COMPETENCE AND JOB PROFILE FRAMEWORKS

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Abstract: The Competence and Job Profile Frameworks presentation will describe the two approaches adopted for the European eCompetence Framework and the ICT Qualifications Framework based on the European Qualifications Framework (EQF). The presentation will show the "grammar" used to define and relate ICT competences, to describe learning outcomes, to identify levels. It will indicate a way to create interoperable eCareer Services towards transparency across Europe and will also focus on the key success factors to build frameworks .and standards.

Keywords: competency

1. Scenario and aims

Why are competence and qualifications frameworks becoming more and more important within the Human Resources (HR) domain?

In general, frameworks are necessary to achieve standardisation. In this case, frameworks help build a common language, i.e they help understand and communicate the same concepts. Common language and understanding are a necessary premise to make services interoperable, i.e. each other connected, consistent, easily reachable, comparable and usable; interoperability means effectiveness and transparency and concerning HR domain, it fosters students and workers mobility, too.

In the HR domain, common competence and qualifications frameworks are the basis for interoperability between competence diagnostic assessments, learning programmes, certifications, and many other possible eCareer services, as illustrated in Figure 1. [1]

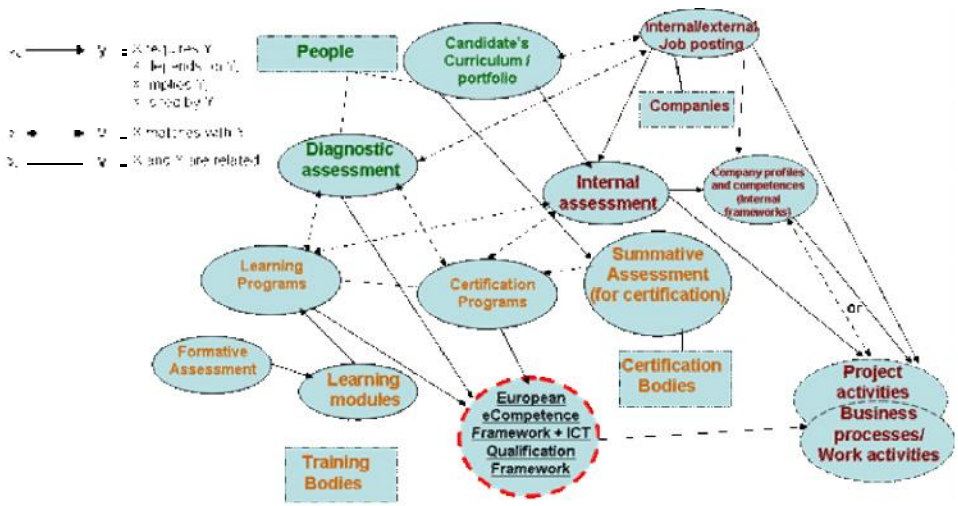

Figure 1. HR Domain main relationships

For the last few years, European Commission has been fostering competence and qualifications frameworks: the European Qualifications Framework supported by DG Education and Culture is now available [2] and inside the eSkills Forum initiatives [3], supported by DG Enterprise, the CEN/ISSS eSkills Workshop launched the development of the European e-Competence Framework [4], [5];

moreover, other sectoral frameworks are on the way, just as the ICT qualifications Framework within the Leonardo Project EURO ICT Lane. [6]

Fondazione Politecnico and stakeholders from several European countries representing both ICT industry sectors, ICT end-user companies and education and vocational training system, are just working at the realization of the European e-Competence Framework and the EURO ICT Lane, and at an interoperable model, as well, which connects them together and also to the EQF, as shown in Figure 2.

