

Dear colleagues,

As input into our discussion about research priorities, I have attached a list of submissions, which I received in response to my email request on October 20.

**From:** UCD Faculty of Commerce Staff [mailto:COMMERCE@LISTSERV.HEANET.IE] **On Behalf Of** Stefan Klein  
**Sent:** 20 October 2005 16:56  
**To:** COMMERCE@LISTSERV.HEANET.IE  
**Subject:** Input for Research Priorities Meeting, Nov. 3, needed

Dear colleagues,

May I ask you to submit proposals / suggestions for potential research priorities for the School of Business, or for research areas that might be worth pursuing on some kind of collaborative basis.

In particular, it would be helpful if you could:

- describe the title and rationale for the research theme,
- comment on selected criteria from the last two pages of my presentation, which Andy sent around, ( e.g. promotion of high quality research, impact on society, contribution to education, collaboration with other institutions etc. ) , and
- indicate modes of research (and funding), e.g. SFI/ EU funded project, PhD training network etc., and preferred institutional setting.

As I would like to use this input to prepare for our discussion on November 3, please send your submissions (if you have not done so already) no later than Oct. 31.

While this might appear as a difficult and challenging request, I strongly believe that right now we have an opportunity to shape our research agenda for the coming years. It is up to us to grasp and take advantage of this opportunity.

Best regards  
Stefan

As far as I could solicit consent from the authors (on short notice), I have also included their submission text. I hope that the outstanding contributions will be made available soon.

Best regards  
Stefan

	<b>Proposers</b>	<b>Theme</b>
1	Tony Meenahan Marketing	International Sales and Brand Development
2	Colm O’Gorman, Camilla Noonan, Peter McNamara	The Center for the Competitive Performance of Firms
3	Peter Keenan Sean McGarraghy Brian Fynes Sean de Burca NITM	Innovation, Performance and Technology
4	Breffni Tomlin, NITM	Technology management
5	John Geary, Bill Roche, Séamas Kelly, Stefan Klein, Tom Begley	Work, Innovation and Organisation Research Group  Including OB, CEROP, CITO
6	Don Bredin John Cotter Elaine Hutson	Financial Institutions and Markets - Empirical financial markets
7	John McCallig Paul Ryan	Financial Institutions and Markets - Equity Analysis
8	Niamh Brennan Dr Blanaid Clarke (Law), Eleanor O’Higgins Dr Aileen Pierce	Corporate Governance, Financial Reporting and Ethics Research Cluster
9	Christoph Drechsler	Accounting, Organisations and Society
10	Cathal Brugha Andreas Buttimer, Charles Geaney	Project Evaluation and Management
11	Anthony Brabazon	Centre for Natural Computing and Applications
12	Sean McGarraghty, Anthony Brabazon, Dan Golden	Business Modelling and Optimisation
13	Gerardine Doyle	Health care management or Public Sector Management (Research Centre to be established)
14	Bill Roche	Generic research programme title "Business in Global Markets"
15	Tom Begley	Thoughts on Possible Themes

## 1. International Sales and Brand Development

Tony Meenahan

## 2. The Center for the Competitive Performance of Firms<sup>1</sup>

Colm O’Gorman, Camilla Noonan, Peter McNamara

Within the Business School, there is a stream of research, embedded in a variety of disciplines, which ultimately seeks to understand various aspects of the *competitive performance of firms*. Broadly, the research may be delineated along the following lines, with individual researchers typically focused on one of the following:

- The origins and evolution of firms and markets and the underlying knowledge/innovation system that fosters high performance (including strategy during periods of disruptive innovation) (e.g. Colm O’Gorman, Peter Mc Namara, Paul Mc Grath, Damien Mc Loughlin)
- The internationalisation of firms, including the patterns of overseas activity (e.g. Sean Cassidy), modes of entry (e.g. Dorota Piaskowska) and supply chain management (e.g. Donna Marshall)
- The evolutionary role of MNE subsidiaries, the changing nature of intra-firm activity and the challenges associated with managing dispersed but interconnected networks of activity (e.g. Pat Gibbons, Camilla Noonan,)

In the Irish context all areas (creating of new firms, upgrading of foreign-owned firms, etc.) have been highlighted as important for the future development of indigenous firms and foreign-owned firms in Ireland. In addition to existing interdisciplinary nature of the aforementioned research, there is enormous potential to forge links with other disciplines. For example, as Irish policy makers seek to develop Ireland as a scientific and technology base for firms, there are potential synergies to be had between scholars working in the science, business and law faculties around issues pertaining to Intellectual Property Protection. This type of cross-disciplinary research would have obvious potential spillovers into teaching curricula within the science and business faculties.

**Existing competences:** Aside from publications in mainstream international journals, within each of these areas, industry/academic experts have acknowledged the contributions made by several of our faculty. For example, Donna Marshall was pivotal in securing the IBM research project; Colm O’Gorman has participated in EU funded research projects (e.g. Leonardo da Vinci (FIN/00/C/P/RF/92650); Phare- ACE (P95-2114-R); Dorota Piaskowska and Pat Gibbons have both received best papers at the Academy of Management; and Camilla Noonan 2003 recipient of the Richard N. Farmer Award at the US Academy of International Business.

A full list of publications within each area of activity is available on request.

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<sup>1</sup> The stream of research described above obviously includes others within the School of Business. Due to time constraints we were unable to contact all colleagues that might be interested in such a centre/group. The names listed above are therefore illustrative, and don’t necessarily represent a commitment from individuals or a complete listing of research activity that might be included in such a centre/group.

**Funded Research Activity:** Given the nature and breath of this stream of research, it is likely to be of interest to a wide variety of businesses and could be easily packaged to this constituent group. One potential flagship project for marketing of such research to industry might be to launch a competitiveness report that would be of interest to firms located in Ireland. Such a project would seek to examine international performance within a number of sectors and generate implications for firms within this sector that are seeking to do business from an Irish location. The project should serve as window into the types of research undertaken by this group/centre and provide data for members of the group.

### **3. Innovation, Performance and Technology**

Peter Keenan, Sean McGarraghy, Brian Fynes, Sean de Burca, NITM

This group comprises Peter Keenan and Sean McGarraghy of MIS, Brian Fynes of Management and Sean de Burca of Marketing and the members of NITM. Interest has also been expressed by members of Marketing. It would be set within the UCD School of Business.

The mission of this group is to conduct world-class research in the inter-related domains of [a] product and service innovation; and [b] the design and optimisation of service delivery processes to create customer value

Funding could be sought from one or more of: the IDA, SFI, EI, the EU, commercial entities.

This group has significant proven ability to generate funding from and develop existing international collaborations with IBM, Lucent/Bell Labs.

Researchers in this group collaborate in the SFI-funded Centre for Telecommunications Value Chain Research (CTVR) CSET, which represents a first for UCD/NITM.

Furthermore, this group's members form part of the IBM-funded international consortium on Integrated Supply Chain research, and are carrying out joint research with the leading US business schools in this area.

This group is research active in areas such as internationally refereed publications, journal editorships, national and international networks and supervision of doctoral students and post-doctoral researchers. This demonstrates the group's ability to generate world-class research output.

The group's mission directly addresses the need to innovate in Irish industry and employ optimisation techniques to enhance performance. Thus this theme addresses national requirements of interest to IDA, SFI, Enterprise Ireland, etc.; these would include moving Ireland up the value chain so that it can be competitive as a high cost economy, the introduction of new technologies, etc. It supports the development of electronic services (such as Google) in Ireland.

This theme directly supports the education needs of the nation in Management Science, Operations Management, Supply Chain & Logistics, Information Systems, E-Commerce and Marketing.

This group already demonstrates multidisciplinary - it comprises people from different research traditions, modellers, empiricists etc. It is also willing to continue existing and develop new collaboration with other institutions.

Because of its mission in maximising benefits from technology and innovation, this group is interested in linking with the College of Engineering, Mathematical & Physical Sciences and any proposed University ICT initiative:

it has membership on the UCD Research IT Steering Group. The group is also in a position to build on existing national collaborations e.g., members of the previously mentioned CTVR CSET such as the Cork Constraint Computation Centre (4C), National Geocomputation Centre etc.

Because of the increasingly important Intellectual Property (IP), copyright, and contractual issues associated with innovation and new technology, this group also sees collaboration with the UCD School of Law as beneficial to both parties.

Opportunities may also arise to work with NOVA to commercialise research undertaken.

#### 4. Technology management

Breffni Tomlin (National Institute of Technology Management).

I would like to propose technology management as a theme for research in the School of Business.

##### **Scope of Technology Management.**

These introductory words about scope are intended to illustrate how broad a theme technology management is.

The designation "technology management" originated when MIT realised that its research and teaching programme called R&D Management embraced the wider subject of innovation. (In many ways it is unfortunate that it relabelled the programme Management of Technology instead of Management of Innovation.) As Operations Management broadened to Supply Chain Management, and as the concurrent design of products and processes which lies at the heart of innovation encompassed supply chains, there has been a convergence of the two fields. We now increasingly see the emergence in US universities of concentrations labelled Technology, Innovation and Operations. In continental Europe, these subjects have always been integrated under the name Technology Management.

##### ***Advantages of TM as a Theme.***

Whether labelled TM, TIO, or Innovation Management, the subject has significant advantages for the School of Business.

