Chapter 28
Student Projects and Virtual Collaboration in IT Degrees:
Incorporating Entrepreneurship into Study Programmes

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ABSTRACT

This paper describes a framework that assists the inclusion of Entrepreneurship into computing study programs. It has been developed within a European Tempus Project and is built following a process-oriented view of innovation and entrepreneurship. It outlines key activities and capabilities of entrepreneurship. An approach is presented that combines existing online tools with the traditional methodologies for creating courses on entrepreneurship. We introduce a concept -the virtual innovation space- to take the most advantages from opportunities that the Internet gives us for increasing efficiency of learning entrepreneurship for IT students. A summary of the course content on entrepreneurship that is developed and used by the project partners for their local courses is presented. We present and discuss feedback received from the project partners and describe some student projects and experiences. The work in this paper can be useful for other universities and similar projects to compare their effort and receive some justification or ideas for their initiatives.

INTRODUCTION

Higher education, innovation and entrepreneurship are long established as key pillars to provide various ways of engaging with enterprises. Over the last decades there has been an increased demand to include innovation and entrepreneurship into educational programs, emphasising the importance of engagement between industry and academia. However, the inclusion in curricula and educational programmes still seems to be challenging, although some successful examples illustrate how collaboration between academia and industry can be beneficial. There is no doubt that links between training, research and innovation by means of introducing advanced training in entrepreneurship and innovation capabilities are beneficial. In relation to the education domain, comparable professional standards, frameworks and curricula are important but less well established. Furthermore, although e-learning concepts seem to be particularly suited for collaboration and entrepreneurship, it appears that in e-learning programmes collaboration between academia and industry is less prominent. Furthermore, training transferable skills and creativity as part of entrepreneurship is challenging in an e-learning environment. In particular support for student projects and engagement practices are less well-developed.

This paper provides a framework and description of an open infrastructure for student projects as part of an IT entrepreneurship course that can facilitate collaboration between students and enterprises.

RELATED WORK: ENTREPRENEURSHIP, INNOVATION, AND STUDENT PROJECTS

Many researchers have discussed innovation management and entrepreneurship as part of Information Systems (IS) and Information Technology (IT). Many have described insights into innovation processes in organisations and the role of IT (Carroll & Helfert, 2015, Carey & Helfert, 2015) and many tools have been suggested (Auinger et al., 2014). A large body of research is, in general, concerned with the impact of IT and the successful application of IS to support businesses becoming more innovative (Legris, 2003). Entrepreneurship and innovation are closely linked (Huff, 2013; Blundel, 2011). Recently the concept of Open Innovation has been discussed in many papers (Maccani et al. 2015; Huff, 2013; Chesbrough, 2006; Drucker, 1993). Innovation can be seen as an outcome (product) or a process (activity) or a combination of both. Process innovation has been described as any new way of developing, implementing and maintaining IS in an organisational context (Swanson, 1994). In his seminal work, Drucker focused on two aspects of innovation: the process of innovation i.e. how innovators search for opportunities and transform them into a new practice in the marketplace; and the practice of "entrepreneurship" i.e. how institutional ways and processes embed the practice of innovation into an organisation (Drucker, 1993).

A process can be described as a repeatable set of value-adding activities with a discrete beginning and a discrete ending that produces desired, predetermined, measurable outcomes. This view posits that all work is a process and all products or services are the outcomes of processes. A so-called "resource-based" view of IS/IT innovation has been popular in the literature (Feeny, 1998) and more recently a "capability-oriented" view of IS (Peppard, 2004).

Research concerning the influence on students of technical specialities in an educational program in engineering showed that there is no connection between presence of the program and a positive and significant effect on the venturing rate of the students (Militaru, 2015). Moreover, the students, with an average age of 21 years, had an opinion that entrepreneurship skills did not matter at all or that it

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