



**ON COMPETENCES IN PROJECT MANAGEMENT AND LIFE-LONG  
LEARNING – EU STANDARDS - APPROACHES WITH THESAURI AND  
COMPETENCE MODELS**

**Peter J. A. Reusch**, University of Applied Sciences and Arts, Dortmund, Germany<sup>37</sup>

**Sylvie M. M. Reusch**, Hölderlin Gymnasium, Köln, Germany;

Université de Bourgogne, Dijon, France<sup>38</sup>

**Abstract**

There is a long tradition to shape project management by developing selected competences of project team members using standards like ICB (IPMA 2015: IPMA Individual Competence Baseline). Today such standards are confronted with strong competence models pushed by the EU to stimulate employment and open job markets – the scope of these models includes all kinds of life-long learning. Here the new DISCO competence thesaurus (DISCO, 2016) already offers about core 10.000 competence terms in 11 languages. DISCO and ICB are overlapping – and bridges are to be discussed. The thesaurus concept can also improve ICB. For all these approaches we need additional models to describe competence development.

**Key words:** *project management, competence management, competence thesaurus, ICB, DISCO*

**JEL code:** *O22*

**Introduction**

In ICB 4 there are 29 selected competences to shape project, program, and portfolio management. The ICBs of IPMA are focused to support the IPMA certification. There are more competence models in project management PMCD (PMCD 2007). These very narrow competence models are now confronted with competence models pushed by the EU. Part of the strategy of the program Europe2020 is included in the following statement:

*“Member States should promote productivity and employability through an appropriate supply of relevant knowledge and skills. Member States should make the necessary investments in education and vocational training systems while improving their effectiveness and efficiency to raise the skill level of the workforce, allowing it to better anticipate and meet the rapidly changing needs of dynamic labour markets in an increasingly digital economy. Member States should step up efforts to improve access to quality adult learning for all and implement active ageing strategies to enable longer working lives.”* (EU Commission 2010 COMMUNICATION FROM THE COMMISSION: EUROPE 2020. A strategy for smart, sustainable and inclusive growth).

To support this strategy the EU launched the ESCO program on European Skills, Competences, Qualifications and Occupations. The ESCO classification identifies and categorizes skills, competences, qualifications and occupations relevant for the EU labor market and education and training (ESCO, 2016).

In addition the EU launched the DISCO program that goes some steps further (DISCO, 2016).

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<sup>37</sup> Peter.Reusch@fh-dortmund.de

<sup>38</sup> SylvieReusch@web.de



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DISCO is a Dictionary of Skills and Competences – it is a thesaurus that currently covers more than 100,000 skills and competence terms and approximately 36,000 example phrases in total and is available in eleven European languages. DISCO is one of the largest collections of its kind in the education and labor market. DISCO is compatible with ESCO and EQF, and supports competence matching, and qualification and learning outcome descriptions (Müller-Riedlhuber, Heidemarie; Ziegler, Petra 2012).

Compared to the big and universal competence thesaurus DISCO the ICBs of IPMA are very small. Nevertheless they are quite similar in some aspects. And in the project management community it will be more and more important to take a look at DISCO in future because the number of job descriptions and CVs based on DISCO will grow rapidly.

In the following sections we give a short overview over the content and structure of ICB4 and DISCO and compare both concepts.

After the classification and description of competence that next step is a concept for modeling competence development. Here we look at an approach that leads to further research.

### ICB4 Content and Structure

In ICB 4 there are 29 selected competences in following areas:

- People competences defining personal and interpersonal competences
- Perspective competences defining contextual competences
- Practice defining technical aspects of managing projects

There is the flat hierarchy of competences:

ICB4 Competences

#### People

Self-reflection and self-management  
Personal integrity  
Personal communication  
Relations and engagement  
Leadership  
Teamwork  
Conflict and crisis  
Resourcefulness  
Negotiation  
Result orientation

#### Perspective

Strategy

...

#### Practice

Design

...

For all these competences there are descriptions in ICB4 and for all these competences key competence indicators are introduced – like:

Personal communication

Provide clear and structured information to others and verify their understanding

Facilitate and promote open communication



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Choose communication styles and channels to meet the needs of the audience,  
Situation and management level

Communicate effectively with virtual teams

Employ humor and sense of perspective when appropriate

In the competence *personal communication* there the following links to related competence elements:

All other people competence elements

Perspective 4: Power and interest

Perspectives 5: Culture and values

Practice 5: Organization and information

Practice 12: Stakeholders

In the competence *negotiation* following indicators are defined:

- Identify and analyses the interest of all parties involved in the negotiation
- Develop and evaluate options and alternatives with the potential to meet the needs of all parties
- Define a negotiation strategy in line with own objectives that is acceptable to all parties involved
- Reach negotiation agreements with other parties that are in line with own objectives
- Detect and exploit additional selling and acquisition possibilities

These competence indicators are new in ICB4 and different from the approaches in former ICBs. These indicators are based on concepts that are similar to DISCO and can help to build bridges between DISCO and ICB4.

### DISCO Competence Thesaurus

“DISCO, the European Dictionary of Skills and Competences, is an online thesaurus that currently covers more than 104,000 skills and competence terms and approximately 36,000 example phrases. Available in eleven European languages, DISCO is one of the largest collections of its kind in education and labor markets.

The DISCO Thesaurus offers a multilingual and peer-reviewed terminology for the classification, description and translation of skills and competences. It is compatible with European tools such as Europass, ESCO, EQF, and ECVET, and supports the international comparability of skills and competences in applications such as personal CVs and e-portfolios, job advertisements and matching, and qualification and learning outcome descriptions.” (DISCO, 2016).