1. It is inherently interdisciplinary, not only within the School, but between the School and the Colleges of Engineering and Life Sciences.
2. It is a theme rather than a discipline: a very broad umbrella under which many disciplines can come together as it suits their purposes. For instance, within the School of Business itself, there is scope for scholars from many subject areas to orient their work toward particular issues:
  - a. Policy and Strategy: the national system of innovation, and the development at firm level of coherent strategies, plans and portfolios to maximise competitive advantage.
  - b. Intellectual Asset Management/ Knowledge Management.
  - c. Organisation: at the macro level, issues such as the design of corporate innovation structures for multi-company innovation, and the drive by Irish MNC subsidiaries to secure wider business charters; at the micro level, the issues of individual and small group functioning throughout the development process.
  - d. Operations Management: the integration of supply chain design and product design.
  - e. Management Information Systems: the IT support of the digitised design process and of distributed design; the portfolio selection process as multi-phase, multi-criterion decision making.
  - f. Marketing: the incorporation of customer information in the design and implementation process from idea to launch to "Main Street"
  - g. Finance: the treatment of R&D projects as real options; the valuation of technology; the sources of funding for innovation
  - h. Accountancy: the relationship between R&D spending and market value of the firm.
3. The subject of innovation, the effective execution of large research projects and the commercialisation of intellectual property developed in universities, and the control of supply chains as manufacturing globalises, are critical areas of national policy.
4. TM is a subject in which the School can build an international reputation.
  - a. Perceptually, Dublin is seen internationally as a centre of technology, so a specialisation in its management has face validity in the international market.
  - b. Because the field is not highly developed academically, and because groups in most universities are quite small, we can realistically aspire to a position among the leaders.
5. Significant funding is available to develop the area. NITM was instituted by Enterprise Ireland in order to establish Ireland, and specifically UCD, as a leader in the field of Technology Management.

Under a new contract, its mandate to develop the area has been renewed. EI and the university have committed significant funds over a 5-year period to enable UCD to develop the research capability of the School of Business in collaboration with other Colleges.

## **5. Proposal to Create a Work, Innovation and Organisation Research Group in the School of Business**

John Geary, Bill Roche, Séamas Kelly, Stefan Klein, Tom Begley

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### **Concept Outline**

In response to the Dean's request for proposals for consideration of new disciplinary groups in the context of a new School of Business, this proposal outlines, in brief, the concept of a Work, Innovation and Organisation Research Group.

The proposal is offered as a basis for discussion, and the Work, Innovation and Research Organisation Group, as conceived, would become the unit of research for disciplines with a focus on cognate aspects of behaviour and innovation in work and organisations.

The proposal is presented to colleagues as an open invitation to dialogue and membership.

The proposal reflects the following critical premises:

1. A considerable 'blurring' of academic and research boundaries has been evident between a series of disciplines that are all concerned in various ways with the rapidly changing world of work and its consequences for management, employees and organisational performance: organisational behaviour, knowledge and organisation networks, human resource management, and industrial relations.
2. The research work and outputs of existing research centres (CEROP, CITO and the OB group) are considerable, and they have achieved significant reputations in their respective research domains. There has also been considerable collaboration between individuals from within these research centres. (For example, John Geary, Seamas Kelly, Stefan Klein and Bill Roche have collaborated with the National Centre for Partnership and Performance. Seamas Kelly and Paul McGrath are working on a proposal to look at change in the health care sector. Others, still, have worked together on the NuDIMS seminar series).
3. The bringing together of members from these centres and other colleagues in a new Work, Innovation and Organisation Research Group holds the potential for creating research critical mass of international significance and reputation. It also promises to provide the School of Business with one strong strategic research focus.
4. Members of such a Group would be united in drawing from a variety of intellectual traditions from the social and behavioural sciences, including sociology, political science, psychology, philosophy and organisation theory.
5. The formation of such a Group would be used to advance and promote interdisciplinary approaches to understanding important contemporary issues in employment and the workplace, including, for example, network organisation, virtual organisation, new HR practices, employee commitment, knowledge management and business excellence.

6. The emphasis would be on developing a critical understanding of the behavioural and social aspects of contemporary developments in work and organizations through independent and theoretically informed empirical research.
7. The establishment of such a Group would also be used to develop further the PhD programme, combining existing and new inputs from the disciplines encompassed by this Group.
8. The existence of such a research Group would help to better 'map' the Group's research activities onto existing and future potential sources of external funding.
9. The governance arrangements for the Group would be decided by the members of the Group with due regard to University protocols and requirements. A Director would be appointed and senior researchers would head-up sub-fields of research within the Group. A collegiate structure of governance is proposed and the support of senior researchers will be critical in assisting the Director to pursue the objectives of the newly-formed research group.
10. The competencies of the Director would be agreed by members of the Group, and it is proposed that the person appointed will be an active researcher with an international reputation, capable of providing research and management leadership on the basis of mutual trust and a commitment to the research values espoused in this proposal.
11. The development of such a Group would be important for the promotion of a strong social science research and teaching tradition within management education in a new School of Business.
12. The research outputs of the Group would be used to inform teaching in the disciplines embraced by the research Group and cognate disciplines within the School of Business.

John Geary, Bill Roche, Séamas Kelly, Stefan Klein and Tom Begley

April 15<sup>th</sup>, 2005

## **6. Theme: Financial Institutions and Markets –**

### **Sub-theme: Empirical financial markets**

Don Bredin, John Cotter, Elaine Hutson

**Research areas:** The members of this group conduct research and have published widely in the general area of empirical financial markets research. Topics of ongoing interest to the group include risk measurement and management in futures markets, the performance of asset managers, and the interaction between financial markets and the real economy.

**Rationale for research theme:** The priority is to undertake empirical research of the highest international standard into the operations of financial markets. This will build on previously completed research by team members in this area (see Appendix 1). Given the backdrop of our expanding financial services sector, this research will act as a catalyst to aid continued growth in the financial sector, which is critical to Ireland's future prosperity.

**Structure:** The research will be conducted under the umbrella of the Centre for Financial Markets (see Appendix 2). Empirical finance is a core research component of the output of the Centre.

### **Aims and objectives**

- Our main aim is to conduct high quality empirical research in financial markets that would be disseminated via high quality peer-reviewed international journals and in other quality outlets (such as books, industry reports and policy documents).

In order to achieve this aim, the group has the following 6 objectives:

1. To train new researchers through doctoral and post-doctoral schemes.
2. To building on our current collaborations with outside researchers in the area of empirical finance.
3. To expand on current relationships with industry.
4. To further develop the expertise and education of the area of empirical finance through existing and new relationships with government.
5. To foster the relevance of empirical finance by collaborating with researchers from other disciplines.
6. To raise research funding from various bodies to enhance the research programme.

### **Research experience, outside collaborators, and government and industry contacts**

We provide a brief snapshot of some further background details of the researchers associated with this proposal (further details available on request). This proposal builds on previous work in empirical finance published in international journals (see the publications list in Appendix 1). We have funded our prior research via several sources, including faculty and university research grants, and grants from the CPA and the Irish Bankers' Federation. We have experience in supervising research students at masters and PhD level, including encouraging and assisting in the publication of their research findings. We have extensive contacts in leading research and policy institutions such as the London School of Economics, Sydney University, the Central Bank of Ireland, the European Central Bank, the University of Nottingham and City University. Our co-researchers include finance specialists as well as researchers from disciplines such as economics, entrepreneurship, statistics and mathematics. Our relationships with industry include the Irish Bankers Federation, the Institute of Bankers, the Irish Exporters' Association, IBI Corporate Finance, DCC, the Futures and Options Association and the Securities Institute of Australia. Our collaborations with government and government agencies include the Central Bank of Ireland, the Czech National Bank and the Commission for Aviation Regulation.

6.1 Appendix 1: Publications

6.2

6.3 Refereed Academic Journals

**2006**

1. **Cotter, J.** and J. Hanly (2006) Re-evaluating Hedging Performance, *Journal of Futures Markets*, forthcoming.
2. **Cotter, J.** (2006) Extreme Value Estimation Of Boom And Crash Statistics, *European Journal Of Finance*, forthcoming.
3. **Cotter, J.** and S. Stevenson (2006) Multivariate Analysis Of REIT Volatility, *Journal Of Real Estate Finance And Economics*, forthcoming.
4. Denvir, E. and **E. Hutson** (2006) The performance and diversification benefits of funds of hedge funds, *Journal of International Financial Markets, Institutions and Money* 16(1), forthcoming.

**2005**

5. **Bredin, D.**, G. O'Reilly, G. and C. Gavin (2005) Foreign Shocks and the Volatility of the ISE, *Applied Financial Economics*, forthcoming.
6. **Bredin, D.** and S. Fountas (2005) Macroeconomic Uncertainty & Macroeconomic Performance: Are they Related? *Manchester School*, vol. 73, 58-76.
7. **Cotter, J.** (2005) Modelling catastrophic risk in international equity markets: An extreme value approach, *Applied Financial Economic Letters*, forthcoming.
8. **Cotter, J.** (2005) Tail Behaviour Of The Euro, *Applied Economics*, 37, 1 -14.
9. **Cotter, J.** (2005) Uncovering Long Memory In High Frequency UK Futures, *Journal Of European Finance*, 11, 325-337.
10. T. Hogan and **E. Hutson** (2005) What factors determine the use of venture capital? Evidence from the software sector, *Venture Capital: An International Journal of Entrepreneurial Finance*, 7(3), forthcoming.
11. **Hutson, E.** (2005) The early managed funds industry: investment trusts in 19<sup>th</sup> century Britain, *International Review of Financial Analysis*, 14(4), 439-454.
12. **Hogan, T.** and E. Hutson (2005) **Capital structure in new technology-based firms: financing in the Irish software sector**, *Global Finance Journal* 15(3), 369-382.
13. **Hutson, E.** and C. Kearney (2005) Merger arbitrage and the interaction between target and bidder stocks during takeover bids *Research in International Business and Finance* 19(1), 1-26.

**2004**

14. **Bredin, D.**, and S. Hyde (2004) FOREX Risk: Measurement and Evaluation using Value-at-Risk, *Journal of Business, Finance and Accounting*, vol. 31, 1389-1417.
15. **Bredin, D.**, G. O'Reilly, and C. Gavin (2004) International Monetary Policy Shocks and Irish Market Rates, *Applied Economic Letters*, vol. 11, 409-414.

