "How could you now know what I'm talking about! You must have been living under a rock [out of communication with the real world] for the last ten years." "Geek" is another term for techie, sort of a stereotype techie with a pocket protector, short-sleeved white shirt, with no interests outside his computer. Geeks have a pallid complexion because they never see sunlight, and they sit in front of their computers 24/7.



Technical Communicators – Seen from Under a Rock? (cont.)

Professional Societies

HS: At least two European technical societies have reached a high level of influence on the education of TCs: The Swiss tecom and, even more, the British ISTC. The ISTC has received the approval of their National Vocational Training (NVQ) concept for technical communication in the UK this year. Were you aware of that? I suggest you visit their website at www.istc.org.uk. Switzerland made another approach some years ago. But these are the only countries in Europe where professional societies have accreditation. But there is a promising beginning of international co-operation going on, e.g. between UK and German industry.

CJ: I will be interested to see exactly your certification requirements.

HS: Unlike the USA, there are virtually no national certification requirements yet – but there are universities and other education institutes running a wide spectrum of courses on a national or commercial basis.

Final Comments by Camille Johnson:

By far the most important skill a Technical Writer can have is good listening skills.

We listen to users to learn what they need/want to know to do their job. We listen to the users to discern what piece of the puzzle they don't understand. Sometimes we have to be mind-readers. Always, always, we listen to the user.

We listen to the Subject Matter Expert to learn their expertise. We ask them questions, questions, and more questions, to learn the answers to the users' questions. Then we "interpret" the tech-speak and translate it into normal English. We listen to the Project Sponsor to learn the company object of this product.

And you thought Americans spoke only one language. I speak the language of: telecommunications, electrical and mechanical engineering,

numerous programming languages, numerous software languages; I speak the language of accounting, insurance, finance, banking, and stock market trading. I speak the language of industry on the production line, shipping, project management, and budgets. I speak the language of management, IS, and the customer. I speak the language of written documentation, online help, web design, and presentation materials. I speak the language of Indexes, Table of Contents, Glossary, Editing, and Style Guides. I am a Technical Writer!



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Closing Remarks by the Editor

I think this is an excellent presentation of an American technical writers' self-understanding and of the problem of global communication - - even among communicators. I assume that there are many items worth discussion.

I would very much appreciate your comments on the self-understanding, the necessary "fundamentals", the further education of technical communicators, and the further development of the profession.

And wouldn't it be interesting to learn the professional societies' intentions and what role they assign to education/training (including upgrading) for the further development of technical communicators/writers within the next 5+ years?

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The Making of www.tc-forum.org · SA 17

By Alexander von Obert, Germany

There have been tries to put modern software technology to work for our profession. True, we use tools that were created using object-oriented (OO) technology and we even document such programs. But you know the problem: The programmers change "a single bit" of the program and you chase down all those 39 instances of that change. This paper will give you insights into possible ways to use OO technology by yourself.

The computer cannot write text by itself. But if the computer has some insights into the structure and contents of your document it can help you much better than ever before:

- By "typing" information and relations between the information units you can enter more information about the contents into the document structure. Information typing is quite common these days, which is what distinguishes XML from HTML. But typing of relations between elements is quite a new concept and more powerful than ordinary links.
- By defining document structures on a very abstract level, combined with the typing of every single bit of the document, cross-media publishing gains power and flexibility.
- Powerful evaluation of the document structure allows you to concentrate information in the source document. These concepts need some explanation. I will show a few examples from the TC Forum Web site.

