Chapter 12
Analysis of the European ICT Competence Frameworks

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ABSTRACT

The rapid evolution and expansion of ICT labor markets requires a common language to manage offer and demand of talent, which is especially critical and complex in a transnational integration scenario like the European Union. Models and frameworks represent useful tools for this purpose. This chapter analyzes the most relevant e-competences frameworks in the European Union (e-CF or EN16234, ESCO, and Body of Knowledge or BoK) as well as their integration and similarities. The present impact of these European frameworks in the ICT labor market and their connection to training and education is presented through data and several examples taken from two EU-funded projects: e-Skills Match and e-CF Council.

INTRODUCTION

Competences, skills, knowledge, job profiles, qualifications or occupations are some of the concepts most commonly used in the present within the IT profession. They can be easily found in all types of information written in e.g. job ads, training courses and CV of jobseekers. Ensuring that these terms are used consistently with a common language is essential for a correct match of needs between employers, job candidates and training providers. When we analyze the case of European Union (EU) where the transnational coordination is a primary objective, this need of a common frame for all actors in ICT employment is urgent and vital for the mobility of ICT people across borders. This is one of the main reasons why EU has promoted different ICT competence frameworks to support a better coordination.
of the ICT job market where, as it happens in many other developed countries, companies are generally experiencing a shortage of qualified workers to cover their needs of digital transformation of businesses (Hüsing et al., 2015).

The efforts of EU in this area has led to a set of results in the shape of frameworks or competence models. The most relevant ones are the European e-Competence Framework (e-CF) (EN 16234-1, 2016), the European Competence, Skills, Qualification and Occupations (ESCO) classification (European Commission-1) and the European Foundational Body of Knowledge (BoK) (Oliver, 2012). Before continuing it is important to mention that the ICT labor market also considers important the role of certifications. However, there are several reasons why we are not going to devote space to this area in this chapter:

- It is important to point out that certifications are not competence frameworks. We have also analyzed the case of ITIL (Fernández-Balandrón, 2007) which basically is just a model which defines the best practices for IT management. Axelos, the company which manages ITIL, PRINCE and other certifications created under guidance of the UK Government, has launched the Axelos Skills Framework. It has been derived from ITIL and other sources, and embraces a restricted set of skills in Project Management and IT Service Management. Although this framework pretends of offering additional value to their certifications, its structure with qualifications, skills/competences and occupations is not exhaustive and is totally inspired in the e-CF Framework mentioned above.
- Certifications are always relevant as sources of information for competences frameworks but they are usually very specific and restricted to the documentation of syllabus and evaluation methods.
- ICT certifications represents a huge number of cases as can be seen in a non-exhaustive non formal catalogue of ICT certifications (http://itcertificationmaster.com/list-of-all-it-certifications/), there are 2313 different IT certifications from 161 vendors/entities.
- Certifications cover a broad range of rigor and quality of design and justification from the worst to the best level something already identified in (García and Fernández-Sanz).

These are the reasons why ICT certifications in general are not considered as sources of information for our analysis of competence frameworks. However, we have also included a short analysis of Axelos Skills Framework to allow readers to also know this case.

As a consequence, we can summarize that the aim of this chapter is to provide a comprehensive view of the above mentioned frameworks and to highlight the need of having a good understanding on such basic and fundamental concepts. But the work does not stop here because an integration of the different views provided by the mentioned frameworks is also needed.

This simple idea of integrating the existing ICT related reference schemes and standards (Fernández-Sanz, et. al., 2017) was the origin of the European Project e-Skills Match (e-Skills Match Project: http://www.eskillsmatch.eu/en/), aimed at providing integrated services for self-assessment of e-Skills and digital competences and further training recommended to reach the target profile as well as market certifications offered by the developed e-Skills platform. It is also directly related to another project, e-CF Council (http://www.ecfalliance.org/) which works with the e-CF Framework to develop training paths for the different competences.

The chapter is organized as follows. The first three sections describe and analyze each of the mentioned frameworks (e-CF, ESCO and BoK) adding a reference to Axelos Skills Framework. Once presented the frameworks, a short section analyzes their similarities and the possible alignment of basic terms coming from the different frameworks. The next section illustrates the impact and utility of these models within
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