16. **Bredin, D.** and G. O'Reilly (2004) An Analysis of the Transmission Mechanism of Monetary Policy in Ireland, *Applied Economics* 36(1), 49-58.
17. **Cotter, J.** (2004) Modelling extreme financial returns of global equity markets, *Greek Economic Review*, forthcoming.
18. **Cotter, J.** (2004) Minimum Capital Requirement Calculations For UK Futures, *Journal Of Futures Markets* 24, 193-220.
19. **Cotter, J.** (2004) Viability Of The Irish Equity Market, *Irish Banking Review*, Summer, 42-54.
20. **Cotter, J.** (2004) Extreme Risk in Futures Contracts, *Applied Economic Letters*, forthcoming.
21. **Cotter, J.** (2004) Downside Risk For European Equity Markets, *Applied Financial Economics* 14, 707-716.
22. **Cotter, J.** (2004) International Equity Market Integration In A Small Open Economy: Ireland January 1990 - December 2000, *International Review of Financial Analysis* 13, 669-685.

### 2003

23. **Bredin, D.**, G. O'Reilly, and C. Gavin (2003) The Influence of Domestic and International Interest Rates on the ISEQ, *Economic and Social Review* 34(3), 249-265.
24. **Bredin, D.**, S. Fountas, and E. Murphy (2003) An Empirical Analysis of Short-Run and Long-Run Irish Export Functions: Does Exchange Rate Volatility Matter? *International Review of Applied Economics* 17(2).
25. Barry, F., A. Hannan, **E. Hutson** and C. Kearney (2003) Competitiveness Implications for Ireland of EU Enlargement, *Journal of the Statistical and Social Inquiry Society of Ireland*.
26. Donabedian, M. and **E. Hutson** (2003) Hedge funds: the case for disclosure regulation, *Irish Banking Review*, Summer, 42-58.

### 2002

27. **Bredin, D.**, G. O'Reilly and T. Fitzpatrick (2002) Retail Interest Rate Pass-Through: The Irish Experience, *Economic and Social Review* 33(2), 223-246.
28. **Bredin, D.**, and K. Cuthbertson (2002) Liquidity Effects and Precautionary Saving in the Czech Republic, *Applied Financial Economics* 12, 405-413.
29. **Cotter, J.** (2002) Comment On A Promising Timing Strategy In Equity Markets, *Journal of Statistical and Social Inquiry Society of Ireland*.
30. **Hutson, E.** (2002) Australia's takeover rules: how good are they? *The Journal of the Securities Institute of Australia*, Issue 4, Summer, 33-37.

### 2001

31. **Bredin, D.** and G. O'Reilly (2001) The Transmission Mechanism of Monetary Policy in Ireland, *Central Bank of Ireland Quarterly Bulletin*, Summer.
32. **Bredin, D.**, G. O'Reilly and T. Fitzpatrick (2001) Structural Change and Pass Through in Irish Retail Lending Market, *Central Bank of Ireland Quarterly Bulletin*, Autumn.
33. **Cotter, J.** (2001) Extreme Value Calculations Of European Futures Margin Requirements, *Journal Of Banking And Finance* 25(8), 1475-1502.
34. Cuthbertson, K., and **D. Bredin** (2001) The Demand for Money in the Czech Republic Since Transition, *Journal of Policy Reform*, vol. 4, 271-290.

35. Cuthbertson, K., and **D. Bredin** (2001) Long Rates and the Risk Premia in Ireland, *Journal of Forecasting*, vol. 20, 391-403.
36. **Hutson, E.** and C. Kearney (2001) Volatility in Stocks subject to Takeover Bids: Australian Evidence using Daily Data, *Journal of Empirical Finance* 8, 273-296.

## 2000

37. **Cotter, J.** and D.G. McKillop (2000) The Distributional Characteristics Of A Selection Of Contracts Traded On The London International Financial Futures Exchange, *Journal of Business Finance and Accounting*, 27(3/4), 487-510.
38. **Cotter, J.** (2000) Volatility And The Euro: An Irish Perspective, *Journal of Statistical and Social Inquiry Society of Ireland*, 29, 83-116.
39. **Cotter, J.** (2000) A Non-Parametric Examination Of Stability In The Euro, *Journal Of International Finance* (SSRN).
40. **Cotter, J.** (2000) Varying the VaR For Unconditional and Conditional Environments, *Scottish Institute For Research In Investment And Finance*.
41. Cuthbertson, K. and **D. Bredin** (2000) The Expectations Hypothesis of the Term Structure: The Case of Ireland, *Economic and Social Review*, 31(3), 267-281.
42. **Hutson, E.** (2000) Our Iron Takeover Law: Why Australia Needs a Mandatory Bid Rule, *The Journal of the Securities Institute of Australia*, Issue 2, Winter, 2-7.
43. **Hutson, E.** (2000) Takeover Targets and the Probability of Bid Success: Evidence from the Australian Market, *International Review of Financial Analysis* 9(1), 45-65.

## 1999

44. **Cotter, J.** and R. Hutchinson (1999) The Impact Of Accounting Reporting Techniques On Earnings Enhancement In The UK Retailing Sector, *The International Review Of Retail, Distribution And Consumer Research* 9, 147-163.
45. **Hutson, E.** and C. Kearney (1999) The Asian Financial Crisis and the IMF: A Survey, *Journal of the Asia Pacific Economy* 4, 393-412.

## 1998

46. **Bredin, D.** and Fountas, S. (1998) Testing for Monetary Policy Convergence in European Countries, *Journal of Economic Studies* 25(5), 353-369.
47. Fountas, S. and **Bredin, D.** (1998) Exchange Rate Volatility and Exports: The Case of Ireland, *Applied Economics Letters* 5(5), 301-304.
48. **Cotter, J.** (1998) Testing Distributional Models For The Irish Equity Market, *The Economic And Social Review* 29, 369-383.
49. **Cotter, J.** (1998) Irish Event Studies: Earnings Announcements, Turn Of The Year And Size Effects, *Irish Business And Administrative Research* 18 (1), 34-51.
50. **Cotter, J.** (1998) An Assessment Of The Market Reaction Of UK Firms To A Private Placement Announcement, *Irish Accounting Review*, 5(1), 1-22.
51. **Hutson, E.** (1998) The Regulation of Corporate Control in Australia: A Historical Perspective *Canterbury Law Journal* 7, 102-122.

#### 6.4 Book chapters

1. **Cotter, J.** and F. Longin (2005) Margin Requirements With Intraday Dynamics, in L. Becchetti, I. Hasan and M. Bagella (eds) *Governance, Transparency and Markets*, Elsevier Press, forthcoming.
2. **Cotter, J.** (2005) Risk measures of Asian markets, in K. Daly (ed) *Finance in Asia*, Edward Elgar, forthcoming.
3. Fetherstone, T., **E. Hutson** and L. O'Sullivan (2005) Bank corporate governance in post-crisis East Asia, in K. Daly (ed) *Finance in Asia*, Edward Elgar, forthcoming.
  
4. Hogan, T. and **E. Hutson** (2005) What factors determine the use of venture capital? in B. Clarysse, J. Roure and T. Schamp (eds) *Starting up and growing new ventures: the role of the financial community*, Edward Elgar, forthcoming.
5. **Hutson, E.** and C. Kearney (2000) The IMF and the New International Financial Architecture, in A. Chowdhury (ed), *Beyond the East Asian Crisis*, Edward Elgar.
6. **Hutson, E.** and C. Kearney (2000) The Asian Financial Crisis and the Balance of Payments, in P. Kriesler (ed), *The Australian Economy*, Allen and Unwin.

## 6.5 Appendix 2: The Centre for Financial Markets (CFM)

The Centre for Financial Markets (CFM) is the main research body in finance at University College Dublin. The following is a brief synopsis of events occurring at the Centre:

### **1. Publishing in finance journals:**

The primary area of published research focuses on the operations of financial markets, financial institutions and the financial services industry.

### **2. External research seminar series:**

Recent speakers include Bernard Dumas (INSEAD), Henri Servaes (London Business School), Gregory Connor (London School of Economics), Theo Vermaelen (INSEAD), Stephen Taylor (University of Lancaster), Raman Uppal (London Business School), Jon Danielsson (London School of Economics), and Kevin Dowd (University of Nottingham).

### **3. Visiting Scholar programme:**

The CFM develops collaborative research through visits by internationally renowned researchers including Hassan Tehranian (Boston College), Jim Lothian (Fordham University), and Francois Longin (ESSEC Business School).

### **4. Train finance researchers at PhD and Masters level:**

In finance more than 70 Masters and Doctorate students graduate each year. Most of these graduates are immediately placed in the financial services industry. For PhD students, the appropriate support structures such as required coursework (equivalent to Masters in Finance), symposiums and internal research seminar properly prepare candidates for their careers in finance research.

### **5. Internal working paper series:**

The Centre supports and promotes a research ethos that develops preliminary research via a working paper series.

### **6. Internal research seminar series:**

The Centre supports and promotes a research ethos that develops preliminary research through an internal research seminar series.

## **7. Theme: Financial Institutions and Markets**

### **Sub-theme: Equity Analysis**

John McCallig & Paul Ryan  
UCD School of Business

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### **Introduction**

Ireland has developed a significant Financial Services Industry in the last 15 years. This industry is based around the funds industry. It relies on tax incentives and the availability of a skilled workforce. The Irish funds industry is mainly made up of funds administration and trustee work. It will be necessary to move up the value chain into fund management if the number of jobs in the IFSC is to be maintained.

### **Rationale for the research theme**

This rationale for this research theme is that significant expertise on equity analysis and selection exists in UCD and is not currently connected to the financial services industry in Ireland. It is an area in which expertise need to grow in both the university/research sector and the commercial sector if the growth of the IFSC is to be maintained.

### **Promotion of high quality research**

A significant finance and accounting literature exists that informs choices about the following topics:

Optimal regulation and institutional setting of equity markets.  
Equity performance and selection.  
Fund performance and selection.

