Chapter 2
EMERSION:
Education to Meet the Requirements of Software Industry and Beyond – Establishing, Implementing and Evaluating an Industry-Oriented Education Model in China

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ABSTRACT

China and the European Union both face the challenge of building dynamic and internationally focused knowledge economies. Information Technology (IT) is a key enabler of such economies and IT education must be at the forefront of any strategy to meet the challenges of building them. Recognising this, the School of Computing in Dublin Institute of Technology (DIT), Ireland, the National Pilot School of Software in Harbin Institute of Technology (HIT), China, and the School of Computing and Information Technology in the University of Wolverhampton (UW), United Kingdom, established a collaboration which resulted in the EMERSION (Education to Meet the Requirements of Software Industry and Beyond - Establishing, Implementing and Evaluating an Industry-Oriented Education Model in China) project. This project designed, implemented, and evaluated an education model with an industrial ethos to deliver sustainable, high-quality, and effective IT education in HIT. The project was completed in 2006, and this chapter presents a review of the main lessons that emerged from it.

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INTRODUCTION

China is advancing rapidly to become a competitive and dynamic knowledge economy with a thoroughly international perspective. The European Union (EU) shares a similar aim, having declared at its council meeting in Lisbon in March 2000 that the EU must become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion. Achieving and sustaining such an economy involves many challenges, the central one of which consists of ensuring the quality and effectiveness of IT education.

Educational institutes in the EU and China must therefore be in the forefront of the efforts to meet this challenge. While traditional education models and practices in the higher education sector in China have been very successful in educating students for academic excellence, there have been problems in producing industry-oriented graduates, who can readily fit into the working environment of the Chinese software industry (Chinese Government Report, 2001). The parallel challenge for education institutions in EU countries is to enhance and improve their education programmes to ensure graduates meet the requirements of the software industry and the development of the most competitive and dynamic knowledge-based economy.

Recognising this, the School of Computing, Dublin Institute of Technology (DIT-SoC), the National Pilot School of Software, Harbin Institute of Technology (HIT-NPSS) and the School of Computing and Information Technology, University of Wolverhampton UK (UW-SCIT) initiated a collaboration in 2003 to address this challenge.

The collaboration and co-operation between DIT-SoC and HIT-NPSS had been initially established during the visit to DIT in January 2002 by an Education Delegation led by the Chinese Vice-Minister of Education, Mr. Lu, Fuyuan, where Prof. Xu, Xiaofei the Dean of NPSS-HIT was a delegation member. Impressed in general by the success of the Irish software industry, which was one of the top software exporting countries for some years around that time, and in particular by the industry-oriented quality-assured education ethos and practices as well as the high quality of industry-oriented lecturing staff within the DIT-SoC, Minister Lu invited DIT-SoC to develop collaborations with the Chinese National Pilot Schools of Software, and nominated HIT-NPSS to be the direct Chinese partner in the collaboration. The aim agreed was to pilot the establishment of an industry-oriented education model and lecturing team in the HIT-NPSS, to incorporate industry-oriented education practices.

As this collaboration progressed, the partnership recognized that their aims, objectives and timelines were closely aligned with those of the European Union Asia-Link programme which aimed to promote regional and multilateral networking between higher education institutions in the EU and Asia. There had been a long-term academic relationship between DIT-SoC and UW-SCIT, strongly based on their common high level commitment to an industry-oriented education philosophy and practice, and the three institutions put forward a joint submission to the Asia-Link programme and the EMERSION (Education to Meet the Requirements of Software Industry and Beyond - Establishing, Implementing and Evaluating an Industry-Oriented Education Model in China) project was approved in early 2003. The project was initially intended to run for 3 years from March 2003. However, the official starting date was delayed until July 2003, due to the SARS (Severe Acute Respiratory Syndrome) epidemic of the time.

AIMS AND OBJECTIVES OF THE EMERSION PROJECT

The primary aim of the EMERSION project was to leverage the experience of the project partners