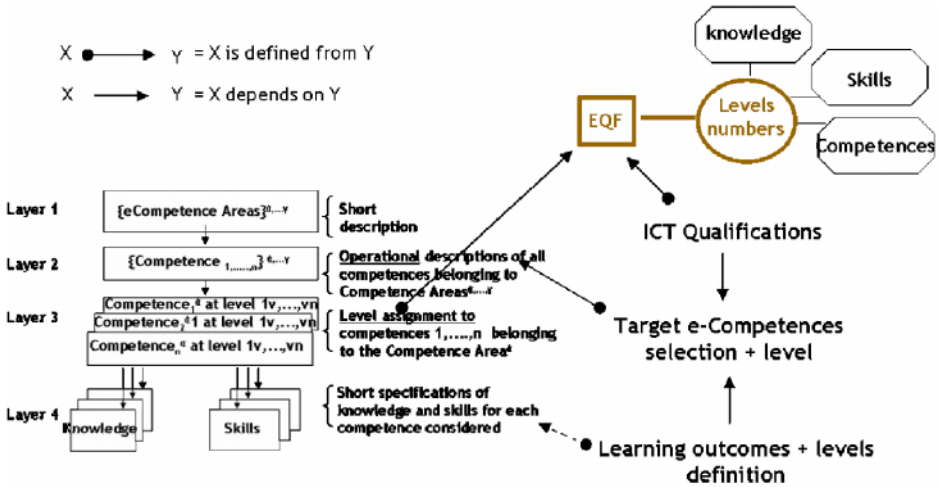

Figure 2. Relationships between frameworks

The European e-Competence framework is an input for the ICT Qualifications Framework while the EQF provides them levels indications.

2. Method adopted: an overview

In order to develop common patterns it was necessary to define and to find an agreement on:

- The meaning of “competence” and “learning outcome”: i.e. what they are,
- Competence and learning outcome descriptions: i.e. how they can be described,
- Competence and learning outcome levels in line with the EQF levels (and with the European eCompetence framework logic): i.e. where we can position ICT competences and learning outcomes along the EQF eight-level scale.

Accordingly, some definitions are reported in Table 1.

Table1. Definitions developed within the European e-Competence Framework, Euro ICT Lane, eCCO [7]

- **Knowledge** ≡ know-how, know-what and know-why
- **Knowledge Object (KO)** ≡ a "small enough", self consistent set of knowledge (with respect to specific areas of analysis, targets, objectives, etc.)
- **Skill** ≡ KO put into action, KO + Action Verb (AV)
- **"Competence** = a demonstrated ability to apply knowledge, skills and attitudes in order to achieve objective results (according to a specific level of autonomy and context complexity)"
- **"Learning outcomes** = statements of what a learner knows, understands and is able to do on completion of a learning process and are defined in terms of knowledge, skills and competence" (*from EQF documentation*)
- **Learning outcomes** are expressed through "operational descriptions" like "to be able to do something"
- **Learning outcomes levels** depend on contexts complexity (e.g. routinary, predictable, unpredictable, subject to changes contexts) and on knowledge, skills and competences typologies (e.g. practical, cognitive, social, functional competences)
- Relevant ICT knowledge, skills and competences for ICT professionals **start from EQF level 3**

The concepts expressed by these definitions can be connected together; they generate a platform to develop an interoperable model, as illustrated in Figure 3.

