

Quality Assurance in the Technical Documentation and Translation Process

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Abstract

Quality assurance in the technical documentation and translation process is a means of assuring both quality as a process and quality documents as a result of any quality processes implemented. The willingness to improve quality is the common desire of commerce partners and a project team co-operating in the production of a quality assurance manual, which is the topic to be discussed in this paper. A concentration of mutual efforts on the road to higher quality in technical documentation is the focus of this quality assurance manual to be created in accordance with the partners' requirements. Furthermore, the easy implementation of necessary changes to this manual and the introduction of new approaches to process handling combine to make the quality assurance manual versatile and lasting. Preconditions to this approach are manifested in the quality awareness required of the participants, as well as in an openness towards innovative quality measures. As a consequence of these preconditions, a modular approach is taken to organise and structure the documentation workflow, and to incorporate quality aspects and measures into modules. Modularity is a key factor for converting these project requirements into reality, thus ensuring that quality criteria are assigned to individual tasks and steps within the documentation production workflow. Modules are specified and designed to constitute the centre of the quality assurance manual which will be presented as a flexible and editable on-line document.

Introduction

The present contribution poses the question whether working according to ISO and other national/international standards is enough to realise highest quality in technical documentation, and whether high-quality multilingual documentation is work ensured, if only deadlines and budgets are kept. While today work process-oriented quality assurance has become common practice in most production-oriented sectors, the discipline of writing and translating technical documentation has its own rules and regulations. This paper reports on the QUATRE approach which aims at instrumentalising these rules, thus attempting to further quality assurance in the technical documentation and translation process. In addition, the discussion printed here also provides insight into those perspectives offered when the QUATRE approach is successfully carried out.

The QUATRE project and its partners

The QUATRE research project¹ is carried out in the Department of Technical Translation at the Flensburg University of Applied Sciences (Germany). It focuses on the development of an on-line quality assurance manual for, initially, the QUATRE partners. The commercial partners involved are representatives of the documentation departments of the *Drägerwerk AG*, Lübeck, the *Volkswagen AG*, Wolfsburg, and the *MobilCom AG*, Büdelsdorf, as well as the former *Great Plains Deutschland GmbH*, Hamburg, the translation agency *Lass Fachübersetzungen und Dokumentation*, Flensburg, and the communication service provider *Zindel Technische Dokumentation und Multimedia*, Hamburg. All companies are located in northern Germany and, through participation in periodic workshops and a web forum, they contribute to the project their expertise in the translation and technical documentation workflow. The partners work in close co-operation with the QUATRE team² of the Flensburg University of Applied Sciences. Along with the partners' hands-on experience, the team also draws on current research literature, e.g. on project management, quality control, languages for specific purposes and process optimisation, to form the QUATRE quality assurance manual. In order to meet the quality requirements of the partners the QUATRE team aims at developing a manual which takes the partners' individual wishes, preferences and needs into account.

The challenge for the QUATRE team lies, on the one hand, in the significant differences between the unlike industrial and service sector companies and, on the other hand, in the partners' differing requirements. The companies vary greatly in size, in the form of organisation, in the kind of service and/or documentation they provide and in the way in which they currently integrate quality aspects or measures of quality management into their workflow.

For the partners, the documentation process is a technical translation process in itself or includes technical translation or software localisation to a great extent. The kind of documentation produced ranges from internal and external print to on-line documentation. Partners produce full software documentation, translations of technical text, respectively internal standards and the like, and product briefs along with workplace descriptions, operator and service manuals, maintenance manuals and manuals for international markets.

While some partners already work within the structures of company-wide quality management systems, others have not yet incorporated defined quality rules and standards-based approaches to quality assurance into their day-to-day business. QUATRE brings together the common interests of the partners in customer-oriented, high-quality documentation. In addition to customer satisfaction, there is a common necessity for the manual to focus on interaction and communication within the individual company structures.

Partners require guidelines, ideas, and/or suggestions for handling procedures at the initial stage of a documentation assignment, for initial customer meetings and for interviews, preferably to be provided in the form of checklists. In addition to the service area, there is also a considerable need for quality milestone in the course of

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² Kerstin Dundalski, Carmen Heine and Prof. Dr. Klaus Schubert as project leader

the workflow to ensure that documentation quality is continuously being tested and reported on according to a set of organised quality criteria which match the various process stages.