DISCO has a web portal to use the thesaurus and navigate along the thesaurus relations. Further-more subsets of DISCO can be selected and exported for customized applications.

DISCO is a thesaurus with 2 main segments

- non domain specific skills and competences
- domain specific skills and competences

DISCO is a multi-level hierarchy, here just a case

Non domain specific skills and competencies

personal skills and competences

cognitive skills and problem solving ability

problem solving ability



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### problem identification

With the multi-level hierarchy and the corresponding links to narrower terms and broader terms, with synonyms and related terms DISCO is a real thesaurus according to ISO 25964. [6]

DISCO also includes indicators for competences like ICB4 – in some cases really very similar to ICB4.

A typical competence dealing with management is the management of personal resource with the subsequent indicators:

#### Management of personnel resources

- evaluate performance of employees and contract personnel
- hire and discharge workers
- manage human resources
- manage training interventions
- orient new employees
- record and evaluate existing capabilities
- schedule employee work hours
- transfer and promote workers

#### Management of work activities

- assign work to employees
- organize activities for various services
- organize distribution of tasks
- organize the work of trainees
- organize work activities
- plan and organize work
- plan work activities
- plan workload and related activities

Some of these aspects go beyond ICB4 like hiring workers, but many of the remaining aspects are also mentioned in ICB4.

Corresponding to the ICB4 competence in personal communication there is the competence in professional communication in ICB4 with the subsequent indicators

#### Competence in professional communication

- answer customer and public inquiries
- communicate efficiently with colleagues
- communicate with future system users
- communicate with suppliers
- communicate with the front line staff
- communicate work related ideas and concepts
- confer with engineering and technical personnel
- confer with manufacturing personnel
- confer with other departmental heads
- confer with research personnel
- confer with scientists
- consult with colleagues
- consult with experts
- consult with managerial and supervisory personnel
- use professional communication language when performing work activities



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And corresponding to the ICB4 competence in negotiation there is the competence in negotiation skills in ICB4 with the subsequent indicators

### Negotiation skills

- ability to find a compromise
- ability to handle conflict situations
- ability to reach consensus
- conflict avoidance
- conflict resolution
- diplomatic skills
- persuasiveness
- sales talent

### ICB4-DISCO Comparison

The ICBs of IPMA are focused to support the IPMA certification. Project management in higher education for example – university courses on project management, or study programs at bachelor, master, or ph.d. level - must apply competence models according to EQF for example to meet the requirement for the accreditation. Integration of both approaches will be more and more important in the future because teaching and training in project management is growing to meet the requirements of more projectized companies.

Table 1

<b>ICB4-DISCO Comparison</b>		
	<b>ICB4</b>	<b>DISCO</b>
Content	29 competences About 5-6 indicators for each competence at project, program, and portfolio level	7000 preferred competence terms, 3000 synonyms, indicators not yet fully developed
Scope	Project management, supporting IPMA certification	Life-long learning, supporting all kinds of learning and education, includes learning outcomes and EQF concepts
Structure	Flat hierarchy: Competence areas, competences	Thesaurus: Multi-level hierarchy, no yet fully developed
Thesaurus features	Implicit links to related competences	Hierarchical aspects: Narrower term, broader term. Synonyms, related terms
Languages	In 2015 only English, translations will follow	11 languages
Availability	Download pdf from IPMA	Web portal Browser supporting thesaurus features and access to indicators, and also customizing of the thesaurus and export of the thesaurus
Development	Fixed over years	Dynamically growing
Supporter	IPMA and national project management associations	EU with strategic programs, EU units working with DISCO, National labor organizations



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*Source: Authors' construction*

### Competence development model

A general approach for the evaluation of competences can be developed the following way:

The evaluation of competences is based upon competence indicators. A competences indicator can cover several aspect of a competence. For all aspects an evaluation must be introduced with defined ranges and values.

In the case of the ICB4 competence personal communication we could do it like that:

#### **Competence: Personal communication**

Subunit: Facilitate and promote open communication

#### **Indicator: Communicate effectively with virtual teams**

Aspects of this kind of communication: training, experience, feedback from teams, ...

Range or levels of these aspects:

Training in number of days for example

Experience in months or years for example

Feedback – no, poor, good, excellent – for example.

Competence development can be described based on these aspects, like: Initiate additional training regarding this competence indicator by 2 days.

For many competence indicators of ICB4 and DISCO it is not so easy to shape the evaluation like in the case mentioned above. Indicators must be analyzed and reconsidered to find an appropriate approach for the evaluation.

The ISO Conceptual Reference Model for Competencies and Related Objects can also help to concepts here (ISO/IEC JTC 1 SC 36 WG3 N0244 2008).

### Conclusion and further steps

ICB4 and DISCO are young and unfinished. Both models do not have a competence evaluation so far. Without a concept for the evaluation of competences IPMA cannot even use ICB4 in the certification process.

In DISCO there is just an initial set of competence indicators. Thesaurus relations could also be extended here.

DISCO will have a growing impact on ICB4 and other isolated competence models.

The master thesis of Sylvie Reusch (Reusch, Sylvie 2013) includes a PROLOG-based thesaurus with PROLOG rules to navigate through the thesaurus following the thesaurus relations and going up to transitive closures. This approach is used now to test the thesaurus of competences. It will also be extended to test bridges between different competence models like ICB4 and DISCO. Here also linguistical features can help to reduce the number of links to be defined explicitly. (Reusch, Sylvie 2011)

We propose further research in the context of the competence thesaurus regarding special kinds of education like e-learning. Additional aspects of competences and competence development must be considered here.

Further aspects of ICB4 are discussed in (Reusch, Sylvie 2011 and Reusch, Peter J.A.; Reusch, S. Pascal, 2016).



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