### **Impact on society**

This project will contribute to society in the following ways:

- Availability of highly skilled research to inform choices about the development of the fund management industry.
- Availability of more specialised and skilled graduates and postgraduate/PhD students in this area.
- A focus on Ireland as a centre of excellence for the fund management industry.

### **Contribution to education**

This project will contribute to education in the following ways:

- More expertise in UCD on fund management will lead to more courses on this topic and graduates better equipped for the fund management industry.
- The project will increase UCD's research resources and profile.

### **Collaboration with other institutions**

Collaboration would be between commercial organisations in the IFSC and UCD researchers.

### **Modes of research**

Commercial organisations will be invited to sponsor PhD candidates and research resources such as databases. Government sources may also want to sponsor PhD candidates investigating public policy choices in the fund management industry.

## 8. Corporate Governance, Financial Reporting and Ethics Research Cluster

Niamh Brennan

### Background and Context: Centre for Corporate Governance

The Centre for Corporate Governance was established in 2002. The Centre promotes excellence in corporate governance in Ireland. It has two objectives:

- (1) It provides training to individual company directors and to company boards. Since its establishment in 2002, The Centre has introduced three products: (i) Director development programme launched in 2002; (ii) In-house customized courses for individual company boards launched in 2003 and (iii) Diploma in Corporate Governance launched in 2004/05. The Centre is generating substantial revenues (more than €400,000 in 2004/05).
- (2) To act as a research hub, promoting research in the area of corporate governance and publishing papers and reports in this regard. This objective has not progressed as well as (1) above, as considerable effort has been invested to date in developing the director training products.

Now that the three director training products are in place, the intention is to re-focus energies on developing the research objectives of the Centre. Past surpluses generated from courses could be applied to progress these objectives.

### Objectives for the Proposed Research Cluster

The objectives of this proposed research grouping is to bring together existing areas of corporate governance research excellence currently within in the School of Business and the School of Law. These areas are:

- (1) Corporate governance, focusing on the roles, responsibilities and behaviour of directors and company boards;
- (2) Financial reporting which is an element of corporate governance; and
- (3) Ethics.

Currently, colleagues on an individual basis are producing quality national and international research and publications in these three areas. Forming a research grouping would provide an opportunity for colleagues to collaborate, would act to attract other researchers to the group, and would have greater impact than operating individually.

#### *Corporate governance research*

The Centre for Corporate Governance has a large stakeholder group of directors and company boards. The proposed research group would take advantage of this captive stakeholder group as potential

subjects for research. Given this research focus, a more qualitative (surveys, interviews, field work, case studies) rather than quantitative (using databases etc) research approach would be pursued.

#### *Financial reporting research*

Financial reporting is a central mechanism of corporate governance. A number of researchers in the Discipline of Accountancy have built up a track record in financial reporting research in Ireland and internationally. This work would continue, with some re-focusing on financial reporting issues as they interface with corporate governance (accountability, transparency, etc) and away from the more technical aspects of financial reporting.

#### *Ethics research*

The issue of ethics is at the heart of corporate governance and financial reporting. Proposed members of the cluster have an established track record in ethics research. This research cluster would bring together these researchers who might make a bigger impact by pooling their knowledge.

#### *Research funding*

The researchers associated with this proposal have been and are currently active in competing for research funding. Here are some examples:

- Participant in *Accounting Harmonisation and Standardisation in Europe: Enforcement, Comparability and Capital Market Effects* research project, carried out by the HARMONIA network and funded by the European Commission Research Training Programme. Ten universities are participating in the contract which is valued at €1.346m. UCD's share is €106,000 (Niamh Brennan and Aileen Pierce).
- Ethics and the professional accounting firm – Research project funded by the Institute of Chartered Accountants in Scotland, €10,000 (Aileen Pierce).
- National Document Centre for Corporate Governance, located in the Centre for Corporate Governance UCD; Funding application to the *Irish Research Council for the Humanities and Social Sciences* currently under review (Blanaid Clarke).
- Global convergence to International Financial Reporting standards, a six country comparative study, including Ireland. Funding application to the Australian Research Council currently under review (Niamh Brennan).

#### *Training of PhD students*

The researchers associated with this proposal currently have seven PhD students under supervision in the areas of financial reporting and corporate governance (Niamh Brennan and Aileen Pierce 3; Blanaid Clarke 2 and Eleanor O'Higgins 2).

The Centre has built up a considerable reputation in the business community in Ireland since its establishment. This has attracted an increasing number of enquiries from students interested in corporate governance research. However, Queens University, in association with the Institute of Public Administration, currently offers a DBA in Governance (Governance is broader than corporate

governance). This has made competition for students coming to the Centre for Corporate Governance at UCD more challenging.

However, the Centre has many advantages and it could with some additional effort attract more PhD students in the areas of corporate governance, financial reporting and ethics.

#### **Criteria (Stefan Klein's slide 14)**

##### *Working relationships with researchers from industry and other academic disciplines*

The proposed group would comprise current researchers from the business disciplines of Accounting and Management, and envisages contributions from academics in the School of Law. Some discussions have also taken place with the Geary Institute with whom there are opportunities for collaborative research projects. The Geary Institute has eight research areas, one of which is the broader subject area of governance (see <http://www.ucd.ie/geary/research/GovResearch.html>). There are also opportunities for interesting interdisciplinary research with Psychology in the area of company boards, directors, group behaviour and organisational psychology.

##### *Scientific technological and economics impact*

The most difficult aspect of corporate governance research is getting access to subjects for research viz directors and company boards. Through its well-established stakeholder group of directors and boards of directors who have availed of the Centre for Corporate Governance training courses, the Centre has built up a considerable research advantage.

Because such access is difficult, much prior corporate governance research is quantitative large firm studies based on crude publicly-available corporate governance proxies. Research of the type envisaged for the Centre could make a significant contribution to more qualitative understandings of the work of, and performance of, boards and company directors and would complement the existing more quantitative stream of corporate governance research.

##### *High quality research*

High quality research follows high quality researchers. The researchers proposed for this research group fit that category. This group of researchers are research active with a regular stream of publications. Some have won prestigious international research awards. Others have successfully competed for research funding. All are supervising PhD students.

##### *Gaps in expertise*

The gap in corporate governance expertise was recognised on establishment of the Centre for Corporate Governance in 2002. The Centre at UCD is now nationally recognised as the only centre of excellence in

corporate governance in Ireland. The Centre has also been gaining international recognition as its activities are becoming known outside Ireland.

Corporate governance is a relatively new discipline only attracting serious interest since 1992 on publication of the Cadbury Report in the UK. Corporate governance is by now one of the most topical areas in business, thanks to Enron. Notwithstanding the Sarbanes Oxley legislation in the US, corporate governance continues to be a serious problem for business. For example, the recent collapse of US company Refco, two months after going public, with a share price that dropped from €22 to 75 cent in that two month period has shocked US and world markets.

#### *Enhance education*

The gap in corporate governance training was recognised on establishment of the Centre for Corporate Governance in 2002. The substantial revenue generated by the Centre in a short period of time is testament to the Centre having filled that gap. The Centre has a strong academic mission, not only in training directors and boards, but facilitating research opportunities though providing access to researchers to this stakeholder group.

#### **Identification of issues relevant to research cluster (Stefan Klein's slide 15)**

#### *Preferred mode of research*

Leveraging off the large stakeholder group of directors and boards of directors built up around the Centre for Corporate Governance since its establishment in 2002, a more qualitative (surveys, interviews, field work, case studies) rather than quantitative (using databases etc) research approach would be pursued.

#### *Links to on-going research*

The initial group of academics proposed for this research grouping include Prof Niamh Brennan (Accountancy), Dr Blanaid Clarke (School of Law), Dr Eleanor O'Higgins (Management) and Dr Aileen Pierce (Accountancy). It would be the intention to expand this initial group, not least to introduce some gender balance! Appendix 1 includes a selected list of their publications in the period 2002-2004.

In addition to the publications listed below, this group of researchers has on-going corporate governance research projects underway. In addition, Niamh Brennan is co-editing a special issue on corporate governance for *Accounting, Auditing and Accountability Journal* which is scheduled for publication in 2008. However, there is little coherence in the research as it has been progressed on an individual basis. Forming a research cluster would facilitate better research coherence within the group leading to greater academic impact for UCD.

Publications specifically in the area of corporate governance include:

Prof Niamh Brennan (Accountancy)

Brennan, N. and McCafferty, J. (1997) Corporate Governance Practices in Irish Companies, *IBAR – Irish Business and Administrative Research* 18: 116-135.

MacCanna, L., Brennan, N. and O'Higgins, E. (1999) National Networks of Corporate Power: An Irish Perspective, *Journal of Management and Governance*, 2 (4): 355-377.

Brennan, N. (2003) "Accounting in crisis: A story of auditing, accounting, corporate governance and market failures", *Irish Banking Review*, Summer, pp. 2-17.

Brennan, N. and McDermott, M. (2004) "Alternative Perspectives on Independence of Directors", *Corporate Governance: An International Review*, 12 (3): 325-336.

Dr Blanaid Clarke (School of Law)

Clarke, B. (2002) "Advancing Corporate and Social Responsibility – the Softly, Softly Approach" *Commercial Law Practitioner* 9: 223-225.

Clarke, B. (2004) "Regulating Poison Pill Devices" *Journal of Corporate Law Studies* 4: 51

Clarke, B. (2004) "Recent EU Corporate Governance and Audit Developments in the Light of Parmalat" *Accountancy Plus* April: 18

Dr Eleanor O'Higgins (Management)

MacCanna, L., Brennan, N. and O'Higgins, E. (1999) National Networks of Corporate Power: An Irish Perspective, *Journal of Management and Governance*, 2 (4): 355-377.

O'Higgins, E. (2001) What matters most? The importance of all stakeholders. *Strategic Investor Relations* 1(1): 81-87.

O'Higgins, E. (2001) Spotlight on pay-for-performance system and Is the Celtic Tiger Breeding Fat Cats? In Power, T., Walsh, S. & O'Meara, P. *Financial Management: An Irish Text*. Dublin: Gill & Macmillan.