Likewise, the partners require assistance in troubleshooting, in reorganising their processes according to best practice communication and information flows both within the organisation and in conjunction with the customer, and in setting up operational strategies for time and resource management. Managing outsourcing processes, particularly the outsourcing of translation work, is another quality area in which the partners require improvement and assistance.

In order to achieve the above improvements in quality and to increase the service and communication potentials of the companies, the QUATRE team is working on integrating existing standards, including ISO, VDI and DIN (see references) - the latter two being German standards used by some of the partners - into the manual. Contemporary theories, ideas developed during the workshops, and data gathered from the partners, all combine to create the basis of the approach.

The QUATRE approach

There are different approaches to technical documentation. Attention can be directed to the end product, the technical document, thus to the subject matter of the documentation, be it a medical device described, a software to be fitted for a specific location, or an internal standard to be translated into a multitude of languages.

Another approach would be to look at technical documentation from a task-oriented perspective, where attention centres on roles and competencies, and the management of these. And again, technical documentation can be looked upon as a process, or workflow, in which a sequential progression of actions is performed.

Figure 1, below, indicates a non-systematised fraction of aspects, competencies, features, measures, and requirements, as an example of the varieties of factors which must be considered by the QUATRE team and which represent the content of "technical documentation".

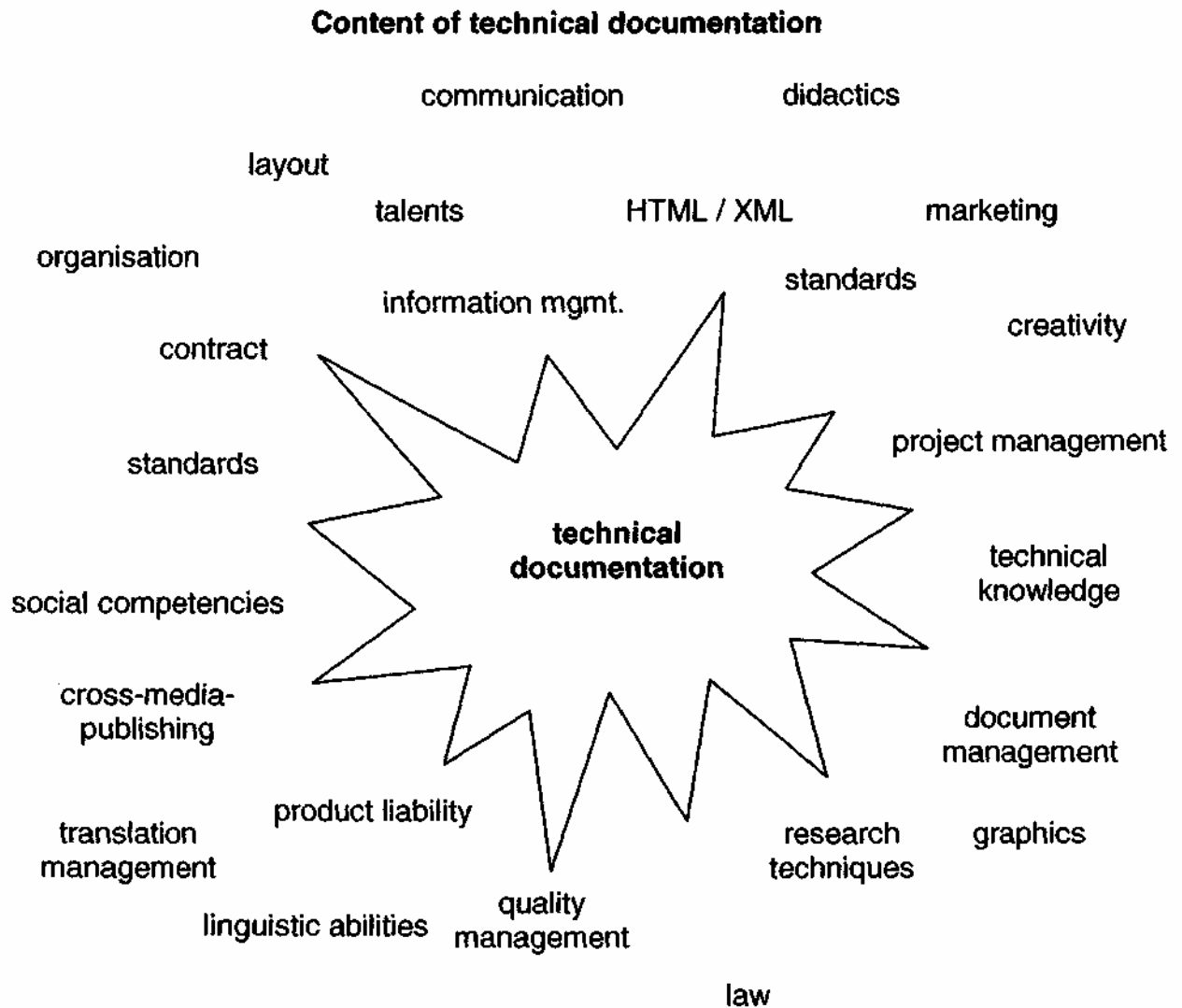


Figure 2: Content of technical documentation