The Concept of Information Typing

The SGML and XML experts will not find anything new here: Charles Goldfarb had these ideas in the 1960s. Since 1986 ISO 8879 has formalized them as part of SGML. To give you an idea look at the following warning note:

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl"
href="warn1.xsl" ?>
<Warning
xmlns:HTML="http://www.w3.org/Profiles/XHTML-transitional">
<Signalword>Danger</Signalword>
<Sourceofdanger>Boiling water, watch for
splashes!</Sourceofdanger>
<Results>Possible burns</Results>
<Preventivemeasures>Use protection
gloves!</Preventivemeasures>
</Warning>
```

Fig. 1: This well-formed XML document frames each of its components with "tags" that describe the type of its contents. There can be simple components containing only text, or components can contain other components.

Many errors can be prevented if your authoring tool knows that every warning must consist of these four elements. Or you can easily search for "water in a warning". In authoring tools like Framemaker + SGML this is the present state of technology.

The Concept of Relation Typing

You know the concept of links in Web sites: There is a hot spot in the page and when you click on it you jump to another place in this or another document. An important weakness of this concept is that the author creates a relation between two places of the document without the target knowing about it. As soon as you expand that link concept you gain many possibilities.

A typed relation consists of three elements:

- The source (of one or more types).
- The target (of one or more types).
- The type of this relation.

Let's start with a simple example:

- The source shall be a mother.
- The targets shall be her children
- The type of relation is "child of the given mother".



The Making of www.tc-forum.org (cont.)

This way you can easily find one's mother. But there is more to it: You can easily find ones brothers and sisters. You might even find one's grandmother! One possible property of this relation is "two children of a mother cannot have the same age". This leads to a sorting order. This is exactly what happens on many levels in the TC-FORUM Web site:



Fig. 2: This page was created automatically – mostly out of typed mother/children relations: The mother of this page is "Contents of Printed Issues". The next younger sister is "4-99 (December 1999)", the next older sister is "2-99 (June 1999)".

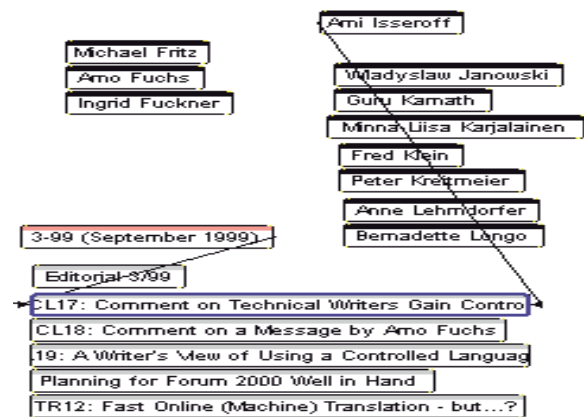
The information about incoming links can be put to good use: There is one link to this page and the authoring tool derives three outgoing links from this structural information – plus the information about where this page is within the site and the naming of all hot words.

But this concept has even more possibilities: Not only relations but even types of relations can be sorted. This is what creates the table of contents in the page above:

- There are separate relation types "from TOC to article of topic X" for every topic used in TC-FORUM.
- These relation types have been ordered. This defines the order of topics in the tables of contents (TOC).

If I change this order of relation types in my source document all TOCs will be re-ordered. Within the relations of a type the links are sorted alphabetically, which is why I use the article number (e.g. "CL17") as a prefix.

Fig. 3: On the source document level: Relations define where an article appeared in print and who wrote it. Both facts are only in the structure of the document and nowhere else, i.e. the author's name is mentioned nowhere in the article node.



Many things are created automatically when I enter an article into the archive:

- A node of type "article of topic X" is automatically connected to the correct "Contents by Topic" node.
- A link to the overview of this topic is created, whose hot word enters the topic into the head of the article – again an existing relation used backwards.
- Links to the neighbouring nodes (and from these nodes to the new one) are created.
