



TecDoc-Net

Professional education and training of Technical Communicators in Europe – Guidelines –

Version 1.0

April 2005



This project is realised with the support of the Commission of the European Communities under the Leonardo da Vinci programme. The content does not necessarily reflect the Commission's position on this subject.

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– Guidelines –

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These guidelines were created as a part of the TecDoc-Net project with the support of the Commission of the European Communities under the Leonardo da Vinci programme. They are the product of a European network for the collection and dissemination of knowledge in the field of professional education and training of Technical Communicators. The National Societies of Technical Communicators, educational institutions and training institutes, chambers of commerce, documentation service providers and manufacturing companies have cooperated in this network.

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Table of contents

1 Setting the stage	4
1.1 Technical Communication: definition and mission	4
1.2 Scope, purposes and audiences of the guidelines	4
1.3 State of the profession	5
1.4 Current challenges for the profession	8
2 What is a Technical Communicator?	9
2.1 General description	9
2.2 Personal aptitudes	9
2.3 Be part of the Technical Communication community	10
2.4 Where do they work?	10
2.5 Locating Technical Communication in an organisation	11
2.6 Salary levels	11
2.7 The four dimensions of technical communication work	12
3 What competencies does a Technical Communicator have?	13
3.1 Definition of competencies	13
3.2 Levels of competency	13
3.3 List of competencies	14
3.4 Required competencies on different levels	17
4 How to become a Technical Communicator?	41
4.1 Ways of qualifying	41
4.2 Certification	42
List of references / sources	43
Documents	43
Data base with vocational and further training programmes in Europe	43
National societies for Technical Communication in Europe	43

1 Setting the stage

1.1 Technical Communication: definition and mission

Technical communicators (TCs) create and manage the production of usable information, also referred to as documentation, at key points along the life-cycle of technical products, software or services. In this definition, in accordance to ISO 9142:2003, usable refers to the effectiveness, efficiency and satisfaction with which specified users of the documentation achieve specified goals in particular environments.

- Effectiveness refers to the accuracy and completeness with which specified users of the product can achieve specified goals in particular environments.
- Efficiency refers to the ease and time expended in relation to the accuracy and completeness of goals achieved.
- User satisfaction refers to the comfort and acceptability of the documentation to its users.
- User safety refers to the prevention of hazards and damages that may occur when using the products.
- The terms ‘technical products and services’ also include such things as medical and financial products and services.

The importance of technical communication is recognised by the European Council Resolution of 17 December 1998 on operating instructions for technical consumer goods which states explicitly that “the protection of economic interests requires that consumers of technical goods have access to adequate user information to ensure proper and complete use of the product.” The Council invites the Member States and economic operators to pursue the objective of “making information available to consumers, enabling them to make safe, easy, proper and complete use of technical goods”. Besides the fundamental obligation to provide adequate user information, suppliers of technical goods have a commercial interest in this, since the quality of user information is an important tribute to the marketing of their products.

There are different means of communication: print media (paper), digital media, face-to-face communication, telecommunications, and learning media. Technical Communication is mainly text-based, but it also comprises illustrations, the design of diagrams, animations, video materials, multimedia products and WWW sites.

Technical Communication (TC) is a profession with a specific skills profile. At present, depending on current national practices, the development of this profession requires training, education and/or certification.

1.2 Scope, purposes and audiences of the guidelines

1.2.1 Scope

These guidelines offer recommendations and advice. They are not legally binding. Members of the national Professional Associations have contributed to the production of the guidelines.

1.2.2 Purposes

The main objective of these guidelines is to give a definition of the job profile of Technical Communicators, on behalf of all players in the profession such as employers, clients and other interested parties (students, job seekers etc.) who want to start a job in Technical Communication or who want to improve their skills in the field of Technical Communication.

By defining and listing the competencies (knowledge, skills and experience) needed in the various professional branches, the guidelines provide a reference framework for professional education and advanced training in these professions. Moreover, Technical Communicators can use the competence definitions to evaluate their own competencies and identify subjects in which they need further training. Finally, the competence definitions encourage a debate of possible harmonization for the certification of Technical Communicators on national or European level.

1.2.3 Intended audiences

- Technical Communicators who want to assess their competencies, or who want to broaden or deepen their competencies via effective, specific training or education.
- Specialists in other fields who want to broaden or deepen their competencies in the field of Technical Communication.
- Providers of training programmes who want to adapt their training and educational programmes to the needs of Technical Communicators.
- Public and private educational institutions who want to adapt their training and educational programmes to the needs of Technical Communicators.
- Human resource departments who want to gain insight into the requirements in the field of Technical Communication when recruiting and training their employees.
- Managers, on various levels, who want to recruit, assess or train their Technical Communicators.
- National societies for Technical Communication, who want to improve the competencies of their members, organise fruitful discussions between the members to raise their competence level, and who are looking for guidelines on how to certify Technical Communicators.
- Organisers of certification programmes who want to have a reference in designing their certification programmes.

1.3 State of the profession

The world wide use of the term Technical Communicator, rather than 'technical author' or 'technical writer' indicates that the field has long since grown beyond the boundaries of conventional print.

Originally, this professional title was used only for creators of "classical" technical documentation (user manuals, instructions for use, etc.). Today, this field of activity has grown enormously with Technical Communicators also working in new media on such things as online-help, web pages, electronic catalogues, CD-ROMs and electronic courses for learning. Also, the scope of technical communication has extended to other products and services which are not technical but complex in some way, e.g. software, services, logistics, and finance.

According to a survey conducted by tekomp in Germany in 2002, 80 % of all those currently engaged in the professional field of Technical Communication do not have a specific qualification in the field: they are usually trained or qualified in other fields, such as science, engineering, computer science, humanities, social sciences, etc. Based upon the results of the German survey, estimations can be made of the potential for technical communication jobs in the different EU countries (See Table 1). The calculation was based on a comparison of the gross domestic industrial product of the respective countries.

On the assumption that each Technical Communicator works on average for 20 years in this field, the estimated number of jobs in Europe was divided by 20. This is the estimated share of Technical Communicators who retire each year and thus need to be replaced.

At present most of the replacements are usually done “in-house”. This means that staff have to be trained for this new job. Nevertheless, the need for education of specialised Technical Communicators for external recruitment exceeds the number of graduates coming from the universities. Considering the growing legal requirements, the rapid pace of technical advances, the growing awareness of quality among customers, the increasing volumes of documentation and mounting cost pressures, here, too, there is a major requirement for professional education and advanced training.