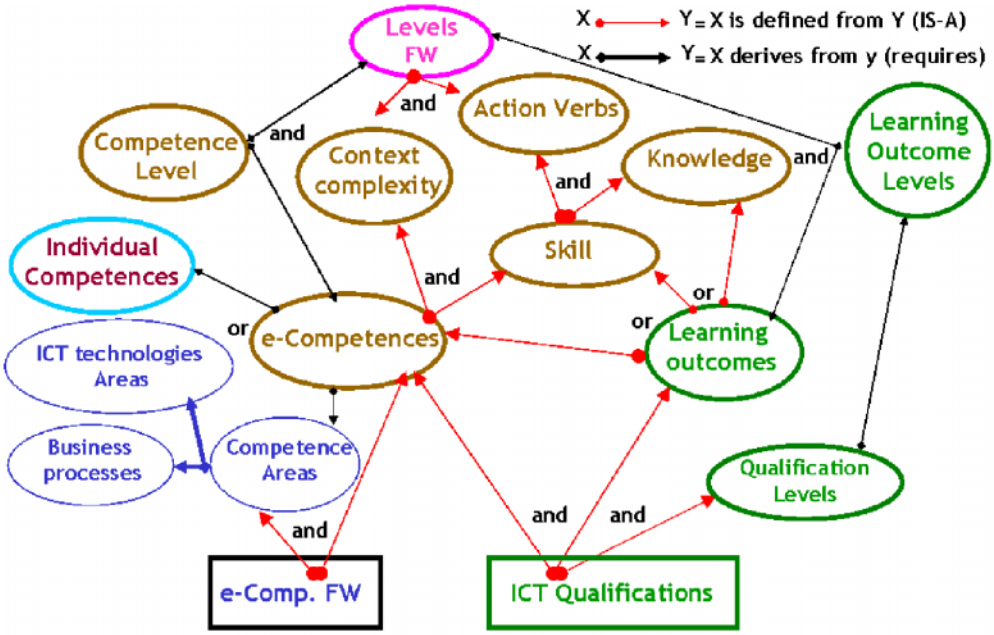

Figure 3. Connections between concepts

Concerning levels definition and recognition, by following the EQF levels descriptions, it is possible to assign a level to any ICT-related competence or ICT-related learning outcome typology-category (knowledge, skill and competence), according to at least two dimensions: context complexity – actions complexity[1]. In fact, by reading the EQF levels descriptions carefully, we can distil these concepts at increasing complexity levels.

According to a common agreement among ICT stakeholders' communities, ICT proficiency and learning levels range from EQF levels 3 to 8; nonetheless, the European e-Competence Framework

[1] EQF defines competences in terms of Autonomy and Responsibility. So within the EQF, levels are also assigned according to these two dimensions. Because companies prefer not to confuse competences with "organisational responsibilities", within the frameworks developed in the projects mentioned in this Paper, the concept of Responsibility is skipped. In this paper "Autonomy" dimension is not considered as well just for simplicity of reasoning.

has developed its own scale, which starts from level 1 to level 5. In Table 2, a schematic provisional representation of levels and reference dimensions is drafted.

Table 2. Levels EQF compliant (provisional)

EQF - ICTQualFW Levels	e-Comp FW Levels	Context complexity	Key action verbs + words
8	**5**	**Unpredictable - unstructured**	**Conceiving, transforming, innovating, finding creative solutions by application of a wide range of technical and / or management principles**
7	**4**		
6	**3**	**Structured - unpredictable**	**Designing, managing, surveying, monitoring, evaluating, improving, finding non standard solutions**
4- 5	**2**		**Scheduling, organising, integrating, finding standard solutions, interacting, communicating, working in team**
3	**1**	**Structured - predictable**	**Applying, adapting, developing, deploying, maintaining, repairing, finding basic-simple solutions**

Concerning the "key action verbs – words" column, it represents actions complexity; the descriptions inside identify the core features characterizing each level and are intended as "lower bounds", i.e. that column indicates from which level on we can start to recognise a specific set of key actions. Accordingly, it is always possible to identify same sets of action verbs-words at higher levels but they will not play a key role there. So just as an example, if "surveying" characterizes level 6 EQF and level 3 European e-Competence Framework (Ee-CompFW), it may also be found at higher levels (7-8 EQF, and 4-5 EeCompFW) but at higher levels it will not play a key role anymore. Other action verbs-words will be key for those levels. This table is provisional and sets of key action verbs-words are in progress.

The idea behind is that the levels scale spans a spectrum from low complexity concrete actions to high complexity actions and conceptualization. In Table 3 below, a summary in progress is provided. [8], [9], [10]

Table 3. An example of provisional sets of actions

- **"Doing", "making":** related to concrete actions and referred to either predictable or unpredictable contexts. E.g.: doing, using, applying, adapting, developing, deploying, maintaining, repairing, finding basic-simple solutions;
- **"Coordinating", "operating":** related to concrete actions and referred to either predictable or unpredictable contexts subject to changes. E.g.: scheduling, organising, integrating, carrying on, finding standard solutions;
- **"Observing", "analysing", "listening to", "controlling", "driving":** related to "conceptualizing" and referred to either predictable or unpredictable contexts subject to changes. E.g.: surveying, designing, managing, supervising, monitoring, evaluating, improving, finding non standard solutions;
- **"Choosing", "communicating", "enhancing":** related to "conceptualizing" and "by definition" referred to unpredictable contexts. E.g.: decision-making, team-building, personnel forming, performances reviewing;
- **"Conceiving", "visioning", "foreseeing":** related to "conceptualizing" and "by definition" referred to unpredictable contexts. E.g.: planning, transforming, innovating.

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