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Estonia Implementation Model

Jaan Oruaas

The following article provides an overview of the approach taken by the Estonian Information Technology Society (EITS) in the adoption and implementation of the EUCIP Programme. The article pays particular attention to the roll out of the EUCIP programme and how it is being integrated into the state curriculum in Estonia.

Keywords: EUCIP, EUCIP Core, EUCIP Professional, International Certification, IT Certification, IT Expert Shortages, IT Standard, Ministry of Education, Vocational Education.

In the mid nineties, just before the ICT boom or, to be more precise, enthusiasm over the “new economy”, the economy of Estonia and in particular its education system faced the challenges involved in choosing a way forward. The ultimate need for competitiveness in the process of integration into the European economy dictated the choices made. The government at that time was very ICT friendly (this friendliness did not stretch to the whole technological area due to limited resources) and supported IT infrastructure development and the introduction of IT training into schools. For this reason there was a widely accepted understanding of the need for IT skills.

Higher and vocational education was not receiving attention at the same time. There was a great lack of resources for the development of educational infrastructure and training quality. Vocational schools had to offer new courses to receive funding from the state budget. At this time it was easy to launch IT courses on the wave of the IT boom; unfortunately many of these courses were no more than extended ECDL (European Computer. Driving Licence) courses.

The Estonian Information Technology Society (EITS) did not view this approach as a comprehensive way to maintain and develop an educated IT community. EITS felt that it had a responsibility for ensuring continuous recognition of ECDL, the development of proper qualification systems, and curricula for ICT education at the vocational education level. This philosophy was a key factor in the decision to promote the ECDL, and later, the EUCIP initiative. The first problem was very pragmatic – the joining fees for both of these programmes created some problems for our small society. Funding from governmental and EU projects was used to meet this requirement.

Changes in the education landscape started in the late nineties. There were two main initiatives (and some additional items) that enabled quick progress to be made in the chosen direction. The first was an initiative from the Chamber of Commerce to work out a professional certification system for the whole economy. It became clear at that time that all these developments should be regulated by law. The second helpful initiative was CEPIS’s efforts to create independent certification systems for IT professionals. Vocational schools were kept informed about these activities from the very early stages of the work. This involvement confirmed their exact needs, because the use of international experience was the best and quickest way to overcome unsatisfactory teaching quality levels. An established local legislative environment and associated practices were also very helpful. Due to the very strong position of EITS in the IT sector, there was a practice in the Ministry of Education that all IT curricula had to be approved by this professional organization before a ministry decision. It meant that all new curricula for vocational education were checked against EUCIP Core Syllabus requirements.

The reputation of EITS was established through continuous work over several years in the IT education area. The first credit was obtained following implementation of ECDL certification in the country. Nowadays it is the de facto standard for all levels of IT user training. The latest direct evidence of this is that it is now common practice to define IT skills for computer users in all professional standards (over 700 standards in total) through ECDL require-
ments. Most market recognition of professionals was generated from the distribution of general knowledge collected from the Career-Space consortium project followed by the results of similar work in CEDEFOP (Centre Européen pour le Développement de la Formation Professionnelle, European Centre for the Development of Vocational Training). The distribution of the experience and knowledge gathered in the ECDL community was similarly influential. In short, extensive international experience was very useful in this field.

The qualification system is now up and running. The next step will be to make the required change from a five level qualifications structure to the European Qualification Framework that has eight levels for the description of knowledge, skills and competencies. Ten local professional standards for IT specialists created so far have to be changed accordingly. These are:

- Information technology specialist I & II levels.
- Information technology support specialist III level.
- Software developer III level.
- Information systems project manager III - V levels.
- Information systems analyst III - IV levels.
- CIO V level.

The first one is based on the EUCIP Core level syllabus. Candidates have to pass automated tests in accordance with all EUCIP rules to obtain certificates. Other standards are created on the basis of corresponding EUCIP profiles. The differences between the levels shows the requirements of work experience in terms of time, money and people; i.e. how long a candidate has been involved in a particular business and in what kind of projects.

The implementation of new professional standards based on EUCIP Professional profiles and certificates is a problem in small markets where the shortage of IT specialists is very high and employers do not ask for very much in terms of certification. The main and the most effective headhunting method is still based on personal relations.

Even though the market is not expanding very quickly, much has been done to prepare for future developments and to raise the overall level of qualification in the country. EUCIP is the basis for all professional standards and, as a result of this approach, all vocational schools have to consider EUCIP requirements when creating their curricula. The latest development is that five state curricula for software developer, computer technician, database developer, multimedia specialist, and IT project coordinator have been created based on EUCIP. Some success factors played a significant role in this:

- The need for a unified, transparent and independent certification system for the whole economy and for the vocational education system during the economy transition period.
- Perfect timing of the emerging certification scheme for IT professionals in the CEPIS community.
- Legislative support.
- Good co-operation with key organizations - Estonian Qualification Authority, Ministry of Education and its departments, Chamber of Commerce, Confederation of Employers etc.

No system development can avoid weak areas, which may be objective and subjective.

The labour market does not require or, to be more precise, employers cannot be overly demanding regarding certificates of a general nature. Therefore most EUCIP candidates are from vocational schools. One of the key factors of success here is the decision of the Ministry of Education to oblige schools to carry out graduating exams with professional certification. It is important to note that in this case the professional exams are financed by the state.

The success rate of the candidates taking the tests is another problem. There are several reasons for failure, but there are two more important issues to note. The EUCIP Core knowledge area "Plan" has not been considered as a typical subject in IT studies and not many students choose to take this test. An additional important issue is the questionable qualification of teachers and, as a result, the quality of training. Massive training for teachers is planned in coming years to overcome this problem. European Social Fund income is already being dedicated to this work.

To sum up the work in figures, we can speak of nearly 400 certified specialists, 10 professional standards, 5 state level curricula, and 5 test centres throughout the country.