Documentation quality is likewise "a term that has always been difficult to define" [Warren 1994:170]. Different views are associated with the quality of technical documentation. Despite of the traditional view of quality, where high standards of production, delivery and presentation are in the focus of attention, a managerial view or a consumerist view of quality, both driven by customer satisfaction, or a professional view being that of the document production experts can be taken. Wright suggests a democratic view of quality which "is achieved by a synthesis of the other four meanings" [Wright 1994:11].

The QUATRE approach is a bottom-to-top approach in that it uses workflow orientation as a basis, and form modules to incorporate the individual tasks and ensure that these are performed by the respective professionals whose efforts will cumulate in the resulting technical document and its quality.

Given the above situation, i.e. to handle various heterogeneous ideas and a wide range of differing interests, jobs and task profiles, the following steps are applied:

1. Development of a general workflow overview model for discussion
2. Identification of partners' wishes, preferences and needs
3. Identification of shared and deviating documentation process requirements
4. Specification of each partner's individual workflow
5. Definition of primary and secondary process modules
6. Definition of modules, quality criteria and quality measures
7. Provision of a sample workflow for discussion
8. On-line manual design and production

The QUATRE research project was begun on the basis of a presupposed workflow common to all conceivable document production processes. Figure 2 illustrates this presupposed simplified workflow model of step one, above, used as a sample and the kick-off for discussion.

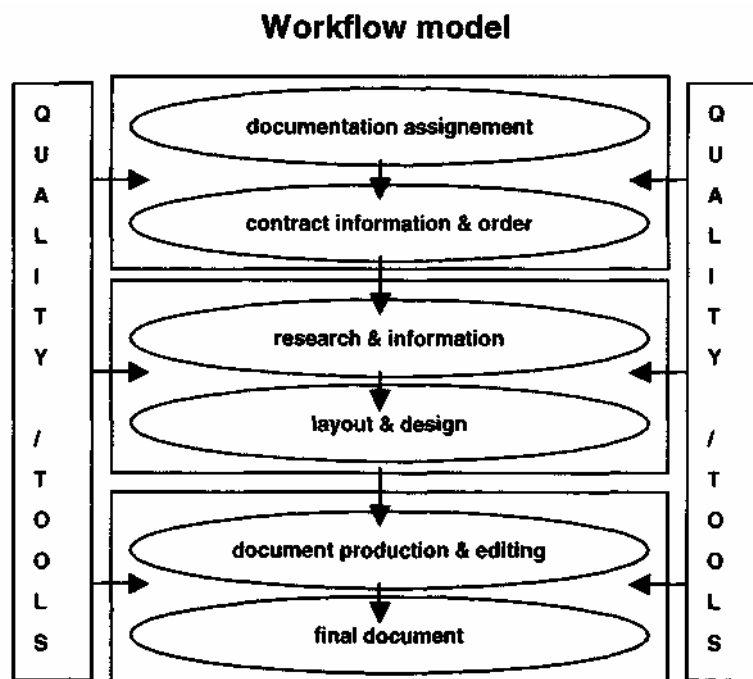


Figure 3: Workflow model

It was assumed that such a process would originate in a translation or documentation assignment by a customer (this includes in-house orders), and would ultimately culminate in contract information, research and information stages, document production, construction and layout stages, proof-reading, and final print and on-line document versions.