EU countries with mature industry	Potential for jobs in the field of TC	Estimated need for staff per year	Job name	Organisation	Year of foundation
Austria	6 600		Technischer Redakteur	tekom Gesellschaft für technische Kommunikation e.V.	1978
Finland	4 500		Tekninen kirjoittaja	STD Suomen Tekniset Dokumentoijat ry	1997
France	38 000		Rédacteur technique	CRT Conseil des Rédacteurs Techniques	1992
Germany	66 900		Technischer Redakteur	tekom Gesellschaft für technische Kommunikation e.V.	1978
Netherlands	11 000		Technische Communicatie Specialist	STIC Studiekring voor Technische Informatie en Communicatie	1960
UK	38 000		Technical Communicator	ISTC Institute of Scientific and Technical Communicators	1948
Sweden	7 500		Teknikinformatör	FTI Föreningen Teknisk Information	1964
EU countries with agriculture-based economies					
Italy	37 000		Redattore tecnico	COM&TEC	2003
Spain	17 500		Redactor técnico / autor técnico	ACOMTEC	2005
Total Europe	227 000	11 350			

1.4 Current challenges for the profession

Technical Communicators were first of all writers, and accordingly strongly focused on the use of concise and clear technical language. Although writing and editing are still core tasks of Technical Communicators, recent and future developments in technology and commerce lead to fundamental changes in the profession which challenge professionals as well as their educators:

- **Growing legal requirements**
In connection with standardisation and harmonisation within the EU regarding product liability, there is an evolving regulatory framework that has to be taken into account.
- **New demands by consumers**
As consumers have become more demanding and have gained greater rights, product instructions and documentation have gained a more central role. Consumer groups and organizations include both documentation and interface issues.
- **New products**
Products are becoming more complex and instructions are more and more embedded in products (e.g. displays on mobile phones and copying machines, “wizards” in many computer programmes). This extends the task of Technical Communicators to those of taking part in the design of product interfaces. Despite this integration of product interface and documentation the need for separated documentation is still unchallenged.
- **New output media**
Apart from the traditional print documentation, there is a wide range of new output media coming into use (CD-ROM, online documentation, multimedia).
- **New tools and techniques**
Content Management Systems have come into use to make processes more efficient and to handle automated cross-media document production.
- **Consequences of the international market**
The increasing internationalisation of the market for technology and technical products create growing demands with respects to translation and localisation.
- **Outsourcing**
The processes of creating, publishing and maintaining technical documentation are becoming more complex as a result of a tendency among manufacturing and large service providing companies to outsource specific documentation tasks. Technical Communicators often act as project managers who plan and supervise the work of many specialists.
- **Changes in the scope of the profession**
Technical documentation is increasingly recognised by manufacturers as a part of the after sales service, playing a role in marketing and competition. Technical Communicators are therefore facing a change in the orientation of their work towards marketing.
- **Growing body of knowledge**
Scientific theory and research in the field of Technical Communication have developed rapidly in the past decades; the body of knowledge to be mastered by Technical Communicators has therefore been growing proportionally. Life long learning and a more knowledge based professional practice are essential conditions for advances in the profession.

2 What is a Technical Communicator?

2.1 General description

Technical Communicators represent the interface between product and user. Professional Technical Communicators are the users' advocates. They work for the manufacturers and, at the same, time try to meet the users' needs for usable information. They ensure that technical products are used effectively, efficiently, satisfactorily and safely. They analyse the product, its features and the different ways of using it as well as the target groups. They analyse the situations, goals, tasks, working processes and routines of the users. They analyse specifications, the functions and the interface of the technical product. They develop appropriate documentation to help users use and enjoy all the features of a product. To fulfil these tasks, Technical Communicators have to be well trained and highly educated in the competencies and skills described in this document.

2.2 Personal aptitudes

Technical Communicators should have a wide range of communication skills. To gain these skills persons who wish to train for and practice the profession of a Technical Communicator should possess certain personal characteristics.

These include:

- **Aptitude for language**
Technical Communication requires a good command of the language that they are writing in. Sometimes the language may not be their first language. This includes mastery over orthography and grammar, and also the ability to write clearly and concisely. This is the basic pre-requisite for professional technical communication.
- **Analytical thinking**
Technical Communicators need to be able to analyse large amounts of data, and to recognize which materials are appropriate for the understanding of technical product information. They will need to be able to create logical information combining several sources of data, using the evidence and examples required to make the concepts and technical details understandable.
- **Motivations for writing**
Writing is a multi-facetted activity. Anyone who enjoys putting things into words and presenting information in a structured manner will always find the necessary motivation required by a Technical Communicator.
- **Aptitude for interpersonal communication**
In many situations, Technical Communicators should be capable of expressing themselves clearly and without ambiguity, both verbally and visually, and of grasping what their conversation partner is trying to convey. More than anything, they must be capable of framing the right questions and listening attentively during the information research stages.
- **Ability to work in a team**
Many projects in Technical Communication are executed in teams (such as teams of communicators and illustrators). For productive work, all members in the team must have the following pre-requisites: ability and willingness to co-operate, ability and willingness to make concessions, willingness to engage in objective dialog and discussions, openness and willingness to share ideas.

- **Flexibility**
A Technical Communicator has to be willing to learn and to be prepared to adapt to a constantly evolving environment; to be able to document new products, use new working methods and tools, cooperate in different ways. and work in varied subject areas.
- **Ability to take criticism**
Change requests, corrections and quality assurance measures are part of a day's work for Technical Communicators. Criticism of the work should not be taken personally, but accepted as constructive measures for improvement. Similarly, Technical Communicators must be capable of putting across criticism in an objective manner.
- **Ability to work under time constraints**
Project work is always conducted under time constraints and technical communicators need to be able to function efficiently and calmly under these circumstances. Being able to manage time and to understand how long tasks take is crucial.
- **Meticulousness**
All the details of form and content have to be taken into account meticulously, and at every step in the project, starting from the research stage to publication. Technical Communicators need to be extremely conscientious in checking the completeness and correctness of instructions, and they need to ensure with utmost care that the instructions in the document are error free.
- **Technical understanding**
To describe the functions of consumer goods, user software or complex industrial products, a Technical Communicator needs to have an interest in and understand complex technical systems.

2.3 Be part of the Technical Communication community

Being part of the Technical Communication community is of essential importance to the Technical Communicator in order to keep pace with the academic, technological and commercial developments of the field. Ways of getting access to information and knowledge exchange with colleagues and further training are:

- Participating in conferences, workshops and seminars
- Being member of a national society
- Reading specialised publications (books, journals, magazines, newsletters, Internet-based discussion groups)

2.4 Where do they work?

Technical Communicators work in all sectors of the economy including the industrial, service, public and educational sectors.

- In the industrial sector: In all industrial branches where technical goods (both consumer and industrial goods) are produced
- In the public sector: public administration, telecommunications, health and medicine, governance, etc.
- In the service sector: banks, informatics, telecommunications, medicine, administration, etc.
- In the educational sector: universities, universities of applied sciences, colleges, private training institutions, etc.

2.5 Locating Technical Communication in an organisation

Possible Locations for Technical Communication in an organisation are:

- TC forms a documentation department (staff function)
- TC is part of a R&D department
- TC is part of customer services / technical support (together with training, help-desk, etc.)
- TC is part of marketing
- TC is outsourced to a specialised company
- TC can be bought in from free-lancers
- TC is part of the IT-department

In all forms, the Technical Communication function may vary from only a part of the tasks of one employee to a large department, depending on the size of the company and / or the complexity of the products and services.

