Editorial. European Certification of Informatics Professionals — Niko Schlamberger

Monograph: "EUCIP: A Model for Definition and Measurement of ICT Skills" (published jointly with Novática)
Guest Editors: Renny Bakke Amundsen, Neil Farren, and Paolo Schögør

Presentation. Introducing EUCIP — Renny Bakke Amundsen, Neil Farren, and Paolo Schögør (with contributions by Niko Schlamberger)

EUCIP General Overview — Michael Sherwood-Smith and Giovanni Franzia

Exploring the EUCIP Certification Range and Progression Options — Paolo Schögør, Frank Mockler, and Neil Farren

Advanced Experiences in Norway — Renny Bakke Amundsen

Advanced Experiences in Italy: The University Approach to EUCIP — Marco Ferretti and Nello Scarabottolo

Advanced Experiences in Italy: EUCIP as a Shared Model in the ICT Community — Roberto Bellini, Franco Patini, and Antonio Tetti

Ireland Implementation Model — Mary Cleary

Estonia Implementation Model — Jaan Orauas

Spanish Implementation Model: Current Situation — José O. Montesa-Andrés, José-Maria Torralba-Martínez, and Manuel Rodenes-Adam

A Web-based Computer System as a Main Tool of Certification Processes Automation in EUCIP Poland — Grzegorz Śzyjewski

Implementing EUCIP IT Administrator in Romania — Ana Dulu

An Overview of Recent Adoption in Croatia — Kristijan Zimmer and Enola Knežević

CISCO and EUCIP Co-operation in ICT Professional Competencies Development — Fabrizio Agnesi

EUCIP Services for Organizations — Roberto Bellini

E-Learning Tools and Projects on EUCIP Core — Marco Ferretti and Juan Orauas (with contributions by P. Prinetti, A. Chianese, P. Salomoni and Lily Loidap)

CEPIS NEWS

CEPIS Working Groups
Thinking Ahead on e-Skills in Europe: Matching Supply to Demand — Consortium Team led by CEPIS

Monograph: "EUCIP: A Model for Definition and Measurement of ICT Skills" (published jointly with Novática)
Spanish Implementation Model: Current Situation

José O. Montesa-Andrés, José-Maria Torralba-Martínez, and Manuel Rodenes-Adam

In this article we review the current state of EUCIP training and its implementation in Spain. In particular, we study the current situation of the "ConsITIO" Masters Degree taught in collaboration with five universities, and the EUCIP accreditation to which it leads. The article also looks towards the future prospects for EUCIP in Spain.

Keywords: e-Learning in ICT, Information Systems Competencies in Spain, Professional Certification in Spain.

1 Introduction

The situation regarding the issue of accreditation and legal competencies of ICT domain professionals in Spain is vague, so we shall begin by exploring the current context and then see how EUCIP fits within this context. Finally we will describe a specific case describing the training required for the Business Analyst profile of EUCIP Professional, within the ConsITIO Masters <www.itio.upv.es>, which consists of two levels, Core and Professional. This Masters has been developed as a result of a joint project by the Valencia, Madrid, and Catalunya Polytechnic Universities, the Universities of Murcia and Cantabria, and the Technical Institutes al2 – (Instituto Universitario de Automática e Informática Industrial and ITI-Instituto Tecnológico de Informática), both from the UPV (Polytechnic University of Valencia), and AITEX (Asociación de Investigación de la Industria Textil).

2 The Context

In all societies, when professional services have a direct impact on people and their lives in a certain area, the Government requires a "licence" to practice this profession. This licence is obtained after a regulated training process and / or certification exams. Classical examples are medicine and architecture.

However, there are other professions that are not regulated. As examples we can cite novel writers, bakers, and shoemakers. Of course, there are also intermediate situations, especially when companies try to be accepted by consumers. In this case, companies seek professionals who provide certain levels of quality in their services. A good example is a football team.

If there is state regulation of professionals, companies are forced to abide by it, but even so, if companies want to progress they must select their staff carefully. An example could be a firm of architects, or a prestigious medical clinic.

2.1 Information System Professionals

Due to its youth and the diversity of job characteristics there is very little regulation in the field of information systems in Spain. Given this lack of clear references for the profession, many companies, especially those of a certain size, have been forced to select and train their staff.