O'Higgins E. (2002) [Non-executive directors on boards in Ireland: Co-option, characteristics and contributions](#), *Corporate Governance An International Review*, Vol. 10, pp. 19-28.

O'Higgins E. (2004) CEO compensation. Parameters paradigms and paradoxes, Chapter 17 in *Corporate Integrity and Responsibility*, G. Brenkert (ed.), Sage.

Dr Aileen Pierce (Accountancy)

Pierce, A. (2003) "Elan Corporation: A Case Study in Corporate Obfuscation", *Corporate Governance International* 6 (1): 5-23.

#### *Related landscape of Irish and international research*

The only active researchers in corporate governance in the Republic of Ireland are located in UCD. As mentioned earlier, there is a research grouping in the broader subject area of Governance in the Geary Institute in UCD.

Prof Istemi Demirag of Queens University, Belfast has also been working in the area of accountability and governance. QUB has a DBA programme in the wider area of governance.

Prof Christine Mallin is arguably the best known UK academic in the area of corporate governance. She is Director of the Centre for Corporate Governance research at the University of Birmingham and is editor of the journal *Corporate Governance: An International Review*. The Centre at UCD has well established relationships with Prof. Mallin and her Centre.

There are also a large group of individual researchers associated with the European Corporate Governance Institute.

It is beyond this short document to summarise international research in governance. The challenge for the Centre would be to identify unique aspects of Irish business and focus on these areas in an attempt to make as significant a contribution possible to international governance research. Two such areas of focus come to mind given the Irish economy:

#### (1) Governance and International Financial Services Centre (IFSC) companies.

Ireland is currently fourth largest in terms of funds under management thanks to the IFSC. This represents a unique research site for Irish researchers. Two of the Diploma in Corporate Governance class of 2004/05 have done projects on the IFSC. These two projects indicate there are significant governance issues around the regulation and governance of IFSC companies with consequent significant research opportunities.

#### (2) Governance and family businesses

Most prior governance research in other countries is based on public companies. There are only 70 public companies in Ireland. Nearly all business in Ireland is done through family businesses. Family businesses have unique governance issues and challenges. A focus on family businesses would provide opportunities for a unique contribution to the governance literature. Corporate governance and the challenges facing small businesses, especially hi-tech start up operations, is another unique opportunity in Ireland to make a contribution to international corporate governance research.

### *Potential links to the School of Law*

Links between the Centre for Corporate Governance and the School of Law currently exist. Dr Blanaid Clarke is a member of the Management committee of the Centre since its inception in 2002. She actively contributes to the Centre's courses. Mr Rossa Fanning of the School of Law also teaches a course on the Diploma in Corporate Governance.

### *Required/preferred institutional setting*

The research group would be part of the Centre for Corporate Governance.

### *Funding needs and timeframe*

Funding is not an issue for the Centre for Corporate Governance as it is currently generating substantial surpluses.

The greatest impediment to making more progress on the research objectives of the Centre is the heavy administration loads being carried by the academics proposed for the research group. Were those staff freed up to concentrate on research (as well as teaching duties) better progress could be made on (i) designing and progressing research projects, (ii) preparing research funding applications, (iii) attracting research students and (iv) establishing collaborative linkages with other groups such as the governance group in the Geary Institute.

**Prof Niamh Brennan**

**Michael MacCormac Professor of Management**

**22 October 2005**

#### **Appendix 1: Publications (2002-2004) (Eleanor O'Higgins publications missing)**

##### **8.1.1**

##### **8.1.2 Refereed journal articles**

**Brennan, N.** (2003) "Accounting in crisis: A story of auditing, accounting, corporate governance and market failures", *Irish Banking Review*, Summer, pp. 2-17.

**Brennan, N.** and McDermott, M. (2004) "Alternative Perspectives on Independence of Directors", *Corporate Governance: An International Review*, 12 (3): 325-336.

**Clarke, B.** (2002) "Advancing Corporate and Social Responsibility – the Softly, Softly Approach" *Commercial Law Practitioner* 9: 223-225.

**Clarke, B.** (2004) "Regulating Poison Pill Devices" *Journal of Corporate Law Studies* 4: 51

**Clarke, B.** (2004) "Recent EU Corporate Governance and Audit Developments in the Light of Parmalat" *Accountancy Plus* April: 18

**Pierce, A.** (2003) "Elan Corporation: A Case Study in Corporate Obfuscation", *Corporate Governance International* 6 (1): 5-23.

**Pierce, A.** and Weetman, P. (2002) "Measurement of *de facto* harmonisation: Implications of non-disclosure for research planning and interpretation", *Accounting and Business Research* 32 (4): 259-273.

### 8.1.3 Books

**Pierce, A.** and **Brennan, N.** (2003) *Principles and Practice of Group Accounts: A European Perspective*, Thomson Learning, London, xx + 564 pp. and accompanying students' manual 55 pp.

### 8.1.4 Chapters in Books

**Brennan, N.** (2004) "Reporting Intellectual Capital in Annual Reports: Evidence from Ireland", *Accounting, Auditing and Accountability Journal* 14 (4): 423-436. Reprinted in: Aisbitt, S.A and Evans, L (eds) (2004) *Developments in Country Studies in International Accounting – Europe*, Edward Elgar Publishing, Cheltenham.

**Pierce, A.** and **Brennan, N.** (2003) "Republic of Ireland" in *Miller European Accounting Guide*, Fifth Edition, D. Alexander and S. Archer (eds.), Aspen Law & Business, New York, 0-7355-4146-9, pp.13.01-13.88.

**Pierce, A., Brennan, N.** Lamb, M. and Whittington, M. (2003) "Common Appendix: Stock Exchange and Professional Accounting Requirements Applying in Both the Republic of Ireland and the United Kingdom" in *Miller European Accounting Guide*, Fifth Edition, D. Alexander and S. Archer (eds.), Aspen Law & Business, New York, 0-7355-4146-9, pp. 15.01-15.78

**Clarke, B.** and Fitzgerald, G. (2002) "Cross Border Mergers in Company Law: Removing the Final Barriers – Ireland" on XX Congress, London Volume Reports and Conclusions (British Institute of International and Comparative Law).

## 9. Accounting, Organisations and Society

Christoph Drechsler

Proposal for a research theme

This version: 28<sup>th</sup> October 2005

How do businesses achieve long-term sustainable performances? What impact have management practices in business but also in society? How do actions and interactions of companies and their managers link to internal and external stakeholders?

The research theme ***Accounting, Organisations and Society*** attempts to respond to the above sample questions to understand the behaviour and performances of companies, their managers, and their internal and external stakeholders.

The theme focuses on notions of accounting and control in the very broadest sense. It thus may study, for example, the provision and management of information, strategy- and organizational development and the design of accounting and control structures but also the measurement of performances in the public services (e.g. health, education) or in the arena of the sustainable development paradigm.

The research theme is distinctive in that it views businesses as integrated and embedded in society. Analyses from an economic perspective to attain organizational goals may go hand in hand with analysis from social, societal and environmental perspectives and thus naturally foster working relationships with researchers from both various backgrounds in our school and other colleges in our University (e.g. Environmental economics and Urban Planning, Engineering, Sociology).

It allows for both theoretical-fundamental research and applied, hand-in-hand work with industry leaders to develop the knowledge, insights, tools and techniques that will enable Irish companies, global companies in Ireland, and their managers, to fill gaps in long-term expertise needed.

***Accounting, Organisations and Society***, since broadly defined, offers a solid platform to deal with more topical sub-themes as they occur and thus to maintain the thrust for differentiating UCD from other institutions and to raise our University's profile nationally and internationally.

## 10. Project Evaluation and Management: PEM

Cathal Brugha, Andreas Buttimer, Charles Geaney

<http://mis.ucd.ie/staff/cbrugha>

7<sup>th</sup> November 2005

PEM will focus on Multi-Criteria Decision-Making and Project Methodologies and other Management Disciplines that have pragmatic and practice emphasis. It will target the evaluation of large projects: public sector, private, and public-private partnerships, and the use of methodologies to manage these projects.

Its focus could broaden to consider management programmes and change management in key sectors such as hospital services where it is apparent that there is a great need for quality management that is informed by the latest research.

Researchers involved with the group associated with this theme could be involved in other themes also, and projects with external agencies could have dual involvement with this group and others that have different themes.

**Connection to the five criteria:**

**Interdisciplinarity both within and outside UCD:**

It would target environmental, hospital service, infrastructural *projects*. Many of the bodies with which we might have links have policy-making as their primary focus. (I have included extracts from some of their mission statements below.) Our **project / methodology / problem-solving** focus would complement the **policy** focus of these institutes etc.

*Firstly*, we could call on expertise and research interest in the former departments of Management, Management Information Systems and Accountancy.

*Secondly*, there are possibilities for links with Institutes in UCD. (I am including notes on their missions / themes below.)

**National Institute for Technology Management**

(To develop the capability of Irish based companies to manage technology for competitive advantage to the highest international standards.)

**Geary Institute: International Trade and Investment**

(The increased international mobility of firms, driven by developments in technology, improved communications and computerised manufacturing and encouraged by a shift towards greater trade liberalisation, deregulation, and market integration, has led to the emergence of the field of 'new economic geography'.)

**Geary Institute: Policy Evaluation**

(The Policy Evaluation program consists of a group of social scientists, mostly economists, interested in analysing micro' data in areas concerned with public policy, broadly defined. The program's research is currently organised around three themes: Labour markets and Education, Transport & Infrastructure and Political & Social Participation.)

**Urban Institute Ireland**

(UII Vision - To lead research and debate on the Urban environment.

Ull Mission - Ull pursues its vision by taking a multidisciplinary approach to exploring and clarifying the interactions between transport, housing, economics, energy, society, knowledge and policy in the urban environment. Ull works with partners to lead international debate and best practice in sustainable urban living.)

