Actions towards Maturing the ICT Profession in Europe

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ABSTRACT

This paper presents a framework and identifies a series of action points to support the maturing of the ICT profession in Europe. The paper stems from a research initiative launched by the European Commission to develop proposals for a European framework for ICT professionalism, with the intention of maturing the ICT profession within Europe and facilitating worker mobility.

Keywords: Actions, Bodies of Knowledge, Competences, Education, Ethics, Framework, Information Communication Technologies (ICT), Professionalism, Training

1. INTRODUCTION

Approximately 5 million individuals are estimated to be working as ICT practitioners across Europe (Catteneo et al., 2009), with the OECD citing almost 16 million individuals employed in the OECD ICT sector (OECD, 2010). Nonetheless, the ICT profession itself remains immature. Indeed, there is no commonly agreed definition of what constitutes an ICT professional, let alone the implementation of components required to establish and sustain such a profession.

This lack of maturity within the ICT profession presents significant challenges for society as well as European competitiveness:

- ICT Skills gaps of up to 13% are forecasted over the period 2010-2015 for Europe, potentially acting as a brake on the European economy’s recovery, given ICT’s role as an enabler of business value (Catteneo et al., 2009);
- Poor public image of the ICT profession is impacting on the numbers entering the profession – as suggested by the recent CompTIA survey where 17% of students...
surveyed saw IT careers as “sitting in a backroom with little or no social contact” (CompTIA, 2012). The decline in the number of school leavers studying ICT related courses is further evidence of this (Brady, 2009; Furber, 2012);

- Low levels of ICT knowledge (CEPIS, 2011) and/or deep specialist technology-specific knowledge (Forfas, 2008), is hampering practitioners in viewing the “big picture” of ICT, its interconnectedness, and its role in enabling organizational capability. The 2011 CEPIS e-Competence survey reinforces this concern, identifying that “79% of respondents may not have the breadth of e-competences required by their role” (CEPIS, 2011);

- High frequency of ICT budget overruns; according to Flyvbjerg and Budzier (2011a) “ICT projects deviate from their initial cost estimate by more than 10% in 8 out of 10 cases”. Further, a disproportionate number of so-called “ICT black swans” is evident with one in six projects found to have a cost overrun of 200%, and a schedule overrun of almost 70% (Flyvbjerg & Budzier, 2011b).

The fact that the next wave of computing, known as pervasive computing, is exponentially increasing the number of connected devices (Loureiro et al., 2006), suggests that the extent to which ICT is embedded in society will continue to grow. Hence, potentially more significant than the economic impact of e-skills gaps, e-skills shortages and failed ICT projects, is the risk posed to society from ICT. Traditionally, professions have emerged when failure to successfully apply domain-specific knowledge had the potential to adversely impact on society - as stated by Denning and Frailey (2011), “professions form when considerable expertise is needed to take care of people’s enduring concerns in a domain”. Hence, given ICT’s pivotal role in society, and the requirement for specialist knowledge to develop further advancements, the case for maturing an ICT profession is strong.

However, maturing the ICT profession is likely to be met with several challenges; including, for example, the rapid rate of change of the underlying technologies, toolsets and methodologies; and the fact that ICT is broad, with ill-defined boundaries. “If history is a guide, this will not be an easy path. The interdisciplinary character of computing and its overlap with and use by so many other professions will require a degree of nimbleness that may be unique among professions” (Denning & Frailey, 2011). Maturing the ICT profession will take many years. Hence, the findings presented in this paper are primarily intended to act as a catalyst in maturing the ICT profession across Europe; they should be viewed solely as one of a series of steps and form the basis for further work and discussion among key stakeholders within Europe and potentially further afield, in order to help shape this emerging profession.

The structure of this paper is as follows: Section 2 provides an overview of the methodological approach adopted for this study. Section 3 presents a revised working definition of the term “ICT Professional” that encompasses the key building blocks found in other established professions. The definition forms a basis for the proposed framework for ICT professionalism, presented in Section 4. Considerations in the design of this framework are outlined in Section 5. Section 6 and Section 7 presents next steps and draws a conclusion to the paper. The paper is an extended version of the paper presented at the Second European Workshop on Computing and ICT Professionalism (EWCIP, 2012; CISTI, 2012).

2. METHODOLOGY

2.1. Project Overview

The study, focused on developing proposals for a European Framework for ICT Professionalism, was carried out by the Innovation Value Institute (IVI) and the Council of European Professional Informatics Societies (CEPIS) between January 2011 and January 2012.
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