Parallel to the workflow, the different workflow sections were grouped into the main components of research and development, as indicated in Figure 3, and data was collected for each of them.

The information area contained in Figure 3 is purposely put at the centre of attention. The information section and the module information will be used as an example throughout the rest of this paper.

This collection of sections was used to help classify and structure the bulk of the data, as well as theories available, and to group and regroup the variety of factors relevant to quality assurance in technical documentation.

Sections of technical documentation

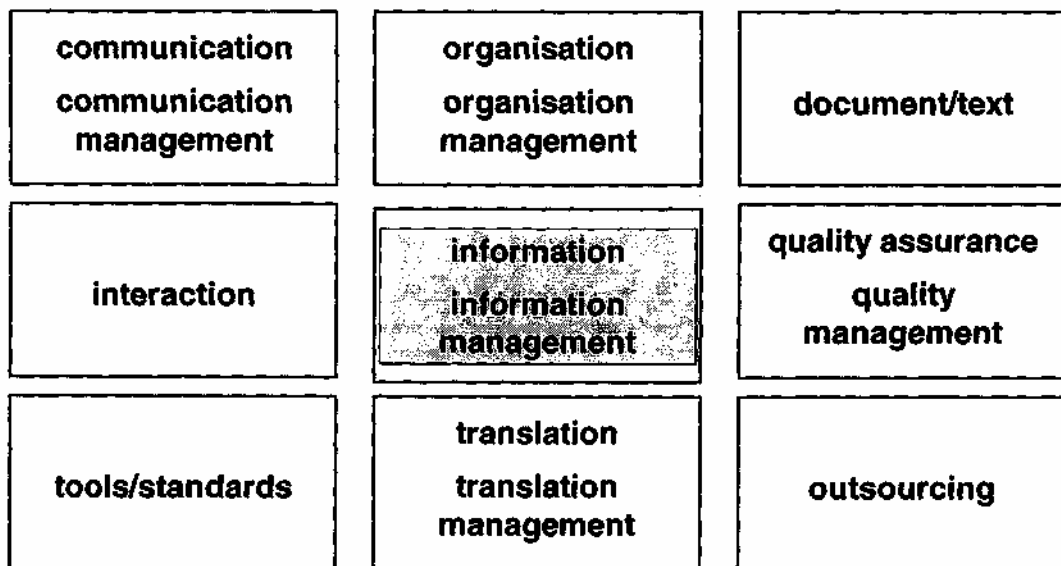


Figure 4: Sections of technical documentation

The sample workflow was presented to the partners at the initial workshop in December 2000. During structured and unstructured interviews, for which questions were organised with respect to the presupposed workflow and to the relevant sections, the needs and wishes of the partners were identified. Group discussions during the workshop made the shared and deviated requirements transparent (step two and three). The partners made it apparent that, for the manufacturers, the documentation process, of internal documentation in particular, is perceived to be an individual internal service within a company and processes are similar to those of the service providers. Thus, both manufacturing and service partners share roughly similar process workflow sequences. Both focus on customer satisfaction, customer

feedback, internal and external communication, and both stress the importance of good communication and interaction.

Along with Pfeiffer and various other theorists the QUATRE partners agree that quality "applies [both] to employee productivity and customer service" [Pfeiffer 2000:44]. In the course of the project, and thanks to the partners' keen interest in these topics, the QUATRE research agenda has been extended by a communicative approach to include the interaction between technical writers and translators, as well as technical and social communication, and other related quality aspects.

The QUATRE team relies on the partners' experience which "will lead them to raise questions about the best means of achieving the communication's objectives" [Wright 1994:9]. The partners consider these human factors as essentially important.

Communication and interaction considerations add an holistic approach to the development of the QUATRE manual best illustrated by the ISO 2000 overview draft, used for and adapted to QUATRE project needs.