2.6 Salary levels

In the past, there has been much uncertainty over the remuneration packages for Technical Communicators. In practice, however, the following picture has crystallized.

As with all salaries, remuneration will be dependent upon the size of the organisation, regional location, age, hierarchy and qualifications. Specific salaries will depend on the level of competency (see section 3.2) within the context of the salary structure of an organisation:

- Entry-level Technical Communicators should be salaried to conform to the scales for junior engineers and academics;
- Professional Technical Communicators should be salaried according to the scales for senior engineers and academics;
- Expert Technical Communicators should be salaried according to the scales for middle or higher managers;
- Some of the national societies make regular salary surveys in their countries. (For contacts see list of references / sources). Salary surveys have shown that Technical Communicators earn more in large companies than in smaller ones, independently from the industrial branch they are working in.

2.7 The four dimensions of technical communication work

The field of activity for Technical Communication is determined by four areas of knowledge and capabilities:

- Knowledge of product, service or subject matter / Applications and technical features of the product
The extent of required specialised technological and engineering knowledge depends on the complexity of the product. To create operating manuals for consumer goods, the Technical Communicator needs Technical Communication competencies plus sufficient understanding of the technology to describe the functions. The documentation for industrial products, installations and complex systems is often produced by staff or teams with expert technical knowledge as well as technical communication skills.
- Knowledge of information types in the product life cycle
Technical Communicators should know the conventions of various types of documentation, and apply them as appropriate to the requirements of the individual cases. Instances of these differentiated ways of presenting information are: marketing brochures, web sites, forms, questionnaires, instructions, procedures, handbooks, descriptions of objects and functions, operating manuals, technical reports, specifications, abstracts, summaries, management summaries, indexes, texts related to specific organisation structures, alert messages, taxonomies and glossaries. Technical Communicators must be capable of choosing the presentation mode that fulfils the goal of the documentation and that is appropriate for the target group at hand.
- Knowledge of the process chain in the creation of information
Technical Communicators should know and understand the necessary steps included in the development of information products, for example:
 - Information gathering
 - Planning documents
 - Producing drafts
 - Validating
 - Maintenance
- Knowledge of Tools
Technical Communicators need to have user knowledge about the different, writing, software and production tools commonly used in Technical Communication as well as skills in the specific tools that are used in their organisation. For the core qualifications, an overview of the commonly used tools is sufficient, specific company-related tools are not relevant in this context.

3 What competencies does a Technical Communicator have?

3.1 Definition of competencies

A competency is what one needs to achieve a determined result in a specific situation. A competency comprises four essential components:

- The knowledge of relevant theories, concepts, methods and procedures
- The capability of applying this knowledge to achieve a particular goal
- The capability to determine which skills have to be used in which situation
- The attitude and motivation necessary to achieve a particular result

3.2 Levels of competency

There are three levels of competency:

- *Entry level:* Textbook knowledge and basic practical knowledge. Sufficient knowledge to complete tasks after instruction, and supervised by others, but not sufficient knowledge to work independently and to take full responsibility. Entry-level competencies are needed to operate as a Technical Communicator in a team, to perform standard tasks within the particular area.
- *Professional:* Theoretical and practical knowledge and work experience. Sufficient knowledge to work independently and to achieve good results. Professional competencies are needed to operate autonomously within the area, to act as a self-employed or freelance Technical Communicator and to act as a documentation project manager.
- *Expert:* Advanced skills in technical communication, understanding of related areas such as localization, publishing, technology. Extensive knowledge and expertise of subject matter areas, being an active member of a technical communication network (national or international). Expert competencies are needed to fulfil executive functions, to develop a communication policy, and to lead teams of Technical Communicators

These levels are not always clearly separated from each other. To assess the level, the following criteria can be taken into consideration:

- Passive or active; the degree of being dependent on decisions made by others (e.g. working according to a plan) or making decisions and draft plans autonomously
- Performing simple or complex tasks (number of disciplines, number of people or groups concerned), consequences for the company, level within the company, clear definition of objectives
- Complex projects (budget, number of team-members, number of contacts etc.)
- Little or extended responsibility and independence; responsibility for staff and budget, management of project outsourcing

3.3 List of competencies

The competencies laid out below are described in more detail in chapter 3.5. The descriptions below provide an overview of each competence area. As noted in chapter 3.2 there are three levels to each competency. Actual educational and training schemes will support Technical Communicators in developing competencies to different levels depending upon the form, structure and level of the course. Certification schemes will define specific levels at which certification takes place. The core competencies define those competencies in which at least entry level skills are needed by all Technical Communicators.

3.4.1 Core competencies required for all Technical Communicators

- Communication theory
Social, psychological and linguistic aspects of communication; communication models; oral and written communication; how information is perceived and processed
- Understanding and using tools
Knowledge of relevant and available tools. Hardware components and their interfaces; operating systems; basic principles of systematic use of software; overview on common software in technical documentation: word processing, image processing, publishing tools, data management tools
- The regulatory framework for Technical Communication
Knowledge of laws, directives, national and international standards; where to get information about these
- Project and process management
How to write specifications; needs analyses, goals definitions, project planning, project monitoring and evaluation, controlling, steering processes, budget planning, basic principles of business administration
- Information gathering
How to obtain information; interview techniques; use of the internet and databases; questionnaires; research methodology and techniques
- Documentation planning and information development
Draft a documentation plan; define scope and objective; define target groups; define information to be transmitted and adequate means to transmit the information; define tools to be used; define standards
- Usability
Target group analyses; needs analyses; usability test designing; data collection and analysis – both quantitative and qualitative; document testing methods
- Structuring information
Use structuring methods and techniques (e.g. "mind mapping", "card sorting"); apply structuring principles in accordance to information types and target groups
- Standardisation techniques
Overview of different techniques such as information mapping, instructional design, style guides; application of standardised structures using software (e.g. templates, XML-schema, SGML-DTDs)
- Professional writing
How to describe complex technical matters in a simple and concise way; text analyses, text types, writing processes, writing techniques, stylistics; use of consistent terminology

- Editing
Substantive editing, style editing, copy editing and proof-reading of printed text and online text
- Visual communication
Basic principles of visual analysis; graphic design; visualisation of technical and abstract contents; basic principles of digital image processing; integration in DTP; understanding of the principles of combining text and visual elements
- Layout and typography
Typographical elements, concepts and styles; visual structure for different output media (print or screen); relation text-image; basic knowledge of DTP; use and creation of templates