## **NOVA**

(Promotes innovation and technology transfer.

Supports entrepreneurs, campus companies and other knowledge-based ventures.)

*Thirdly*, there are theme-based links with centres in UCD. (I illustrate below using the theme of Environmental Impact Assessment.)

Our **project / methodology / problem-solving** focus would complement the **technical / scientific** focus of these centres etc.

### **Environmental Resource Management Department of in the Faculty of Agriculture**

(or whatever is replacing it, has a Diploma in Environmental Impact Assessment, involving almost every college in UCD but not Business)

### **Civil Engineering Department**

(or whatever is replacing it, has a Centre for Water Resources Research (CWRR) with an integrated and multidisciplinary team, (with others in UCD) that uses Multi-Criteria Decision Support for Environmental Impact Assessment)

### **Linkages between academia and industry**

PEM links with industry will target the evaluation of large projects, starting with public sector, and public-private partnerships. Later it would extend to the use of methodologies to manage these projects, and include private sector projects.

The reason for these priorities is that researchers who could contribute to PEM are already stretched in terms of their time commitments to research and teaching.

The financial support needed would be modest, unlike in Science where there is a heavy burden to fund equipment. Funding would be used to support research assistants, PhD scholarships, some buy-out of teaching, and possibly some travel,

The aim would be to provide Technology Transfer into the Irish economy of the most up-to-date research-proven methods for project evaluation and management.

The focus would be on Executive Education for senior decision-makers in the economy, including project mentoring.

An initial target would be to reduce the State's dependency on consultants: €174m and 3,000 reports since 1998 (Mark Brennock: Irish Times Oct. 8<sup>th</sup>, 2005).

A variety of models are possible: funding for PhDs targeted on areas nominated by the funders, funders-sponsored PhDs / DBAs by own staff, selective taking of individual MBA / MBS courses, pure Executive Education, funded projects.

The initial target would be programmes that could benefit from injections of quality management thinking that is informed by the latest research, for example:

### **Irish Government Public Private Partnership (PPP)**

PPP is basically just a different method of procuring public services and infrastructure by combining the best of the public and private sectors with an emphasis on value for money and delivering quality public services. The Central Public Private Partnerships Unit in the Department of Finance is responsible for the legislative framework, technical and policy guidance to support the PPP process and to disseminate best practice in PPPs.

### **National Development Finance Agency (NDFA)**

The NDFA, under the aegis of the National Treasury Management Agency (NTMA), assists in providing cost effective finance for priority infrastructure projects as an alternative to up-front Exchequer funding or unsuitable private sector funding. NDFA was established on a statutory basis and staffed by experts with experience of corporate finance, risk assessment and the delivery of major projects. The role of the NDFA is to advise State authorities on the optimum means of financing public investment projects in order to achieve value for money.

### **Major PPP Projects**

A summary update on major PPP projects, with an estimated capital value of over €20m and which are at or after the stage of appointing client advisers, is available through the [ppp.gov](http://ppp.gov) website (last updated September 2005). The update summarises the state of play on major PPP projects across the public sector. This includes

### **Environmental Impact Assessment (EIA)**

Projects needing environmental impact assessment are listed in Schedule 5 of the Planning and Development Regulations 2001.

### **National Roads Authority (NRA)**

The NRA must carry out EIAs for :the construction of motorways; busways; new roads of four or more lanes etc; and the construction of a new bridge or tunnel which would be 100m or more in length.

<http://www.nra.ie/Environment/EnvironmentalImpactAssessment/> Currently they refer on their website to UK evaluation methods: a Cost-Benefit Analysis (COBA Manual) for the Economic Assessment of Road Schemes and NESAs (Network Evaluation from Surveys and Assignments) (which gives an economic assessment of a road improvement's 'value for money', through an objective comparison of the quantifiable costs of the improved and base situations).

Modern MCDM would reject Cost-Benefit Analysis and would criticise over-reliance on economic assessment. A better approach has already been tested by researchers in the Business School.

### **Implementing Regional Planning Guidelines (RPG)**

The Department of the Environment, Heritage and Local Government issued a "Best Practice Guidance" in February 2005. Appendix 1 contains 17 "Potential Indicators for Monitoring RPG Implementation Process". Such a process could benefit from a Multi-Criteria support process.

### **New Climate for Public Sector Evaluation**

Part of the consequence of Public Private Partnership and of the increase in tax revenue available for investment in projects has been a growing awareness of the importance of review, and the institution of bodies to carry this out. Examples (sites referring to these are all available from the Internet) are the "Framework for Action on Infrastructural Development, Including Public Private Partnership" (Taoiseach's Dept.), the "Civil Service Performance Verification Group" chaired by Dr. Donal de Buitléir (quoted in Irish Times Oct. 22, 2005 saying public sector may not always be as efficient as the private sector), and the "National Centre for Partnership and Performance" (2001) <http://www.ncpp.ie/>.

### **Potential for world class research**

World-class research into Project Evaluation and Management is already in place within the School. This research theme is primarily about technology transfer of the latest proven methods into the economy *that is currently not using the best methods*, and secondarily about making up a projected shortfall in the School's funding. However, the application of PEM methods to various and large applications by an increasing number of PhDs and post-docs would provide research publications, would extend the testing of these methods, and would have impact in related fields and research literatures, e.g. environmental impact assessment that currently use off-the-shelf, out-of-date, academically flawed methods.

### **Potential impact on society**

Expected high societal impact because of large cost savings and economic benefits.

### **Potential impact on the educational landscape.**

On Executive Education, Inter-College Programmes, and links with State / Industry.

## **11. Natural Computing Research and Applications**

Anthony Brabazon

Michael O'Neill, School of Computer Science & Informatics

November 2, 2005

### **1 Overview**

This document provides a brief case for the development of a specialism for natural computing research and applications at UCD. The proposal has been jointly developed by Dr. Anthony Brabazon (School of Business) and Dr. Michael O'Neill (School of Computer Science and Informatics).

### **2 Natural Computation**

Natural computation is the study of computational systems that draw metaphorical inspiration from natural systems, including biological, ecological and physical systems in order to develop algorithms and software tools for solving realworld problems. Examples of systems which provide inspiration for natural computation include the operation of the central nervous system, biological evolution, molecular biology (e.g. the mapping of genes to proteins), the human immune system, and models of social interaction amongst organisms.

Algorithms drawn from these sources can be used to create models for prediction or classification and can be used for the design of products. These algorithms and related software tools have clear application for use in many domains including bioinformatics, telecommunications, operations research, engineering and finance. The world of natural computation is diverse and fascinating. It is inherently multi-disciplinary, as it combines concepts from fields including computer science, biology and various application domains. Areas of research interest include (also see Figure 1):

- Evolutionary Computation
- Immunocomputing
- Particle Swarm Systems
- Ant Colony Systems
- Neural Networks
- Bacterial Foraging Systems
- Hybrid Systems
- Complex Social Systems

Natural computing has special resonance with several applications domains. For example, financial markets represent a complex, ever-changing, environment in which a population of investors compete for profit. Biological entities have long inhabited such environments and have competed for resources to ensure their survival. It is natural to turn to algorithms that are inspired by biological processes to tackle the task of survival in a financial jungle. Beyond this example, there is potential for application of natural computing methodologies in most fields of human inquiry including medicine, pharmacology, engineering, computing, business, economics and other social sciences.

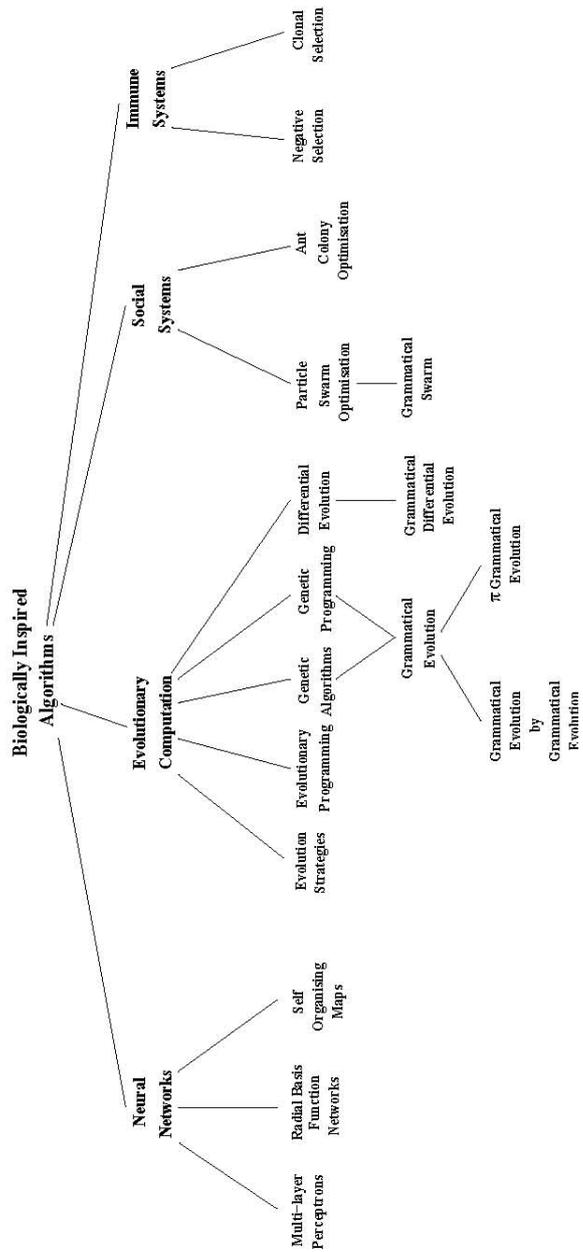


Figure 1: A taxonomy of the common Natural Computing Methods.