Figure 4 shows a model of the documentation process with reference to QUATRE and relates it to the ISO 2000 model. The customer, responsible for initialisation and participation in idea-finding, is incorporated as a key influence into the holistic quality approach by means of feedback. This feedback has an influence on the quality manual.

The quality manual itself is not to be seen as a restriction to process stages and tasks performed within the documentation process, i.e. as something forced upon the process by an external power, but as an integral part of the process which continuously supports and reinforces quality efforts at all times and at all process levels.

Factors like multilingualism (M), tools (T) and communication (C) are considered as aspects likewise vital to the total process, and as going hand-in-hand and operating in conjunction with the QUATRE manual.

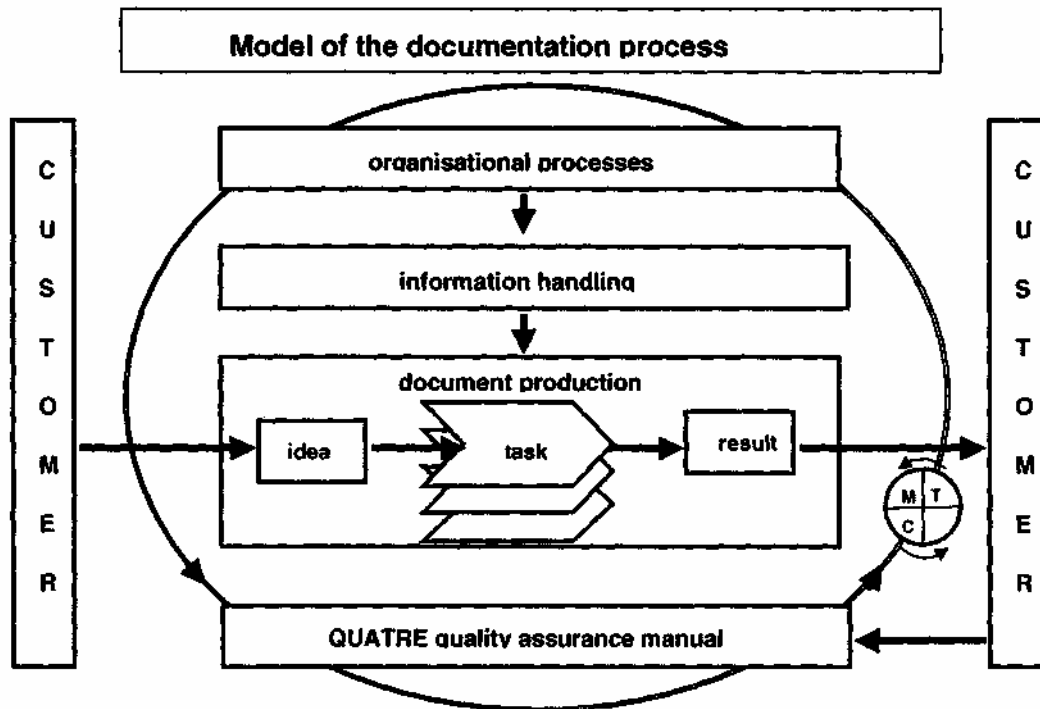


Figure 5: Model of the documentation process

Visits with the partners on their premises allowed for insight into the practice of document production and made it possible to draw up an individualised workflow in those cases where one was not yet available (step four).

As a consequence of the comparison made between the documentation processes and due to the different requirements of the partners, a modular approach to the quality assurance manual was decided on.

The QUATRE modules were generated in the course of splitting various processes taken from the partners into individual components and regrouping them to match a common manual workflow. In addition, the documentation processes were divided into primary and secondary processes and defined accordingly (step five). The following example illustrates this.

While the translation of a document is a *primary process* for every individual translator or translation agency, it is often considered a *secondary process* within technical writing; unfortunately often placed at the very end of the overall workflow and, therefore, almost always leading to time pressure, lack of information and unnecessary feedback loops to name but a few of the resulting quality problems.

How can such a situation be improved? How can these processes be classified and valued? How must they be arranged to meet quality expectations and hold deadlines at the same time?

The primary and secondary processes integrated into the QUATRE modules incorporate answers to these questions. The processes and sub-processes are individually considered and fitted with criteria constructed to match the partners requirements.