3.3.2 Specialist competencies

- Quality management
Basic principles of process-oriented quality management systems; how to define quality criteria for technical documentation in conformity with national and international quality standards; how to organise a feedback control loop; quality assurance; usability testing
- Production and publishing of technical documentation
Different output media; production processes and techniques (typesetting, print, processing, finishing); production budget planning
- Localisation and internationalisation
Basic principles of intercultural communication; understanding of the requirements of the translation and localization process; understanding the basic principles of translation memory use; management of localisation projects
- Terminology
Basic principles of terminology theory; mono-, bi- and multi-lingual terminology; understanding of existing terminology resources; controlled language, create and administrate terminology data bases; terminology management tools; create glossaries
- Indexing and abstracting
Write effective index entries; evaluate and edit an index; embed index markers in documents; design of controlled vocabularies for indexing and searching; computer-assisted techniques; how to write an abstract; application to multimedia and hypermedia
- Databases
The use of data bases in technical documentation; basic principles of data modelling; structured query language (SQL)
- XML and Single Source Publishing
XML/SGML user skills; how to create a DTD; which software can be used to process data in conformity with SGML; publishing SGML-data; XML-based web applications
- Online help
Basic principles (topics, levels of help, data bases, structuring principles, display issues); create and integrate topics; create and administrate help systems
- Designing digital media
Overview of different media (sound, video, interactions); digital formats;

media processing software; design, process and integrate multimedia elements

3.3.3 Important related competencies

- **Presentation**
Presentation skills; presentation media; how to structure and create a presentation
- **Management**
Knowledge of business administration; conceive and set up an organisation structure; make strategic (and political) decisions; initiate, supervise and evaluate projects; draft a business plan; instruct and motivate; represent a company or department internally and externally
- **Consulting**
Collect information; draft and present an advisory statement
- **Training**
Analyse training demands / needs; adapting existing materials; create training material; deliver; evaluate, give feedback
- **Collaborative work**
How to work efficiently in a team; taking different roles in a team (e.g. leading, active contribution, minute-taking); handling conflict and reaching consensus; moderation techniques for meeting management

3.4 Required competencies on different levels

3.4.1 Core competencies required for all Technical Communicators

	Entry level	Professional level	Expert level
Communication theory	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the importance of effectiveness in communication, including the impact of good and poor communication • Identify communication types (e.g. interpersonal, computer-mediated, group, mass) and the challenges for TC • Identify benefits and limitations of a simple (transmission) communication model to account for their own communication practice • Be aware of other communication models and of their potential for accounting for the complexity of technical communication • Understand the importance of context in the way information is produced and is (or not) understood • Understand the basic aspects of language as a communication tool (syntax, semantics, pragmatics) • Understand the basic theories of processing textual information (reading) 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Identify benefits and limitations of a range of complex communication models (e.g. mass communication) • Categorise participants' roles and intentions in communication • Relate communication concepts to practice and describe them accurately, and to devise appropriate mechanisms to ensure greater effectiveness in communication products • Understand specific theories related to reading technical information and instructions (e.g. mental models) • Understand (classical as well as modern) rhetorical theories of communication 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Relate concepts to practice, to identify areas of strength and weakness, and to create more effective communication products or events • Understand the importance of context and the social and cultural factors in communication

<p>Understanding and using tools</p>	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the range of tools available in technical communication • Understand the basics of computer network use • Perform data management tasks • Be aware of how to select appropriate tools • Use project specific tools to create content (e.g. text, visuals) • Learn to work with new tools quickly 	<p>In addition to entry-level skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Use appropriate tools to create complex illustrations and drawings • Configure tools to meet project and organisational requirements • Make selections between available tools • Use the advanced features of tools 	<p>Expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the constraints on using specific software and hardware tools • Ensure correct and consistent use of tools and networks within a project • Specify tool requirements for the future • Evaluate tools on a regular basis
<p>The regulatory framework for Technical Communication</p>	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Identify the (national) standards and directives that are appropriate in the work context, and those that specifically affect the development of technical documents • Apply these standards in everyday practice, initially under supervision 	<p>In addition to entry-level skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Consider the implications of standards and directives on the documents they are responsible for • Know international standards that are applicable to everyday practice • Identify standards that apply to special documents • Decide whether standards are applicable in a given situation 	<p>In addition to professional-level skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Ensure that standards and directives are correctly adhered to in the documents they contribute to or supervise the development of • Contribute to standardisation by being member of a standardisation commission • Monitor any changes or proposals in the field of standards and directives

<p>Project and process management</p>	<p>Entry-level TCs should be able to</p> <ul style="list-style-type: none"> • Understand key project goals • Understand the project and information plans • Understand resource allocation • Understand the roles and responsibilities of other team members • Understand project dependencies and their implications for their own work and that of other people • Apply basic time management skills • Use time-keeping mechanisms or software correctly • Report problems in their own time-keeping • Identify which standard(s) apply and how they should be applied 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Define documentation needs • Create an information plan • Create a project plan • Define content specifications • Define project standards • Manage simple and intermediate documentation projects with up to 10 team members involved • Be accurate and reliable in allocating time to specific goals, tasks and staff • Apply team management skills • Apply detailed and extensive time management skills • Use project management software • Create a project tracking system and track progress • Identify the need for changes in the project plan and to manage these changes • Manage the production of documentation (including translation and indexing as required) 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Manage complex documentation projects (same competencies as professional level, but with larger teams and a higher complexity of information needs) • Evaluate the process, and give recommendations for improvements if necessary • Effectively manage problems and crises in project planning and execution
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Information gathering	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Have basic knowledge of the technical subject • Know literature, databases and other sources that are relevant for everyday practice • Extract relevant information for technical documents such as functional and technical specifications of a system or product. • Interview technical specialists about the features of a technical system, device or service • Interview (potential, prospective) users of documentations about their work procedures, needs and preferences for documentation • Construct a simple questionnaire to gather information about users needs and preferences • Know elementary statistical concepts needed to analyse survey outcomes 	<ul style="list-style-type: none"> • Set up a system for maintaining the documentation • Evaluate the impact of the process on the quality of the resulting documentation <p>In addition to basic skills, professional-level TCs should be able to::</p> <ul style="list-style-type: none"> • Analyse which information is necessary for a specific product or process • Carry out target group analyses (distinguish between internal and external target groups, characteristics, motivation, way to learn, reluctances) • Carry out tasks analyses • Plan and design questionnaires and scripts to support information gathering • Conducting interviews using a range of interview techniques • Conducting field trips to observe people in the workplace • Using talk-aloud protocols to capture user behaviour and attitudes to products • Handling interpersonal issues effectively 	<p>In addition to professional skills, expert-level TCs should be aware of:</p> <ul style="list-style-type: none"> • Potential ethical issues in information gathering • Possible copyright infringement issues • Use a wide range of techniques for gathering information • Assess questionnaires and scripts designed by others • Assess reports presenting data to identify salient points for the documentation planning process • Deal with the ethical issues raised by an information gathering activity
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	<ul style="list-style-type: none"> • Understand and explain the purpose of a target group analysis or a task analysis and interpret the results • Conduct a simple task analysis • Be aware of the ethical issues that might arise in the context of information gathering 	<ul style="list-style-type: none"> • Coding, reporting and priority findings, and presenting them formally • Know advanced statistical techniques to analyse the outcomes of questionnaires • Do contextual inquiry to investigate current practices and attitudes of (prospective) users of a system 	
Documentation planning and information development	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Distinguish between different types and functions of information in the company (internal and external documentation, training documents or reference books) • Be familiar with common layouts of documents and means of information and adapt these (required elements or parts of a document, standards and legal requirements) • Be familiar with the pros and cons of different means of information conveyance • Interpret a documentation plan and discuss it with others (to give a statement, explanations, suggestions for improving the plan) • Develop a document according to a documentation plan 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Design documentation plans and monitor their execution • Design information products appropriately given set project parameters • Analyse which information is necessary to keep a complete organisation structure functioning (translate corporate objectives into information objectives, point out problems, develop ideas for the future, establish priorities) • Select appropriate means and ways to present the information within set parameters (target groups, type of information, requirements) • Select tools within a set organisation structure 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Design comprehensive and coherent information for a wide range of products or processes • Select appropriate formats to transmit specific items of information • Determine and set up the appropriate organisation structure to develop, manage and use the information • Initiate innovative developments documentation planning and information development