Considering that the working life of a professional typically lasts about 40 years, and that colleges and faculties of ICT in Spain, such as the one in the Polytechnic University of Valencia, is celebrating its 25th anniversary (the first ICT schools and colleges in Spain started 31 years ago), then it is easy to understand that even today, despite the large number of graduates in ICT, the social demand for such professionals is only partly met; the remainder is covered by other graduates who have been recycled into ICT. Even today, the context is not clear, due to the lack of a widely accepted structure of professions, as well as the professional backgrounds of their professions. In Spain it is
EUCIP: A Model for Definition and Measurement of ICT Skills

difficult to know what profiles are associated with each training level.

Admittedly, there have been several efforts to address these issues; for example EISS (European Informatics Skills Structure) from CEPI [1], or the work of the Career-Space consortium [2] which, although focused on the definition of profile, did help facilitate the selection processes. Career-space [3] provides a little more and created some guidelines for the development of curricula in ICT. In Spain EISS was the basis for the "Reference Model of Computer Functions for Recruitment" (MRFI-C) from the "Ministerio de Administraciones Públicas". Career-Space has had an impact on the white book on informatics (2004), a guide for the development of future university curriculum focused on the European space, for new Spanish careers in ICT.

The EUCIP approach, as discussed in other articles in this publication, goes further, because it not only structures professional profiles but also proposes a certificate structure that requires certain levels of knowledge and practical experience. This simplifies the staffing of companies, since they can focus on qualifications while assuming the knowledge, skills and attitudes that have been evaluated in the certification process.

In Spain the problem is complex and ambiguous because associations of informatics university graduates are pressing the Spanish government for similar treatment as other engineers (and architects), for whom a university degree is mandatory if they wish to pursue their profession in a legally recognized manner. For example, Telecommunications engineers, which are also considered as ICT professionals, have powers recognized by law.

In this context, EUCIP should be recognized as it is an independent professional certification of skills and expertise. In the case of non-regulated competencies, it will be an excellent reference for professional standards, and even in the case of regulated competencies it will provide a set of good practices for professional updating. Nowadays, it is quite normal to see professional certificates, as well as formal academic qualifications, in medical clinics, and we should not be surprised to see a similar situation in other professions. In fact, it is quite normal to hear of people talking about updating their knowledge and taking part in continuous education. Moreover, in other professions we regularly speak of accreditations such as the PMI (Project Management Institute), PMP (Project Management Professional) or similar accreditations from IPMA (International Project Management Institute), PMP (Project Management Professional) or similar accreditations from IPMA (International Project Management Association). In the context of ICT in Spain, there are common recognized certificates from companies such as IBM, SAP, Oracle, Microsoft and CISCO.

3 EUCIP in Spain

In Spain, a foundation was created, the "Fundación EUCIP España", to operate in Spain and Andorra with the purpose of promoting and standardizing certification (in the same way as the ECDL Foundation), while licensing EUCIP courses and working with employers <http://www.eucip.es>. ATI (Asociación de Técnicos de Informática) is the Founder Patron of this association, and there are a number of other founding partners such as COMFIA CC.OO. and Élogos Conocimiento. To give an overview of the partners:

- ATI holds the honorary position of Founder Patron, since it is the Spanish member of CEPI and EUCIP <http://www.ati.es>.
- COMFIA (acronym for COMisiones Financiero y Administrativo) is the Federation of Financial and Administrative Services Union (CCOO), born as a result of the merger of FEBAA (State Federation of Banking and Savings) and FES (State Insurance Federation). It subsequently incorporated other associations such as administrative services, telemarketing, engineering offices, planning and computer services <http://www.comfia.net>.
- The company Élogos Conocimiento SL. is oriented to the development and implementation of training solutions <http://www.elogos.es>.

ATI focuses on clarifying the professional structure in the field of information technology in Spain. It is also involved in the provision of EUCIP certification in Spain, paying particular attention to its members, but also taking into account all other ICT professionals because, as a professional association, all professionals are candidates to join ATI. In fact, it has already offered free "Core" courses to its members and is currently organizing EUCIP IT Administrator courses.

Élogos Conocimiento develops EUCIP course materials. The EUCIP Core courses offered by ATI were developed by Élogos Conocimiento.