A translator and a technical illustrator are considered human factors and their internal communication within the technical writing process is relevant. On the one hand, translating text from one language to another is the primary process for the translator. The illustrator, on the other hand, focuses on the graphic and considers the text a by-product. How can the quality of both be assured? Which roles, functions and competencies are needed in the process and at which stages? Where is interaction useful - if not absolutely necessary? How do the people involved communicate with each other? How could communication improve quality and efficiency in the documentation process?

Quality measures laid down in the QUATRE manual correspond to these questions and to the given requirements for interaction interfaces; particularly in external service, and internal-external communication areas where troubleshooting measures are likely to be required.

In step six, modules and quality criteria, as well as quality measures, are designed and defined. The modules make up the scaffolding onto which data from the partners may be placed and include the corpus of the QUATRE research. All content for the modules was generated from the available data.

To illustrate module design, consider an order for documentation and the module information at the beginning of the process. The target of the module information will be to prepare the information required for the documentation order and for continued use by the technical writer. There will be information at hand (either because it is common good, can be taken from certain resources known prior to research) or information to be gathered (from the customer, from internal or external sources), or both. Information needs to be viewed, sorted, analysed, stored, and prepared for further use. The people involved in the research and cumulating processes will have to report on their time and tool requirements, they will have to communicate with others, and there will be technical and human interfaces that must be organised in order to transfer data. As mentioned above, quality information of the best practice communication kind is also a key quality factor for the translation process. If the appropriate data-bases and steady business contacts are available, the translator has the best preconditions to ensure high quality multilingual documentation.

A multitude of correlating aspects must be considered within the modules. In order to find out whether the module design concept is right, another sample workflow (step seven) will be provided for the partners. In the course of a second workshop, to be held in October, 2001, the workflow will be put to discussion. At the same time, the partners will be asked to use the QUATRE modules to organise their own individual processes, thus incorporating the QUATRE concept.

In order to ensure that important details are not overlooked, key module targets will be posed as questions. The partners will be required to answer these, adding their thoughts and ideas, as well as to show interrelation and dependencies. Thus, it is hoped that a complete overview will be gained, including requirement necessities and uncalculated errors due to the lack of "real" documentation data.

During the October workshop, the design of the QUATRE on-line manual will also be discussed, and the partners will be asked to commit themselves to various tasks arising from the production stage of the manual. Inquiries will also be made into the availability of software infrastructures of the partners to ensure the feasibility of the design approach.

The manual design

Comprehensible hierarchies, visual simplicity, structured texts, cross-references and links, compatibility, adaptability, and easy access are among the key design features to be transferred into the QUATRE quality assurance manual. In order to organise the complex QUATRE contents and provide an open structure for the same, an on-line manual will be produced.

To ensure an appealing design of the on-line manual the 'most wanted screen features' by Galitz are taken into account:

- an orderly, clean, clutter-free appearance,
- an obvious indication of what is being shown and what should be done with it,
- expected information located where it should be,
- a clear indication of what relates to what
- plain, simple [language],
- a simple way of finding what is in the [document] and how to get it out. [Galitz 1993:60].

The on-line quality assurance manual will consist of three sections: a reference section, including a glossary; a module pool with process workflow modules; and an interactive partner platform.

The reference section of the manual will describe the QUATRE multi-level workflow approach. Definitions and explanations will be given in sequence of activities for documentation and workflow management, internal and external handling procedures, and communication and interaction. Further reference will be made to standards like DIN, ANSI and ISO; bibliographical references for further reading and Internet links to back up the information will be given as well.

The module pool section will provide the QUATRE partners with an outline of the individual modules. The modules will consist of comprehensive lists including tasks, quality criteria, time frames, roles, responsibilities and competencies, and checklists. These will represent the skeleton of the quality processes in that they will structure the ideas, provide the internal connections between parts of the processes, and contain the roles and competencies necessary for the tasks performed at particular process stages. In this section, the partners will be able to take a closer look at specified areas of the documentation process; they will also be able to view the contents of the modules they might want to adopt for their own workflow. Parts of the module pool, as well as parts of the module contents, might not be useful for one partner but might indeed be a quality improvement for another.