<p>Usability</p>	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand and explain the purpose of a user / task analysis • Understand the different meanings of “usability” • Understand well-established definitions of usability • Conduct user-based evaluation with guidance • Identify usability principles (e.g. efficiency) and relate them to products • Understand the difference between user-based and expert-based usability evaluation • Understand the usability evaluation process and identify the techniques available • Conduct usability evaluation under supervision (e.g. heuristic evaluation) • Understand basic quantitative and qualitative methods for the assessors of usability • Recognise potential ethical issues in usability evaluation 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Conduct usability evaluation without guidance • Conduct a user / task analysis independently • Participate in test design, user-based tests, and data analysis with some degree of independence • Have a basic knowledge of relevant ergonomic and psychological theory on usability • Identify which technique is best suited to what purpose and in what circumstances • Conduct expert-based evaluation independently; e.g. use personas and scenarios, and conduct heuristics evaluation • Set the agenda for revision or redesign of the product • Analyse findings from usability testing • Have a full knowledge of potential ethical issues in usability evaluation 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Analyse the maturity of their organisation in relation to usability evaluation • Identify and deal with ethical issues that arise in usability evaluation • Evaluate and critique ones usability test designs and studies • Deal with any ethical issues arising from a usability study
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Structuring information	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the various document types (e.g. tutorial, manual, online help, proposals, consultancy, report, etc) used in technical communication and the typical structures that apply • Understand the implications of the context of use for the documentation • Be aware of any standard that apply to specific documents if appropriate • Draft document hierarchies under supervision • Draft the structure of individual documents under supervision • Include orienteering mechanisms (e.g. contents, lists, indexes, glossaries, hyperlinks) in drafts, as appropriate • Apply appropriate stylistic mechanisms (e.g. signposting, connectives) to express structure • Be aware of visual mechanisms that can express or reinforce information structures across document hierarchies and within individual documents 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Select the most appropriate genre to convey information in a given situation • Realise the implication of standards and regulations • Draft document hierarchies and plans working independently that reflect user needs and tasks profiles • Decide on stylistic, visual and orienteering mechanisms that will best express and/or support the structure within document hierarchies and individual documents • Review accepted structures to reflect business situations and requirements, in order to convey information more effectively 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Advise teams and clients on the most appropriate genre, hierarchies and structures • Assess whether a proposed structure reflect user needs and task profiles • Assess hierarchies and structures, and stylistic and visual mechanisms proposed by other team members or clients • Ensure that hierarchies and structures comply with standards and regulations whenever appropriate
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<p>Standardisation techniques</p>	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Know and apply major principles of text structuring, such as problem-solution, goal-means, generalization -example, etc. • Know and apply text structuring devices such as advance organizers, overviews, headings, labels, connectives, etc. • Know specific structuring principles in relation to product, user, situation, task, complexity, etc • Select adequate principles in accordance with the document type • Know at least one major technique to structure information (mindmaps, matrix, etc) • Know the most important relevant standards for structuring principles and methods • Apply standards with a relevant DTP tool (formatting) 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Assess and evaluate structures • Structure information for hyper-textual (non-linear) information systems • Know the areas of Technical Communication where standardisation is relevant • Create the structure for a template. • Know and apply at least one standardisation technique (functional design, information mapping, instructional design, controlled language, etc), including its scientific backgrounds • Create and apply style guides 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Know a set of techniques such as information mapping, instructional design, controlled language, style guides; application of standardised structures using software (e.g. templates, XML-schema, SGML-DTDs), including their scientific backgrounds
<p>Professional writing</p>	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Write grammatically correct text • Use correct spelling • Know how to handle dictionaries and reference books 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Identify grammatical and spelling problems in other people's writing 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Give advice on language questions, in particular in unusual cases or when no answer can be found in handbooks

<ul style="list-style-type: none"> • Write at a good pace • Be familiar with the most important principles regarding the quality of technical texts (e.g. concision, precision, accuracy) • Understand differences between writing styles (e.g. informative, instructional, persuasive), and use style appropriately, with guidance • Understand the factors that affect the readability of language, both on the sentence and on the textual level (e.g. sentence complexity, active / passive voice, paragraph structures, headings, etc) • Understand the difference between writing for print and writing for online publication, and modify style accordingly • Use appropriate terminology • Use technical terms appropriately given the intended audience • Use style and terminology consistently • Follow a style guide when necessary • Write documents that fulfil the specification or brief received from a project manager or client 	<ul style="list-style-type: none"> • Apply the principles governing the quality of technical texts independently • Understand the different philosophies in the presentation of technical information (e.g. Minimalism vs. declarative information) and apply these in an appropriate manner • Understand the implication of a specification or a brief in terms of writing approaches • Decide upon the terminology and style appropriate for a given project • Follow a specification independently to produce documents • Be familiar with the most important international publications in a field relevant to the area of practice • Create and evaluate prototypes of documentation • Write outlines and drafts independently • Write complex instructions and other technical documents independently • Write abstracts, summaries and management summaries independently 	<ul style="list-style-type: none"> • Develop a concept for manuals in conformity with the demands of the target group, the image of the product and the image of the manufacturer • Draw up a style guide for a project • Evaluate or adjust existing standards and regulations using the results of an in-depth functional and situational analysis • Assess the application of standards and regulations in their own writing and that of other technical communicators • Instruct and supervise technical communicators in the use of a specific style • Evaluate work done by others (e.g. drafts, outlines, abstracts, glossaries) and give instructions for improvement • Determine what types of specifications with which content are necessary to continue a development • Be familiar with relevant research and with the publications discussing current state of the art
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	<ul style="list-style-type: none"> • Write outlines and first drafts under supervision • Write complex instructions and other technical documents under supervision • Write abstracts, summaries or management summaries under supervision • Write a glossary under supervision 	<ul style="list-style-type: none"> • Write glossaries independently • Combine texts with graphical elements (layout, illustrations), though they may not have created these • Write non-standardised documents according to specific needs • Assess the quality of a text • When appropriate, use the most important style manuals for international publications (e.g. APA, Chicago Manual of Style) • Identify possible sources of research or advice for best writing practice 	
Editing	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the difference between substantive editing, style editing, copy editing and proof-reading • Edit documentation according to specific models of editing, and according to a specific brief given by the author or a manager • Follow a style guide to ensure that documents conform with the regulations of the organisation • Use editing symbols to present corrections and suggestions 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • If necessary, query the editing brief independently • Carry out all styles of editing independently • Work with technical specialists and authors as necessary to complete technical edits • Edit online texts independently • Relate editing decisions to audience needs • Manage edit meetings involving many document authors and editors 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Identify priorities for editing documents • Define the editing brief for team members • Manage final editing, to ensure that the final document meets the goals of the organisation and the audience • Take responsibility for the implementation of editorial policy and processes

