TecCOMFrame. Towards a European Competence Framework

Dr. Birgitta Meex - KU Leuven
Dr. Joyce Karreman – Universiteit Twente

tcworld conference 2016
What is TecCOMFrame?

- Technical Communication Competence Framework
- A European collaboration project to improve higher education in the field of Technical Communication (TC)
- Was launched in the autumn of 2015
- Runs until August 2018
- EU-funded as Erasmus+ Strategic Partnership
- 9 project partners
How to educate future technical communicators?
Overview

- Background to the project
  - Objectives
  - Scope
  - Project partners
- Methodological approach
  - Requirements
  - Dissemination
  - Method: how we work
- State of the art: preliminary results
- Examples
- Further steps
- Discussion
Why?

Only few Higher Education Institutions offer study programs in TC. There is a shortage of graduates in the field → Companies hire graduates from related study programs such as translation and engineering. As a consequence:

- The occupational profile is unclear
- The competencies and qualifications for technical communicators are unclear

Higher Education Institutions therefore need help in the establishment of appropriate curricula for training in TC.
Scope

Based on the existing Cross-industry Competence Framework: http://competences.technical-communication.org/

But with a different focus and scope!

This new framework focuses on:

- The competencies to be taught in higher education programs in TC
- The establishment of appropriate curricula for training in TC
  → These curricula may in the longer-term also lead to the strengthening of the occupational profile
Objective

The project aims to a common *academic* qualification and competence framework.

The framework will help to build a solid academic and curricular basis for the growing field of Technical Communication.
This consortium brings together partners with different levels of integration of technical communication programs in their universities to share experiences and best practices.

Some of the universities offer courses in TC that are incorporated into other, related study programs, such as translation or engineering.

Project management and coordination by tekom Europe

Regular face-to-face meetings and web meetings
Other project partners

“Silent” partners:
- Stakeholders from industry and service companies
- Other European Higher Education Institutions
- You?

→ provide feedback & valuable input to ensure maximum compatibility with the work environment
Major output

- Development of curricula at three levels (cf. European Qualifications Framework):
  - EQF level 5: Specialization courses for language/translation studies and engineering studies
  - EQF level 6: Bachelor program
  - EQF level 7: Master program
- TecCOMFrame: Academic Competence Framework for TC based on the existing tekom cross-industry competence framework
- Update TecDocNet Guideline 2018
- Competence and Qualification Profiling Tool
(Long-term) impact

Increasing number of:

- Study programs in TC (specialization, bachelor and master)
- Graduates in TC
- Qualified professionals in TC

Facilitating:

- Better understanding of the profession and its requirements
- Job mobility through definition of standards
- Student and staff exchange through availability of programs
- Employability of students from related studies through specialization in TC
- Employee recruitment due to clear assessment criteria
The academic qualification and competence framework needs to meet several requirements so that it can serve as a solid basis for developing curricula and can be transformed into a profiling tool.
1. To define the content of the framework, **empirical and iterative data gathering techniques** are used
   → The content is described in a systematic, comprehensible way according to the **Bloom’s Taxonomy** of Educational Objectives in the cognitive area (Bloom et al., 1956)

2. Tailored to the **needs of academic training**
   → Apart from competencies that are specifically related to the field of TC, general academic competencies should also be included in the framework
3. The framework should have the potential to become a European-wide standard
   → It should be consistent with EU-standards and tools, such as the levels defined in the European Qualifications Framework (EQF; 2016) & ECTS-grades (European Credit Transfer and Accumulation System)
   → It should cover the higher EQF-levels, 5, 6 and 7

4. The framework strives to be as inclusive and comprehensive as possible
   → It shows the full scope of potential relevant teaching disciplines and covering all relevant subjects
   → It allows stakeholders to select competencies that are useful in their specific situation or from their specific view point
5. The framework should be **user friendly**, allowing different stakeholders to use it **effectively and efficiently**
   → The framework should be **consistent** in its terminology, **generic** in its content, and easy to understand on an **international** level

6. The framework should be **useful for industry** with respect to qualification needs, transferability of competencies, and employability
   → Stakeholders in industry provide **feedback** at several junctures during the development process of the framework
Feedback on the preliminary draft of the framework was collected at several conferences where the framework was presented:

- European Academic Colloquium on Technical Communication Studies in Berlin (May 2016)
- Information Energy in Utrecht (June 2016)
- Medea 2016 in Zakynthos, Greece (September 2016)
- First Chinese Academic Colloquium in Shanghai (September 2016)

tcworld conference in Stuttgart (November 2016)
Method: how we work

Onsite meetings
Method: how we work

- Online meetings
- GoToMeeting **synchronous** communication tool
- Features:
  - HDFaces Video Conferencing
  - Desktop/Application Sharing
  - Hand Over Control
  - From any device and location
Method: how we work

Additional **asynchronous information and communication technologies** (ICTs) support the collaborative work over the Internet.