### 3 Natural Computing and UCD/Ireland

The international significance of the field of natural computing is evidenced by the recognition of this area of research by professional bodies such as the Institute for Electrical and Electronic Engineers (IEEE) and the Association for Computing Machinery (ACM). Each of these bodies has set up special sections which explicitly cover the domain of natural computing. The field of natural computing has several major international annual conferences, some with in excess of a thousand attendees, including GECCO (ACM Genetic & Evolutionary Computation Conference), CEC (IEEE Congress on Evolutionary Computation), EuroGP (European Conference on Genetic Programming), PPSN (Parallel Problem Solving from Nature) and FOGA (Foundations of Genetic Algorithms), as well as a host of smaller regional conferences. Applications of natural computing methodologies also surface in many other research domains.

At present there is no substantial concentrated research in natural computing taking place in UCD or in any other Irish university. Whilst a small number of individual members of staff have interests in some aspects of natural computing there is no coherent strategy to develop this area. The absence of a strong local competitor in the field of natural computing opens up a significant opportunity for UCD.

A number of specific benefits would accrue to both UCD and to Ireland from the creation of a research specialism in natural computing.

- UCD would become the national leader in this important field
- Research in natural computation and the development of applications of these methodologies, fits in well with the current research funding criteria of SFI (SFI Mathematics Initiative, SFI Principal Investigator Programme etc.) and Enterprise Ireland
- This research area has the capability to attract substantial funding and grow to a notable size, thereby contributing to UCD's plan to increase research output
- The methodologies have direct practical application in many domains. Hence UCD would be an attractive research partner for commercial organisations
- This research area offers the potential to develop intellectual property and commercial products in partnership with commercial organisations
- The multidisciplinary ethos of the specialism will help foster research synergies between different disciplines in UCD
- There are opportunities to offer specialist courses, workshops, and technology review briefings in natural computing to commercial organisations (for example to staff in software, finance or pharmaceutical firms). Apart from generating an income stream, these activities will raise the profile of UCD with potential commercial partners.

The building of a critical mass of trained researchers in the domain of natural computing in Ireland enhances the attractiveness of Ireland to international companies as a venue for high value-added research in both software and other application domains

The creation of a specialism for natural computing at UCD, and its subsequent growth, will help attract and retain top-class researchers in natural computing in Ireland

#### Appendix 1

##### A Sample of Natural Computing Centres Abroad

Leiden Centre for Natural Computing <http://www.liacs.nl/lcnc/index.ht>

Natural Computation Research University of Birmingham, UK

Natural and Evolutionary Computation Group University of Essex, UK

Natural Computing Group of Madrid <http://www.lpsi.eui.upm.es/nncg/>

Natural Computing Laboratory Taiwan  
<http://nclab.csie.nctu.edu.tw>

Natural Computation Group University of Kent, UK <http://www.cs.kent.ac.uk/research/groups/aii/ncg/>

Bioinformatics and Natural Computing Group Italy  
<http://bioinformatics.bio.disco.unimib.it/>

Guelph Natural Computation Research Group Ontario, Canada.  
<http://hebb.cis.uoguelph.ca/>

Natural Computation Research Group Hanoi, Vietnam.  
<http://www.cs.adfa.au/~z3106820/nc/>

Illinois Genetic Algorithms Laboratory (IlligAL) University of Illinois

The Genitor Group University of Colorado

The Evolutionary and Adaptive Systems Research Group University of  
Sussex

The Evolutionary Computation and Research Group Napier University

Centre for Neural and Evolutionary Systems Brunel University,  
UK

Evolution and Complex Systems Group Universidade de  
Coimbra, Portugal

## **12. Business Modelling and Optimisation**

Sean McGarraghy

Tony Brabazon

Dan Golden

The rationale of this theme is to produce graduates in numerate business disciplines, in a spectrum from primary degree to Master's to PhD to post-doctoral researcher. It would comprise a PhD training network, integrated with existing teaching programmes, around the research interests of academic staff. The group of staff would comprise Sean McGarraghy of MIS, Tony Brabazon of Accounting, Dan Golden of Banking and Finance, with interest also shown by Peter Keenan of MIS and David Edelman of Banking and Finance. Other members would include Sean McGarraghy's PhD students and post-doc. The thinking behind the theme is as follows.

The Irish economy is a small open economy subject to global competitive forces. Our economic success has meant that we are no longer a low wage rate economy. We have depended increasingly on improved productivity to maintain our competitiveness in global markets; however, this will not be sufficient as other countries with lower wage rate economies catch up. It is generally agreed that Ireland must prepare for a loss of traditional manufacturing jobs to emerging economies in Eastern Europe and/or the far East. Replacement jobs of equal or higher value must be found: we must create productive employment in areas that can sustain higher levels of wage rate. To this end, various bodies such as Enterprise Ireland (EI), Science Foundation Ireland (SFI) and others have been working on strategies to reposition Ireland as a knowledge economy. Emphasis has been placed on Research and Development (R&D) because of the benefits in terms of products and services adding new streams of wealth creation: this is the backdrop to the creation of SFI. A key plank of any such strategy is the provision of a sufficiently educated workforce to encourage foreign and multi-national companies to locate high-value jobs in this country.

In a recent (22 Oct 2005) speech, An Taoiseach said: "We want to encourage more of our third-level graduates to pursue advanced postgraduate study and research at fourth level - a vibrant fourth level sector that will produce our future knowledge leaders and underpin a climate of innovation... Creating a world-class education system that will keep Ireland ahead of change and a leading knowledge economy is our goal... We will grow our knowledge economy by creating a new generation of highly-skilled graduates, world leaders, leading this country and realising its potential in 2010, 2020 and beyond."

One part of a vision to make this happen is to attract R&D jobs which directly affect business strategy or the realisation of same. I believe - based on my own experience - that this is achievable. Researchers in UCD Business School currently collaborate with two renowned research-and-innovation-producing companies - IBM and Lucent/Bell Labs.

Each of these has a large - mostly US-located - research effort, but has found it beneficial to work with UCD. Our work with IBM involves developing integrated Data Models, algorithms and Information Systems (IS) to allow IBM to successfully achieve its strategic goal of re-forming itself as a services organisation. At a recent presentation by Sean McGarraghy, Bob Moffat, IBM Senior Vice President for

Integrated Operations, said that he found this work 'very exciting' and that 'the organisation that cracks services supply chains will achieve dominance'. A new discipline, Services Science, is forming around this kind of work. Sean McGarraghy and his current PhD student, Michael Phelan, have also been working with Bell Labs to enhance demand forecasting of their product lines, and so streamline their supply chains. This work involves understanding the statistical distributions governing demand, making appropriate business assumptions, and applying or developing appropriate mathematical models of the supply chain, to optimise inventory, lead times, responsiveness to the customer, or whatever may be judged most crucial to the business.

The common thread here is the use of technical knowledge, such as IS, Mathematical and Computer Modelling, Optimisation and Operations Research in a business application. The term Management Science is one that is often used to describe this approach; it ranges from Industrial Mathematics to Decision Science. Degree programmes that produce such graduates are rare in Ireland, the main one being the UCD business school MMS; and few PhD students are produced, due to scarce or isolated funding sources \*.

Another area where there is a meeting of business and numeracy requirements is that of Quantitative Finance, where the design of Financial products again requires the twin pillars of business understanding and exceptional mathematical skills (though the skills are not precisely the same as the skills of Management Science, there is overlap). Again, there is a demand for more highly-skilled graduates in this area, and it is necessary in order to attract the highest level financial jobs to Ireland, which currently are to be found in London and other major financial centres.

In order to attract this kind of business/strategic R&D to Ireland, we need to produce a pool of graduates that are both highly numerate and business aware. This does not mean that research graduate output (Masters, PhD, PostDoc) in other disciplines already being produced in Ireland are not necessary: far from it, and SFI and other organisations already do a good job of producing such graduates. However, there is a niche to be filled, which is currently not being filled.

A numerate researcher who can translate to and from the business setting is the kind of graduate that can make an IBM Senior VP sit up and take notice.

It must be emphasised that such disciplines, because of the nature of their applications, are properly situated in a business school. Also, these highly technical disciplines are complementary to, rather than in competition with, other graduates; there will always be a need for good relationship managers; graduates who can manage from a central point in Ireland a geographically dispersed supply chain; and graduates who can add such extra value that - with appropriate infrastructure - it still makes sense for a company like Intel to keep their manufacturing jobs in Ireland, as the overall business benefit is greater.

Furthermore, the focus here must be on quality, because a few top-quality graduates can make more difference to Ireland's international reputation for thought leadership than many less skilled graduates. Such a reputation will be the catalyst for establishing a critical mass of high-value Irish-based companies -

a new Silicon Valley in Services Science or Exotic Options. A spectrum of graduates from Bachelor's to Master's level will also be required to support the high-end jobs, but it is the top-end jobs that will determine our success.

I propose a PhD school, whose research will not be in one narrow business application but rather in any business area which lends itself to exact or mathematical description. Its main measure of output would be PhD students, but it would of its nature also generate significant research papers. I would envisage a total of about 15 PhD candidates at any one time in Management Science, giving about 5 graduates per annum, and an equivalent number in Quantitative Finance. This would mean building up the existing UCD Business School faculty, and funding the PhD students. The majority of funding would be seen as coming from SFI or other Government/EU bodies, with a probability of companies funding a PhD in an area close to their own interests.

The criteria of promotion of high quality research, impact on society and contribution to education have been dealt with above, but some further points may be made. The theme would seek to stimulate interest in school-leavers in these topics, via outreach programmes to encourage interest in scientific approaches with the added cachet of business applicability: this would help address the dearth of Leaving Cert students interested in Mathematic and Science.

Other outreach exercises such as recent breakfasts organised by MIS and the UCD part of the SFI CTVR CSET have shown a strong interest from industry in our work and its applications. There would also be significant linkages between academia and industry arising from the placement of our graduates in influential positions: positions which would require continuing research work for career advancement: thus the graduates would have an incentive to maintain research links with UCD. Furthermore, companies are already approaching us regarding joint research, such as IBM, Bell Lab, Pioneer Investments (the main high-end Financial Services company in Ireland), indicating a market there to be tapped into. There is also a strong track record of companies seeking Management Science and Quantitative Finance graduates.