- The link to the author's node is inserted and it enters the author's name into the article node.
- A link to the TOC is created and it enters the paper edition information into the article node.

The most advanced use of this technology in the TC Forum Web site is how the authors' names appear in the TOC. The algorithm is like this:

1. Go forward to the article node.
2. At the article node get all relations of type "author to article".
3. Go to the source nodes of these relations.
4. Get the HTML addresses and names of these nodes.
5. Create the TOC entry with links to the authors' nodes and the article node.

INTECOM Code of Good Practice

And what is the user's profit?

This multi-dimensional structuring is available in the TC Forum archive. Let's look at an example:

1. You browse through the table of contents of the latest paper edition.
2. You jump to an article.
3. You get interested in the author and jump to his or her description.
4. There you find a list of all his or her articles that appeared in TC Forum.
5. One of these titles sounds interesting. You jump there.
6. The topic catches your attention. You jump to the respective topic overview.

Each of these steps is possible with a single click! There is no need to restart from the home page or a navigation frame.

... How Can This be Done?

First: Do not try this technology on a small project. If you are in the experimenting phase 100 – 200 nodes might do (the TC Forum Web site has some 240 nodes). But if you really want to do cost-effective production you need at least 1000 nodes.

There are very few tools that allow you to work this way. The only one I know about is Schematext (<http://www.schema.de>). It is a fascinating tool that opened new insights for me. But it is neither easy to start with nor cheap. You need some training and someone to configure it for you. Later on you can work quite easily with it, but it is a quite long way to that point. However I think it is easier to set up than a typical SGML/XML authoring system and both technologies change your way of working and thinking.



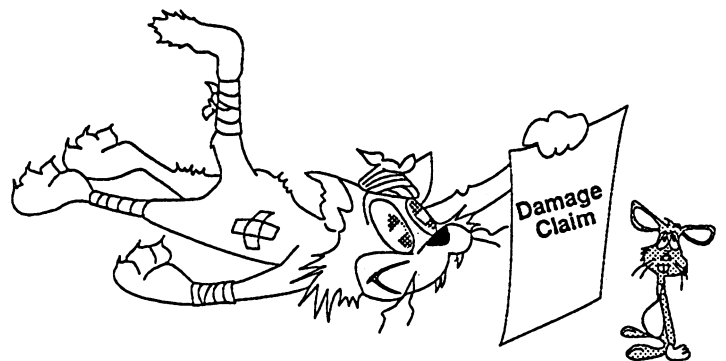
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5. It is not unclever to express oneself in a simple way.



6. The communicator must be aware of the legal and moral aspects of his communications.



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We invite papers covering multilingual aspects of any NLP task/application.

Submission Guidelines

Authors are requested to submit full-length papers which should be written in English and should not exceed 7 single-column pages (preferred font: Times New Roman 12) including figures, tables and references. Electronic submissions (attached postscript files, pdf, rtf or Word files) are encouraged.

The address for e-mail paper submissions is:

D.R.Lewis@exeter.ac.uk

In addition, the abstracts of the papers should be separately emailed to Ruslan Mitkov (R.Mitkov@wlv.ac.uk).

Schedule

Paper Submission Due:

1 June 2000 Notification of

Acceptance: 1 August Camera-

ready Paper Due: 30 September

Conference: 20-22 November

2000

Exhibitions

The conference will host exhibitions of software products and books related to multilingual NLP. Companies/organisations interested in exhibiting their products should contact Derek Lewis (see below).

Further information

Derek Lewis, Queen's Building
University of Exeter, Exeter
United Kingdom EX4 4QH
D.R.Lewis@exeter.ac.uk, or
David Wigg, NLTSG,
wiggjd@bcs.org.uk

Conference web site:

<http://www.bcs.org.uk/siggroup/nalatran/mt2000/index.htm>

Exeter University web-site:

<http://www.exeter.ac.uk>

tekcom Conferences in 2000¹⁾:

November, 23-24

Rhein-Main-Hallen Wiesbaden

Annual Conference

Further details from
info@tekcom.de or the Website
www.tekcom.de

23 - 24 September 2000

Wiesbaden, Rhein-Main-Hallen

tekcom Annual Conference

with one track in English language.

Proposals for presentations welcome

mailto: m.fritz@tekcom.de

Further details from

info@tekcom.de

or the website www.tekcom.de"

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