		<ul style="list-style-type: none"> • Appreciate the differences between editing printed text and online text • Carry out substantive edits under supervision, bearing in mind the audience profile • Copy edit and proofread texts independently, referring to style guides as necessary • Edit online texts under supervision, paying attention to navigation, hyperlinking, and order and length of information • Present comments to authors in a considerate and constructive fashion 	
<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Create style guides for the presentation of visual material • Establish efficient methods and techniques to make different illustrations • Understand the possible ethical implications of presenting information visually in different ways (e.g. implications of small type, or of scales in business graphics, etc) 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Select the most appropriate information presentation, both at macro (document) level and at micro (graphic, table) level • Select the most appropriate illustrations to be used in a given document • Design and process illustrations reflecting complex situations or operations (e.g. 3-d models) independently 	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Gather information about the user's visual literacy (i.e. ability to interpret different types of visual representation) and needs in terms of information • Understand the principles of visual composition • Understand the principles of document design • List the various types of illustrative materials (including time-based items) and understand their purpose, strengths and limitations 	<p>Visual communication</p>

	<ul style="list-style-type: none"> • Select the adequate type of illustration • Have a basic knowledge of software needed to create visuals • Design simple illustrations • Identify needs for specialist input if the visuals are too complex, or require software tools not available locally • Create a balanced combination of text and image. • Apply a provided style guide to visual elements 	<ul style="list-style-type: none"> • Use appropriate software to implement their designs for illustration • Assess the potential of animations and video and make recommendations for suitable materials to be created • Appreciating the possible cost constraints of developing visual items • Work collaboratively with visual artists if required • Use an appropriate taxonomy to identify the components of visual communication in documents 	<ul style="list-style-type: none"> • Check that visual materials are suitable for use in different cultural contexts • Manage multi-disciplinary teams including visual artists
<p>Layout and typography</p>	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the principles of document design (e.g. use of space, impact of typography, consistency, etc), and how they apply in printed documents and in electronic documents • Be familiar with the basic principles of visual structuring and the relevant concepts (margins, relationship length-width, A-system, golden cut, hierarchical structure of texts, etc) • Identify typographical concepts and styles 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Identify the variety of constraints that can affect a specification: corporate image, product image, style guide, legal requirements, document purpose, audience needs, etc • Design layout and typographic specifications, taking into account any relevant constraints • Design and create a template for an optimised visual structure according to the purpose of the document and any applicable style guide 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Ensure that any specification is appropriate, given the relevant constraints • Design layout and typographic specifications for a range of documents, some of which may be presented online • Instruct and supervise others in the application of specifications • Evaluate work done by others and give recommendations for improvements if necessary

	<ul style="list-style-type: none"> • Be aware of specific audience requirements and or any legal requirements (e.g. accessibility of websites) • Recognise and apply correctly any applicable style guide • Use a template to implement a layout and typographical specification • Select the adequate typography for simple texts if no style guide or template is available or required • Understand the implication of presenting information online • Work with graphic designers 	<ul style="list-style-type: none"> • Create document designs to display complex information (textual and visual) • Understand the different requirements regarding visual structure of print and online documents • Assess the suitability of information presentation 	
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3.4.2 Specialist competencies

	Entry level	Professional level	Expert level
Quality management	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be familiar with the basic principles of quality management • Work according to a specified quality system, creating the necessary quality documents • Take part in project quality reviews • Take part in document quality reviews 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Assess and apply different quality criteria in Technical Communication • Check the compliance of technical documentation against applicable standards 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Prepare, implement and manage a quality management system • Create a quality improvement cycle into the quality process • Develop and evaluate strategies for quality assurance and error prevention

<p>Production of technical documentation</p>	<ul style="list-style-type: none"> • Understand which standards (e.g. ISO) are in operation <p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Use the production environment defined for the documents they are creating • Understand the different processes required for different output media 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Know the different production processes and techniques for different document delivery media • Choose suitable production and publishing processes for specific document types, users and purposes • Select the application of peripherals 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Make decisions on the most suitable production method for documentation, assess the cost and efficiency of the process • Solve technical problems in the production and publishing of documents
<p>Localisation and internationalisation</p>	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the basic principles of localisation • Understand the importance of consistency of the source material in the translation/localization process • Work in a controlled language environment • Understand the implications of the target languages of the document they are writing (cultural issues with colours, graphics, use of language) 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the principles of translation memory usage • Understand the correlation of source inconsistencies and translation cost • Assess the implications of the target language characteristics (e.g. double byte languages, left-to right languages, Unicode) for document design • Define rules for visual content creation for easy localization (e.g. layering of text and graphics, placing text inside graphics) 	<p>In addition to basic skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be able to design a documentation process aimed at producing an optimized localization result (cost control, quality optimization) • Coach technical communicators in internationalisation issues • Evaluate documents with the localisation process in mind • Maintain and create rules for a controlled language environment

	<ul style="list-style-type: none"> • Understand a controlled language environment, be able to assist in the maintenance and definition of the environment 		
Terminology	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be familiar with the basic concepts and methods of terminology work • Acquire a working knowledge of subject-specific terminology quickly • Apply a subject-specific terminology consistently • Be familiar with the use of technical dictionaries (print and online) • Know where to find terminology resources • Have a good command of specialised terminology in at least one technical discipline 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Adapt terminology to target groups (e.g. regional differences) and tasks • Apply methods to extract (at least monolingual) terminology • Ensure the use of a consistent terminology when collaborating on documentation projects • Create a glossary • Use terminology management tools 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Create and manage terminology databases • Manage multilingual terminology sources • Supervise and coordinate terminology work
Indexing and abstracting	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the principles of indexing (e.g. distillation, concision, use of keywords and synonyms, cross-references, double-postings, etc) • Understand the implication of online publication for the design of indexes (e.g. use of search engines) 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Assess whether an index is required • Understand the difference between an index and a concordance • Work from computer-generated indexes to create well-targeted indexes 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Set up an indexing policy • Take responsibility for the completeness and usability of indexes, both in printed and online documents