- **Email** is used to share information and for administrative tasks
- **TeamDrive** is used to share and synchronize resources, such as documents and spreadsheets
The first step towards developing the framework was to define the main subjects of relevance when studying TC at an academic level, together with the general competencies related to each subject.

Taxonomy with two levels

- 1st level: relevant subjects and related competencies
- 2nd level: relevant sub-subjects and related competencies

Description according to a prescribed format
Method: developing a taxonomy

Additional information: Overall competency 1. Understanding theories on visualization. 2. Being able to design for different media.

Level 2: Subtopics/subcategory

- Learning outcome: Knowledge or skills
- Level 2: Subtopics/Subcategory
- Visualisation theories
  - Understand Gestalt principles
  - Understand semiotics
  - Understand visual rhetorics
  - Understand Itten's theory of color

Print media design

- Apply guidelines on typography
- Design tables and diagrams
- Design infographics
- Create photographs
- Create screenshots
- Design navigational structure

Web design

- Writing a synopsis, creating a storyboard, writing a script
- Edit a film

Knowledge expressed as infology

Skill expressed as to be able to...
First level

1. Defining **the subjects** relevant for academic training in technical communication (noun).

2. Formulate a **definition/description** for each subject:
   - **Underlying idea**; why is the subject important for technical communication?
   - **Application**; when (for which tasks) is the qualification in this subject needed and how will it be applied?
   - **Scope**; which aspects does the discipline include?

3. Overall **competencies** to gain: additional information on the level and characteristics of the qualification and the learning outcome (verb)
Second Level

4. Defining **sub-subjects** – showing the scope and different aspects of the subjects to teach

5. **Skills/knowledge** to acquire: expressed in the style of Bloom’s taxonomy

   **Rules:**
   - Learning outcome; knowledge or skills
   - Knowledge expressed as infinitive; “understand/know”
   - Skills expressed as to be able to... “verbs” - infinitive as a first part of the description of a knowledge or skill

6. Relevant **names or theories** as examples
## Preliminary results:

### Excel work sheet

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Def. / description</strong></td>
<td><strong>First Level</strong></td>
<td><strong>Overall</strong></td>
<td><strong>Second Level</strong></td>
<td><strong>Skills / Knowledge to acquire</strong></td>
<td><strong>Additional information</strong></td>
</tr>
<tr>
<td><strong>Definition / description</strong></td>
<td><strong>Subject</strong></td>
<td><strong>Additional information</strong></td>
<td><strong>Sub-Subject</strong></td>
<td><strong>Rule: writing it down as noun</strong></td>
<td><strong>Rule: writing it down using the infinitive (understand / know) infinitive as first part</strong></td>
</tr>
<tr>
<td>Idea behind</td>
<td>Visualisation and design of information products (e.g. lay out) is part of the overall design process of information products; next to text, visuals and the lay out of documents are essential parts of information products, Application</td>
<td>Visualisation</td>
<td>Concepts on visualisation and Information design</td>
<td>Visualisation</td>
<td>Visualisation</td>
</tr>
<tr>
<td>Technical communicators need to be able to design the figures and pictures, the lay out, and all other visuals aspects of information products, as part of the overall design process of information products (print media, digital products, videos)</td>
<td>Visualisation</td>
<td>Visualisation</td>
<td>Visualisation</td>
<td>Visualisation</td>
<td>Visualisation</td>
</tr>
<tr>
<td>Scope</td>
<td>The discipline focuses on how to design the visual aspects of several types of information products.</td>
<td>Visualisation</td>
<td>Visualisation</td>
<td>Visualisation</td>
<td>Visualisation</td>
</tr>
</tbody>
</table>

### Concepts on visualisation and Information design

- **Print media design**
  - Apply guidelines on typographics (e.g. font, font size, indentation, spacing)
  - Apply guidelines on layout (e.g. type page, balance text/visuals)
  - Design comprehensible tables and diagrams
  - Design infographics and illustrations that convey or support the message
  - Create photographs that convey or support the message
  - Create screenshots that help understand the message
  - Apply guidelines (e.g. with regard to visibility and position) on safety notes and warning messages

- **Digital design**
  - Apply guidelines on typographics (e.g. font, font size, indentation, spacing)
  - Design for different media and devices (e.g. web, pc, tablet, android, tablet, iPad, smartphones, infotainment screens)
  - Design comprehensible tables and diagrams
  - Design infographics and illustrations that convey or support the message
Preliminary results: creating a list of subjects

- The project team strived to compose a comprehensive list.
- This resulted in a unordered list of 23 subjects.
- The list was then divided into three categories of subjects, together with a short description of the general competencies a Technical Communicator must have.
- This preliminary list is currently under review!
Three categories of subjects consisting of:

1. Subjects that are **core** to TC
2. Generic **accompanying** subjects, i.e. independent professional or academic fields that are related to or partly overlapping with the field of TC
3. Subjects that are part of the TC field and that are **supportive** to the core subjects
<table>
<thead>
<tr>
<th>Core subjects (???)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Academic research methodology</th>
<th>Understand and be able to apply the types of academic research methods and approaches that are typical in this field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation of user experience</td>
<td>Understand and apply concepts of evaluation to create information products that are usable and that result in a positive user experience</td>
</tr>
<tr>
<td>Information product development</td>
<td>Be able to select among product development strategies in order to develop appropriate information products for different purposes and audiences</td>
</tr>
<tr>
<td>Information architecture</td>
<td>Be able to ensure that information is retrievable and accessible, presents a cohesive mental model and is consistent across products and media</td>
</tr>
<tr>
<td>Technical communication</td>
<td>Understand basic principles of information processing and be able to create products that are appropriate for and usable by the target audience</td>
</tr>
<tr>
<td>Visualization and design</td>
<td>Be able to design visual aspects of information products, as part of the overall design process of information products</td>
</tr>
<tr>
<td>Domain</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Communication</td>
<td>Understand basic communication concepts and theories, and understand concepts in the fields of corporate and marketing communication</td>
</tr>
<tr>
<td>Domain knowledge</td>
<td>Understand fields that are relevant for technical communicators (computer science, mechanical engineering, physics, etc.) sufficiently, to be able to cooperate with experts from the field</td>
</tr>
<tr>
<td>Ethics and philosophy</td>
<td>Be aware of the ethical implications when making decisions on how to develop technologies and the accompanying information</td>
</tr>
<tr>
<td>Generic competencies</td>
<td>Be able to communicate effectively and efficiently with people with varied functions, roles and levels of knowledge</td>
</tr>
<tr>
<td>Interculturality</td>
<td>Be sensitive to differences between cultures</td>
</tr>
<tr>
<td>Language skills</td>
<td>Know how to apply communicative and linguistic theories and models to adequately describe information products</td>
</tr>
<tr>
<td>Management</td>
<td>Be able to manage projects, to work with multiple sources of information in the enterprise, and to strategically compete and cooperate with others</td>
</tr>
</tbody>
</table>
Supportive subjects (???)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Info-mining</td>
<td>Be able to collect, analyze and select appropriate information to design an information product</td>
</tr>
<tr>
<td>Information management</td>
<td>Be able to manage and to overview large amounts of information</td>
</tr>
<tr>
<td>Information technology</td>
<td>Know about hardware and software that is used in technical communication</td>
</tr>
<tr>
<td>Multilingual workflow management</td>
<td>Be able to manage communication processes across languages and cultures</td>
</tr>
<tr>
<td>Project Management</td>
<td>Be able to manage information development processes and report on these processes</td>
</tr>
<tr>
<td>Publishing</td>
<td>Understand the process of publishing an information product and the different stages within this process</td>
</tr>
<tr>
<td>Quality assurance</td>
<td>Understand quality assurance principles and strategies in order to implement appropriate quality processes and to manage projects well</td>
</tr>
<tr>
<td>Standards and regulations</td>
<td>Know the laws, standards and regulations that are relevant for technical communication in order to provide correct information</td>
</tr>
<tr>
<td>Terminology</td>
<td>Understand the basic principles and methods of terminology science</td>
</tr>
<tr>
<td>Training and e-learning</td>
<td>Understand principles and theories of instructional design to apply these in a systematic way to ensure that training and e-learning modules will be effective, efficient and satisfying</td>
</tr>
</tbody>
</table>
Examples

An example from the framework:

- Information Product Development

- Other examples you’d like to see?
Draft finished by the end of October: major milestone!

1. We compiled feedback for Quality Assessment:
   - Contents and level of detail of the (sub-)subjects, competencies, knowledge and skills
   - Missing ↔ irrelevant disciplines or sub-disciplines
   - Overlapping disciplines
   - Cross-references
   - Typos, grammar, inconsistencies
   - Structure/categorization of the taxonomy
   - Future trends & developments

2. We discussed and evaluated feedback.

3. We adapted the framework based on feedback from silent partners & academic audiences at conferences.
Further steps

- **Complete academic framework** finalized by the end of the year
- **Deriving** from the framework **prototype curricula** with educational content & learning goals
- Next on-site project meeting scheduled for December 2016
- Further **dissemination** activities at different venues
- All findings will also be published on the **website**: [www.teccom-frame.eu](http://www.teccom-frame.eu)
References


Thank you!
Questions?
Suggestions for cooperation?...

j.karreman@utwente.nl
birgitta.meex@kuleuven.be

On behalf of the TecCOMFrame project team
Ihre Meinung ist uns wichtig! Sagen Sie uns bitte, wie Ihnen der Vortrag gefallen hat. Wir freuen uns auf Ihr Feedback per Smartphone oder Tablet unter

http://api01.honestly.de

oder scannen Sie den QR-Code

Das Bewertungstool steht Ihnen auch noch nach der Tagung zur Verfügung!