Given the job profile of many of its affiliates and its sphere of influence in ICT consulting companies, COMFIA CC.OO also intends to develop this type of training for its members and other stakeholders.

In this context some ATI members, mainly professors from the UPV such as Julian Marcelo and others took the decision to create an "ICT Consulting Masters" following the guidelines of the EUCIP Professional Profile [4]. Since this is a university masters, we also need to address other requirements, such as a minimum amount of credits or a mandatory project.

ATI welcomed this proposal and members such as Miquel Sarries provide their selfless support to this approach. At present the first edition of this masters started in September 2007 and will finish in February 2009.

4 Master ConsITIO (Consulting ITIO-Integration of Information Technologies in Organizations)

This masters is structured in three levels [5]. The first level, called the specialist ConsITIO, is equivalent to the "Core" and lasts one semester. This level seeks to standardize competencies, providing the students with a background in management, an introduction to the world of ICT, and for those who come from the technical area in ICT, an entry point into the world of management. The aim is for every student to understand the planning, construction and operation of information systems. The second and third levels are developed over two semesters and lead to the Masters degree. In both cases three objectives are pursued:
To train professionals with an attitude of service and competence in ICT, enable understanding of complex organizations, extract requirements, modelling processes, and identify the appropriate ICT solution [6].

To provide a professional program that prepares for international accreditation by EUCIP. Knowledge and practices are evaluated in the masters and provide the university masters title, but students must be evaluated by EUCIP.

The third objective is to provide phased and flexible modular training so that it can be tailored to each student, and allows for modular registration and flexibility in both time and place of study, using the collaborative blended learning style.

This masters requires the completion of 60 ECTS (European Credit Transfer System). As we adopted a blended learning method, these credits are divided into 6 presential credits and 54 non-presential (distance) credits, mainly using Internet technology. We opted for blended learning, as already indicated, because we work with professionals who have little time and who cannot all be available at the same time.

4.1 Masters Structure

The masters is broken down into six areas: the first three areas are equivalent to the areas in the EUCIP "Core", the other three areas - "Essential Behavioural Skills"; "Incisive Level Competence" and "Deep Level Competence" - comprise the "Business Analyst" elective unit.

Each of these areas is broken down into modules, which are equivalent to the categories listed in the Core and Elective units, with the exception of the "Essential Behavioural Skills" area which is not developed in the EUCIP profile but has also been broken down into modules for the purposes of this course.

The first semester is equivalent to "Core", and the first three areas represent 15 ECTS. In addition, to pass the assessments of the modules, candidates need to complete a tutored project.

The second semester develops Area 4 "Incisive Competence Level" and area 5 "Essential Behavioural Skills".

The third semester is dedicated to the Area 6 "Deep Competence Level" and the "Masters Project". The Masters Project tries to be as close to the business world as possible in order to provide a degree of specialized training and the set of skills associated with the "Major Competence Level".

Each semester is broken down into modules (EUCIP categories), which are taught as we shall see below, and also some presential sessions, two sessions in the first semester, and one session in each of the other two semesters. The sessions are devoted to lectures by teachers and guests conducting tutored practice, and exhibitions by students.

The sessions also provide the means by which students meet each other personally, and include participatory training and shared experiences.

When each module starts, students can access the documentation, including the introduction, additional reading, and associated activities to be developed and used to evaluate the module, this includes:

- Tests.
- Questions.
- Individual and team cases.
- Problems.
- Discussions.

Within the module information an indication is given to which elements are mandatory and which are complementary. It should be noted that we work on a weekly basis and it is important that students are asked to contact the module teacher and/or the Masters coordinators if they have any queries.

5 Conclusions and the Future

Our experience with this model of training has been very positive. Participation in discussions is used in the evaluation of some modules and the teacher responsible for the module starts the discussions by proposing a list of topics. Then students usually talk about their experience regarding the module topics and discuss related professional problems faced by them or their companies.

In the future we face two challenges: on the one hand, collaboration with other European Masters, and on the other, the development of other elective levels close to the present ones, in particular in terms of their orientation towards project management information systems (EUCIP IS Project Manager). We are also considering collaborating with other project management Masters, creating modules to complement EUCIP.

References