	<ul style="list-style-type: none"> • Understand the value and limitations of electronic tools for creating indexes • Create a simple index independently • Create a detailed index for complex documents, or for online documents, under supervision • Understand how indexes should be presented in printed documents using typography and spacing to best effect • Check that index entries are correct • Work with indexing experts to ensure that indexes are comprehensive and useful to the target audience 	<ul style="list-style-type: none"> • Create an index for complex publication or for online documents independently • In printed documents, assess the suitability of index entries, the overall length of the index given the publication, and of their physical presentation • In online documents, assess the suitability of entries and their potential for hyperlinking • Work with indexers to review indexes • Set up mechanisms to ensure easy maintenance of indexes in printed and online documents 	<ul style="list-style-type: none"> • Assess the work of others and make recommendations for improvements
Databases	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be familiar with the basic principles of databases and their role in Technical Communication • Be familiar with the concept of relational databases as a basis for tools and applications in Technical Communication • Create a simple database appropriate tools 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be familiar with the basic principles of data management with SQL functions • Apply this knowledge in commonly used database management systems 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Evaluate and critique others databases • Manage large scale database projects and applications • Be involved in the setting of organisational data management policy

XML and Single Source Publishing	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the difference and relationship between the content and structure of documents • Be familiar with the concepts of Single-Source-Publishing • Create content in logical information chunks in a structured authoring environment • Know the principles of SGML and XML (DTD, tags, publishing filters) • Know the difference between SGML and XML • Identify the most common editors for structured content 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be able to identify all required elements in a structured authoring environment from content creation through to publishing • Be able to read a DTD 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Create DTDs • Know how to publish structured data • Know the advantages and limitations of web-based XML applications • Understand the requirements and opportunities in managing structured multi-lingual content • Create a Single-Source-Publishing environment • Understand (and define) the requirements for Document Management Systems and Content Management Systems
Online help	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Identify different help systems (topic-oriented systems, database-oriented systems) • Understand the differences between types of online text (conceptual, procedural, warnings, etc) • Understand problems associated with the online display of information (use of language, chunking, presentation, structure, hyperlinking, etc) 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be familiar with the different paradigms for creating online help systems • Differentiate between different help authoring tools, and understand their benefits and limitations • Decide what topic types are most appropriate to support users effectively 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Select appropriate tools to suit organisational and project purposes • Solve complex problems in the design and development of online help systems • Create and manage different help systems • Take responsibility for the completeness and usability of online help systems

	<ul style="list-style-type: none"> • Write help topics under supervision • Create and edit help files under supervision • Be familiar with the basic principles of HTML (tags, links, frames, etc) 	<ul style="list-style-type: none"> • Structure online documents (hierarchies) • Create and edit help topics and files independently, making appropriate use of language, chunking, presentation, structure, hyperlinking, etc • Automise the creation of help files • Use visuals appropriately in help files (e.g. screen shots, animation) • Check that help files are complete, usable and without technical errors • Solve straightforward problems (e.g. symbols, exotic types) • Evaluate prototypes and fully developed help systems for usability • Set up mechanisms to ensure easy maintenance of online help systems 	
	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the range of digital platforms available, their benefits and limitations • Access information the users, in particularly their level of familiarity and competence with digital media • Be aware of the implication of accessibility principles 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Select an appropriate digital platform given the specific purpose and audience of a given project • Translate user profiles into designs that will support tasks • Design information products that take into account accessibility and usability principles 	
<p>Designing digital media</p>	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Understand the range of digital platforms available, their benefits and limitations • Access information the users, in particularly their level of familiarity and competence with digital media • Be aware of the implication of accessibility principles 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Translate accessibility and usability principles and relevant regulations for online information delivery into information products • Supervise digital media production projects 	

	<ul style="list-style-type: none"> • Be aware of the implication of usability principles • Understand the possible ways of structuring hypertext / media (e.g. linear, hub, semantically-related, etc), and relate them to the purposes of the digital information being designed (e.g. training, instructional , marketing, etc) • Develop appropriate structures that reflect user needs and tasks, and standards and regulations if necessary • Create or adapt text specifically for online delivery • Identify materials other than text (visuals, sound) • Produce briefs for other professionals (e.g. video artists), usually under supervision 	<ul style="list-style-type: none"> • Select and implement appropriate hypertext structures • Design or commission multimedia items for technical information (animations, digital video, etc) 	<ul style="list-style-type: none"> • Assess the quality of digital information products against well-defined criteria (e.g. usability principles) and against user needs
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3.4.3 Important related competencies

	Entry level	Professional level	Expert level
Presentation	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Prepare a presentation using relevant media and tools • Be familiar with the advantages and disadvantages of different presentation media • Prepare a meeting, seminar or conference session under supervision • Deliver a standard presentation of 20 to 30 minutes 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be familiar with moderation techniques • Use advanced presentation techniques and media • Know how to deal adequately with the audience (raise interest, respond to questions, take criticism, etc) • Prepare a meeting, seminar or conference session without supervision 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Oversee or manage a large meeting, seminar or whole conference • Evaluate and critique others presentations.
Management	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Have a sound knowledge of the working environment • Understand project management methods • Understand basic business administration concepts and how to apply this knowledge • Under supervision, draft project plans for small projects (or parts of larger projects) 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Have detailed knowledge of the working environment • Take part in decision-making processes (eg policy, business plan, product development) • Communicate and negotiate on managerial level • Apply project management methods and keep pace with developments 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Have in-depth and overall knowledge of the working environment • Contribute actively to the development of organizational strategy, and determine policy; introduce innovations • Draft business plan and manage / supervise its implementation

	<ul style="list-style-type: none"> • Under supervision, co-ordinate the implementation of project plans, taking into account budget, quality, time, human resources, means and material • Under supervision, manage a few team members and co-ordinate their work • Work well with managers and technical staff / designers • Communicate effectively with managers, colleagues and designers • Communicate effectively with internal staff and other people outside the organisation (eg customers, graphic designers) • Have a reasonable command of spoken and written English 	<ul style="list-style-type: none"> • Apply theoretical knowledge of business administration in daily work • Initiate new projects • Draft several project plans simultaneously • Manage and control several projects that run simultaneously (budget control, quality control, time, human resources, means and material) • Lead and motivate team members (including beginners) • Co-ordinate project realisation with customers • Have a good command of spoken and written English 	<ul style="list-style-type: none"> • Communicate and negotiate on executive level • Have extended knowledge in business administration in several of the following subjects (product development, production techniques, company strategy / top management, marketing / sales, acquisition, accounting, taxes (financing), legislation) • Manage a number of large projects simultaneously (budget control, quality control, time, human resources, means and material), possibly at international level • Select a number of different team-members (conduct job interviews), employ, instruct, inspire, train and evaluate performance • Draft simultaneously several project plans and co-ordinate project realisation • Represent the company outside and seek actively new customers
Consulting	<p>Entry-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be familiar with the different stages of the consulting process • Spot the hidden agendas in a consultation project 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Design plans for consultancy projects 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Run and manage all aspects of a set of ongoing consultations

