

# Chapter XIII

## Industry–University Collaborations in Research for Information Systems: An Exploratory Study of a Management Model

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### ABSTRACT

*Research collaborations between industry and the academic community are now commonplace and continuing to flourish. While both entities are involved in problem solving, their motivations and objectives appear to be quite different; industrial research being primarily driven by business needs to improve cost, quality, and so forth, academic research ostensibly driven by the desire to push the boundaries of knowledge but in reality driven by the need to “publish or perish.” Recognising the differences, and indeed the complementary aspects of these respective motivations and objectives, has been repeatedly cited in the literature as a critical success factor for such collaborations. While much has been written especially from the academic perspective on various aspects of research collaborations, there is relatively little from the industrial perspective, especially with regard to a management model, that could be used to guide such research project collaborations. This chapter is written from an industry perspective and it explores such a model specifically for managing information systems (IS) research projects. Nowadays, and increasingly so, the business of software production will follow a defined software process to provide good management of projects and to guide both the management and engineering aspects of development. This chapter suggests an extension of these principles to produce a process management framework that software companies can use for research project collaborations with universities.*

## INTRODUCTION

Industrial collaborations with universities go back a long way and are exemplified by the establishment of “redbrick” universities in the industrial heartland of Britain in the mid to late 19th century. These universities were founded on the principle of industry and academia working together not only for scientific and technical advancement in an academic sense, but also for the benefit of the local industry and the economy (Howells, Nedevea, & Georghiou, 1998). Around the same time in the United States, the Morrill Act of 1862 established land-grant universities to meet the growing demand for agricultural and mechanical education to benefit economic development. This was followed by the Hatch Act of 1887 and the Smith-Lever Act of 1914 which initiated and further authorised ongoing federal support for experimentation and applied research (Allen, Aldredge, & Burkhalter, 1989).

The industry-university collaborations that emerged from these early beginnings have traditionally been *informal*, and it is only since the 1970s that their true significance has been fully recognised and *formal* linkages have been established (Alam, Jayakumar, & Balakrishnan, 2003; Howells et al., 1998; Mead et al., 2000). It is suggested that these formal linkages resulted from four main mechanisms and sources:

- Informal contacts and spin-outs from university departments
- Through contracts and collaborative research
- Property-led initiatives in the form of science or technology parks
- Through the management and licensing of intellectual property rights (IPR)

In the period since the 1970s, and particularly during the 1980s these collaborations have continued to develop. They are nowadays an accepted part of the wider research remit and are actually

increasing (Amabile et al., 2001; Burnham, 1997; Pollitt & Mellors, 1993).

While collaborations between industrial, pharmaceutical, and medical research organisations with universities are perhaps the most prevalent and best known, collaborations have also spread to IS research, and to many other industry sectors. Many universities have gone so far as appointing specialised personnel to industry liaison roles with the express purpose of managing the interface with industry, while some have created autonomous technology transfer organisations to facilitate transfer of the know-how generated to industry (Alam et al., 2003). On the industrial side some (larger) corporations have established specific training and/or dedicated resources which are intended to address the sourcing and management of these special relationships with academia. They are referred to as *special* relationships because, unlike industry-industry collaborations, there are apparent dichotomies in industry's and academia's motivations to engage in collaborations in the first place. Hence, it has been observed that successful cooperation between industry and academia requires a special kind of synergy (Fassin, 2000). Consequently, to achieve successful cooperation both parties need to be aware not only of these dichotomies, but of each other's complementary strengths (Brannock & Denny, 1998), and this applies to IS research collaborations just as much as any other research collaboration.

Commentators have indicated that the management of engagements between industry and academia is a crucial factor for success and have pointed to the lack of familiarity with project management techniques among some academic researchers (Hurmelinna, 2004; Martin, 2000; University of Melbourne, 2003). Other commentators speculate whether an academic research environment is in fact compatible with industry in collaborative R&D (David, 2001). Hence, realising and appreciating the motivations for industry and universities to engage in research projects generally and IS research in particular,

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