The group would be interested in collaboration with other groups inside UCD such as the Schools of Mathematical Sciences and Computer Science, where this would fit common research interests. It would also seek to collaborate with outside institutions. Micheal O'hEigeartaigh, head of the Department of Mathematics and Computer Science at WIT, has already indicated interest in continuing joint work.

[\* However, SFI is beginning to realise that this area is getting more important - Michael Phelan is funded by SFI under grant no. 03/CE3/I405 for the CTVR CSET.]

### **13. Health care management or Public Sector Management**

Gerardine Doyle

#### **Rationale for this research theme:**

- There are many staff members within the School of Business currently working on different research agendas within health care management, ranging from subject groups such as Accountancy, MIS, Management, Banking and Finance and perhaps other subject groups.
- With these existing competencies, there is the possibility for the School of Business to create a multidisciplinary research team with experts in a variety of areas, which may impact on the management of our health service.
- The expertise of different research methodologies that exist amongst the staff members researching in the healthcare area, ranging from ethnographic research, to quantitative research provides a strong base on which to promote high quality research.
- Expert and larger teams would have a greater possibility of obtaining research funding at EU level and at national level.

#### **Maths Initiative Criteria applied to this research theme:**

##### **Create Synergies**

With the existing competencies, there is the scope to develop existing and new working relationships with other researchers in other academic disciplines such as medicine, law and economics.

In addition, many staff members have existing links within the health care industry, which could be further developed for research purposes by a stronger and larger team.

By creating such synergies there is a greater possibility of higher quality research as an output of the School of Business.

##### **Impact on Society**

With the consistent need for high quality health care and high quality health care management, the impact on society is self evident in terms of quality of service and also in terms of efficient use of Exchequer funds.

##### **Contribution to Education**

The contribution to education is particularly relevant to post graduate business and medical graduates. Such research is also relevant at undergraduate level for medical and business students.

This research could be promoted through the PhD programme within the School of Business.

Collaboration with the School of Medicine has already commenced at undergraduate level.

##### **Collaboration with other Institutions and Internationalization**

I myself am engaged in collaborative research and teaching with a university in France and am in the process of developing such a collaboration with a Canadian university and plan to develop one with a US university. I have no doubt that many other colleagues have similar collaborations with other international

institutions. This has clear linkages to our research and teaching activities in the area of health care management.

**Funding:**

Funding could be sought at National and EU level

**Institutional Setting**

A Research Centre to be established

**Potential linkage to the School Of Law and the School of Medicine**

There is staff in these schools currently researching and teaching the legal and ethical aspects of health care management.

**Note:**

All of the above can equally be applied to a research centre for Public Sector Management

#### **14. Generic research programme title "Business in Global Markets"**

Bill Roche

MEMO

27<sup>th</sup> October 2005

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Stefan,

The Industrial Relations and Human Resources Group met to discuss the evolving process of priority formulation for research in the School of Business.

We would like to put forward the following proposals and suggestions.

##### **1. Generic Research Programme Title**

The Group are of the view that it would be best for all subject groups to unite behind a generic programme title that might foster co-operation and still allow all areas space within which to address their own specific research priorities.

Our suggestion is: "Businesses in Global Markets".

This title seeks to encompass the business and economic imperatives facing Ireland and the wider European region (trading and marketing, shifting up the value chain, innovation dynamism and entrepreneurship, financial markets, governance and strategy etc.) and also provides a basis on which the School and University can credibly seek to attract international students, postdocs and faculty to undertake world class academic research out of an Irish context.

The Group are of the view that in formulating such a generic title it is important that a narrow functional and uncritical focus should be avoided (ie a sole emphasis on gearing our research activities to short-term demands and problems), and that the School's research programme should be sufficiently broad to encompass the interaction of business and society and business and the state.

##### **2. Research Priority Area within the Generic Programme**

The Group further proposes that the following area might be identified as a priority within the broader programme:

"Work, Employment and organization in the Global Economy"

Such a priority would reflect the research strength, performance and track-record of the HR & IR Group.

With respect to the specific criteria identified in your email of 20<sup>th</sup> October, the above priority can be supported as follows:

- the topic area has already yielded high quality research of international impact, as well as reflecting Irish and Regional business and economic imperatives and trends;
- the research undertaken directly informs the teaching of the Group and programme design and delivery in the areas of teaching and learning.
- the research undertaken has had a significant and demonstrable public policy impact;
- the research undertaken and the work of the IR & HR Group have attracted PhD students and a significant number of postdoctoral fellowships.\*
- the research area and Group have attracted significant funded research income from State and EU programmes and institutions.

As to the issue of “preferred institutional setting” for this research priority area, the Group have an open mind and are open to co-operative initiatives with colleagues within and beyond the School of Business. The current institutional host for work in the area is CEROP, and the IR & HR Group were also prominent in the proposal to develop a “Work Innovation and Organization Group” In developing this proposal, the Group are also mindful of strengths in the School of Business in cognate areas like MIS, OB and logistics and supply-chain management.

I hope that these proposals represent a constructive basis on which to progress dialogue on research priorities in the School of Business.

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\* The CRH Newman Scholarship in International HRM, EU Human Capital and Mobility Fellowships (2 in the area) the RJP Mortished Newman Scholarship in Industrial Relations; the ESB Fellowship in Industrial Relations, Government of Ireland PhD Fellowship, PRTL I PhD Fellowship in High Performance Work Organization; Government of Ireland Postdoctoral Fellowship (current) AIB – Auginish Newman Fellowship in the New Industrial Relations (current).

## 15. Thoughts on Possible Themes

Tom Begley

People at the 18 October meeting on research emphasised the organic development of research themes based on the interests of existing faculty. That is a natural approach and should be encouraged. At the same time, rather than confine ourselves to the inward focus that such an approach supports, I believe we should also look to the external environment for signals as to the types of research that would be seen as valuable and as having the potential to make a substantial contribution to society. The government's endorsement of the idea of Ireland becoming a knowledge-based economy, especially as represented in the Enterprise Strategy Group (ESG) report, "Ahead of the Curve," provides much information along these lines. This perspective ties in with the EU goal to become the most economically competitive region in the world by 2010. Below I summarise the main points of the report and offer some preliminary thoughts on possible connections to our interests.

The ESG report highlights Ireland's need to move up the value chain in its core sources of expertise. In particular, it points to current weaknesses in the areas of:

- 1) marketing and
- 2) r&d/technology management

that need to be redressed for the country to be economically competitive in the future.

Related to marketing, it recommends increased attention to capability development in sales and to knowledge of export and overseas markets.

Related to r&d/technology management, it stresses the need to improve the ability of industry and the education sector to apply r&d and technology to the creation of new products and services.

The report highlights two primary sources of innovation that will be vital to economic development:

- 1) efforts to inculcate entrepreneurial and innovation skills in the workforce and
- 2) efforts to develop innovative, creative work practices that contribute to employee commitment, increase productivity, and reduce costs.

In relationship to the latter efforts, the report in particular urges greater use of employee financial participation schemes, a relatively unusual feature in Ireland.

The report states that the historical focus on foreign direct investment should continue and that increased activity should be devoted to encouraging MNE subsidiaries to win mandates from their headquarters that increase their value to their companies. Beyond that, it advocates investments in creating industry clusters through encouraging intra-industry cross-company networks. It also posits that efforts should be made to lure European regional headquarters to Ireland through tax incentives and financial assistance, at

least partly because of the professional nature of the jobs they bring and the likelihood they will be involved in some kind of marketing activities.

The report highlights the relative stagnation of indigenous Irish companies in growth beyond revenues of roughly €2 million and says it is vital to help this sector to become internationally competitive.

Finally, the report argues that high-end manufacturing should receive continued support, since it builds on Ireland's historical strengths as a manufacturing base for MNEs. Related activities (e.g., supply chain management and treasury functions) should be developed further.

### **Possible Relationships to Our Research Themes**

The report points toward several possible themes that may be viewed as making a contribution to the wider society. Following the material above chronologically, ideas come to mind for consideration.

**Marketing:** Research related to export and marketing aspects of new product development would connect most closely to this theme. While members of our faculty have some interest in this area, I am not sure how wide and deep it is.

**R&D/Technology Management:** Many policy makers in Ireland now focus on the development of scientifically-based products, but not much attention is being paid to the substantial challenges of moving them from the lab to finished products. This transformation is a managerial challenge that will be key to the success of any new product development initiatives. We already have the National Institute of Technology Management, which in expanded form could take on more research-related activity. If we do not take a firm grasp of this area, one or more other Irish business schools are bound to.

**Entrepreneurial Skills:** We currently participate in the Global Entrepreneurship Monitor project and have the potential to greatly increase our interaction with UCD Nova. We might find especially fertile ground studying the limits to growth of indigenous Irish companies.

**Innovative, Creative Work Practices:** The faculty members who likely would be core to the proposed Work, Innovation, and Organisation Research Group, which itself holds much promise, have published research on a host of themes related to this area. Emergent interest among faculty members in the management of the health sector falls in this orbit.

**MNE Subsidiary Management/Industry Clusters and Networks:** Especially if tied in with the technology management base, this theme connects to the research interests of members of our strategy and international business areas.

**Supply Chain Management:** We have a group working on the IBM and Bell Lab projects. My impression is that MNE subsidiaries in Ireland that have won corporate mandates have often done so in the SCM area.

As an area that is less prominent in business schools than other functions, it is one where we might be able to make a mark.

Treasury Function: An under-attended element in the ESG report relates to the financial services sector. With the presence of the IFSC in Dublin, this area is a natural focus of attention, which it is now receiving among finance faculty.

This list is not meant to be all-inclusive but rather to make an initial attempt to identify levels of fit between ESG-designated areas of need for Ireland as it moves forward into the future and possible responses we might make.