	<ul style="list-style-type: none"> • Collect information and present ideas, usually under supervision • Participate in a consultation session • Establish a good relationship with clients 	<ul style="list-style-type: none"> • Draft a clear and precise advisory statement / instruction in the starting phase of a consultation project • Be capable of putting oneself in the position of clients • Handle the objections and reluctances expressed by the clients • Convince / persuade people to accept advice 	
<p>Training</p>	<p>Not applicable</p>	<p>The skills of professional TCs should then be expanded to include:</p> <ul style="list-style-type: none"> • Understand the brief given to trainees • Understand the nature of information gathering in relation to training work (focus on Knowledge, Skills and Attitudes) • Use information-gathering skills (see above) • Understand the structure of training sessions (aims, objectives, conceptual vs procedural information, case studies, exercises, feedback, etc) • Draft individual training sessions under supervision 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Create high-level designs for training programmes • ;ake an analysis of educational and training demands within an organisation, relate these to the mission, vision and policy of the organisation • Use information gathering skills (see above), specifically to conduct Knowledge, Skills and Attitudes analyses • Design training programmes independently, looking at the overall coherence of the programme • Develop or review lessons independently

		<ul style="list-style-type: none"> • Acquire confidence in speaking in front of others • Conduct well-defined training sessions, initially under supervision • Respond adequately to questions and comments made by trainees, perhaps under supervision • Report on the performance of trainees 	<ul style="list-style-type: none"> • Train technical staff in how to process and manage technical publications, how to give presentations and so on, using existing programmes and material • Have confidence in speaking in public situations • Conduct training sessions • Motivate trainees • Respond to questions and comments made by trainees • Give adequate feedback on the performance of trainees • Evaluate the performance of trainees
Collaborative work	<p>To work effectively as a member of a group, entry-level TCs should:</p> <ul style="list-style-type: none"> • Understand their specific role in fulfilling the project brief • Know what their deadlines are, and how they fit in the project as a whole • Understand the mechanisms of good social interaction • Understand the specialisms of other professionals (e.g. editor, graphic designer) 	<p>In addition to basic skills, professional-level TCs should be able to:</p> <ul style="list-style-type: none"> • Successfully apply the mechanisms of good social interaction • Understand and apply models of team interaction • Support others in fulfilling their roles, and in understanding project goals and deadlines • Establish good relations with all members of a team • Give praise when required 	<p>In addition to professional skills, expert-level TCs should be able to:</p> <ul style="list-style-type: none"> • Be familiar with mechanisms to assess team composition and effectiveness • Use models of team interaction to identify strengths and weaknesses with groups • Provide a good example in handling relationships with others • Take a leading role in collaborative work

	<ul style="list-style-type: none"> • Provide appropriate information to help others fulfil their role • Report progress and difficulties to the project manager • Take part in group discussions • Take meeting minutes, perhaps with support from others 	<ul style="list-style-type: none"> • Give constructive feedback sensitively • Identify possible difficulties early • Advise on remedial action if necessary • Pay attention to non-verbal communication and elicit further information if necessary • Handle conflict with other team members 	<ul style="list-style-type: none"> • Establish a climate of effective collaboration within the team • Resolve conflict situation between members • Report on progress and difficulties to senior management as required
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4 How to become a Technical Communicator?

4.1 Ways of qualifying

4.1.1 Qualification through formal higher education

At the moment, there are essentially three ways to become a *qualified* Technical Communicator through higher education:

- By completing a regular higher degree study in the field of Technical Communication, Information Design, or Communication Studies (with the relevant combination of courses and electives). Such programmes are offered at universities and officially recognized institutions for higher vocational education in most European countries, albeit under a variety of names and titles.
- By completing a degree study in engineering or technology, and completing additional programmes or training courses in the field of Technical Communication, combined with at least several years of practical experience.
- By completing a degree in any other discipline and completing additional training courses in the field of Technical Communication, combined with at least several years of practical experience.

The higher education qualification systems of the European countries are very different. However, in the near future, the EU countries will be bound to the Bachelor-Master qualification system as agreed in the Bologna declaration. Therefore, universities and institutions of higher vocational education are exhorted to create

- Bachelor degrees in Technical Communication
- Professional and Research Masters degrees in Technical Communication

Doctorate level education in Technical Communication is also available (e.g. research based PhD in UK and Netherlands).

4.1.2 Qualification through life-long training

Training courses in Technical Communication for engineers and other qualified professionals are offered by universities and higher vocational institutions, as well as private companies. The diplomas issued by these institutions do not have an official status. It is recommended that national societies of Technical Communication create an accreditation system to validate the quality of these training courses. A database with existing programmes is available on <http://www.tceurope.org/tecdocnet/index.htm>

4.1.3 Vocational and professional training

Here we refer to vocational and further training, or retraining, that Technical Communicators may need in order to develop competencies and skills that complement and extend qualifications and / or work experience. Professionals working in related fields (engineers, information designers, translators) and professionals dealing with technical documentation can do further training courses on specific Technical Communication subjects to extend their knowledge and to achieve specific Technical Communication skills.

The currently available possibilities for professional qualification take many forms:

- Attending seminar sessions, workshops and extensive courses parallel to the job. There is a great variety of such seminar sessions and part-time,

distance learning or e-learning courses. The duration and scope can range from one day to 24 months part time or distance learning.

- Attending conferences organised by professional associations.
- Reading technical magazines and literature (self study).

Advanced training is provided by private educational institutions, institutions for advanced training set up by various industries and chambers of commerce, and a few colleges and universities.

A number of private organisers of seminars offer both internal and external seminar sessions and workshops in the field of Technical Communication. The spectrum of offerings ranges from the basics, through legal issues and the use of tools to various specialty areas. Some providers have also specialised in particular fields. Participants normally receive a certificate of participation from the organiser.

Some chambers of commerce and advanced training institutions affiliated to universities offer qualifying courses and distance education programmes for Technical Communicators who are working, which they can pursue alongside their jobs. These are extended courses, lasting six months or more, and include a number of contact programmes at the training institution, in addition to the study material. Participants normally receive a certificate of participation, a certificate or an Masters level degree from the course organiser.

4.2 Certification

Certification programmes are designed for those who are working in the field of Technical Communication without formal qualification in technical communication. A certification programme allows them to obtain a certificate as a formal acknowledgement of formally or informally acquired competencies.

The certification procedures should be designed to involve a minimum of regimentation and approval effort. Certification should enhance competitiveness in the labour market. Certification systems are developed and implemented by some national societies. Currently, there are operational certification programmes in Germany, Sweden and Switzerland.

Other national societies are exhorted to create comparable certification systems.

List of references / sources

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Leitlinie Aus- und Weiterbildung Technischer Redakteure, published by tekomp Gesellschaft für technische Kommunikation, 2003

National Occupational Standards for Technical Communicators, published by the Institute of Scientific and Technical Communicators, 1999

Reglement und Wegleitung über die Erteilung des eidgenössischen Fachausweises als Technikredaktor/Technikredaktorin, published by Tecom Schweiz, 2003

Usable and safe operating manuals for consumer goods – A guideline, Version 1.0; published by TCEurope, 2004

Data base with vocational and further training programmes in Europe

http://www.tceurope.org/tecdocnet/tecdocnet_index.htm

National societies for Technical Communication in Europe

Austria:

tekomp Gesellschaft für technische Kommunikation e.V., Regionalgruppe Österreich
info@tekomp.de
www.tekomp.de

Finland:

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<http://www.dokumentoijat.net/>

France:

Conseil des Rédacteurs Techniques
<http://www.chez.com/crt/>

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