Achieving Relevant Research Through Industry-University Partnerships

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Overview of Presentation

- Introduction
- Aims and Objectives
- Outline of the Programme
- Advantages to the various parties
- Previous Placements
- Barriers to Success
- Current Research Project

Collaborative Industry Research

- Collaborative Research Project between the Engineering Project Management Group (EPMG) and Multiplex Constructions

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INDUSTRY- UNIVERSITY PARTNERSHIPS

- The value of establishing effective industry-university partnerships has been realised by many construction engineering educators and industry leaders (Tener, 1996)
- Aims to promote the pooling of knowledge and experience from within the student group (Lowe, 1991).
- The real educational issue however, is how to best prepare engineers and constructors to deliver a quality product to an owner (Schexnayder, 2003)

PROGRAMME OUTLINE

- The PhD candidate is placed full time in industry and undertakes work directly for the employer along with studying towards the PhD full time.
- The employer (Multiplex Constructions (Vic) Pty Ltd) employs the candidate as a researcher, to perform research and report on any particular area of interest to the organisation
- The PhD thesis topic was determined at a joint meeting between Multiplex, the student and the university supervisors
- Academic rigour is maintained

Programme Outline

- The candidate is based full time at Multiplex, but spends 60% of time working directly towards the PhD, and the remaining 40% on Multiplex projects.
- There are certain added pressures with this mix of work and study which could be detrimental to the success of the PhD.
- It is up to the individual candidate and supervisors to ensure the industry work doesn't interfere too heavily with the PhD programme

ADVANTAGES TO THE PARTICIPATING PARTIES:

- The University
- The Engineering Project Management Group (EPMG) through which the student is supervised has pioneered the practice of industry focused Engineering PhD's with many past graduates having spent significant time placed in government and industry
- The University stands to gain excellent exposure through being closely involved with industry, and confirms the EPMG as an industry focused group whilst still maintaining its academic integrity.

ADVANTAGES TO THE PARTICIPATING PARTIES:

- The Organisation
- The organisation stands to benefit greatly through having an on site researcher who has skills in searching for and disseminating relevant industry and academic material to the company
- The organisation also stands to benefit from the added incentive it has provided the student to stay loyal to the company once the PhD program is complete
- The program also provides tax benefits under Australian Taxation Laws through the provision of Research and Development.

ADVANTAGES TO THE PARTICIPATING PARTIES:

- The Student
- Possibly benefits the most through the program, by gaining valuable industry experience not otherwise available to PhD students.
- The student has access to a wealth of information and expertise through both the University and the organisation, which is much more likely to result in an industry grounded PhD that retains its academic merit.

Previous industry based PhD placements

Research Topic Area	Placement Organisation	Researcher's Industry Participation	Year
Environmental management systems	Australian Antarctic Division	Engaged at Casey Station, Antarctica, establishing environmental reporting systems	2002
Construction project management in developing countries	AusAID, Orica	Conducted training needs analysis in Vietnam, and consulting work on an Indonesian project	2002
Privately funded Infrastructure evaluation	State Treasury, Victoria	Developed agreements for the delivery and operation of a range of public private partnership projects, including risk management investigations	2001
Risk allocation in the private provision of infrastructure	State Treasury, Victoria	Employed in developing risk management criteria for Victorian Government PPI projects	2000
Housing delivery in less developed countries	Urban Land Authority, Victoria	Engaged in urban land residential developments in outer suburban Melbourne	1999
Estimating & tendering in the Australian civil engineering industry	John Holland Group	Employed in estimate & tender preparation, and tender review	1996

MAJOR BARRIERS TO SUCCESS:

- Intellectual Property
- The preferences of the three participants can generally be met by prior agreement without jeopardising the academic criteria fundamental to the degree granting institution
- The related issue of confidentiality is commonly addressed by academic institutions but may also be required by the placement organisations.

Confidentiality Issues

- When investigating various case studies and performing industry surveys within the bounds of the PhD research, there is an obligation under the Code of Conduct to state all affiliations and sources of funding and employers.

Outline of the Research

- Innovative Commercial Management for the Australian Construction Industry;
- "Development of a Framework for Public Private Partnerships through a Relationship Contracting approach"
- The aim is to create a three stage process for enhanced PPP delivery

Framework Outline

- The aim is to create a three stage process for improved PPP project delivery:
- Define Critical Success Factors in the delivery of PPP's using relationship contracting techniques. Using literature and endorsed by survey results.
- Establish a method for assessing how the model is performing during the project.
- Create a 'toolbox' for correcting any problems along the way.

Key Findings:

- It is hoped the following outcomes will be achieved

1. That utilising Relationship Contracting techniques through a PPP project will result in an improved project outcome.
2. That the new framework can successfully identify problems as they arise throughout the delivery process.
3. That the new framework can successfully correct any issues that do arise

Work Completed

- Survey of major contractors in Australia has been completed in conjunction with the Australian Constructors Association (ACA)
- Journal paper has been produced and will be published in the Chartered Institute of Building (UK) Journal
- Major Case Study performed:
- - Channel Tunnel Rail Link (UK)

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