The primary module "information" of a process can be taken as an example. Information is one of the first modules to occur in a documentation workflow. Information is gathered, evaluated, filtered and checked for quality with respect to

utilisation, correctness, duration and other quality aspects outlined in the QUATRE manual. Consequently, it is at this stage that big steps of quality assurance are made, that the milestone of "good" documentation is reached. First and foremost, the module information of the module pool describes the overall aim of this process stage. It includes interactive references to other primary modules and shows a variety of secondary processes connected to it. The fill-in forms of the information module allow the user to state names of people responsible for individual tasks, the order in which these tasks are to be performed (a detailed description of the tasks can also be included by the user) to whom, as well as when, one should report, and references to other processes or sub-processes.

Furthermore, information references for gathering purposes can be made and paths can be laid where respective data may be kept. The data content behind the modules cannot be made more precisely since it varies according to the tasks performed, according to the users of the module, and according to the given circumstances.

From a translator's perspective, information includes everything that exceeds the source text and the details of the contract. Terminology databases, drawings, and site visits would be examples of additional precision and timely information that the translator would require to produce the highest quality target texts.

The module pool section serves particularly as the backbone of time and resources. Overall management and the individual modules are designed to refer to and match each other. Thus, the QUATRE modules makes sure that its users are aware of their current position, and which route to take within the workflow, especially when using the modules on a daily basis.

The third section of the on-line manual will provide the QUATRE partners with an interactive platform where they can construct an individualised workflow by picking primary and secondary modules according to their own individual requirements. The content of these modules may be arranged and rearranged at will. Individual data may be entered into the forms described above. An interface with word-processing or publishing tools, such as Microsoft Word and Adobe FrameMaker, will allow for direct module usage, implementation, and adaptability. Consequently, the partners will be able to use customised modules for their practical needs. Partners can adopt the underlying ideas of the modules as they please, without being forced to implement the bulk of all the QUATRE modules. The resulting custom-tailored workflow will be quality assurance according to QUATRE.

The module pool and the reference section will be closely linked with each other. Users will be able to navigate from keywords in the module pool to the reference section, where detailed descriptions or the process will be provided. Likewise, each part of the reference section will refer to related modules of the module pool and will include hyperlinks for easier navigation. Marginal columns will allow for easy access to related areas of the manual from all sections.

The "information" module contains a short description of the overall aim of the "information" process stage, lists the people involved, the tasks to be performed and the quality criteria to be met. The hyperlink reference part of the manual will go into further detail by means of definitions, descriptions and explanations.

In this section, the definition of information according to QUATRE is followed by a detailed outline on information gathering - including details on information sources and instructions on how to utilise these in relation to quality -- a section about

interview techniques, note-taking and mapping, along with suggestions and guidelines on confidentiality of information, information access control and time frames.

On the platform, partners may construct an individual organisational workflow. The module pool may be accessed where data and actual usage information may be entered.

With the three section design, practical requirements will be covered, interest in theoretical and practical quality ideas for technical documentation will be cultivated and the partners will be animated to successfully implement QUATRE modules into their work.

Conclusion

With respect to the question whether working according to standards is enough to realise the highest quality in technical documentation, QUATRE says "*No, it isn't*". QUATRE undoubtedly considers standardised, overall quality processes important, but it also points out the importance of the role that the individual participants - be it writer, translator, or another - play in the documentation process, and in developing a standardised workflow.

The human factor, strongly manifested in information oriented communication between the participants, is a factor of utmost importance to quality.

Corporate rules and regulations only work if the people involved mutually agree to follow them. The provision of a departmental, or company-wide quality concept, the availability of milestones to keep track of the documentation production process and its workflow according to pre-determined quality criteria, and the continuous awareness of staff to work according to these structures, are all key issues vital to realising quality.

A document cannot be infused with quality at the very end of the production process. Quality in technical documentation is a matter of keeping up a continuous effort, utilising sophisticated knowledge, and consistently adhering to a standardised manual. Field tests will show the usability of the QUATRE quality assurance manual and answer the question of the viability of the QUATRE approach.

The manual parts which will be presented to the participants of the conference will offer a range of quality goals to be achieved by the QUATRE team and its partners to improve quality in technical documentation.

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